An ICSSR Sponsored

Two Day National Seminar on

INNOVATIONS IN 21st CENTURY EDUCATION

21st in the Senior Scholars’ Seminar Series

April 4-5, 2014

Proceedings

Editor
Dr. Sreetanuka Nath

Organised by
K.J. Somaiya Comprehensive College of Education, Training and Research, Vidyavihar, Mumbai-400 077
Message from the Founder

My Dear Young Students

Welcome to the Institutions of the Vidyavihar!

Your finest hour is here. The future belongs to you.

Let us all zealously work together and dedicate ourselves to build India of our dreams.

Remember, nothing was ever achieved without hard work. Be bold but be not bowled over.

Let truth and duty be our watchwords. Never despair in the face of setbacks.

Keep courage and continue to work with fortitude.
ICSSR sponsored Two Day National Seminar on

INNOVATIONS IN 21st CENTURY EDUCATION

A Peer Reviewed Edited Book

Editor
Dr. Sreetanuka Nath
Assistant Professor,
K.J.Somaiya Comprehensive College of Education,
Training and Research, Vidyavihar

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Vidyavihar, Mumbai

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Vision

K J Somaiya Comprehensive College of Education and Research aspires to be an internationally recognized premier institution that offers to the society globally competent teachers who are humane, collaborative and multicultural in their outlook.

Mission

K. J. Somaiya Comprehensive College of Education, Training and Research will undertake

- to develop an understanding of academic content at a higher level by weaving 21st century interdisciplinary themes into core subjects;
- to develop learning and innovation skills among students and teachers;
- to equip teachers and students with research driven instructional practices;
- to foster life skills and work place skills among students and teachers;
- to empower teachers and students with knowledge, skills and attitude required to create inclusive and multicultural learning environments;
- to instill among the students and teachers the civic virtues and the spirit of giving back to the society multifold.
Our Inspiration:

The Great Visionary and Transformational Leader,

Dr. Shantilal Somaiya

The Principal, the staff and the students of K. J. Somaiya Comprehensive College of Education, Training and Research pay tribute to our departed leader, great philanthropist and entrepreneur,

Dr. Shantilal Somaiya

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Dear Readers,
If our today is like yesterday, why should we wait for tomorrow? Every one dreams of a better tomorrow and this is possible when we are able to do better than before; a better tomorrow is possible because there is always a better way of doing things!
Knowledge and innovations are the keystones of progress, says the President of India, Shri Pranab Mukherji. An individual has the power to change the world for the better and in a group, by concerted efforts; we can usher in the change we want to see.
As we all know, the government is working on the New Education Policy for the country through an inclusive, participatory and holistic approach – to meet the changing dynamics of the population’s requirement with regards to quality education, innovation and research, aiming to make India a knowledge superpower by equipping its students with the necessary skills and knowledge and to eliminate the shortage of manpower in science, technology, academics and industry.
Our higher educational institutions are an integral part of the local eco-system. They must assume greater responsibility for overall development. The present government is dreaming of financial inclusion, creation of model villages, Clean India and building of digital infrastructure. We in higher education are preparing tomorrow’s citizens. We have to inspire and invigorate the human resource to innovate and drive the country towards progress.
The least that we can do as teachers of higher education is to try out new ideas in order to achieve our goals more effectively and share our ideas and experiences with the community through seminars and conferences. It gives me great pleasure to be writing this prologue for the proceedings of our seminar on Innovations in Education. Come; together let us make a difference!

Dr. Vasundhara Padmanabhan
Principal
Einstein once said that no problem can be solved from the same level of consciousness that created it. Current needs suggest that we must learn to view the world and therefore education, in a new way. Innovation is a key element of today’s societies and economies, and that includes how we learn. Much has been written about innovation in education, but what does it really mean in practice in terms of content, organization of learning, roles of teachers, etc.? How does one design a powerful learning environment that enables students to thrive in the 21st century? Recognizing this need of the hour and the fundamental role of education in nurturing and fostering an ecosystem of innovation, K. J. Somaiya College of Education, Training and Research, organized the ICSSR sponsored Two Day National Seminar under Senior Scholars’ Seminar Series (SSSS) during April 4-5, 2014 on the theme ‘Innovations In 21st Century Education’. This time it was the twenty first in the series. The sub themes of the seminar were as under:-

- Technological Innovations in Education
- Innovation for Inclusion
- Innovative Instructional Strategies

This book includes the proceedings of the seminar and covers the peer reviewed views of participating scholars in total 26 chapters. As a gesture of gratitude the editor heartily acknowledges and thanks all the scholars who have contributed for this book. She also thanks all the expert reviewers for painstakingly reviewing the papers and ensuring them to be of utmost quality and precision. Special thanks to Dr. Vasundhara Padmanabhan, Principal K.J. Somaiya Comprehensive College of Education, Training and Research, Vidyavihar for her valuable message for the proceedings. Thanks to our publisher for bringing out this publication.

Dr. Sreetanuka Nath
Editor

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Happenings of the event...

The K J Somaiya Comprehensive College of Education, Training and Research, welcomed one and all to the journey from beliefs to shaping destiny via the 2 day ICSSR sponsored National Seminar on the theme: Innovations in 21st Century Education.

**Day 1** commenced by extending a warm welcome to the dignitaries of the day, the guests, participants and the general audience. After invoking the blessings of the deities, through the recital of the college prayer as well as a dance performance, the Principal, Dr Vasundhara Padmanabhan shared her thoughts on the culture of SSSS and formally inaugurated the Seminar in alliance with the luminaries.

**Dr Chitra Natarajan**, Professor and Dean, Faculty of Science Education at HBCSE as well as the Guest of Honor of the day, put forth a very simple and direct demand from practitioners of education. She dwelt at length about the need of professionalism in today's scenario, the demand for acquiring expertise in one's subject area and finally the obligation of involving the community in educational endeavors.

Our Chief Guest and the Keynote speaker **Dr Vijayam Ravi**, was the next to address the gathering. Through her eloquent, lucid and magnetic discourse, she exhorted the gathering to spark innovations from the inner of oneself. She amended the complaints of the teachers who said that, ‘one could take a horse to the pool but cannot force it to drink’, by advising them to *keep the horse thirsty, then it would drink!* Drawing a parallel from the Mahabharata, she compared Krishna to an ideal teacher and Arjuna as a learner. She urged teachers to enable learners to discover and maximize the potentials within them.

Our next eminent persona, the Chairperson of the inaugural function was the Honorary Secretary of Somaiya Vidyavihar, **Shri V Ranganathan**. He expounded the fact that education needs to be practical and life based. He further added that Holistic Education must nourish all the three domains: cognitive, affective and psychomotor and strengthen the learner’s emotional integrity.

Post the tea break, **Ms Kavita Anand**, Director, Adhyayan Quality Education Services,
Pvt Ltd., conducted an interactive discourse on the use of Twitter, a social networking site, and how it could revolutionize the quality, reach, depth and pace of education. By encouraging the audience to tweet even on simple post its, she demonstrated its simplicity and benefits. Her words rang a warning alarm, when she stated from numerical evidential data, how India would soon be facing a severe paucity of 75, 000 qualified teachers within the next 6 years. She appealed to the gathering to keep themselves abreast of technology as well as innovations in the various global realms of education.

Over a sumptuous lunch, one could overhear the participants conferring animatedly upon the mind chew that they had relished since the inaugural event.

After lunch, it was time for the paper presenters to present their contributions towards innovations in 21st Century education.

A lavish spread of 23 papers segregated over 2 subthemes were parallel orchestrated under the able guidance of the 2 chairpersons Dr Indira Shukla, Principal, Gokhale College of Education and Dr Shyam Sainekar, Professor, K V Pendharkar College.

**Subtheme 1: Technological Innovations in Education**

4 papers on Flipped classrooms and its modalities ranging from its relation to established theories, its uses, payoffs, reasons for and its effectiveness as a learning strategy were presented by Ms Rima Mani (Research Scholar, GSB’s College of Education), Ms Aarti Badiyaani (faculty, Pillai’s College of Education, Rasayani), Ms Beena Sureshkumar (faculty, K J S College of Science and Commerce) and Ms Sherrian Pereira (M Ed student, KJS College of ETR). This disclosed the fact that flipped classrooms were soon going to be a reality in the future classrooms.

2 papers dealt with the use of Mobile phones for curriculum transaction. Of this, Ms Sheetal Zalte (faculty, KK College of Education) shared a research paper on how their institution harnessed mobile phones to generate meaningful interventions for education, while Ms Sonia Avlu (faculty, Oriental College of Education) spoke on the myriad possibilities of using cell phones, ipod, mp3 players and e books for education.
Mr Bijoy Thomas (faculty, St Xavier’s Institute of Education) offered a paper on how a blog can serve as a reservoir of knowledge for Education researchers at the higher education level. The potential was limitless for an individual who possessed commitment towards innovations.

