

# Incorporating Collaboration to Foster Voluntary Teaching

**Himanshu Bansal**

Department of Design  
Indian Institute of Technology,  
Guwahati  
h.bansal@iitg.ernet.in

**Mehul Agrawal**

Department of Design  
Indian Institute of Technology,  
Guwahati  
a.mehul@iitg.ernet.in

**Keyur Sorathia**

Department of Design  
Indian Institute of Technology,  
Guwahati  
keyur@iitg.ernet.in

## ABSTRACT

Voluntary organizations in India are facing different issues like economical, political, structural and manpower etc. in their efforts of educating financially constraint children in India. This study aims to investigate problems faced by voluntary teachers and non-teachers willing to teach. This paper proposes the use of collaboration to foster voluntary teaching. Our methodology included qualitative user research (focus group interview with financially constrained children, semi-structured interviews with 15 voluntary teachers and non-teachers), affinity analysis and activity observation. We present insights and analysis of our user research. Voluntary teachers found difficulties in managing their time, finding the appropriate course material and teaching students with different knowledge level in same class. Non-teachers found themselves unable to start voluntary teaching due to lack of confidence and motivation. We also present advantages of collaborative voluntary teaching such as improvement of quality of education, better study material, better teaching techniques, effective discussion on problems occurring in class. Increased preplanning time is found biggest disadvantage of collaborative teaching.

## Author Keywords

Voluntary, Teaching, Collaboration, Education, Motivation

## INTRODUCTION

Education is positively related with economic growth and people's living standard through various means that are: by increasing the efficiency of the labor force and encouraging democracy [2] and thus creating better conditions for good governance, by improving health, by enhancing equality [1]. According to census 2011 [5], literacy rate of India is 74 %. Literacy rate in India is defined as *person aged 7 years and above who can both read and write with understanding in any language has been taken as literate. It*

*is not necessary for a person to have received any formal education or passed any minimum educational standard for being treated as literate.* Wheeler [15] has articulated that *educating today's youth to have the requisite knowledge, skills and values to shape their lives and world around them successfully is our greatest challenge.* As per NSS, 55th round, the illiteracy level and the Monthly Per Capita Consumer Expenditure and the illiteracy rate are inversely related to each other, both in rural and urban areas i.e. that poverty is one of the critical factors determining literacy level of households in India [9].

Briggs, Landry and Wood [3] define volunteers as *people who have already freely and willingly provided their time and effort for a non-profit organization longer than six months.* In India, there are more than 1,000 Non-Governmental Organizations (NGOs) and voluntary organizations teaching financially constrained people free of charge [7] and uplifting them socially and economically by increasing their value [12]. But these organizations have to face financial, political, structural, professional, ideological, functional and legal constraints in their efforts [12]. Therefore, we targeted to motivate and empower small voluntary teaching groups working in their respective locality which would be independent of external forces like political parties or government and won't require any fund from outside for their own group for their execution e.g. a group of college students wanting to teach voluntarily.

Goals of the paper are as following:

- To find the problems being faced by voluntary teachers
- To find the possible difficulties being faced by concerned people in starting voluntary teaching
- To suggest guidelines to solve above problems and difficulties.

## PROCESS FOLLOWED

**User Research:** We conducted user research in following four stages:

### *Mess Workers*

A focus group interview was done with the cafeteria

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

CHI'12, May 5–10, 2012, Austin, Texas, USA.

Copyright 2012 ACM 978-1-4503-1015-4/12/05...\$10.00.



**Figure 1. Interview Images**

workers (mess workers) of our college to know about their education level, their daily activities and about daily learning. By conducting this study, we wanted to better equip ourselves to take steps to teach them by knowing about their problems, eagerness to learn and time they could devote for learning. Camera was used for documenting their surrounding and their living and working conditions.

