

# **Educational Innovations in Rural Tamil Nadu Tsunami-affected Arunthaiars of Sathyamangalam**

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This paper reports on the human aspect of a two-and-half-year collaboration between mathematics professors of City University of New York (CUNY), and grassroots organizers in rural Tamil Nadu, (Nagaipattinam, Cuddalore, Salem and Erode districts). Reporting on student success in Calculus classrooms in the Bronx<sup>1</sup> at epiSTEME-1<sup>2</sup>, just prior to the tsunami, the CUNY professors were asked how their TR-NYC methodology of teaching-research could be implemented in community-based schools in Dalit hamlets. In the non-formal, community-based schools<sup>3</sup> and bridge schools<sup>4</sup>, in the tsunami-affected<sup>5</sup> Arunthaiar<sup>6</sup> community, a new methodology, teaching-action-research (T-A-R), began to develop, in which the educational environment of the child is viewed as it is shaped by school, home, work and community.

Invited into both communities by grassroots organizers, the teacher-researchers, in a perpetual state of learning had the advantage of observing objectively the state of affairs upon which they were asked to assist and act. The state of affairs is reported here, as well as the task that remains. The most important lesson learned by this teacher-researcher is the power of the human connection, which is independent of perceived social standing, amount of education possessed, or the standard socially accepted norms. The most profound impact upon this teacher-researcher was the resilience of the women, the unbounded joy of the children and the unrecognized strength of the men of the communities. Each of these is partially described below.

## **The Collaborators**

The women of the communities are the unsung martyrs. Fisherwomen, teachers, Arunthaiar women organizers and mothers and grandmothers, who are wood-cutters, brick masons and agricultural labourers, all request a better life for the children.

In a hamlet with no modern amenities, in the late evening, the children study under a tall, dim street light. An old man of the hamlet, pointing to the huts, asks, "Must my granddaughter live the same way as I did?" The questions of the women and children, equally challenging in their innocence and their despair, are about their living conditions. "Will you remember us, will we meet again?" ask young, beautiful women in

the 14-15 years age range, who want to be I.A.S. officers, and when I say of course, they ask, “Why? Our village is so dirty, we are the village of manual scavengers, look, look how much the children fight, why?”

As part of the activities of the War Trauma Foundation project, the teaching-action-research team interviewed several groups of women, men, youth and children to understand how psychosocial professionals could assist. In a fishing village, the psychosocial focus groups encounter persons living in temporary shelters. The youth are drowning themselves in drink and the men are withdrawn. The women are vocal in their love of the child and desperation for the child’s future. “We want our children to live in government hostels. When (note they say when, and not if) the tsunami comes again, we want the children to be far away, but we do not want the hostels to be too far. When the tsunami comes we will have to go to them, who will take care of them?”

A young woman teacher of a community-based school from a nearby village sporadically breaks into song, as we walk on the beach after lunch. The other women try to shoo her. However, she is not to be quietened. “I will sing. I am not under house-arrest, now, I am a bird, I will sing”, she says. The stories of the women are each heroic. A young woman, one of the few paid teachers (paid Rs. 500 per month by a NGO), was a college student in the nearby town when the tsunami hit. She had scored very high on the 12<sup>th</sup> standard examination and had continued on to college. The tsunami destroyed her father’s boat. As the oldest of 4 children, she was asked to discontinue her education to support the family. For Rs.500, the young woman gave up her education to become a teacher of a community-based school. “I am very interested in studying”, she says.

### **The Arunthaiar Woman**

No description of the gender inequities ubiquitous among the communities that formed part of the collaboration, would begin to convey the plight of one who must live in perpetual separation from her own identity – a slave to the dictates of a changing but ever present authority. Enslaved in body and mind, the spirit learns sustenance on very little and minimality becomes the norm, from which even visions of escape and victory are measured in miniscule units and where the true meaning of absence of oppression cannot be held together long enough to catch its own means of sustenance. Such a community, which states itself to be “the last on the steep cliff with not even the dog behind them”, is the Arunthaiar community of Sathyamangalam. The women of the community are all in the labour force. Most are daily agricultural labourers. A woman works from morning to evening to earn Rs. 50 and gets work about four days a week. The man works longer hours, gets more days of week of work and is paid Rs.100.