Ms Sandy Chris Ichiparamban and Dr Sudha Pingle (Dept of Education, Univ of Mumbai) threw light on the many uses of Social networking sites for academic and personal work.

5 papers were presented on the actual use of ICT based resources for effective curriculum transaction.

- **Ms Misbah Bellim** (M Ed student, KJS College of ETR) concluded that web based resources could be successfully used for developing conceptual; clarity in Economics.
- **Dr Reni Francis** (faculty, Pillai’s College of Education) divulged how one could use online courses for the purpose of education and socialization.
- **Ms Shweta Pathak** (M Ed student, KJS College of ETR) disclosed how blended learning strategies enhanced conceptual clarity in Commerce.
- That ICT integration could be profitably drawn upon to develop English Language speaking skills was surmised by **Ms Anu Madhok** (M Ed student, KJS College of ETR).
- **Ms Lovetty Ger** (M Ed student, KJS College of ETR), deduced that achievement and interest in History could be promoted by using project based learning technique.

Dr Indira Shukla then provided her concluding remarks using a jocular stance. She expressed appreciation over the kinds of papers presented as well as acknowledged the patience of the audience.
Subtheme 2: Innovations for Inclusion

10 papers were presented in this session.

Dr A Rambabu’s paper revealed how Government initiatives were in place to change the perception of society towards the differently abled, but it was extremely essential that the policies be translated to proactive actions too.

2 papers predominantly addressed diversity and inclusion. Of this, a joint paper by Dr Pooja Birwatkar and Dr Sugra Chunawala (faculty, HBCSE) discussed the diversities inherent in the school curriculum. It brought to light how teachers were reluctant to make much adaptations to usher in diversity.

A joint venture by Dr Kalpana Kharade and Ms Hema Peese (faculty, KJS College of ETR) enriched the participants about structuring astronomical activities for the vision impaired students to effectuate an equitable learning environment.

Dr Elvina Pereira (faculty, St Xavier’s Institute of Education), in her paper unearthed the fact that though government policies are geared towards inclusion, appropriate modifications are needed in the curriculum and teachers need to be trained to handle inclusive practices.

A joint paper by Ms Arundhati Agnihotri and Dr Snehal Donde, revealed that there is a significant relation between student’s SES and emotional intelligence.

4 papers analysed various strategies to enhance the teaching learning process:

- **Ms Isha Singh** (M Ed student, KJS College of ETR) concluded that students’ self esteem was raised by using the peer mentoring approach

- **Dr Ashwini Karwande** (Faculty, Dept of Edn, Univ. of Mumbai) put forth the idea of using concept mapping as an instructional tool in Mathematics teaching to enhance conceptual clarity in the subject.

- **Ms Bindu Paul** (M Ed student, KJS College of ETR) enumerated the merits of active learning strategies and how it catered to multiple intelligences of the learners.
• **Ms Akshaya Sawant** (M Ed student, KJS College of ETR) in her research paper successfully employed the peer tutoring approach.

• The final paper by **Ms Anchal Lala** reiterated that values are essential in the upbringing of children and it was the onus of education to ensure that this is achieved.

**Dr Shyam Sainekar** then provided his concluding remarks. He appreciated all the papers presented under subtheme 2 and 3. He advised the participants not to focus too much on the technicalities of the paper but rather give prominence to innovations made by them.

**Thus ended Day 1**

**Day 2**

After a quick breakfast and the recital of the college prayer, a panel discussion was arranged on the theme: **Revisioning Teacher Education for Innovations in school Education**

The 2 leagues of stalwarts included 3 luminaries from the realm of teacher educators with practice of over 2 decades while the other comprised 3 teachers from the formal as well as non-formal setup of education.

**Dr Sunita Wadikar** (Principal, Pillai’s College of Education, Chembur) emphasized the need of teachers and the school in the formative years of a child. She expressed concern that teachers today require to be techno savvy even whilst possessing skills like ways of thinking, problem solving, etc. Also she added that the evaluation system needs to be totally overhauled.

**Dr Sybil Thomas** (Principal, St Xavier’s institute of Education) catalogued the lacunae in the present system of teacher education: centralized power, uncontested knowledge, control techniques, unnecessary stress on documentation etc. to remedy this she suggested the following: performance mastery, competition with self, generative and graduate exercise etc which would result in humanized individuals.
Ms Elizabeth Mehta (founder director, Muktaangan) asked for integration of teacher education and the school. Some ways in which this could be achieved is by training teachers to specialize in the teaching of different segments of society, involving the community in the educational endeavors, rather than conducting the observation of teachers, observe the students when the teachers teach, also research must be conducted only if it adds value to the system of education.

Ms Parveen Shaikh (Head, primary section, Somaiya School) suggested that in order to bridge the disconnect between teacher education and the school requirements, an intensive on field training of these teachers be conducted after their recruitment by the institution. Teacher educators must employ those techniques of teaching for their B Ed students which they desire that the latter use in schools. Also, Teachers must be game changers in classrooms and try and learn from every situation.

Ms Vidushi Chaudhary (Founder, Mindsprings enrichment centre) began by requesting that teachers be respected in society for their contribution to education. She then enlisted creative strategies to be used in classrooms such as giving meaningful assignments for students so that they are eager to come to school the following day. Empower children through meaningful involvement in classroom interventions. Finally, she ended her discourse by suggesting that a ‘Thinking Skills’ paper be introduced at the teacher education level.

After a very stimulation discussion, the Chairperson, Dr Indu Garg (HOD, Dept of Edn, Univ. of Mumbai) left the audience with a few though provoking questions to dwell upon:

- What is the purpose of education?
- Should society be concerned about teacher education?
- What defines our new roles in society as teachers?
- Has teacher education produced effective teachers since the last decade?

**Subtheme 3: Innovative educational strategies**

Dr Pooja Birwatkar and Dr Chitra Natarajan (faculty, HBCSE) shared a research
study wherein school students were taught using the design and technology approach. Students were given just a few broad pointers and they were able to accomplish the given task of creating a product through the sheer use of creativity and collaborations.

Ms Vinita Desai (Faculty, Pillai’s College of Education, Chembur) used Schon’s reflection technique to comprehend the extent of reflection developed through activity based learning. The fruits of such a labor were in the form of a booklet that student teachers developed for handling stress in daily life. Dr Rashida Kapadia’s (faculty, St Xavier’s institute of Education) paper on students perception of teachers’ Interpersonal skills brought to light among many other pointers, that Indian teachers are strict in their demeanor.

That the achievement in Science of Secondary school students was enhanced by employing the inquiry based Science program, was disclosed by a research study conducted by Ms Ankita Vaswani and Ms Milan Kande (B Ed students, KJS College of ETR, guide: Dr. Sreetanuka Nath)

Ms Nishi Kumar (faculty, St Xavier’s institute of Education) shared her research apper on the attitude of student teachers towards rural internship.

Ms Priti Sivaramakrishnan (faculty, St Xavier’s institute of Education) elaborated on the manner in which cooperative learning could be employed to infuse values in the learners.

Dr Vini Sebastian (faculty, St Xavier’s institute of Education) informed the group on the merits of Reverse mentoring and how it could be effectively used to better institutional climate, communication lines and create learning communities.

Ms Shadab Pallonji (faculty, St Xavier’s institute of Education) deliberated on the Transactional analysis embedded in decision making through activities. She created awareness towards the 3 C’s of decision making.

In her paper, 21st century – ambassador for a peaceful tomorrow, Dr Arpeeta Bhatia (faculty, Thakur College of Education) put forth her idea that each
individual's contribution is a must for a peaceful world. Inner transformation must precede progress.

**Ms Sunita Britto** (faculty, KJS College of ETR) shared how she and her research student team made use of 4 movies and developed 10 clippings each from the movies to teach concepts in Science, History, Value education etc. a venture that was appreciated by both the learners and their teachers.

**Ms Noopur Pathak** (M Ed student, KJS College of ETR) in her research study successfully correlated the basic skills of language to develop strategies to enhance the word problem comprehension in Mathematics.

**Ms Dimple Varshney** (M Ed student, KJS College of ETR), demonstrated in her research that game based learning could improve Grammar concepts in English among secondary school students.

For developing Higher Order Thinking Skills among Higher secondary learners, **Ms Monika Koradia** (M Ed student, KJS College of ETR), used the Case study approach in commerce teaching. The results showed an enhancement in achievement scores in Commerce as well as enhanced HOTS.

**Ms Neelu Verma** (faculty, BTTC) analyzed the problem faced by teachers while using ICT for teaching purposes. Time and effort demands, regular feedback system, follow up, support and pressure, staff development programs, maintenance are some of the issues involved. **Ms Kalpana Chavan** (faculty, St Xavier's Institute of Education) studied the relation between the approach of learning and reflective thinking. Critical reflection is required for long term and lifelong reflection. Finally, **Ms Kavita Karkare** (faculty, NSS College of Education) provided a teacher's perspective on the understanding of life skills and suggested strategies to inculcate the same.

