

Basic Information

Grant title

Bridging the digital divide: Rajankunte Magnet school Language Lab and connect to 5 satellite rural

Type of Project**Humanitarian Project**

Address community needs and produce sustainable, measurable outcomes

Primary Contacts

Name	Club	District	Sponsor	Role
Paul Mundackal	Bangalore Oasis	3190	Club	Host

Committee Members

Host committee

Name	Club	District	Role
Vinay Anand	Bangalore Oasis	3190	Secondary Contact

International committee

Name	Club	District	Role
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Do any of these committee members have potential conflicts of interest?

No

Project Overview

Tell us a little about your project. What are the main objectives of the project, and who will benefit from it?

The present project entitled empowering rural magnet school teachers and 5 satellite schools with physical/mobile Language Lab so as to implement NEP-2020 and to integrate technology with the class room

teaching and reach the unreached. The objective is to facilitate the students to learn the syllabus in Mother Tongue Language base more effectively through Language Labs with Ka-Naada Indian Languages keyboard and obtain good grades to become competitive to pursue higher studies in university colleges. The concept of a lab hitherto did not exist for Kannada or mother tongue medium schools. One has to learn English in 7th and beyond, to access the computer and content. One has to use English keyboard to type Kannada. .

Concurrent objectives are (i) to enable the teachers –with reinforced learning tools with content delivery in mother tongue, manage/master the current modes of content overload and monitor student progress via the Language Labs and (ii) to provide uninterrupted learning-practice of digital literacy skills in rural schools. The beneficiaries are (i) students who can learn their lessons on mother tongue basis and basic-medium and (ii) teachers who can impart the teaching in more effective manner in non-english native language medium in a rural high school. (iii) Reach the Unreached children through portable lab and tutor.

The language lab consists of a portable pocket computer, Kannada keyboard, touch screen, power bank and pouch. This is designed to work in four options, with/without electricity, with/without current. Content is synced with the content in magnet school and sources like Khan Academy, Deeksha and teacher curated sources, so it runs in Kolibri LMS. The local lan enables the server access using standalone or tabs or phones. .

How students and teachers in a rural school are benefited: In urban schools like the one at metropolis and Bangalore every school going child knows what a computer/ tab/ smart phone is and learns through English language computer lab in use on a regular school day. But the scenario is totally different in schools that are in the semi-urban and rural areas just 30 km away from Bangalore. Black boards are still in use in the rural schools. Many teachers in rural and semi-urban schools feel the big gap between a school in the city and a school in rural areas. We at Rotary Oasis provided benches and tables. Many teachers in such schools bring their laptops and use their cell phones to show some experiments in science or a nature's phenomenon to create interest in students. But the student does not have adequate facilities for hands on learning experience. Even when one or two computer exists, how to cycle 40-60 students in an hour is a challenge. Fast forward into Covid situation, everyone is expected to have digital literacy and accessibility. The ones left behind have no alternate access to computers or content.

When we installed a language-lab prototypes in Rajankunte school in Karnataka State, one of the teachers who teaches math and languages said that 'class teaching becomes interesting if we can use the technology on day-to-day basis and the students become more interactive'. Social studies teacher said can animation be used for her class? Only English medium students could create content, now Ka-Naada multilingual keyboard enable these children to now type as they think and enables their creative ability. Students say that the best time they ever have is when they are taken to the single computer rooms to watch Khan Academy lessons, animations, once a week provided there is electrical power supply. But school curriculum does not support 'language-studies and hands on practice for digital literacy since computers in mother tongue medium schools hardly exist. We realised a 9th standard girl held mouse for the first time. A few students said that they enjoy learning when Madam uses laptop to teach but sometimes we don't understand properly when we sit in the back benches but are able to follow once we do lab exercises. Edu-tek counsellors feel that teachers need to embrace change and integrate technology in class rooms. Technology pervades every walk of our life and if we don't keep pace, situations like Covid will have dire consequences. Mother tongue based digital literacy is needed more in rural schools to reduce the dropout rate and to prepare rural students to compete with the urban students. Language should be no barrier for their learning.

Two of the biggest hurdles in Empowering rural school with Digital Literacy & integrating technology implementation of NEP-2020 is (i) skilled teacher-competency to adapt to digital education technology and tools and (ii) lack of adequate hands on training facility for each student to practice and improve the skills at their own pace.

Need for training to be given to teachers is important along with lab mentors. Language-Labs are important because they offer a platform for integration of different teaching technologies and student practice platforms for languages as well as sciences in their mother tongue providing level playing ground for rural students. They are time- saving and offers a simple way to work hands-on to learn at own pace, practice, record, save and review lessons. Now with smart software tools and features for integrating learning content, use social media, online search and access digital resources the teacher's job is made simple and makes the learning experience more effective and interesting. Therefore it is imperative that adequate training to be given to the teachers to operate the language-labs to its full potential. This project proposes a thorough training to teachers and hand holding for at least two years from the provider of Rotary Ka-Naada Language Lab for implementation of NEP-2020.

The one period children spend in the lab without interruptions is critical for reinforced learning along with peer guidance. Need for right kind of hardware and digital devices along with uninterrupted electricity is an infrastructure need to run the language labs. The current tablets that dominated Covid scenario is a one way

information device, and the laptops are not affordable for all. Our pilots have revealed that the mixture of pocket servers with portable UPS or battery pack is the right solution along with legacy windows or terminals or laptops so scalability is easy along with a mentor. One advantage is 'Language- Labs can run on low battery back-up and/ or solar power backups. The Rajankunte School got a facelift due to Rotary efforts to provide clean drinking water, leakless class rooms, toilet and pocket computer system. Importance of Electricity infrastructure support has been pointed out in several surveys reported below, about 35% of the total government high schools do not have electricity even as the policy makers are hoping to bring in a qualitative improvement in the current state of the education through maximum utilization of Information Communication Technology (ICT). A joint survey in 2014, by National University of Educational Planning and Administration and Department of School Education and Literacy, which looked at 1.52 million schools across 36 States and Union Territories reports that 40% of the Indian Schools lack electricity. The absence of these basics is proof of the crisis in India's education and learning system. The quality of education in Asia's third-largest economy is proved to be of sub-standard, with poor learning outcomes across the country. Power deficit has been a looming issue. Only 27% gov. Schools have some form of computer. Our approach is to use alternative energy like solar, power banks so the 12v, 5v DC is sufficient to run the servers and portable units whether it is in house computers or portable mobile units.