Almelu is an active young woman. She has overcome some of the inhibitions of being a woman and works toward the social causes that she perceives as important. Among all the self help groups (SHG) I visited, some of the ones that made a very positive impression were those she regularly oversees. The women have a brighter sense of themselves, their smiles are happier, less questioning. Finding oneself in any small form, reveals her own strength and frees the woman of the self-help groups to dream and hope just a little bit more. Some have managed to buy themselves out of bondage. When a woman of the village was being ill-treated, the SHG was called to intervene. They are wise women, who weigh the actions, and their consequences. Some SHG’s weave rope from the abundantly available coconut coir

However, not all self-help-groups provide hope. Among the daily agricultural labourers too are self-help-groups. What do they do? They help people to save money. An earning of Rs.400 per week for the woman, perhaps Rs.700 for the man, long hours of physically exhausting labour, children, housework, and saving of money. The women woodcutters have finely shredded hands that hurt even just to look at. The brick masons have no cuts on their hands, but they are equally sore from the merciless labour. The questions of the men of the village are haunting: “What is it like to be born of caste?”

The labourers in the fields have thin stick legs, the cheeks are sunken, the eyes lustreless. A smile is not possible, conversation is not initiated, just a beast of burden--- hours and hours in the fields toiling, supervised by the ‘farmer/owner’ of the land. The Arunthaiars are a talented people. In the workshops when language is a barrier as it often is, their drawings, their art, song and drama and love of life, predominate. Maran is a ‘model’ student in the workshops. He translates, is excited about new ways of learning mathematics, asks questions about how to teach better, or a better mathematics pedagogy to teach multiplication of fractions. He explains that not everyone “studies”. What do kids who do not “study” do, I ask. “They work”, he explains. “They go out with their fathers to learn the occupation. Some get killed, as my uncle’s son did. He mended chairs. He walked on the streets, shouting “Sopa, Sopa, Sopa repair, Sopa”. People then bring their chairs to be repaired. They sit outside the house to repair the chairs. My uncle’s son died as he tried to cross the road, hit by a bus”.

### **Educational Climate**

The teachers that have attended the workshops conducted over the two and half year have been young men and women who have either taught children in the night schools, are coordinators of night schools or are the teachers of two government-run bridge schools. Both bridge schools are one-room schools with mixed-age children, who have missed school on account of being child labourers and are attending a one-year ‘bridge’ school before being mainstreamed in the government-run schools again.

The educational background of the teachers varies. We did encounter some young women and men who had undergraduate and post-graduate degrees and who are unable to find employment, sometimes on account of their caste. For the most part however, the teachers have had education for 8-12 years, and their own mathematical background is very weak. Thus, while the desire to assist the children exists, the tools to assist do not.

The government-run bridge schools meant for child labourers to be mainstreamed to regular government schools in a year have been part of the project since August 2006. The one-room school with two teachers, each with 12 years of schooling, leaves much to be desired by way of educational facilities and opportunities.

The community-based school varies in location. It might be under a dim street light, or in front of a house with a bright light. The community-based schools in one location were exceptionally good and it could be directly attributed to the harmonious working among the teachers, coordinators, parents, etc. All schools regardless of location or scarcity of resources have an abundance of happy children, smiling, curious, loving, with sparkling eyes.

The children who attend the bridge schools look exactly like all the other happy children around, except that all of these children have been child labourers. How is the

school run? The teacher and the assistant teacher receive monthly salaries from the government. There is a cook who cooks the midday meal and serves the children. The teachers are from the community – two have a 12th standard education. One has an 8<sup>th</sup> standard education. The children in the schools range from 1-8 standards. None of the teachers speak any English; they all profess a great fear of mathematics, and English. No one in either school can read the English text book except those for the very elementary grades.

What kinds of work do child labourers do? There are 22,000 acres of jasmine plantations around the river beds. Picking jasmine flowers earns Rs. 25 for 1 litre/measure. The image of many, many children in a flower garden is a beautiful sight, but the circumstances of work are far from pleasant.

Several moments of understanding that occur in the joint collaborative exploration lead to new moments of understanding as the cyclic process of T-A-R continues. A session on moments of understanding - conducted by the mathematics teaching-action-research team comprising at that stage of mathematics and psycho-social professors of CUNY – that linked Loganathan's *Sumerian Temple Hymns*<sup>7</sup> to Einstein's quote in his *Autobiographical Notes* to an excerpt from a clinical interview conducted in the teacher-researcher's classroom - led to a heart-stopping moment of understanding at the Pondicherry Science Forum, from Dhanpal, the architect of a full-time school whose design is along his vision of social integration and intellectual achievement of the children. The psychosocial session alternated with the mathematics. During one of the psychosocial sessions, the participants in groups constructed community-maps, life maps and tree maps. The psychosocial team member asked participants to draw their community and mark the places where they felt happy, where they felt sad, etc. The children had drawn a beautiful map of the community. One place had pretty flowers, and was marked with a danger sign. On being questioned for the reason for the danger sign, Dhanpal explained that the area was owned by 'upper-castes' and the children sensed danger to themselves in that area. The children with their love of beautiful places and pretty flowers live with the awareness of their exclusion.