**Dr Vandana Maheshwari** (Principal, KK College of Education), thereafter summarized the papers and generously appreciated the same.

The close of the 2 day ICSSR sponsored National Seminar was formally concluded.
with the valedictory session. What ensued in the 2 days of deliberations was read via a concise and crisp report by Ms S R Britto. Dr Shubha Pandit (Principal, KJ Somaiya College of Engineering), and the Chairperson of the Valedictory function elaborated on the scope of Engineering and how engineering had pervaded every aspect of our life, including medicines. She quoted an example of how today to do an eye surgery; engineering was essential, even more than medical science! She went on to conclude that a teacher today needed to be holistic in her knowledge base, which was inevitable in today’s scenario.

The Chief Guest for the session Dr Vidya Naik, (Dean, NMIMS, Global Access, School of Continuing Education) addressed the gathering on the issues pertaining to the future of the system of Education. She elaborated through examples how learners would be in the future, their demands and consequently what would be required of a teacher in that context.

(Taken from the report of National Seminar, 2014 prepared by Ms. S.R. Britto, Asst. Prof., K.J. Somaiya College of Education)
Glimpses of the event....

Welcome note performance by our students

Lighting of lamp by Dr. Chitra Natrajan, Professor and Dean, HBCSE

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Introductory note by Principal, Dr. Vasundhara Padmanabhan

Keynote speaker: Dr. Vijayam Ravi
Inaugural session: Honorary Secretary of Somaiya Vidyavihar, Shri V Ranganathan delivering keynote address

Shri V Ranganathan felicitating Ms Kavita Anand
Two parallel sessions under Dr. Indira Shukla and Dr. Shyam Sainekar

Idea Exchange with our esteemed panelists: Dr. Sunita Wadikar, Dr. Sybil Thomas, Ms. Elizabeth Mehta, Ms. Parveen Shaikh, Ms. Vidushi Chaudhary & Dr. Indu Garg
Valedictory session, Dr. Shubha Pandit (Principal, KJ Somaiya College of Engineering)

The Chief Guest for the session Dr. Vidya Naik, (Dean, NMIMS, Global Access, School of Continuing Education)
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Student Perception of Teachers’ Interpersonal Skills

Dr. Rashida H Kapadia
Asst. Professor, St Xavier’s Institute of Education

Abstract: Teachers are harbingers of change. A teaching community reflects the direction of progress in a given society. Teachers must adopt the present teaching methods and techniques in order to keep in sync with the developing times. However time and again it has been researched and proved, that long after the teaching is over the student remembers ‘how the teacher made him feel rather than what he taught’. In other words student teacher interaction is supportive of changing student attitude towards what the teacher teaches. Thus understanding teacher behavior which entails teacher interpersonal skills is of paramount importance. Interpersonal skills also known as people skills are competencies that form the basis of soft skills required for a teaching profession. Soft skills are personal attributes that enhance an individual’s interactions. In order to develop these skills in teachers, the researcher sought to identify the perception of students about their teachers’ behavior first. The present study includes studying the same with the use of Questionnaire on Teacher Interaction, followed by descriptive analysis of its components. The sample includes students studying at secondary school level in Greater Mumbai region.

Key words: Students Perception, interpersonal skills

Introduction
According to the recommendations of the NCF, 2005, teacher education programs need to be reformulated and strengthened so that the teacher can be an encouraging, supportive and humane facilitator in teaching–learning situations. While commenting on the quality dimension of education, the report emphasizes the development of values for harmonious living. Values like tolerance require special attention in a world filled with means to make one impatient in his behavior. Values like such can be caught and not taught and so it is essential for students to perceive their teachers to be practicing values of tolerance and cooperation. The report further comments that an enabling learning environment where children feel secure, where there is absence of fear, and which is governed by relationships of equality and equity should be nurtured. In order to develop such learning environment the teacher will require possessing skills that improve the interpersonal interaction with students.
And more recently the Justice Verma (2012) report highlights that a teacher’s attitude towards children, their needs and tolerance, disposition towards tolerance and an ability to listen with empathy is desirous to improve teacher quality.

Teachers play a pivotal role in determining student achievement, student behavior and student attitude. All this the teachers achieve through interaction with their students. This in turn is a factor contributing towards development of a conducive learning environment. There is sufficient literature suggesting the role of teachers in nourishing an effective learning environment (Fisher et al, 1995; Koul, 2003; Gupta and Fisher, 2011, Kapadia and Garg, 2013). The learning environment developed by a teacher includes the teaching aspect- the content that has to be taught, the teaching methodology to be used as well as the relationship between the teacher and the student (Petegem et al, 2006; Kapadia, 2006; Poll, 2009; Charalampous and Kokkinos, 2013). The role of the teacher has several aspects to be accounted for besides just teaching. A teacher maybe more strict in class as compared to another, while some other teacher maybe more cooperative in her interactions. In other words student teacher interaction is supportive of changing student attitude towards what the teacher teaches. Thus understanding teacher behavior which entails teacher interpersonal skills is of paramount importance.

Interpersonal skills also known as people skills are competencies that form the basis of soft skills required for a teaching profession. Soft skills are personal attributes that enhance an individual's interactions. There is a list of skills that fall under the domain of soft skills, which can further be associated under three heads; personal qualities, interpersonal skills and additional knowledge (Schulz, 2008). In order to develop these skills in teachers, the researcher sought to identify the perception of students about their teachers’ behavior first.

**Design and Procedure**

Descriptive method of study was used to assess the students’ perception of their teacher’s behavior. Sample included students studying in English medium schools in Greater Mumbai region. Students studying in standard IX were selected for the study. This was done to ensure that the teachers under consideration would have taught these students for at least a year or more. A total of 478 students participated in the study.

The Questionnaire on Teacher Interaction (QTI) was used for the present study. The original version of the tool consisted of 77 items. Later an Australian version consisting of 48 items
was developed. The present study uses the 48 item version of the tool to measure student’s perception of their teachers’ behavior. The tool consists of 8 dimensions. Each dimension includes 6 items. It is a likert type scale with options ranging from Never to Always.

Table 1 Description of scales of the QTI

<table>
<thead>
<tr>
<th>Scale Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership [DC] - Extent to which teacher provides leadership to the class and holds student attention.</td>
</tr>
<tr>
<td>Helping/ Friendly [CD] - Extent to which the teacher is friendly and helpful towards students.</td>
</tr>
<tr>
<td>Understanding [CS] - Extent to which the teacher shows understanding and care to students.</td>
</tr>
<tr>
<td>Student Responsibility/Freedom [SC] - Extent to which the students are given opportunities to assume responsibilities for their own activities.</td>
</tr>
<tr>
<td>Uncertain [SO] - Extent to which the teacher exhibits her/his uncertainty.</td>
</tr>
<tr>
<td>Dissatisfied [OS] - Extent to which the teacher shows unhappiness/dissatisfaction with the students.</td>
</tr>
<tr>
<td>Admonishing [OD] - Extent to which the teacher shows anger/temper and is impatient in the class</td>
</tr>
<tr>
<td>Strict [DO] - Extent to which the teacher is strict with demands of the students.</td>
</tr>
</tbody>
</table>

The scale measures the teacher behavior on two dimensions which include the Influence dimension (Dominance-D, Submission-S) and Proximity dimension (Cooperation-C, Opposition-O) describing the eight sectors mentioned in table 1.
Findings and Results
The data for the descriptive statistics concerning QTI was collected from 478 students and the values of means and standard deviations are given in Table 2. The highest mean value is 3 for the Leadership scale. Figure 1 represents the mean scores of the eight scales of the QTI in a graphical manner.

Table 2 Mean and Standard Deviation for the QTI

<table>
<thead>
<tr>
<th>Scale</th>
<th>No. of Items</th>
<th>Mean</th>
<th>StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership [DC]</td>
<td>6</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Strict [DO]</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Uncertain [SO]</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Student Responsibility/Freedom [SC]</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Helping/Friendly [CD]</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Understanding [CS]</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Dissatisfied [OS]</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Admonishing [OD]</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

N=478
The overall analysis of the above results show that the students see their teachers as good leaders most of the time and have also rated their teachers in terms of exhibiting helpful and friendly nature, and being understandable in the classroom. In fact, the positive factors have been exhibited by the teachers quite often in the classroom. One interesting feature of the analysis is that students perceive their teachers to be strict which shows that a teacher is in charge of a class and gives direction to the students in various matters. The students also perceive their teachers to be giving less student freedom and responsibility. Also, the negative aspects of the teacher-student interaction have been rated quite low by the students as teachers seldom exhibit admonishing behavior, are less dissatisfied and less uncertain.

This indicates that the teacher is helpful, shows understanding and care for the students, does not get angry or show dissatisfaction towards the students; neither does the teacher seem uncertain or hesitant. The students also perceive their teachers to be good leaders, who are confident and able to hold their attention. This means that students do look up to their teachers for possessing these qualities and that the teacher with these skills may help increasing a healthy teacher-student interpersonal relationship and promote positive behavior.