#### *Shishugram Orphanage*

Shishugram is a Red Cross supported orphanage in Guwahati for girls. An unstructured interview with its manager along with observation was done to inquire about the education of the children and understanding their environment. Camera was used for documentation. The major thing we wanted to know was their source and quality of education and their problems, needs and current situation.

#### *Voluntary Teachers*

After Shishugram interview we came to know that children were being taught voluntarily by some students of IIT Guwahati. Some other students were also teaching guards or mess workers as a part of NSS program. Total seven voluntary teachers were interviewed to know their problems, understand their process, motivation to teach voluntary and how they started. Camera was used for documentation during the interview and interview points were being noted down simultaneously. The interviews focused on the following points:

*Demographic:* Name, occupation, age and at what time they started teaching.

*Motivation:* motivation and need behind voluntary teaching

*Initial Phase:* how did they prepare themselves to start teaching and how did they find people to teach.

*Class:* Preplanning, duration, age groups, method of teaching, sources and courses

*Problems:* Handling different age groups, motivating children

*Assessment:* Assessing student capabilities.

*Output:* change in performance of children and any gain for them.

*Technological Awareness and Usage:* To know their comfort level with laptop, computers and mobile to make appropriate solution for them.

#### *Non Teachers*

Interviews were conducted for the eight students who were not involved in voluntary teaching to inquire for possible reasons behind not doing so and future possibilities. Voice recording was done using mobile voice recorder and camera was used for documentation during the interview. The interviews focused on the following points:

*Demographic:* Name, occupation, age, if they had ever done voluntary teaching

*Past Experience:* If they ever felt the need to do teach someone

*Technological Awareness and usage:* To know their comfort level with laptop, computers and mobile to make appropriate solution for them.

#### *Literacy of the participants*

All of the mess workers interviewed had left their education. One worker who studied maximum of them had to leave study in 5<sup>th</sup> class. Shishugram orphanage children were going to a government school but as we informed by their voluntary teachers, education quality in the school was very poor. For instance a class 7<sup>th</sup> student was weak in class 4<sup>th</sup> concepts.

**Affinity Analysis:** It is an effective tool to analyse the user research and get useful insights from it. We gathered all the user statements, observations and divided them into four major categories of problem point. Each category contains precise problem points and user statements supporting them. Four major categories are as follows:

#### *Management*

Teachers found lack of time due to their respective work schedule. One of the teachers said, “As we only give two days in a week which amounts to 2-3 hours of teaching so often in the weekdays we have to call the children or go to them to teach.”

Teachers found difficulties due to difference in capabilities of students and felt requirement of customized teaching method for effectiveness. While one teacher said, “Different set of questions is given to weak and bright students to boost up weaker student and maintain their interest.”, main coordinator of the group said, “Although we have collection of oxford books but it is not relevant for teaching the kids and we make our own material to teach the kids.”

Managing and coordinating with different teachers and students, all with different schedules require a lot of coordination and mostly Facebook or mobile is used to do so. The coordinator said, "Often when teacher is absent I have to call some backup teachers or we merge the students with other classes."

#### *Problem occurring due to students*

Most of the children had less knowledge as compared to class the students were in. Therefore, they first were taught basics before going on with the given syllabus for that class. According to two teachers, a student is in class 7 but doesn't know concepts of class 4.

There are often student with different grasping capability and thus they have to be taught accordingly. The dull student needs time while the bright student might suffer making it a problem.

#### *Problem occurring during teaching*

Children are comfortable to study in their local language e.g. Assamese (a local person knowing Assamese would be better for them). One of the teacher stated, "We are making a chart which has Assamese word, English word and Image to teach children words."

Teachers found some of the topics/concepts difficult to teach or for students to grasp. One student had difficulty in understanding difference between 17 and 71, so after discussing they came out with card trick to teach them. They have a creative teacher (a college student with good art skill and is creative) who they generally look forward to come up with innovative ideas to solve these kinds of problems.