### **Interventions**

Each TAR visit consists of a series of meetings, workshops, and participation in the life of the community. The workshops are structured on the understanding gained in preceding visits, based on interactions with the community. The content of Mathematics and the pedagogy is addressed through the workshops for teachers. Among all the communities visited either in the coastal or non-coastal region, women's voices were much more vocal. It is the mother who sees the slow extinction of her child's spark, and knows the life that is to follow, and cries for help. "Tell us what to do, teach us your methods, we will learn, we will teach. We do not want your certificates. Certificates get our youth no jobs on account of the caste-mark. But teach us to sign our name; we feel humiliated at the thumb print". An important action research outgrowth has been Montessori-for-Mothers.

The idea underlying Montessori for Mothers is that the mother in creating the 'right' climate for her child in her own 'home', would in that creation herself become literate, and a critical thinker – a way to nurture her child by educating her/him while

educating herself. The picture below is from a session when women of the community made the Tamil alphabet with fabric to create an alphabet set.



### **Mathematics Teaching-Action-Research Project**

The teaching-action-research project that began in December 2004 has had a very interesting history. The teacher-researchers had requested a specially arranged audience with the President of India, to enquire whether an umbrella organization similar to the Peace Corps in the United States started by President Kennedy in 1961, could be created, whose mission would be to bring together the humanitarian efforts taking place in various parts of the country, which work for upliftment of the self through the upliftment of the other, so that no longer need women give birth to their babies in their “homes” in the large pipes on the sides of busy streets of Mumbai. President A.P. J. Kalam had said, “go to the villages, help is needed there”. The set of books by Paolo Friere, Brazilian educator, brought for the President were useful for the grassroots organizers of Pondicherry, who since college and earlier had dreamed of a change in the way in which the peasant of Tamil Nadu, the landless labourer should and could live. The books provided the material medium that connected the insight of the President of India, the dreams of the grassroots organizers of Tamil Nadu and the work of the teacher-researchers of the City University of New York. It synchronized with the vision of the Executive Vice Chancellor of the City University of New York in setting up the task force with the mandate: “...providing rehabilitation to the affected region. The Executive Vice Chancellor's intent was to tap into the reservoir of existing faculty expertise at CUNY and apply their skills and knowledge to the distressed populations...”

The debates in education – from the professional field of mathematics education to the educational needs of the Indian children of Arunthatiar and other communities – need to be understood in their proper perspective. There is a need for the re-education of the educated as to what it means to not have access to education for generations. The



freedom to achieve (Sen, *Inequality Reexamined*, 1992) is severely restricted as evident by the long-standing needs of the Arunthathiar community:

1. A real ban on manual scavenging – no government quota for ‘safai karmachari’ to be filled only by members of the Arunthathiar community
2. A real ban on bonded labour for those that have never stopped toiling the land of India
3. Real care for the Indian Arunthathiar child.

*“People say our people are earning wages of 30 and 50 rupees, and are eating and sleeping, so what is wrong? But animals eat and sleep too. We want more for our children. We are discriminated.”* - KaruppuSamy, Arunthathiar grass roots organiser, READ, President of the Arunthathiar Human Rights Forum.

The pictures above, the courtesy of GuruSamy and Almelu below:



#### Notes

<sup>1</sup> Part of a 4-year project, Introducing Indivisibles in Calculus Instruction, National Science Foundation – Research On Learning in Education #0126141

<sup>2</sup> International Conference to Review Science, Mathematics and Technology Education, Goa, 2004.

<sup>3</sup> The “school” could be held behind a house, with children sitting in the mud, or on the street under the dim street lamp.

<sup>4</sup> Government-run schools set up for child-labourers to be mainstreamed after 1 year

<sup>5</sup> The work in the coastal region was partially funded by the War Trauma Foundation

<sup>6</sup> Traditional and many contemporary occupations are manual scavenging (paid by the government as a safai-karmachari), leather-workers, deliverers of the death message

<sup>7</sup> Hymns of Humble Appar and other Sumerian Temple Hymns extensively studied by Professor Loganathan establish a link between the hymns in Sumerian and Archaic Tamil