The students also perceive their teachers to be strict and giving less freedom and responsibility to them. This highlights that probably the teachers do not completely trust their
students. The researcher believes that teachers need to believe in their students and should transfer the responsibility of learning to each learner. This will facilitate more openness and confidence among the students.

References


Kapadia, R. 2006. Students’ expectation of social and technical competencies of teachers at different levels of education, (Unpublished masters dissertation. University of Bombay.)


Impact of an Inquiry-Based Science Program on Secondary School Students' Achievement in Science

Dr. Sreetanuka Nath
Asst. Prof. K.J.Somaiya Comprehensive College of Education, Training and Research

Ms. Ankita Vaswani and Ms. Milan Kande

Abstract: “Inquiry” is defined as "a seeking for truth, information, or knowledge -- seeking information by questioning." Individuals carry on the process of inquiry from the time they are born until they die. This is true even though they might not reflect upon the process. Unfortunately, our traditional educational system has worked in a way that discourages the natural process of inquiry. Students become less prone to ask questions as they move through the grade levels. In traditional schools, students learn not to ask too many questions, instead to listen and repeat the expected answers. Hence, moving in the line towards inculcation of the element of ‘inquiry’ in the teaching-learning process, the purpose of this study is to investigate how secondary school students performed in their achievement in an inquiry based learning environment. We designed a series of inquiry based activities in Science and posed a set of inquiry based questions at the end of every activity. Activities were designed, tried out and implemented among secondary school students and the effectiveness of the program was compared vis-a–vis traditional method of teaching. Pre-test and post-test values were collected from two secondary school classes with 142seventh graders. The statistical results show that overall the students’ achievement were significantly improved after they participated in the series of the learning activities and attempted to find the answers of the inquiry based questions posed at the end of every activity.

Keywords: -Achievement, inquiry learning approach

Introduction

Childhood is a period of growth and change, involving developing one’s physical and mental capacities to the fullest. There is a constant need to recognize the child as a natural learner,
and knowledge as the outcome of the child’s own activity. In everyday lives, one can enjoy the curiosity, inventiveness and constant querying of children. They actively engage with the world around them, exploring, responding, inventing and working things out, and making meanings.

National Curriculum Framework (2005) lays emphasis on ‘child centered’ approach giving primacy to children’s experiences, their voices, and their active participation. The key points are as under:

- Learners actively construct their own knowledge by connecting new ideas to existing ideas on the basis of materials/ activities presented to them (experience).

- The structuring and restructuring of ideas are essential features as the learners’ progress in learning.

- The engagement of learners, through relevant activities, can further facilitate in the construction of mental images of the relationships (cause-effect).

Gagne (1963) views science process skills as the foundation for scientific inquiry, and knowledge is developed inductively from sensory experience. Learning integrated science process skills requires students to be at the formal operation stage according to Piaget's stages of cognitive development (Inhelder and Piaget, 1958; Brotherton and Preece, 1995). However, majority of the school students are operating at the concrete operational stage (Shayer, Kuchermann, and Wylam, 1976; Palanisamy, 1986). Many research studies (e.g., Allen, 1973; Klahr, Chen, and Toth, 1999) have shown that teaching school students on integrated science process skills require some form of specific training.

Some short-term studies have shown that students who use an inquiry approach have improved attitudes towards science. For example, Selim and Shrigley (1983) compared two instructional modes, discovery and expository, for teaching science knowledge to fifth grade students. The treatment period was 21 days. After the treatment period, they found that students taught by teachers using the discovery approach (an inquiry approach) had a more positive science attitude than the control group who were taught by teachers using the traditional lecture approach.
The American Association for the Advancement of Science (AAAS) (1993) and the National Research Council (NRC) (1996) endorse science curricula that actively engage students in science using an inquiry-based approach. This approach has shifted the focus of science education from the traditional memorization of facts and concepts in separate specific disciplines to inquiry-based learning in which students seek answers to their own questions. The pedagogy advocated for is an inquiry approach, in which students are actively engaged using both science processes and critical thinking skills as they search for answers. Many studies conducted with middle and high school students found that inquiry-based science activities had positive effects on students’ science achievement, cognitive development, laboratory skills, and understanding of science knowledge as a whole when compared to students taught using a traditional approach (Chang and Mao, 1998; Ertepinar and Geban, 1996; Geban, Askar, and Ozkan, 1992; Mattheis and Nakayama, 1988; Padilla, Okey, and Garrand, 1984; Purser and Renner, 1983; Saunders and Shepardson, 1987; Schneider and Renner, 1980; Wollman and Lawson, 1978). Hodson (1990) suggested, inquiry-based learning is a more effective way for students to learn science.

Involvement in scientific inquiry can range from relatively brief classroom activities to lengthy projects in research laboratories. It is generally believed that the more authentic the research experience, such as an apprenticeship guided by a science professional, the more likely students will learn about aspects of scientific inquiry (Baraband Hay, 2001; Ritchie and Rigano, 1996).

In answer to this and similar calls, a variety of programs have sought to place students in research laboratories or special programs to develop broader and more complete understandings of the processes and nature of science (Baraband Hay, 2001; Bleicher, 1996; Cooley and Bassett,1961; Krasny, 1999; Richmond and Kurth, 1999; Ritchie and Rigano, 1996). In addition to learning the processes of doing science, researchers and program developers have hoped that students would learn about the scientific enterprise through participation inauthentic science experiences (Krajcik et al., 1998; Means, 1998; Moss, Abrams, and Kull, 1998; Moss, Abrams, and Robb, 2001; Ruopp, 1994; Ryder and Leach, 1999). In other words, students are expected to make gains in their understandings of the nature of science and scientific inquiry. This learning is sometimes seen as a natural outcome of students’ participation in scientific inquiry. For example, Moss et al. (2001) expected high
school students to learn about the nature of science through collaboration with scientists on research projects.

Chang and Mao (1998) compared the impact of 2 weeks of traditional lecture-type instruction to 2 weeks of inquiry-based instruction on secondary students’ achievement in earth science. They found that students who were taught using the inquiry-based instructional method scored significantly higher on an achievement test than those who were taught using the traditional lecturing approach.

The researchers developed several inquiry learning activities in Science covering various topics of CBSE syllabus. Performing these activities facilitated Inquiry learning by giving rise to a lot of inquiry based questions which required to be catered by the facilitator. This research finds out the effectiveness of these activities towards enhancing the achievement of the students through inquiry learning approach of teaching science at Secondary school level.

**Objectives of the Study**

- To develop Inquiry-Based science program for teaching specific content of standard VIIth Science.
- To study the effect of this Inquiry-Based science program on learning and comparing with traditional face to face learning.

**Operational Definitions of the Key Terms**

**Inquiry Learning Approach:**

Scientific inquiry is more complex than popular conceptions would have it. It is, for instance, a more subtle and demanding process than the naive idea of "making a great many careful observations and then organizing them." It is far more flexible than the rigid sequence of steps commonly depicted in textbooks as "the scientific method." It is much more than just "doing experiments," and it is not confined to laboratories. More imagination and inventiveness are involved in scientific inquiry than many people realize, yet sooner or later strict logic and empirical evidence must have their day (chapter1, benchmark, project 2061, AAAS).
Inquiry learning approach is not about memorizing facts - it is about formulation questions and finding appropriate resolutions to questions and issues. Inquiry can be a complex undertaking and it therefore requires dedicated instructional design and support to facilitate that students experience the excitement of solving a task or problem on their own. Carefully designed inquiry learning environments can assist students in the process of transforming information and data into useful knowledge. Inquiry-based learning is often described as a cycle or a spiral, which implies formulation of a question, investigation, creation of a solution or an appropriate response, discussion and reflection in connection with results (Bishop et al., 2004).

Inquiry Learning Approach is a student-centered and student-lead process. The purpose is to engage the student in active learning, ideally based on their own questions. Learning activities are organized in a cyclic way, independently of the subject. Each question leads to the creation of new ideas and other questions. This learning process by exploration of the natural or the constructed/social world leads the learner to questions and discoveries in the seeking of new understandings. With this pedagogic strategy, children learn science by doing it (Aubé and David, 2003). The main goal is conceptual change.

In the present study Inquiry learning Approach means some activities in Science specially developed by the researcher which constitute a student-centered and student lead process to engage the students in active learning based on their own questions and requires a complex undertaking and dedicated instructional design and support to facilitate that students experience the excitement of solving a task or a problem on their own and assist students in the process of transforming information and data into useful knowledge. Inquiry learning approach can be described as a cycle or a spiral, which implies formulation of a question, investigation, creation of a solution or an appropriate response, discussion and reflection in connection with results.

**Achievement in science:**

In the present study Achievement refers to the extent to which the students of VII\textsuperscript{th} standard grasped the subject matter of science. It is the score obtained by a student in the achievement test (i.e. pre-test and post-test) developed by the researchers.
Hypothesis

- There is no significant effect of the treatment on achievement scores when the difference in the pre-test scores of the two groups has been controlled (H0).