One of the teachers informed, "Once a test was given to students and one student performed badly in class, she cried badly and for next few classes she didn't want to study and her enthusiasm was low. She didn't even see me and turned her face around." This showed us the emotional attachment children had and also a need of an alternative way to assess their learning.

According to teachers, gathering engaging study-material is also a required step to maintain students' enthusiasm. When kids are less enthusiastic they show them some interesting content on their laptop and try to motivate them by telling the practical use of what they are being taught.

#### *Initiation: Not being able to start teaching*

Most of the non-teacher interviewees had the hesitation about the content to teach and from where could they gather content and find students. One of them said, "What would I teach children?"

Non-teachers felt the requirement of different methods to teach children and tackle certain problems which would be helpful for initiating teaching.

There was a hesitation and lack of confidence in taking class alone. They had fear that what would other think. One non-teacher stated, "I don't know if I would be able to take class alone". Another one said, "What if I would be wrong while teaching?"

**Collaboration in Voluntary Teaching:** We did brainstorming upon different concepts and studied literature related to them. After that we focused our literature study to collaboration in various educational scenarios and got a number of useful insights. According to Panitz [13], *collaboration is a philosophy of interaction and personal lifestyle while co-operation is a structure of interaction designed to facilitate the accomplishment of an end product or goal through people working together in groups.*

The major work in collaborative teaching has been done to increase interdisciplinary learning in higher studies and for teaching students with disabilities [7, 11] but its application in volunteerism is a field that needs to be nurtured. Following are the useful insights about collaboration got from literature research which could be helpful in addressing different issues associated with voluntary teaching:

- Collaboration in preparing and organizing course-material can help teachers to prepare a good study material due to their collaborative efforts in preparing effort [4, 10].
- Teachers collaboration, within and across disciplines, improves the quality of teaching and learning. It specifically improves integrative thinking. Integrative thinking is a discipline and methodology for solving complex or wicked problems. [11]
- Special/Expert teacher can collaborate with general teachers to teach different type of students in same class [14].
- While collaborative teaching, teachers learn from their co-teachers about teaching methods and more about topic [6, 8].
- Collaborative teaching method could be helpful for novice users to teach. The teachers find themselves comfortable in sharing the teaching responsibility with their co-teachers [8].

On the basis of above insights/arguments we hypothesized that collaborative teaching can help in increasing voluntary teaching by easing the process of management, providing

support to the teachers taking class and increasing efficiency by dividing work between the teachers. We conducted an activity to investigate the consequences of collaboration in voluntary teaching.

**Activity:** Two teachers were asked to collaboratively take a class including choosing a topic, planning the content, managing the class. They choose a general topic i.e. Solar Systems that can be taught to students of various age groups.



**Figure 2. Activity Image: Collaborative teaching**

The students present in class were from classes 4th, 6th, 7th and 8th and class strength was 9 students. For the class following topics were taught to children:

Solar System (Science) –

- Introduction to solar system
- Occurrence of day and night
- Occurrence of different seasons
- Lunar and Solar eclipse

Activities were documented through video recording. Observation points were also noted down during the activity.

#### *Goals of the activity*

The activity aimed to investigate the impact of collaboration in conventional teaching methods. The following points were focused:

*Attention:* To investigate effectiveness of collaboration in providing individual attention to students.

*Quality:* To investigate the effect in quality of education due to collaboration between teachers.

*Coordination:* To study the ease and effectiveness in coordination between teachers during preplanning and in class.

*Catering Difficulties:* To study the efficiency of collaboration in voluntary teaching in catering different kind of problems occurring during teaching like difficulty

in teaching some concept, behavior of a student or schedule problems etc.

*Preplanning:* To understand the method and level of planning is needed for collaboration.

*Experience:* To know the effect of collaboration on teaching experience in class. To find the difference between their conventional and collaborative teaching experiences with students.

#### *Participants Interview*

Individual retrospective feedback was taken from both teachers about the activity. Voice recording was done using mobile voice recorder.