Project Language Ed-Tech Lab, Rajanakunte, Bengaluru is implemented in Gov. High schools in Karnataka during 2020-21. Intermittent disruption in the supply of electricity, internet in rural schools is a major hurdle in implementing this very useful project supported by KaNaada Phonetics pvt. Ltd. "How can we expect Language Ed-Tech Lab to fire up the imagination and curiosity of our children when several schools and colleges do not have electricity" According to T.C.A. Sharad Raghavan, schools are supposed to be the temples of learning, but the average educational institution in India is likely to be a dingy, dilapidated place without electricity....

(livemint, January 16, 2015). The 2013-14 edition of the District Information System for Education (DISE) report presents a very grim picture of just 10 % of its schools in India have access to electricity in some States and the National Average percentage including the urban schools is an abysmal 56.78%. In the State of Karnataka though It is very much above national average (97%), picture is different with regard to the continuous supply of electricity to schools. Most schools suffer from the interrupted supply of electricity in the day time (sometimes no electricity) which has resulted in mediocrity in learning outcomes especially in the fundamental concepts in Mathematics and Science. (/C:/Politics/h7WkzI77bMtmN9FLDvvo0M/The-poor-state-of-schoolinfrastructure. html). Dr. Prasad and his team from KaNaada Phonetics came up with a portable lab concept that runs on DC phonebanks or a small UPS supported by Paul from Rotary Oasis to run the server running on pocket computer. So at any moment of time without electricity at least several laptops and pocket server will be working or if internet fails local content , for example Khan academy, animation etc is loaded in Kolibri free LMS running on pocket computer. The idea was to make sure Reinforced Learning is not disrupted. This project also proposes the use of Picoprojector to train the teachers on satellite campus and also for content streaming. This also helps in social distancing. In addition training will be provided for LMS., Google classroom and editors to create fillable exercises. The objective is to ensure students to score higher grades in the examination enabling them to pursue their education in reputed institutions. Roof-top solar panels to generate DC voltage is additional infrastructure plan to be provided for uninterrupted electricity for the operation of the magnet school language-lab servers, switch.

Areas of Focus

Which area of focus will this project support?

Basic education and literacy

Measuring Success

Basic education and literacy

Which goals will your activity support?

Supporting programs that strengthen a community's ability to provide basic education and literacy to all

How will you measure your project's impact? You need to include at least one standardized measure from the drop-down menu as part of your application.

Measure	Collection Method	Frequency	Beneficiaries
Number of teachers receiving training in adult education	Surveys/questionnaires	Every six months	20-49
Number of benefiting school-age children	Testing	Every two weeks	100-499

Do you know who will collect information for monitoring and evaluation?

Yes

Name of Individual or Organization

Kanaada Phonetics provided a trained and paid Lab Assistant to run and supervise the lab during evaluation period.. Teachers are trained in July 23 2021 to use the lab and provide content. We have contacted NGO organization Shikshana for guidance on data collection for impact assessment since they are doing for several gov. schools for 5 states manually.

Briefly explain why this person or organization is qualified for this task.

At Rajankunte High School, Bengaluru, Rotary Community Corps (RCC) has already been declared open on January 26,2019 and organization certificate from RI has been received. RCC comprises President of the Management Trust. Mr. Anand, two senior teachers Mr. Venkatesh, Mr. Kantaraj, two junior teachers, two belonging to the community (from Panchayat Ghar digital library, volunteer from NSS Sai Vidya Institute), Rotaract from Presidency Univ., and interns from Nagarjuna Univ., one physical instructor and two supporting staff. The supporting or resource staff will assist in the smooth running of labs, collecting data and passing it to the teaching staff. We have also contacted other NGOs in this space that currently do data collection for other education projects. President of the Trust has agreed to get the data collected for measurement and will also supervise the maintenance of the laboratory. Earlier, RCC has assisted us in installation of painting of the building, water faucets, toilet units to the needy community in the village, note book and dictionary distribution to poor students and distribution of renewable, biodegradable sanitary napkins under the GG project. We have selected this organization based on their previous cooperation over two years with our Rotary club apart from the determination of the members to serve the community and the students in particular, concern for education of their wards, good discipline maintained in the school and respect and regard the villagers give. The education minister has visited the campus also. Additionally, RCC members will involve taking care of the Rotarians and trainers who come for Train the trainer program. Supporting staff of the school who have opted to be in the RCC, play important role in the installation and maintenance of lab computers, cleaning and buying small accessories.

Location and Dates

Humanitarian Project

Where will your project take place?

City or town

Rajanakunte, Chikkaballapur District

Country

India

Province or state

karnataka

When will your project take place?

2022-08-15 to 2024-08-15

Participants

Cooperating Organizations (Optional)

Name	Website	Location
KaNaada Phonetics Pvt.Ltd	www.ka-naada.com	762 RANGESH RESIDENCY,18TH CROSS,#100, BENGALURU India

Supporting Documents

Do any committee members have a potential conflict of interest related to a cooperating organization?

No

Why did you choose to partner with this organization and what will its role be?

KaNaada Phonetics has developed the concept of Indic Keyboard and patented and manufactured them in India with the support of Gov. and private funds. They have been instrumental in running the pilot Language Lab at Rajanukunte. Other Rotary clubs and states have worked with them. We reiterate that this organization is selected based on their previous cooperation over two years with our Rotary club. The students from Sai Vidya , Presidency and Nagarjuna College actively worked and interned at KaNaada Phonetics. We also met with the faculty and staff from these colleges so they can allow these students to come and volunteer in the lab. We like the attitude and determination of the members to serve the community and the students in particular, concern for education of their wards, good discipline maintained in the school and respect and regard they command in the village.

Govt. Junior college, got established at Rajanukunte High School campus also and access to college teachers is available. High school Principal, is instrumental in getting swimming pool, benches sanctioned and is coordinating the Niti Ayog Atal Tinkering Lab (ATL), by Government of India in 2021. (ATL is an approach of Central government of India to create an environment of scientific temperament, innovation, creativity among Indian Students). We have also connected the school with Presidential Award winning teacher Rajashekar Patil who has experience on the setting up and running of CALC labs at Kanakapura district and his advice on content integration from the Gov and Swayam portal.