Methodology and Design of the Study

For the present study the researcher has selected the Experimental Method by keeping in mind the objectives of the study and the problem. The researcher has used Quasi-experimental research design involving Pretest-Posttest Equivalent Groups Design.

\[ O_1 \times O_2 \quad \text{where}, \quad O_1 \ O_3 = \text{Pretests} \]
\[ O_3 \ C \ O_4 \quad O_2 \ O_4 = \text{Posttests} \]

The pre-tests was administered before the application of the experimental and control treatments and post-tests at the end of the treatment period. Gain scores were compared and subjected to test of significance of the difference between means. Pre-test scores were used in analysis of covariance to statistically control for any differences between the groups at the beginning of the study.

Sample of the Study

The study was conducted independently in two school namely SVDD school, Mumbai and SM Shetty School Mumbai, Maharashtra. Thus, sample for the present study includes 142 students of secondary school (Maharashtra State Board) from class VII of which 82 were from SVDD School Mumbai, Maharashtra and 60 were from SM Shetty School Mumbai, Maharashtra.

In SVDD School Mumbai, 41 students of VII C formed the experimental group and 41 students of VII B formed the control group, whereas in SM Shetty School Mumbai, Maharashtra 30 students of VII A formed the experimental group and 30 students of VII B formed the control group.

Tools of the Study

The researcher developed activities based on inquiry learning approach for teaching and learning science to secondary school students. The activities were duly content validated by experts.
In order to check the performance of the students the researcher prepared achievement test. The overall test reliability (Cronbach’s alpha reliability coefficient) was 0.89 whereas with rational equivalence the value was 0.85. The overall discrimination indices were above 0.4 with an average value of 0.75, and the item difficulty indices ranged from 0.2 to 0.70 with an average of 0.50.

Testing of Hypothesis

Incidental sampling technique was used to select the samples for both experimental and control group. Achievement test was implemented for pre and post testing the students of both the experimental and control group. Thus the technique used to test the above mentioned hypothesis is ANCOVA.

For SVDD School-

Means of Pre-test and Post-test scores of Experimental group are 6.4 and 13.6 respectively and for control group are 6.3 and 11.3 respectively.

Table 1: Summary of ANCOVA of pre-test and post-test scores are-

<table>
<thead>
<tr>
<th>SOURCE OF VARIANCE</th>
<th>df</th>
<th>SS_X</th>
<th>SS_Y</th>
<th>MS_X(V_X)</th>
<th>MS_Y(V_Y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMONG MEANS</td>
<td>1</td>
<td>2.743902</td>
<td>1127.024</td>
<td>2.743902</td>
<td>1127.024</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>80</td>
<td>4148.537</td>
<td>4780.732</td>
<td>51.85671</td>
<td>59.75915</td>
</tr>
<tr>
<td>TOTAL</td>
<td>81</td>
<td>4151.28</td>
<td>5907.756</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of ANCOVA of Pre-test and Post-test Scores indicates $F_X = 0.052$ and $F_Y = 18.85$. From table F df 1/80, $F$ at 0.05 level = 4.00, $F$ at 0.01 level = 7.08. Neither $F$ is significant which shows that the experimenter was quite successful in getting equivalent groups. In the next step $M_{yx}$ was calculated.

Table 2: Calculation of $M_{yx}$

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>df</th>
<th>SS_X</th>
<th>SS_Y</th>
<th>$S_{xy}$</th>
<th>$SS_{yx}$</th>
<th>MS_Y(X)</th>
<th>M_YX</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMONG MEANS</td>
<td>1</td>
<td>2.743</td>
<td>1127.024</td>
<td>-55.6098</td>
<td>1204.08</td>
<td>1204.08</td>
<td></td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>79</td>
<td>4148.537</td>
<td>4780.732</td>
<td>2855.439</td>
<td>2815.332</td>
<td>35.63712</td>
<td>5.565</td>
</tr>
<tr>
<td>TOTAL</td>
<td>80</td>
<td>4151.28</td>
<td>5907.756</td>
<td>2799.829</td>
<td>4019.412</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Now, testing the difference for $df = 79$, $t_{0.05} = 1.99$; $t_{0.01} = 2.64$ $M_{yx}(difference) = 5.565$ is much greater than 2.64 at 0.01 level, hence experimental group differs significantly from control group at 0.01 level. **Hence null hypothesis (Ho) is rejected.** Thus it shows elevation in the achievement for experimental group students.

For S. M Shetty School-

Means of Pre-test and Post-test scores of Experimental group are 6.5 and 14.1 respectively and for control group are 6.3 and 11.3 respectively.

Table 3: Summary of ANCOVA of pre-test and post-test scores are-

<table>
<thead>
<tr>
<th>SOURCE OF VARIANCE</th>
<th>df</th>
<th>$SS_x$</th>
<th>$SS_y$</th>
<th>$MS_{x}(V_x)$</th>
<th>$MS_{y}(V_y)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMONG MEANS</td>
<td>1</td>
<td>3.75</td>
<td>1540.2</td>
<td>3.75</td>
<td>1540.23</td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>58</td>
<td>755.23</td>
<td>5675.3</td>
<td>13.032</td>
<td>182.88</td>
</tr>
<tr>
<td>TOTAL</td>
<td>59</td>
<td>758.98</td>
<td>7215.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results of ANCOVA of Pre-test and Post-test Scores indicates $F_X = 0.28$ and $F_Y = 8.42$. From table $F$ df 1/58, $F$ at 0.05 level $= 3.89$, $F$ at 0.01 level $= 6.45$. Neither $F$ is significant which shows that the experimenter was quite successful in getting equivalent groups. In the next step $M_{yx}$ was calculated.

Table 4: Calculation of $M_{yx}$

<table>
<thead>
<tr>
<th>SOURCE OF VARIANCE</th>
<th>df</th>
<th>$SS_x$</th>
<th>$SS_y$</th>
<th>$S_{xy}$</th>
<th>$SS_{y,x}$</th>
<th>$MS_{y,X}(V_{y,x})$</th>
<th>$M_{y,x}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMONG MEANS</td>
<td>1</td>
<td>3.75</td>
<td>1540.2</td>
<td>76</td>
<td>799.46</td>
<td>799.46</td>
<td></td>
</tr>
<tr>
<td>WITHIN GROUPS</td>
<td>57</td>
<td>755.23</td>
<td>5480.73</td>
<td>4655.439</td>
<td>3452.332</td>
<td>605.95</td>
<td>5.55</td>
</tr>
<tr>
<td>TOTAL</td>
<td>58</td>
<td>758.98</td>
<td>7020.93</td>
<td>4731.439</td>
<td>4251.792</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Now, testing the difference for $df = 57$, $t_{0.05} = 1.49$; $t_{0.01} = 2.04$ $M_{yx}(difference) = 5.55$ is much greater than 2.04 at 0.01 level, hence experimental group differs significantly from control group at .01 level. **Hence null hypothesis (Ho) is rejected.** Thus it shows elevation in the achievement for experimental group students.
Discussion

The reasons for the elevation in the performance of experimental group students by using Inquiry Learning Approach can be sketched as: The Inquiry Learning Approach to teaching provides the much-needed interactivity. Also, being interactive it allows collaborative learning opportunities to the learners, who can interact with their teachers as well as with peer groups or co-learners.

Collaborative learning through Inquiry Learning Approach to teaching enhances team performance as well as development of science process skills through tools for communicating each person's ideas, structuring group dialogue and decision making, recording the rationale behind choices, and facilitating collective activities. All this add up to their intrinsic attraction towards science and in turn enhances their achievement. The National Science Education Standards’ Teaching Standard B (NRC, 1996, p. 32) prompts teachers to guide and facilitate learning by
✦ focusing and supporting inquiries while interacting with students;
✦ orchestrating discourse among students about scientific ideas;
✦ challenging students to accept and share responsibility for their own learning;
✦ recognizing and responding to student diversity and encouraging all students to participate fully in science learning;
✦ encouraging and modeling skills of scientific inquiry, as well as the curiousness, openness to new ideas and data, and skepticism that characterize science.

Adding up Inquiry learning approach not only develops children’s learning but it also develops the teacher’s competence in teaching. Because, when the teachers are engaged in preparation and use of different activity materials, they get experiences and perspectives in teaching through different ways. The present system of learning always wants that our learning environment must be democratic, congenial, satisfying and cooperative. All these elements are facilitated in inquiry based approach towards teaching-learning. The approach is psychological because it gives respect to the needs, interests and abilities of the children.

This approach is life centered in the sense that the inquiry based activities selected for the teaching – learning are based upon the daily life situations. Since the students are engaged in divergent activities like games, puzzles, competitions, etc. their manifold creative and
cognitive abilities develop simultaneously. The inquiry learning approach aims at developing scholastic and co-scholastic aspects of activity based joyful learning simultaneously, because the activities engaged in this approach of teaching include all the domains of behavior, i.e. head-related activities, hand-related activities and heart related activities.