Major points were covered in questionnaire

*Demographic:* Name, age, profession and subject currently teaching

*Preplanning:* How did they choose and plan topics to be taught and methods to be used in class, how did they decided about distribution of time, mutual collaboration, individual subtopics for teachers and how did they manage to gather the notes of other teacher for teaching?

*Co-teacher:* How was their comfort level with another co-teacher or any previous collaboration and its necessity?

*During class:* How was the collaboration during teaching and what was the response of students. Was there a greater enthusiasm, doubt asking, and scope of improvements?

*Problems:* Did they face any kind of problems during whole process of pre-planning to conclusion and if yes, what were they?

#### *Results of Conducted Activity*

We analyzed the observation points, interviews and present advantages and disadvantages of collaboration involved in this activity.

#### *Advantages:*

- Result of preplanning was better. Discussion between more than one about contents of the next class resulted as better study material and teaching methods.
- Workload was divided between both collaborating teachers.
- After class, they could discuss the problems occurred in the class more effectively.
- Students were more disciplined and concentrated.
- Students were more enthusiastic due to new teacher or new experience.
- Students had more time/attention individually. So quality of learning gets increased.
- During class, they were able to cover most of the points because if one missed out something, other reminded her.
- They were able to discuss with expert of the topic prior to class.
- Scheduling flexibility because if one of the teachers can't take her class some time then other can take it alone because he would be aware of flow, syllabus being taught and personalities of the student.

- Students got benefits from collective knowledge of more than one perspective.
- Opportunity for teachers to make new connections.

#### Disadvantages:

- Preplanning took more time as teachers have to sit together and decided upon who will deliver which subtopics.
- Possibility that one of the teachers don't know much about topic being taught e.g. in case of interdisciplinary collaboration.
- Comfort level between the collaborating teachers is important.
- To design a collaborative class for some of the topics are difficult.
- Some students got shy due to new teacher or students in the class.

#### **GUIDELINES TO FOLLOW**

On the basis of results from activity observation and teachers' interviews, it can be argued that in India incorporation of positive features of collaboration with voluntary teaching is a likely solution for its different problems. Following guidelines should be followed while developing solutions problems found from our user research:

- There should be a collaborative preplanning prior to each class about what and how to teach in next class. It helps teachers to come up with better study material and teaching methods.
- There should be a commitment and professionalism in collaboration so that there is not much time lost in preplanning [8].
- Discussion between the collaborating teachers during the class is encouraged as students get benefit of combined knowledge of both of expertise.
- There should be a post-class discussion also to find solutions for difficulties faced in previous class.
- Work load should be divided between the teachers very initially according to their role, commitment and time available.
- Teachers can preplan about their individual roles in the class like one teacher can take responsibility of giving attention to weaker students or maintaining discipline.
- Keep all the course-materials, notes and references at one safe place so that other voluntary groups can take help from it, add to it or edit it which would make the materials better and better every time like crowd-sourcing.

#### **ALTERNATIVE APPROACHES**

Another approach could be to develop a peer-to-peer teaching system that can be moderated by teacher and thus solving the problem of weaker and brighter students. This

would be based on promoting collaboration among students and reducing effort by the voluntary teacher.

Voice based language translation system could also be explored as a medium to facilitate teachers and student interaction across language barriers.

Open source based books system could be provided where any teacher can edit a book or have their own version of it which is tailored to suits needs of voluntary teacher and students. It would help them to reduce their pre-planning time.

A series of concept-specific physical tool kits could be prepared for teachers. On similar lines, a video tutorial on tips and techniques that is used as an instruction for teachers on how to teach difficult concept to students could be provided.

#### **CONCLUSION**

Economical factors restrict students in India from getting quality education. Voluntary organizations working for education have not been much effective due to political, structural and financial issues. We explored independent voluntary teaching as an intervention. When some concerned person thinks of starting voluntary teaching, he comes across various issues like lack of confidence, whom to teach, what to teach, how I would manage etc. and already teaching people also have to face some problems like time management, preparation for class, doubts and problems in class etc.