Partners (Optional)

List any other partners that will participate in this project.

NSS volunteers from Dodaballapur District, Karnataka. Shikshana NGO will be invited to observe our impact measuring methods. Rotary TEACH partners

Volunteer Travelers (Optional)

A grant for a humanitarian project can pay for travel for up to two people who will provide training or help implement the project if the necessary skills are not available locally. Upload a CV for each volunteer traveler. Do not include sensitive personal data, such as government ID numbers, religion, race, health information, etc. You are responsible for informing volunteer travelers of the personal data you have provided about him/her to Rotary and that it will be processed in accordance with Rotary's [Privacy Policy](#).

No.	Name	Email
1	Dr. Guru Prasad	guru@ka-naada.com
2	Sathish Agpala	sathishagpala@gmail.com

Briefly explain why these individual(s) were selected and how they are qualified to provide skills that are not available locally.

Dr. Prasad was instrumental in setting up the first Language Lab and inventor of Ka-Naada mothertongue Keyboards. They worked closely with Ministry of Dr. Prasad has worked closely with over 90 schools by installing mothertongue keyboards and understanding the issues at Tier-2, Tier-3 city schools. He has taught academically in Univ. of Central Florida before and has dedicated himself fulltime to bridge the digital divide with his invention and the entire echo system that includes, pocket computer integration, online-offline Lab content and the Lab infrastructure that can work under adverse conditions of no electricity or no internet or providing content on a local low cost server.

Describe this person's role in the project.

Dr. Prasad from KaNaada Phonetics and his staff will be our implementation project. He and his team have actively run the lab and participated in several Rotary events.

Host sponsor confirmation of volunteer travelers

Supporting Documents

Rotarian Participants

Describe the role that host Rotarians will have in this project.

Host Rotarians involve in constituting a Global Grant Committee comprising of the (i) Club President (ii) Club Secretary (iii) Club's Director for Community Services (iv) Primary and Secondary Contacts of the project (v) Club Rotarians knowledgeable about the implementation of the proposed project. The committee will be responsible for the following: (i) Identifying reputed companies which supply best suited electronic interactive panels and solar equipment needed to charge the single UPS unit that will be running the servers (v) Select by competitive bidding for our specification and placing the purchase order on the company complying O & M conditions, stipulations concerning sustainability, training plan and other recommendations by the committee. (vi) Getting the equipment installed and commissioning the equipment for its effective usage. (vii) To facilitate the training of teachers and arrange training programs for O & M coordinating with RCC (vii) Involving data collection, in the 'evaluation and measurement' of the progress of the project's objective. Host Rotarians involve in constituting a Global Grant Committee comprising of the (i) Club President (ii) Club Secretary (iii) Club's Director for Community Services (iv) Primary and Secondary Contacts of the project (v) Club Rotarians knowledgeable about the implementation of the proposed project. The committee will be responsible for the following: (i) Identifying reputed companies which supply best suited electronic interactive panels and solar equipment needed to charge the single UPS unit that will be running the servers (v) Select by competitive bidding for our specification and placing the purchase order on the company complying O & M conditions, stipulations concerning sustainability, training plan and other recommendations by the committee. (vi) Getting the equipment installed and commissioning the equipment for its effective usage. (vii) To facilitate the training of teachers and arrange training programs for O & M coordinating with RCC (vii) Involving data collection, in the 'evaluation and measurement' of the progress of the project's objective.

Describe the role that international Rotarians will have in this project.

The International Partner USA will generate funds for their contribution towards the project. Assist in providing supplementary and value added apps and information on the course content. They will keep in touch with the progress of the project and will help in troubleshooting any unforeseen problems

Budget

What local currency are you using in your project's budget?

The currency you select should be what you use for a majority of the project's expenses.

Local Currency

INR

U.S. dollar (USD) exchange rate

75

Currency Set On

09/02/2022

What is the budget for this grant?

List each item in your project's budget. Remember that the project's total budget must equal its total funding, which will be calculated in step 9. Every global grant includes a match of at least \$15,000 from The Rotary Foundation's World Fund. Project budgets, including the World Fund match, must be at least \$30,000.

#	Category	Description	Supplier	Cost in INR	Cost in USD
1	Equipment	Indic Keyboards, Pocket computers, Networking gear	KaNaada & Local	2433917	32452
2	Operations	Configuration	Kanaada	221000	2947
3	Personnel	Language Lab Assistants	Local	630000	8400
4	Project management	Managing the 6 labs, 2 lab assistants and Kanaada technical staff, school management	Kanaada	192000	2560
5	Training	Train the Teachers, Language Lab Assistants	Kanaada	42000	560
6	Travel	Travel for training, lab assistant travel	Kanaada	84000	1120
7	Signage	Signage for Labs	Local	3000	40
8	Publicity	Report, news paper article	Local	10000	133
Total budget:				3615917	48212

Funding

Tell us about the funding you've secured for your project. We'll use the information you enter here to calculate your maximum possible funding match from the World Fund.

#	Source	Details	Amount (USD)	Support*	Total
1	District Designated Fund (DDF)	3190	4,000.00	0.00	4,000.00
2	Cash from Club	Bangalore Oasis	1,000.00	50.00	1,050.00

*Whenever cash is contributed to the Foundation to help fund a global grant project, an additional 5 percent is applied to help cover the cost of processing these funds. Clubs and districts can receive Paul Harris Fellow recognition points for the additional expense.

How much World Fund money would you like to use on this project?

You may request up to 3,200.00 USD from the World Fund.

18212

Funding Summary

DDF contributions:	4,000.00
Cash contributions:	1,000.00
Financing subtotal (matched contributions + World Fund):	23,212.00
Total funding:	23,212.00
Total budget:	48,212.00

Sustainability

Humanitarian Projects

Project planning

Describe the community needs that your project will address.

The community needs that our Language Lab project will address are described below serially:

1. Digital User Interface (UI) like Mothertongue keyboards do not exist currently to address the digital literacy needs of rural schools in India. One has to know English to type Indian languages. Need for implementing the mandated National Education Policy (NEP -2020) for Mother tongue Literacy, Digital Literacy, English literacy with teacher assistance in a rural high school using latest technology like the mother tongue keyboards and to prepare rural students to be competitively comparable to the level of urban students. Second major intervention is the prevention of school dropouts due to accessibility. The magnet/hub school with mobile labs will be able to cover satellite/spoke school and intervention areas in association with Panchayat digital lab in case of a pandemic.