Inquiry based learning acts as a suitable approach for imparting unified knowledge to the children, because it helps to achieve interdisciplinary competencies through teaching of one discipline. Since inquiry learning approach facilitates the achievement of interdisciplinary competencies through teaching of one discipline, this approach is suitable for single teacher/meagerly staffed schools.

**Conclusion**

It is a known fact that, infants use inquiry to build their sense of the world. The babies turn towards voices, put things in their mouths, grasp things, and observe faces that come near. This inquiry process is mainly the gathering of information and applying them to senses like smelling, tasting, touching, hearing and seeing in science, the students’ questions play an important role in the nature of their inquiry and in their learning; they need to be encouraged.

Students gain from inquiry-based learning-

- Work together as part of a problem-solving team and come to an understanding that shared efforts and abilities produce the best team result.
- Increase self-esteem from the fact that, their own individual effort contributes positively to the team solution of the problem.
- Develop problem-solving skills that can be applied to other areas in their lives and to other academic disciplines.
- Learn how to design an experiment and carry out scientific research including observations and data handling.
- Develop critical-thinking skills.
- Become actively involved in the learning process.
- Experience excitement about studying science because rigorous problem-solving can be enjoyable!
- Learn how to organize and interpret scientific information.
- Make written and oral presentations of the results of their research.
- Increase understanding of basic scientific knowledge through deductive reasoning rather than passive learning techniques.
Clearly, the more active students are in their science education, the more scientifically literate each student will become. Having students probe for answers to scientific questions will lead to a deeper understanding of scientific concepts than if the teacher simply provides students with the scientific facts alone. Introducing inquiry-based strategies not only into the classroom but also into the laboratory sections of science courses will help students enhance and develop their critical-thinking and communication skills.

References


Cooperative Learning and Infusion of Values

Ms. Priti Sivaramakrishnan
Asst. Professor, St. Xavier’s Institute of Education

“Education is the most powerful weapon which you can be used to change the world”

Abstract: Values are an integral part in India. The culture of Indian is known to impart values to children. Cooperative learning is an effective way to infuse value among school children. This paper discusses how value education helps in leading a quality life and why it is very important in the present situation. The paper also mentions how values can be taught by not just having a moral science period. The paper further discusses how through cooperative learning subject matter can be taught and at the same time values can be developed among students. The paper draws attention to the different values students would achieve when taught using cooperative strategies. Values of integrity, trust, peace and tolerance can be cultivated. It highlights that to instill the right kind of values among children the role of a teacher is very important. This paper also touches upon the aspect of how teachers can use cooperative learning strategies effectively to infuse value among children.

Introduction

The dictionary meaning of value is the regard that something is held to deserve; the importance, worth, or usefulness of something. Values are also defined as principles or standards of behavior, one's judgment of what is important in life. Values are taught to a child when they understand and respond to things around, like be good and don’t be bad. The child is taught to differentiate between what is good and what is bad. As children grow and progress through the schooling stages they are made to realize what good behavior is for themselves as well as for the community. The children respond, communicate and change their behavior according to right or wrong. Values education can take place at home, in schools, colleges, universities and voluntary youth organizations. Values learnt at school and college becomes part of a person’s value system.
Value Building at school and Personality

Value Building helps to have a better quality life. It helps to have character formation and personality development. Values like love, compassion, sympathy, empathy, tolerance are developed. Value Education helps to build values like honesty, discipline, punctuality and loyalty. It helps pupils to understand themselves, through an awareness of their inner selves so that they grow to be self-disciplined, having the ability to observe and determine their own positive behavior. It creates personal and school harmony by introducing a moral vocabulary through the explicit and regular consideration of value words such as peace, cooperation, care and respect, which is learned by hearing, reading, reflecting on, writing about, discussing and practicing. It supports the development of good quality relationships between all who work in the school. It encourages pupils to develop their positive dispositions and to choose their attitudes. It promotes self-knowledge and thinking skills for pupils through reflective silent sitting in assemblies and lesson time. It encourages the skill of active listening. This process of becoming values conscious adjusts the intellect; since moral and ethics find harmony faster and more accurately when one is conscious of the value expressed in every situation (Paoli, 2006)

Ground Reality

In today's fast world value is slowly deteriorating among children. In today's fast paced competitive world, man seems to have compromised on his values, integrity and character, in a bid to earn, use and possess more and more of material wealth, a result, we see rampant corruption, unlawful activities, inhuman behavior and immoral consumption, which is slowly breaking the very structure of our society, nation and the world. These traits are not also equally found among children. Therefore, there is an urgent need to re-introduce value based spiritual education dealing specifically with human values, to redesign the fabric of our educational system. A child's mind is like soft clay and can be molded to any desired shape. Thus, it becomes important to impart and infuse values at school.

Value Education and School

School is the common platform for all children coming from various backgrounds. In an interactive and learning environment of the school, where a child spends a maximum of eight hours of waking time, the human values can be easily evoked in them by making them "experience" and "live" the values. Teachers, in turn, present themselves as role models to be
emulated. Values in schools are taught through co-curricular and curricular activities. Theme based morning assemblies; participation in co-curricular activities helps one in inculcating values. The main purpose of primary school education is to help children renegotiate their membership in the local culture of family life and help them join some of the established knowledge communities available to them and encompassing the culture we hold in common. But how much values are gained by a student during the teaching learning process? The answer to this lies in using cooperative learning strategies at school.

**Meaning of Cooperative Learning**

Robert Salvin (1994) defines cooperative learning as instructional programs in which students work in small groups to help one another master academic achievement. Cooperative learning helps to define a set of processes which help people interact together in order to accomplish a specific goal or develop an end product that is usually content specific. Cooperative learning activities helps to achieve outcomes that are beneficial to oneself but beneficial to all group members.

**Robert Salvin identifies three concepts fundamental to all cooperative learning/ student team learning techniques**

1. Students are rewarded as a team but are graded individually
2. The team’s success is not conditionally based on individual performance of one student. All students must help each other to achieve learning goals.
3. All students are expected to improve based on their own previous performance, thus ensuring all students are challenged to do their best

Based on these fundamental concepts when a teacher uses cooperative learning techniques the students have to achieve individually but also with help other achieve the learning goals. There is sharing and cooperation taking place which helps value building among students. Daniel Holt, Barbara Chips, and Diane Wallace (1991) recognize the possible benefits of cooperating learning in linguistically and culturally diverse classrooms level Johnson, D.W., R.T. Johnson, and K.A. Smith (1991) found that cooperative learning methods in general increases student achievement, positive race relations in desegregated schools, mutual concern among students, student self-esteem, and other positive outcomes.
Infusion of Values through cooperative learning

1. Commitment to the common goal: There is a built in concern for the common goal and the success of the others as the efforts of others also contribute to the one’s own wellbeing.

2. Success depends on the joint efforts of everyone to achieve mutual goals. “Sink or swim together” an all for one and one for all mentality is appropriate. Civic responsibility and team work is valued. Success depends on everyone doing his or her part.

3. Facilitating, promoting and encouraging the success of others in a natural way of life. Success depends on everyone doing well. A smart cooperator would find ways to promote facilitate and encourage the efforts of the others.

4. Pleasure of succeeding is associated with other’s happiness in their success. Cooperation feels great about succeeding. When someone succeeds it is a source of pleasure and happiness because it means one’s help and assistance is paid off.

5. Other people are potential contributors to one’s success. Cooperation casts school mates as allies, colleagues and friends who will contribute to one’s success. Cooperation are to be trusted because the efforts to succeed will promote one’s own success.

6. Other people’s worth is unconditional. There are different ways that a person may contribute to a joint effort. Cooperation places value on a wide range of diverse qualities that facilitate joint success ---- Everyone has a value.

7. Self-worth is unconditional: Cooperation teaches that self-worth results from contributing whatever resources one has to the joint effort and common good.

8. Cooperators value intrinsic motivation based on striving to learn, grow, develop and succeed. Learning is the goal not wining.

9. People who are different from oneself are to be valued. Other people are perceived to be potential resources for and contributors to one’s success. If they are different means that means more diverse resources are available for the joint effort and therefore difference is valued. The diverse contribution of members result in the realization that in the long run, everyone is of equal value and equally deserving regardless of their gender, ethnic membership, culture, social class or ability.

From the points mentioned above one can realize how much cooperative learning helps to instill values among children which is the need of the hours. But one point to be kept
in mind is cooperative would be ineffective and values can’t be infused without the supervision and guidance of the teacher.

**Role of the teacher in Infusing values using cooperative Learning**

There is a disparity between what schools are providing and what they should provide. Its educative function has to turn its aims to reinvent itself so as to enable children in the process of learning to know, to do, to be and to live together with others (UNESCO, 2002).