We proposed the concept of integration of collaboration with voluntary teaching. Advantages of collaborative voluntary teaching are better quality of education, less workload, opportunity of mutual discussion about course content, teaching methods and problems occurred during classes etc. There are some disadvantages of it also like teachers have to give more time to prepare for the class. In conclusion, it has been found that in India use of collaboration in voluntary teaching has potential to address different issues of voluntary teaching and foster it and there is scope of further research.

#### **FUTURE WORK**

In future we would conceptualize, design and develop a platform incorporating provided guidelines. We are also planning to divide the features of the platform into different phases according to their importance (most important in first phase), make the information architecture, wireframe and User Interface, develop it phase-wise and test it with users and study effects of collaboration using the platform.

Also we are planning to do further research on aligning motives of voluntary teaching and rewards and fulfillment provided by Gamification in later phase.

#### **ACKNOWLEDGMENTS**

We wish to acknowledge Dina Zaman and her voluntary teacher group teaching Shishugram students for their

supportive and cooperative attitude throughout the project. We would also like to thank Aditya Ponada for guiding us.

## REFERENCES

1. Aghion, P., Caroli, E., Garcia-Penalosa, C. Inequality and economic growth: The perspective of the new growth theories. *Journal of Economic Literature* 37(4) (1999), 1615-1660.
2. Barro, R.J. *The Determinants of Economic Growth*. MIT Press, Cambridge, MA (1997).
3. Briggs, E., Landry, T., and Wood, C. Beyond just being there: An examination of the impact of attitudes, materialism, and self-esteem on the quality of helping behaviour in youth volunteers. *Journal of Non-profit & Public Sector Marketing* (2007), 27-45.
4. Cawley, J. F. Science for students with disabilities. *Remedial and Special Education*, 15(2) (1994), 67-71.
5. Census 2011, Ministry of Home Affairs, Government of India <http://censusindia.gov.in/Metadata/Metada.htm#2i>.
6. Gabelnick, F., MacGregor, J., Matthews, R. S., & Smith, B. L. *Learning communities: Creating connections among students, faculty, and disciplines*. New directions for teaching and learning, 41. San Francisco: Jossey-Bass (1990).
7. GOI India: Education for All Year 2000 Assessment. Ministry of Human Resource Development, New Delhi: Government of India and NIEPA (2000).
8. Grillo, K., Moorehead, T. & Bedesem, P. Perceptions of Novice Co-Teachers on Co-Planning, Co-Teaching and Co-Assessing (2011).
9. Jaitly, D. Illiteracy & India. *International Journal of Transformations in Business Management* (2012), 6.
10. Klein, J. T. *Interdisciplinarity: History, theory, and practice*. Bloodaxe Books (1990).
11. McDaniel, E. A., & Colarulli, G. C. Collaborative teaching in the face of productivity concerns: The dispersed team model. *Innovative Higher Education*, 22(1) (1997).
12. Mohanty, M., Singh, A. K. *Voluntarism and Government (Policy, Programme and Assistance). Constraints In Voluntarism, Resource Mobilisation & Funding To VOs, Chapter4, Voluntary Action Network India (VANI) (2001), 39-40.*
13. Panitz, T. Collaborative versus cooperative learning: A comparison of the two concepts which will help us understand the underlying nature of interactive learning. *Cooperative Learning and College Teaching*, 8(2) (1997), 1.
14. Villa, R. A., Thousand, J. S., Nevin, A., & Liston, A. Successful inclusive practices in middle and secondary schools. *American Secondary Education*, 33(3) (2005), 33-50.
15. Wheeler, K. A., & Bijur, A. P. *Education for a sustainable future: a paradigm of hope for the 21st century* (Vol. 7). Springer (2000).