In spite of the best efforts by the teachers to teach, performance of rural students in the public examination (measured by the average marks scored) is very much below that of the students studying in city schools. For example, in the public school at Rajanukunte which is one of the few rural schools with English, and Kannada as the medium of instruction and following Central Board Scheme, only 5% of the students score high marks needed to continue their education in reputed colleges in the city. This is compared to more than 60% in city schools (comparative survey made with a few schools in Bangalore using better teaching methods such as National Public School, Aurobindo Public school, Kumarans Public school). Since its inception in 2005, Public School has only a few students who have become doctors (5 numbers) M.Sc., M.Tech., Ph.Ds (2 numbers) and engineers (45 numbers) and students who have cracked national entrance exam (nil) compared to hundreds in each category in each of the schools in Bangalore city adopting latest teaching methods.

Addressing the need: Project envisages improvement in the quality of education through equipping the rural school with better teaching methods involving the latest technology such as providing interactive intelligent panels (IIPs) to each high school class room. Supporting information “Digital education among students in rural areas” www.forbesindia.com/blog/education/digital-education-among-students-in-rural-areas/ Education

to be digitized in rural areas by providing multimedia teaching tools to teachers and engaging students through learning methods that utilize digital tools, such as smart-boards, LCD screens, videos, etc., to teach them different concepts. By making it possible for one teacher to deliver information remotely across several locations, interactive digital media will also help address the shortage of teachers

2. Concurrent needs are (i) to upgrade the teachers through training to master the barrage of apps and related skills to use the boards to its full potential and (ii) to provide uninterrupted power supply to operate the boards in rural schools. (iii) Need for adequate training to be imparted to teachers to use the latest technology to teach in the class rooms. Addressing the need: The project addresses this important need by giving intensive training to teachers by the experts so as to make them competent to utilize the facility provided to its full potential. Supporting information: “Digital education among students in rural areas”

www.forbesindia.com/blog/education/digital-education-among-students-in-rural-areas/ Teachers in rural areas face certain challenges, such as limited training in using digital tools, exposure to technology, and apprehension of new modes of teaching. Therefore, it is crucial to impart adequate technology training to teachers. This can be done by means of training programmes initiated by non-governmental organizations (NGOs) (for example Rotary TEACH program), the government as well as by Corporate Social Responsibility (CSR) arm of corporates.

(iv) Need to provide Hands On practice facility for digital literacy, mother tongue literacy and English literacy through language labs providing students time and opportunity for hands on practice.

3.) The infrastructure has to uninterrupted power supply to operate the servers. Principal of Rajanukunte school expressed the lack of continuous supply of electricity during school hours in rural areas as a big handicap for effective teaching through AV methods, Lab.. Also the principal of neighboring Kakol school and Chokkanahalli village schools (3 km from Rajanukunte school) mentioned lack of internet access. Addressing the above community need: By providing solar energy through roof top solar panels with battery back-up for 5-6 hours for limited instruments like server, switch. Nevertheless, most of the schools in the remote rural areas around Bangalore do not have uninterrupted power supply from the State electricity Board. Electricity supply is usually for about three hours in the early morning but gets cut off by the time students get into the class rooms, say many school headmasters in the rural areas. Power supply is highly interrupted resulting in the teachers not able to teach the practical aspects to the students in the lab. The Gov. provides limited budget for electricity. It is therefore imperative to provide uninterrupted power supply, preferably using renewable energy sources, such as solar panels on the roof tops of schools. These are small UPS that can support pocket servers and switch so the lab can still function with tabs, laptops accessing server in local network. We are providing local content on the opensource server so that during internet interruptions/non-availability (no budget for internet access in gov. rural schools) the content is available lab is still functional.

Present proposal is about addressing these needs which, when taken care of, facilitate the maximum utilization of the IIPs for effective teaching apart from creating conducive ambience for learning and making school going enjoyable to students.

How did your project team identify these needs?

Members of Rotary Bangalore 3190 have been carrying out community projects for many years. Every year, District 3190 acknowledges Rotary Oasis for its service to community projects. The club's vision statement is “To establish as a Rotary Club of excellence with a commitment to identify the community needs and reach out to serve the needy making a better place for them to live in peace”.

In conformity with its vision statement, Rotary Oasis a young three year club has completed several need based community projects, particularly in Rajanukunte semi-urban and rural areas. Some of them include rehabilitation and rebuilding dilapidated school, providing water faucets to rural schools, providing tabs to 10th grade needy students during covid, O2 concentrator, feeding migrant workers during covid and contributing to Digital Library project at Panchayat Ghar (rural gov. office). In its continuous involvement covering rural areas, the project teams learnt the problems encountered in rural schools.

Rajanukunte school in Bangalore Urban district has improved facilities with good infrastructure and Language lab beta testing done to conduct Reinforce Learning experiments. We were impressed by the forward looking management, qualified teachers with high motivation. Our implementation partner Dr. Prasad from KaNaada Phonetics, understood one of the problems students were facing during lab tests and developed mind mapping techniques to assist in English learning and sentence formation for 10th std students. Students with English as the medium of instruction with for Karnataka Secondary Education curriculum had trouble understanding Khan Academy math and better understood when same content was provided in Kannada as well as English.

The school had 100% passes in the 10th standard public examination. The team felt that there is definitely a need for alternative source of content for such students who need extra help and put content in and links in Ka-Naada Gurukula an online teachable system. The schools have ample space on the terrace to install solar panels enough to generate electricity which can suffice the uninterrupted running of laboratories and classes". The local elected official made sure the school got outdoor activity project and got a grant to build a swimming pool.

Based on these observations, Rotarians of Rotary Bangalore made a community assessment of Rajanukunte High School and made a study of the needs of the school. Independent observer groups were made to talk to the teachers, students on the approaches of the pilot study. (please see the details under the community assessment results). Education minister, District BEO, teachers were called to study the pilot. NEP officials were also briefed on the pilot. Some of the important needs (relevant to this project) found are 1. Teachers need training to add content and using mothertongue keyboards. A server that can carry reinforced learning content to supplement the needs of rural students 2. Absence of Uninterrupted power supply 3. Need for a lab assistant for a smooth functioning of the lab. 4. Results of the school in the public examination showed under-performance of students despite 100 % result in the 10th standard public examination. Hence this proposal for a language technology Lab at Rajanukunte.