Research suggests that cooperative learning contributes to the fostering of social skills in students of all ages. Evidence shows that cooperative learning helps to remove differences and work in harmony with each other. But how best and how well it is to be integrated to infuse these values depends on the role of the teachers. Spencer Kagan (989) recommends that teachers use the ‘structural approach’ to cooperative learning which involves “content-free ways of organizing social interaction in the classroom”. Some of the well-known structural approaches of cooperative learning to be successfully used in classroom are jigsaw, students teams achievement division, think-pair share, numbered heads together, three – step interview, roundtable.

James A. Duplass (2006), Middle and High School Teaching: Methods, Standards and Best Practices. Boston, MA: Houghton Mifflin, 2006 the following are the most commonly found characteristics of cooperative learning:

1. Teacher supervision - the teacher should always monitor group activity to ensure that students are not veering too far off task. The teacher should also be available to answer student’s questions and guide discussion if necessary.
2. Heterogeneous groups – the teacher creates groups of diverse ability levels and backgrounds.
3. Positive interdependence
4. Face-to-face interaction—students are encouraged to use verbal and nonverbal communication to solve problems and explain learning material.
5. Individual accountability—students are accountable for their tasks and for assisting the whole group meets learning goals. This accountability is enforced through student roles.
6. Social skills—the teacher needs to establish rules so that all students are respectful, speak in a manner appropriate to the classroom setting, and utilize their time wisely during group interaction.
7. Group processing—students engage in reflection on how the group functioned during activity.
8. Evaluation—all activities should include both individual and group assessment.

Conclusion

Cooperative learning as a teaching method would help to infuse values among children. It would help children to prepare for a better tomorrow. Students would learn to appreciate people around them, develop traits of listening and respecting others’ point of view. Accordingly, it is the researcher’s humble submission that more and more teachers use cooperative learning in class and prepare students for a better future tomorrow.

References


http://www.successforall.org/Elementary/Powerful-Instruction/Our-Instructional-Design/Cooperative-Learning/
A Perspective Understanding of Approaches to Learning and Reflective Thinking

Ms. Kalpana Chavan
Asst. Professor, St. Xavier’s Institute of Education

Abstract: Students’ learning approaches mirrors the way student learns and reflects over the learning content and process. The main objective of the paper was to study the relationship between the approaches of the Student Learning (Deep and Surface Approach) and Reflective Thinking. The sample of the study was 93 pre-service teachers of College of Education in Mumbai. In addition, the variables like stream of education and qualification of students are examined. Two standardized questionnaire-Kember et al. Reflective Thinking Questionnaire (RTQ) and Biggs’s Revised Study Process Questionnaire 2F (SPQ) were used for the collection of the data. RTQ is divided into Habitual Action, Understanding, Reflection and Critical Reflection aspects of reflective thinking and SPQ 2F consists of items related to Deep and Surface Approach of Student Learning.

The finding shows that the Overall Deep Learning Approach and Overall Reflective Thinking of students are positively correlated and significant at 0.01 level. It implies that by promoting reflection and critical reflection, one can improve the quality of learning. At the same time, the finding reveals that Overall Surface Learning Approach and Overall Reflective Thinking is negatively correlated. It implies that students who study to merely pass the exams, rote learn without understanding may not be able to analyze and improve their learning.

Introduction

John Dewey defines education as, “that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases one’s ability to direct the course of subsequent experience.” Learning is an experience which students gain in the journey of education and reflection is that process of “reconstruction and reorganization of experience which adds to the meaning of experience.” Thus, reflective thinking is not just a product but also a process of mental thought, making learning not an object distanced from the learner but understanding it and even transforming it. Reflection is both, a noun and a verb. It is that on-going action which changes the
learner’s organization of learning tasks, his/her perspective and approach towards it and in turn, accounts for difference in learning and eventually learning outcomes.

The paper is, thus, a study of understanding the student’s approach to learning and its relation to reflective thinking. The approach to learning that the student adopts, affects the quality of learning outcomes (Salijo and Marton). Some students approach the learning tasks from the motive to collect information without understanding whereas some others would perceive learning as transformational. The approaches thus, could be connected to what the student reflects whether the task can be done without thinking or it can be made interesting and challenging.

Learning theories developed in the 20th century fit into two broad groupings- those concerned with behavior (how people respond or react to different kinds of stimuli) and those linked with cognition (how people interact with stimuli and construct their own learning).

Behaviorism, one theory, is concerned with the approach that is much controlled, making the learner a passive recipient of learning tasks and completing it for reinforcement without being interested or making it a part of their own learning. The second learning theory, constructivism, is more concerned with student as an active learner critically interacting with the learning tasks, reflecting it from a different perspective. Thus, the learning theories emphasis to the background as to how student can approach and reflect on the learning tasks at hand and how the learning process is affected by the thinking.

Two learners may adopt differing approaches to studying within the same context and a single learner may adopt differing approaches to studying in different contexts (Prosser and Trigwell, 1999). Reflection is deemed to be an important prerequisite for deep and meaningful learning (Moon, 1999). Learners who think reflectively become aware of and control their learning by actively accessing what they know, what they need to know and how they bridge that gap (Sezer, 2008). Gibbs (1988) also finds that reflection plays an important role in experiential learning, as the process of reflection helps solidify experience in the learner’s memory, raising the potential for further learning.

**Rationale of the study**

The National Curriculum Framework for Teacher Education (2010) stresses the need to teach trainee teachers to “view learners as active participants in their own
learning and not as mere recipients of knowledge; need to encourage their capacity to construct knowledge; ensure that learning shifts away from rote methods”. But the question arises how do these trainee teachers approach learning? Are they involved in continual advancement of reflective learning or is it collection of isolated, unconnected ideas?

The essence of education is to assimilate the new knowledge with previous learning and applying it to new situations. Research study by Tok reflective thinking can be used for pre-service teachers to improve positive attitude towards teaching profession and increase their performance. Thus, reflective thinking plays an important role in the professional growth and how these teachers become better teachers and are more effective. The teacher trainees when are aware of their reflective thinking and also of the effect that it can have on the way they learn, the quality of their learning outcomes, it will help them to be better learners and in turn better teachers. Cruickshank (1987) reflection is a means to help pre-service teachers to be more effective.

Teachers are expected to be aware of importance of reflective thinking and they are also equipped with reflective thinking skills so that they can keep up with the recent innovations in education field, put their learning into practice and evaluate and assess their learning in the context of scientific criteria and experiences (Altinok, 2002). Thus, reflective thinking helps a student teacher to be responsible for their learning and its quality outcome in the context of their experiences in a systematic manner. The researcher is interested to know whether the student teachers are approaching their learning from a reflective thinking angle, is the student teacher reflecting on the learning tasks and content, asking questions and seeking meaning, thus leading to deeper learning.

**Significance of study**

The basic goal of this study is to determine the relationships between reflective thinking and approaches to learning. This study will be useful to the principals of the colleges of higher education to understand the different approaches the students take towards learning and how deep approach can be lead to meaningful and lasting learning. It will be useful to teachers, teacher educators to develop their lessons on reflective practice like asking questions, critically analyzing and encouraging students to construct their own knowledge. The results of the study can give an insight to the students especially of higher education to be aware of their approach to learning and their way of thinking and organizing learning tasks in such a way which is not mechanical and passive but active and interesting.
Reflective thinking and students approaches to learning study would be important to all the stakeholders in the field of learning as one can get deeper understanding that learning can be made interesting, a part of one’s thinking rather than a mechanical, boring activity to pass an exam at the end of the year.

**Reflections of Related Literature**

The related literature has highlighted that there is student learning approaches and reflective thinking have been a subject of interest in various fields of learning from higher education, real estate to nursing field as the quality of learning outcomes depend upon thinking process and learning option. But more studies are needed in the field of student teachers; if the prospective teachers are not themselves aware of it then it will have a cascading effect on the next generation of students. The trainee teachers have to be consciously made aware of their approach to learning and different constructs of reflective thinking.

**The research study has two main questions:**

1. Does qualification of the student and graduation stream affect Student Learning Approach and Reflective Thinking?
2. Is there a relationship between Student Learning Approach and Reflective thinking?

**Aim of the study:**

The study was conducted with following broad aim:

- To study the relationship, between Student Learning Approaches and Reflective Thinking of pre-service teachers.

