e-KALVI: An Equal Footing Through Computer Education

Student: Anvita Ramachandran, University of Chicago
Location: Chennai, India
Dates: July 06 – August 28, 2020

This project is an outgrowth of years of volunteering at schools that serve low-income and disadvantaged children in Chennai, interacting with young students and interviewing their parents and teachers. In Tamil Nadu, the state-government sponsored education system is termed “Samacheer Kalvi”, which literally translates to “Equity in Education”. This proposed Project for Peace aims to achieve this said equity by bridging the divide in technological access and developing the digital skills of underserved school students. I have partnered with the Anjugam Primary School, a school serving an impoverished locality in the city, to set up a computer centre for students and the broader school community. I aim to design and implement a digital literacy program with an ecosystem of volunteers and teachers from private schools and colleges in the city who will support the project at various stages and sustain it after the summer. Through the program, these children will possess the necessary skills in technology that will propel their future education and employment prospects, reducing their vulnerabilities to the vicious cycles of poverty and instability. The program, hence, fosters an equality of opportunity, a vital precursor for sustained peace.

Background

Currently, less than 10% of the parents of students at the Anjugam Primary School have completed a secondary education and, as a result, earn daily wages in manual and seasonal jobs that are threatened by automation. According to the International Labor Organization, 51.8% of activities in India can be automated, and so training these children in digital skills is instrumental for alleviating their social and economic circumstances[1]. Yet, government-aided schools like the Anjugam Primary School are neither mandated nor funded to teach computer science as part of their academic curriculum. In fact, only 13% of Indian government primary schools possess sufficient computer infrastructure and connectivity[2]. These schools typically educate underserved neighbourhoods and recruit students who are at a high risk of drop out. The divide in digital skill acquisition is, hence, systemically deepening due to differing access to quality education along class lines.

Such differences in opportunity inherently weakens the social fabric of the city. Providing an equal footing to these students and expanding their future capabilities is then imperative to ensuring their right to a sustainable and dignified livelihood. It paves the way to an integrated, fair and equitable society, a necessary environment for the promotion of social peace. I have studied the mechanisms of skill development as a research assistant at the Center for the Economics of Human Development, specifically the statistically higher returns of investment in early childhood education programs. This research has informed my proposal to target the gap in technological access and skill training in childhood, as it provides the most effective method to enable job security and social mobility for disadvantaged students.

Proposal and Implementation

The two-month program will equip low-income primary school students, between the ages of 5 and 10, with the base ability of using a computer and a newfound interest in technology, by utilizing a practical and interdisciplinary approach to computer education. The curriculum will focus on peer-learning, in which students will be guided through learning exercises by student volunteers from private schools and colleges. The program will also incorporate workshops for the teacher and parents of the students, with a particular emphasis on training the teachers to integrate the use of computers into their curriculum and teaching methods. The student’s progress will be continually monitored, and the summer program will end with an evaluation of skill development and a discussion of learning milestones. I have outlined the following timeline to implement the project:

1. (December 2019 – April 2020): Form partnerships and design structured curriculum

[1] Kaul, Vivek. 2020. "How Automation Will Affect The Job Market In India". *Livemint*. https://www.livemint.com/industry/human-resource/how-automation-will-affect-the-job-market-in-india-1554090914792.html.
[2] National University of Educational Planning and Administration. 2020. "Present Status Of Infrastructure Facilities In Schools In India: From National And State Level Perspective". New Delhi.

I have already partnered with two private schools and a college – DAV Higher Secondary School, PSBB Senior Secondary School and Women's Christian College. These institutions have agreed to provide student volunteers who will assist with the dissemination of the program. Each cohort of volunteers will be assigned to a particular class and each volunteer will be paired with a group of 2-5 students, to ensure a continued interaction over the course of the program. I will also work with Dr. Priya George (Assistant Professor of Social Work, Stella Maris College), who will guide the design of the parent and teacher workshops and the evaluation mechanism.

I am also working with Mrs. Sree Devi (Computer Science Teacher, PSBB Schools), and Dr. Shobha Leslie, (Assistant Professor of Computer Science, Women's Christian College), to design educational material that is age and background appropriate for the students. Each class will begin with an introduction to the module and an explanation of its relevance and practical use. This will be followed by a demonstration led by the student volunteers and a hands-on exercise for the students to practice. The class will end with a recap of the learning goals, with a focus on forming connecting points with their academic learning

2. (April 2020 – June 2020): Setting up classroom infrastructure

An unused classroom at the Anjugam Primary School will be converted to a computer learning centre. This will require the purchase 10 computers, which can serve two students at a time, along with the necessary hardware accessories like a printer and backup power devices in the case of electricity shortage. A fast and secure internet connection will also be provided to the computers through an ethernet cable and router. I have already contacted potential suppliers in Chennai. I have also partnered with a voluntary organization – The Candles – that has offered to help refurbish the classroom and paint the walls to make the room a conducive learning environment. This effort will be completed during the school holidays in May and June, and I will work remotely to coordinate the set up.

3. (July 2020 – August 2020): Program Implementation

Upon returning to Chennai, I will work to implement the following weekly schedule.

Week	Agenda
1	Ensure complete set-up, train volunteers and finalize volunteer schedules
2	Introduction to computer hardware, desktop features and typing
3	Using word-processors to write in Tamil and/or English
4	Exploring the internet and using search engines to research facts
5	Setting up an email account and writing an email
6	Using excel to compute simple math functions and make graphs
7	Making a slideshow on a studied topic incorporating images, text and graphs
8	Review of program and evaluation of learning outcomes

Scalability and Long-Term Sustainability

The program is designed to serve as a pilot for a more in-depth and permanent computer curriculum that can be sustained and even expanded to other schools. Specifically, it will provide the students with the foundational skills that will enable them to engage with a computer curriculum on par with private schools. The program will also create a community of volunteers surrounding the program, who are well-trained to continue the curriculum beyond the summer and also teach new cohorts of students. The students and volunteers will be given participation certifications, which will give them a sense of satisfaction and accomplishment. The teachers will also be trained, so they can actively use computers in their classroom education and ensure continued practice of computer use. The Anjugam School is closely associated with other schools that similarly serve low-income students, and so the program and facilities can be expanded to serve more students.

About the Applicant

Anvita Ramachandran is a third-year undergraduate, studying economics and statistics. She has volunteered at the Anjugam School for the last 5 years, having previously led efforts for introducing kindergarten classes and building a playground. She also has pedagogical experience, having taught school students through Splash! Chicago and undergraduate students as a College Core Tutor in Economics.