How were members of the benefiting community involved in finding solutions?

Benefitting committee were involved through focus groups representing the stake holders (i) school management (ii) teachers and supporting staff (iii) students (iv) RCC members (vi) villagers. Discussions were held through the following focus groups Focus group 1. School Management, Teacher in rural school 7 School teachers (Principal Katharaj, Srinivas, Venkatesh, Vedavati BhaT (pd was constantly deputed to covid duty), Siddgangamma (Kannada), Ms. Smitha, Ms. Taramani (met 2 times)

Focal group 2. 20 students (7 boys and 13 girls- representing different categories, good, weak and disinterested in studies) Partial solutions for the needs emerged through interaction with the community members in the focus groups are given below: 1. In spite of the best efforts by the teachers to teach, performance of rural students in the public examination (measured by the average marks scored) is very much below that of the students studying in city schools.

For example, in the public schools at rural areas with English as the medium of instruction, only 5%-10% of the students score very high marks compared to more than 60% in city schools (comparative survey made by Kolar Rotary Club with a few schools in Bangalore using better teaching methods such as National Public School, Aurobindo Public school, Kumarans Public school). Public Schools in rural areas has only a few students who have become doctors, M.Sc., M.Tech., Ph.Ds and engineers, students cracked IIT and IIT entrance exam (nil) compared to the schools in Bangalore city. This may be due to several reasons such as socio-economic background, subdued confidence, prohibitive cost of city life and so on. But it is felt by the community teachers like Mr. Rajashekar Patil , a national awardee who teaches in a Channapatna , Kabbala village school that providing a lab. certainly boosts up confidence of a student to pursue higher studies irrespective of the student's socio-economic background. Mr. Patil has developed innovative methods of teaching. Faculties have expressed that lack of continuous supply of electricity during school hours in rural areas is a big handicap for effective teaching through AV methods. 2. Percentage of students studying in rural schools are less attentive in class rooms and do not participate in learning compared to the urban school students. Their attention and hence their grades can be improved if teaching methods and aids involving latest technology are provided.

In focus group 2 we provided headphones with daisy chain outlets so three students connected their headphones and were able to look into the math content simultaneously. The children were very focused and able to answer the questions.

Such teaching aids and language lab are a need in rural schools to make all the students to participate in reinforced learning. Post covid the students were way behind and the labs were a necessity to intervene and setup peer learning so the children left behind due to lack of digital means could catch up. Other solutions expressed by the community include (i) Adequate training to be imparted to teachers to use the latest technology to teach (Expressed by all the teachers) A three day training was proposed to allow them to record content and create editable pdfs for lab exercises (ii) Uninterrupted power supply with a battery back-up for at least 5-6 hours and Internet facility which are very necessary if the project is to be successful (iii) Supplementing the teaching by additional skilling lessons in language lab like Animation (conversations in

mothertongue), Tools and technologies for Indic Languages for newsletter publication. Children are asking about learning Linux and other advance projects, Towards this we are ready to do allow children come to the lab during holidays. Outcome of the discussion: Use of technology like mothertongue keyboard and Language Lab can help in mitigating the aforementioned concerns due to pandemic, electricity and internet interruptions and provide lab to reduce the Digital Divide problem.

The community of Rotracters and NSS volunteers actively helped us in the pilot and have committed to help in future.

How were community members involved in planning the project?

Upon the suggestion by the Rotary team, the school authorities agreed to set up a Rotary at their school premises as the meeting point with members of management, school teachers, supporting staff and former village panchayat members. The Rotary would assist in the installation of language Lab. and look after the maintenance of solar panels and back-up battery. Gururaj , past President and President elect of the Rtry, agreed to take up the entire responsibility of TEACH program and preparing a report after acquiring the relevant data to measure the impact of the project under the supervision of the technology partner. KaNaada has shown it to the formaer Education Minister, local elected representative and current Education minister, Commissioner of Education and Principal Secty of Education and they are willing to sign MOUs so that this will be a role model for rest of the state.

A team of Rotarians from our club visited the school multiple times along with expert engineers on addressing roof leaks, Lab accessories, wall openings for UPS, lan cables, headphones, solar panel installation location and have planned the execution of the project. Looking at the enthusiastic involvement of the community members, suggestions were received to plan the implementation of the project. Teachers were enthusiastic to undergo training to equip themselves to learn the different contents installed, editable pdfs for children to fill in answers, multilingual keyboard, animation lessons, content organized on Teachables site, pocket server with various math and other contents and to fully utilize all the functions for effective teaching. To have accountability, Rtry members were ready to sign an MOU with the Rotary.

Project implementation

Summarize each step of your project’s implementation.

Do not include sensitive personal data, such as government ID numbers, religion, race, health information, etc. If you include personal data, you are responsible for informing those whose personal data is included that you are providing it to Rotary and that it will be processed in accordance with Rotary’s [Privacy Policy](#).

#	Activity	Duration
1	Equipment Order	1
2	Site Visit	1
3	Installation	5
4	Training	1

Will you work in coordination with any related initiatives in the community?

No

Please explain. Are local initiatives not addressing these needs? Or, if they are, why did you decide not to work with them?

A language Lab project has never been implemented in India. Rotary Oasis and KaNaada Phonetics were the first ones to implement the pilot at Rajanukunte school. There is a related project, the Rajankunte Digital Library initiated by Rotary Oasis/Rajanukunte Grama Panchayat and fully sponsored by Presidency Univ. which is a interesting project where the students from rural area could study for UPSC and other advanced exams . Students from High School could attend the library afterhours and take the math and other lessons

created at a Teachable web site called KaNaada Gurukula setup by our partner KaNaada Phonetics using the computers there.

The Rajanukunte Rural School Language Lab has successfully run with support from volunteers from NSS program from neighboring Sai Vidya Institute of Technology, Presidency University Retractors and Nagarjuna College of Engineering and Technology interns. Our technology partner KaNaada Phonetics trained these interns in Robotics, programming and software in return to their services to volunteer at the lab. We are open to work with other reputed organizations in future such as WIPRO and INFOSYS foundations once we take up the challenge and show the project's success in schools in rural areas.

Since such a language initiative and mothertongue keyboards didnt exist, hence we are proposing this unique tested model to the schools proposed in this proposal. Once we make this a success, other schools across India could benefit through Rotary and other community efforts.

Please describe the training, community outreach, or educational programs this project will include.

1. Training on the use of Language Labs: Training is an essential part of the project. Success of the project entirely depends on the training given to the teachers to use the Language Lab to its full potential. Creating digital content is a challenge for teachers and KaNaada has already worked with teachers in slowly creating the video links into an organized teachable class. KaNaada has already trained the teachers during pilot program on how to create small video segments, google docs with URLs and other reinforced learning materials and bring it online either in local LMS or in KaNaada Gurukula hosted in teachables. KaNaada will train the two Language Lab assistants from local area on the running of the lab, handling of equipment, bug reporting, adding content and maintaining lab registers. Trainers who are experts in using the Language Lab, identified by KaNaada Phonetics will be visiting the school and a Project Manager is set up to handle the issues and trainers and Language Lab assistants, faculty from the six schools. Initially, it is planned to give intensive training to the teachers for one day at the school. After this, one day training once in every three months in the first year followed by hand-holding for additional year. Training program is more described in the training plan for Global Grants of Rotary.
2. Training on computer maintenance will be done by KaNaada to Language Lab assistants and students who are taking interest or skill training classes. KaNaada personnel will send the appropriate lab technician depending on the issue. Internet and electricity will be based on the local school vendors. KaNaada will do twice a year maintenance checks on the hardware.
3. Training on the O & M of the solar panels. Training programs will be held at the school for the members of the school committee (or Rtry) in-charge of supervising the implementation and maintenance. One training program during the execution of the project and after six months another training program on maintenance are planned in the first year. Experts have identified important maintenance issues. These include (i) monthly checking of charging unit and monitor system volts and amps; (ii) semi-annual inspection of modules for damage, mounting system & cleaning of panels. Training will be imparted on these issues by the vendor companies and a written agreement will be made with the vendor company for giving training followed by hand-holding for at least two year free of cost

How were these needs identified?

We ran pilot runs for Language Labs from 2020 onwards and fine tuned the needs of students and teachers on how a Language Lab would be useful to them with multilingual keyboard. We started with pocket computers and then realized lab. content was sparse. We developed content in line with their curriculum to support reinforced learning in Lab. and also hosted it so students could access whenever internet, power was available. We ran the process through experts who constituted the National Education Policy and Education Department officials. Multilingual keyboards by themselves was tested in many schools. The content was fine tuned to add animation , editable pdfs, and mind map techniques to remember using their mothertongue. The content was also hosted in the local server and upto 7 machines were tested to access content from server both locally and remote. Discussion with teachers in the focus groups: KaNaada Phonetics and Rotary Oasis Teach program has constantly interacted with teachers pre Covid as well as during Covid and understood the needs of children who were not having digital access. Teachers were convinced that getting them to school and then have peer groups helping the children behind was working out. Young teachers who had joined the college for teaching recently were confident of handling the digital content, students who were Rotaract and NSS volunteers were also trained to help the students and Lab Assistants given the shortage of machines and Lab

time allotted. Ka-Naada is also working with teachers who run the DIET Labs and content creators so that some of which can reach the rural children. This discussion led to the necessity of training to all the faculty for the success of the project and we may sign MOU with Dept of Education to help in the training program. We have planned three meetings a year at the Rajankunte Magnet school along with 4 students and a school teacher from the five spoke schools along with Rotary, KaNaada Phonetics subject matter experts and Language lab assistants to understand any issues and content changes and implementation of new course modules. For the solar panels experts language lab assistance and maintenance we have identified important maintenance issues. These include (i) monthly checking of UPS ; (ii) semi-annual inspection of solar modules for damage, mounting system & cleaning and remove debris as and when required. Training will be imparted on these issues by the vendor companies and a written agreement will be made with the vendor company for giving training for at least two years free of cost

What incentives (for example, monetary compensation, awards, certification, or publicity), will you use, if any, to encourage community members to participate in the project?

KaNaada Phonetics had a typing competition for students to type Kannada language using Kannada keyboard. This was done for the first time in India. The winners were awarded some prizes and certificates. Such competitions and short animations on global issues can be now possible using language lab tools (We already put animation lessons for students and have conversations in Kannada language). Tradition has been set up in in our club to felicitate the community members involved in different community projects carried out by the club. Vocational awards have been instituted in our club which are bestowed on those who do yeomen service to community.

Rotary will award certificates to NSS, Rotaract, RCC and other volunteers for their support and service to make Language Lab Project sustainable.

List any community members or community groups that will oversee the continuation of the project after grant-funded activities conclude.

PP Rtn Dr., Club's President elect, President-nominee Vice-President elect, Secretary elect, Director-elect of community service. Members of Rotry Oasis

Budget

Will you purchase budget items from local vendors?

Yes

Explain the process you used to select vendors.

GG committee set up by the Club President comprising Primary and Secondary contacts, President Elect, Secretary Elect, Club's community service director and two expert Rotarians of the club have gone through the quotes from different reputed companies dealing with pocket computers, Ka-Naada multilingual keyboards & solar panels. Committee has seen the quality in pilot run. The client pocket computers are extensively used in Railway ticketing terminals and are ruggedized. Training plan on the Language Lab is given as per indicated in the budgetary plan. The committee has decided on the best vendor price-wise and quality-wise and who has given a written assurance for intensive training on Language Lab and hand-holding for two years and O & M for solar panel set up for two years without any extra cost and also give an undertaking for periodical training to staff

Did you use competitive bidding to select vendors?

No

Please explain.

Some of the equipment like multilingual keyboard is manufactured for the first time in India and piloted for the first time with gov. grant. KaNaada Phonetics was a winner in Startup Karnataka Elevate grant where it

encouraged the development of the hardware Indic keyboard in India. The MSME (micro and small business) and Indian Institute of Science (IISc) also supported the design of the electronics. The Dept. of Information and Bio Tech (ITBT) from Gov. has provided support letters to Dept of Education after reviewing it for over a year. Most other equipment will be purchased based on the low cost and maintenance and warranty aspect from the pilot run results.

Please provide an operations and maintenance plan for the equipment or materials you anticipate purchasing for this project. This plan should include who will operate and maintain the equipment and how they will be trained.

The rooftop solar market is evolving continuously and project developers need to continuously apprise themselves of risks involved in the sustainability. Operation and maintenance (O & M) and Asset Management (A.M) are critical issues. The Industry is matured and has evolved several competent players in the market who are responsible and credible in executing the Solar Power Projects. Due diligence has been exercised by the club's GG committee to work with KaNaada Phonetics with whom the club has worked for past two years on the pilot run and they have committed manpower and maintenance to date to get the current equipment as well as new donated equipment in running and managed repairs of computer as needed. The Language lab assistant regularly comes to school and maintains lab ledger and all students sign in and check in/out equipment and attendance. The teachers and language lab assistant will be engaged on appropriate commercial terms of contract, compensation and the like as suits the context of law and school.

Describe how community members will maintain the equipment after grant-funded activities conclude. Will replacement parts be available?

O & M Plan for maintenance by the vendor companies after grant-funded activities conclude has already been discussed with vendor companies. They have assured in writing two years of support and equipment warranty for a year with additional maintenance.

If the grant will be used to purchase any equipment, will the equipment be culturally appropriate and conform to the community's technology standards?

Yes

Please explain.

As we discussed before about 55% students only had digital access during covid. Despite the cultural shift of using phones for education, affordability and accessibility has been a challenge. Hence this need for a Language Lab. The lab uses Mother tongue keyboards and for the first time these children can think and type in their mother tongue giving a quantum shift in Digital Bharat for mother tongue medium students. Our lab is designed to work with Internet and electricity disruptions. So those who have no digital access at home will be given priority in the lab and also a audio splitter is provided so multiple students and peer can listen on same computer. In addition each student is provided an OTG adapter and a KaNaada mother tongue keyboard to work from home connecting to their mobile device. By end of 2022 most villages should have access to 4G so lessons at KaNaada Gurukula can be accessed to do homework.

The following report speaks of significant shift of rural culture in India towards technology usage. (<https://www.livemint.com/Specials/bez364SJNi0rLbVJ1EUHvI/TVs-mobile-phones-spearhead-shift-in-rural-India.html>) TV and mobile phone culture has caught up in India in the last twenty years more than any other culture. According to the Telecom Regulatory Authority of India, as of June,2018, India had 873 million mobile connections.

In this project we are providing a low cost solar panel providing a DC power to support the server and charging phones or light a lamp. In case of electricity failure during the lab hours, server and phones or tabs or laptops could connect to the server along with the keyboard. The UPS provides limited power to one or two machines also. This is based on the experience in pilot runs in several schools. Solar energy panels have become a part of life in our country, especially in Bangalore where most Bangaloreans are accustomed to use of solar energy in one or the other way. Even the rural and semi-urban parts are knowledgeable about this. Rotary Bangalore South has donated hundreds of solar lamps to rural schools as a part of the club's community projects. It certainly conforms to the community's cultural standards where the school is situated.

After the project is completed, who will own the items purchased by grant funds? No items may be owned by a Rotary district, club, or member.

Schools will own the equipment. It will be recorded in the stock ledger of the school and is subjected to Annual inspection of the Deputy Director of Public Instruction's office

Funding

Does your project involve microcredit activities?

Have you found a local funding source to sustain project outcomes for the long term?

No

Will any part of the project generate income for ongoing project funding? If yes, please explain.

Indirectly, saving on electricity due to the supply from solar panels and consequent reduction in the monthly electricity bill could generate some income from the project. This saving could be utilized for maintenance of electrical equipment used in the project.

Supporting Documents

- OnePager_English.jpg
- P1148619-3.jpg
- PilotLanguageLab-1.jpeg
- PilotLanguageLab-2.jpeg
- PilotLanguageLab-3.jpeg

Authorizations

Authorizations & Legal Agreements

Legal agreement

Global Grant Agreement – India - to be authorized by the primary contacts and club presidents (or DRFC chairs if district-sponsored)

This Global Grant Agreement (Agreement) is entered into by The Rotary Foundation of Rotary International (TRF), Rotary Foundation (India) (RF(I)), and the grant sponsors (Sponsors). In consideration of receiving this Rotary Foundation Global Grant (Grant) from TRF, the Sponsors agree that:

1. All information contained in this application is, to the best of our knowledge, true and accurate.
2. We have read the Terms and Conditions for Rotary Foundation District Grants and Global Grants (Terms and Conditions) and will adhere to all policies therein.
3. The Sponsors shall defend, indemnify, and hold harmless RF(I), Rotary International (RI), and TRF, including their directors, trustees, officers, committee members, employees, agents, associate foundations and representatives (collectively Rotary), from and against all claims, including but not limited to claims of subrogation, demands, actions, damages, losses, costs, liabilities, expenses (including reasonable attorney's fees and other legal expenses), awards, judgments, and fines asserted against or recovered from Rotary arising out of any act, conduct, omission, negligence, misconduct, or unlawful act (or act contrary to any applicable governmental order or regulation) resulting directly or indirectly from a Sponsor's and/or participant's involvement in grant-funded activities, including all travel related to the grant.

4. The failure of the parties to comply with the terms of this Agreement due to an act of God, strike, government regulation, war, fire, riot, civil unrest, hurricane, earthquake, or other natural disasters, acts of public enemies, curtailment of transportation facilities, political upheavals, civil disorders, outbreak of infectious disease or illness, acts of terrorism, or any similar cause beyond the control of the parties shall not be deemed a breach of this Agreement. In such an event, the Agreement shall be deemed terminated and the Sponsors shall refund to RF(I)/TRF all unexpended global grant funds within 30 days of termination.
5. RF(I)/TRF's entire responsibility is expressly limited to payment of the total financing amount. RF(I) and TRF do not assume any further responsibility in connection with this grant.
6. RF(I) and TRF reserve the right to cancel the grant and/or this Agreement without notice upon the failure of either or both of the Sponsors to abide by the terms set forth in this Agreement and the Terms and Conditions. Upon cancellation, RF(I)/TRF shall be entitled to a refund from the Sponsors of any global grant funds, including any interest earned, that have not been expended.
7. The laws of the State of Illinois, USA, without reference to its conflicts of laws principles, shall govern all matters arising out of or relating to this Agreement, including, without limitation, its interpretation, construction, performance, and enforcement.
8. Any legal action brought by either party against the other party arising out of or relating to this Agreement must be brought in either, the Circuit Court of Cook County, State of Illinois, USA or the Federal District Court for the Northern District of Illinois, USA. Each party consents to the exclusive jurisdiction of these courts, and their respective appellate courts for the purpose of such actions. Nothing herein prohibits a party that obtains a judgment in either of the designated courts from enforcing the judgment in any other court. Notwithstanding the foregoing, RF(I)/TRF may also bring legal action against Sponsors and/or individuals traveling on grant funds in any court with jurisdiction over them.
9. This Agreement binds and benefits the parties and their respective administrators, legal representatives, and permitted successors and assigns.
10. If any provision of this Agreement is determined to be illegal, invalid or unenforceable, the remaining provisions of this Agreement shall remain in full force and effect.
11. Sponsors may not assign any of its rights under this Agreement except with the prior written consent of RF(I)/TRF. Sponsors may not delegate any performance under this Agreement without the prior written consent of RF(I)/TRF. Any purported assignment of a Sponsor's rights or delegation of performance without RF(I)/TRF's prior written consent is void.
12. RF(I)/TRF may assign some or all of its rights under this Agreement to an associate foundation of TRF. RF(I)/TRF may delegate any performance under this Agreement to an associate foundation. Any other purported assignment of RF(I)/TRF's rights or delegation of performance without the Sponsors' prior written consent is void.
13. Sponsors will comply with all economic and trade sanctions, including those implemented by the Office of Foreign Assets Control (OFAC) of the United States Department of Treasury, and will ensure that they do not support or promote violence, terrorist activity or related training, or money laundering.
14. This Agreement constitutes the final agreement between the parties. No amendment or waiver of any provision of this Agreement shall be effective unless it is in the form of a writing signed by the parties.
15. Rotary may use information contained in this application and subsequent reports for promotional purposes, such as in The Rotarian, in Rotary Leader, on rotary.org and on social media. For any and all photographs submitted with any application or follow-up report, the Sponsor hereby grants to Rotary an unlimited, perpetual, worldwide right and license to use, modify, adapt, publish, and distribute the photograph(s) in any media now known or hereafter devised, including but not limited to, in Rotary publications, advertisements, and Websites and on social media channels. The Sponsor represents and warrants that a) each adult appearing in the photograph(s) has given her/his/their unrestricted written consent to the Sponsor to photograph them and to use and license their likeness, including licensing the photograph(s)

to third parties, b) the parent or guardian of each child under age 18 or each person who lacks legal capacity appearing in the photograph(s) has given unrestricted written consent to the Sponsor to photograph the child or individual and to use and license their likenesses, including licensing the photograph(s) to third parties, and c) it is the copyright owner of the photograph(s) or that the copyright owner of the photograph(s) has given the Sponsor the right to license or sublicense the photograph(s) to Rotary..

16. Privacy is important to Rotary and any personal data your Sponsor shares with Rotary will only be used for official Rotary business. The Sponsor should minimize the personal data of Grant beneficiaries that it shares with RF(I)/TRF to only personal data that RF(I)/TRF specifically requests. Personal data you share will be used to enable your Sponsor's participation in this Grant process, to facilitate your Sponsor's Grant experience and for reporting purposes. Personal data you provide when applying for a Grant may be transferred to Rotary service providers (for example, affiliated entities) to assist Rotary in planning Grant-related activities. By applying for a grant, the Sponsor may receive information about the Grant and supplementary services via email. For further information about how Rotary uses personal data, please contact rotarysupportcenter@rotary.org. Personal data collected on this form is subject to [Rotary's Privacy Policy](#).

17. The Sponsors agree to share information on best practices when asked, and RF(I)/TRF may provide their contact information to other Rotarians who may wish advice on implementing similar activities.

18. The Sponsors will ensure that all individuals traveling on grant funds have been informed of the travel policies stated in the Terms and Conditions and have been made aware that they are responsible for obtaining travel insurance.

19. The Agreement is an "electronic record" as defined in the Information Technology Act (2000) of India and is in accordance with The Rotary Foundation Code of Policies. This electronic record is generated by a computer system and is submitted electronically and does not require any physical or digital signatures. The domain name www.Rotary.org is owned by Rotary International, a company incorporated in Illinois, USA.

Primary contact authorizations

Application Authorization

By submitting this global grant application, we agree to the following:

1. All information contained in this application is, to the best of our knowledge, true and accurate, and we intend to implement the activities as presented in this application.
2. The club/district agrees to undertake these activities as a club/district.
3. We will ensure all cash contributions (as detailed in the grant financing) will be forwarded to The Rotary Foundation (TRF) or sent directly to the global grant bank account after Trustee approval of the grant.
4. Rotary International (RI) and TRF may use information contained in this application to promote the activities by various means such as The Rotarian, the RI international convention, RVM: The Rotarian Video Magazine, etc.
5. We agree to share information on best practices when asked, and TRF may provide our contact information to other Rotarians who may wish advice on implementing similar activities.
6. To the best of our knowledge and belief, except as disclosed herewith, neither we nor any person with whom we have or had a personal or business relationship are engaged, or intend to engage, in benefiting from TRF grant funds or have any interest that may represent a potential competing or conflicting interest. A conflict of interest is defined as a situation in which a Rotarian, in relationship to an outside organization, is in a position to influence the spending of TRF grant funds, or influence decisions in ways that could lead directly or indirectly to financial gain for the Rotarian, a business colleague, or his or her family, or give improper advantage to others to the detriment of TRF.

All Authorizations & Legal Agreements Summary

Primary contact authorizations

Name	Club	District	Status
Paul Mundackal	Bangalore Oasis	3190	

District Rotary Foundation chair authorization

Name	Club	District	Status
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DDF authorization

Name	Club	District	Status
S.K. Bhagavan	Bangalore Southwest	3190	
Mahmood Fazal	Bangalore Metro	3190	

Legal agreement

Name	Club	District	Status
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