**Major Objectives of the study:**

1. To study the dimensions of Student Learning Approaches of pre-service teachers with respect to qualifications of the student teachers
   a) Post graduate
   b) Graduate

2. To study the dimensions of Student Learning Approaches of pre-service teachers with respect to graduation stream of the student teachers
   a) Arts
b) Science

3. To study the dimensions of Reflective Teaching of pre-service teachers with respect to qualifications of the student teachers
   a) Post graduate
   b) Graduate

4. To study the dimensions of Reflective Teaching of pre-service teachers with respect to graduation stream of the student teachers
   a) Arts
   b) Science

5. To ascertain the relationship between dimensions of Student Learning Approach and dimensions of Reflective Thinking.

**Hypothesis of the study:**

1. There is no significant difference in the dimensions of Student Learning Approaches of pre-service teachers with respect to qualifications of the student teachers
   a) Post graduate
   b) Graduate

2. There is no significant difference in the Student Learning Approaches of pre-service teachers with respect to graduation stream of the student teachers
   a) Arts
   b) Science

3. There is no significant difference in the dimensions of Reflective Teaching of pre-service teachers with respect to qualifications of the student teachers
   a) Post graduate
   b) Graduate

4. There is no significant difference in the dimensions of Reflective Teaching of pre-service teachers with respect to graduation stream of the student teachers
5. There is no significant relationship between the dimensions of Student Learning Approach and dimensions of Reflective Thinking.

Methodology of the study:

The present study is descriptive type as it deals with student learning approaches and its relationship to reflective thinking. As the study deals with student learning approaches in relation to reflective thinking, the descriptive method of correlation and causal comparative type is used. Sampling method is simple random sampling. Sample consists of 93 pre-service teachers of St. Xavier’s Institute of Education.

Tools:
For the present study, two standardized tools were used-
• Kember et al’s Reflective Thinking Questionnaire
• Biggs’s Revised Study Process Questionnaire 2F

Data Collection and Analysis

Data from the questionnaires were edited and saved for analysis. Firstly, the statistical assumptions were examined; descriptive statistics and inferential statistics were employed using SPSS for windows version 10.2v.

Analysis and Discussion

Analysis of data included descriptive and inferential analysis.

Data was analyzed for any statistically significant difference in scores with respect to qualification and graduation stream. The results of the study carried out are presented here in the following sections-

The mean score for ODA is 29.65 for graduates and 30.05 for post graduates, the t value revealed that they did not differ significantly even at 0.05 level.
The study also indicates that there is no significant difference with reference to stream of education, i.e. whether the students are from Arts or Science background, the mean of ODA is 29.65 for Arts and 30.05 for Science students, as the mean for OSA is 19.69 and 18.87, as the mean of ORT is 49.56 and 50.08 for Arts and Science students respectively.

The pre-service teachers whether they are graduates or post-graduates, or from whichever educational background, the mean score does not show any significant difference in all the three variables - Overall Deep Approach, Overall Surface Approach and Overall Reflective Teaching. Thus, the approach to learning of the student teacher is not affected by the qualification or stream of education the student teachers enter the B.Ed. The groups may not show difference as the teaching scenario is the same; they are being given the orientation to same learning tasks and styles of teaching. Moreover as compare to Overall Surface Approach the Overall Deep Approach mean is higher of both the groups, so maybe the factors like emphasis on understanding rather than rote memorization, and stress on interest in subject than motive of merely passing the exams could be affecting the student teachers. This is a good sign to show that the background of the student could graduate or post graduate, the learning environment when promoting higher level of thinking can promote more deep approach learning. The findings also show that the Overall Reflective Thinking is also not significantly different in the students of different qualification level, this, showing that if reflective environment is encouraged then students irrespective of their previous qualification can be more critical in their thinking, challenge their own way of thinking and question the preconceived notions and be more flexible in accepting different perspectives. Thus, the null hypothesis is accepted.

**Hypothesis**

There is no significant relationship between the dimensions of Student Learning Approach and dimensions of Reflective Thinking.

The findings indicate the hypothesis, there is no significant relationship between the dimensions of Student Learning Approach and dimensions of Reflective Thinking is rejected. The correlation between ODA and ORT is positive and significant at 0.01 level, thus indicating that if a student takes interest, asks questions, relates to his experiences and actively constructing meaning and this is related to reflective thinking. Thus, the students take interest and make learning a part of their own and not just for avoiding failing a test.
It implies that by promoting reflection and critical reflection, one can improve the quality of learning. The previous research suggests that there is a significant relationship between learning approaches, stages of reflective thinking, and academic performance. (Rashid, 2011; Watkins, 2001; Leung and Kember, 2003; Phan, 2006; Muller, 2004)

At the same time, the finding reveals that Overall Surface Learning Approach and Overall Reflective Thinking is negatively correlated. It implies that students who study to merely pass the exams, rote learn without understanding may not be able to analyse and improve their learning.

**Note:** HA = Habitual Action, U = Understanding, R = Reflection, CR = Critical Reflection, DA = Deep Approach, SA = Surface Approach

A striking finding is that the habitual action has a positive and significant correlation at 0.01 level with both polar aspects, i.e., overall surface approach and even overall reflective action. It signifies that when a learner is acquiring a new skill, it should not be taught for the sake of avoiding undesirable consequence like failing a test but for a meaningful understanding of the learning task as Leung and Kember (2003) found that students who tend to learn on surface, scored higher in Habitual Action level. Pahn (2006) in his findings has stated that deep approach also predicts habitual action and reflection.

### Correlations

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**Note:** Correlation is significant at the 0.01 level (2-tailed).
Thus, in a nutshell, Deep Approach Learning can help learners to go beyond the exam – oriented, detached and uninterested way of learning to more understanding and application based learning, encouraging reflective thinking. Moreover, as a learner with deep approach gains deep satisfaction while studying and draws own conclusions about the content, cannot relate to OSA as the learner with such an approach study limited portion for just passing the exam and not for learning.

It is recommended that students should be encouraged to understand and develop the habit of making learning tasks a part of their thinking, critiquing, analysis and connecting to their previous experiences and constructing their own learning. This will make learning long lasting and relevant. The surface approach learning aims at only passing tests and there is no understanding of the content hence seems meaningless and easily forgotten. Thus, the present study cements the relationship between deep approach to learning and reflective thinking which can be of relevance to teacher educators, teachers and students in their perspective towards learning. In future, the researcher intends to expand the participants in yhe survey to include learners from higher education and include variables like academic achievement and epistemological beliefs.

References


Leung, D.Y.P. and Kember, D. (2003); The Relationship between Approaches to Learning and Reflection upon Practice, *Educational Psychology*, 23 (1), 61-71


Phan, H.P. (2006); Examination of Student Learning Approaches, Reflective Thinking, and Epistemological Beliefs: A Latent Variables Approach, *Journal of Research in Educational Psychology*, 10 (4 (3)), 577-610
Phan, H.P. (2007); Examination of Student Learning Approaches, Reflective Thinking, and Self-Efficacy Belief at the University of the South Pacific: A Path Analysis, Educational Psychology


Webliography

academicjournals.org/article/article1380288390_Navaneedhan.pdf
eltj.oxfordjournals.org/content/early/2007/05/07/elt.ccm022.full.pdf
is.muni.cz/th/266245/pedf_m/DPIva_Christodoulou.pdf
www.ijhssnet.com/journals/Vol_2_No_16_Special_Issue/24.pdf
www.ncbi.nlm.nih.gov/pubmed/21927778
www.bcu.ac.uk/research/our-people/abdul-rasheed-amidu
Concept Mapping

Dr. Jayprabha Asore
Associate Professor, Department Of Education
Padmashree.Dr.D.Y.Patil University,Nerul Navi Mumbai

Abstract: Concept mapping is used to organize related information in a visual manner. Study maps clearly and concisely demonstrate hierarchical relationships among the topic, main ideas, and supporting details or pertinent course material. Mapping is a way of picturing course content that enhances retrievability of the information on a test. Maps are useful because they reduce large amounts of information.

Mapping helps you to learn actively. The maps are highly individualized, representing information in a unique and personal way. Concept maps are graphical tools for organizing and representing knowledge. A concept map should be read from the top to the bottom, proceeding from the higher order--more general--concepts at the top to the lower order--more specific--concepts at the bottom. Concept maps also have cross links that show relationships between ideas in different segments of the map.

Key Words: Concept maps, meaningful learning, Education

Introduction

As educators, we often are placed in the challenging position of making the knowledge generated by research available to our audience in a way that makes sense and is useful to them. To do this, we have to understand both 1) the research--judging the validity of its claims and whether they will be useful/helpful to the audience, and 2) the audience--assessing the audience’s needs and existing knowledge in order to make the information meaningful to them. While it takes time to investigate both of these, an initial investment of time and thought before developing educative materials and/or teaching helps us to understand more clearly what we are teaching, why we are teaching it, and how we can address more efficiently and effectively the needs of our audience. The last point is based on a key principle of educating, that the most important factor influencing learning is what the learner already knows. We need to ascertain this and teach accordingly if we are to best succeed in
helping learners to use new knowledge to make decisions, change their behavior, or achieve a different level of understanding.

What is a Concept?
A concept is a mental image, generalization, of certain characteristics and aspects that make up an item. This list of characteristics is not a label, but can be used to describe all examples of items under that category and separate them from non-examples.

Example of a Concept:
Concept: Any warm-blooded, vertebrate animal that has hair on its body
Concept Label: Mammal
Examples: Bears, dogs, humans

Children as young as three years old begin to take notice of the patterns and characteristics of objects and people around them. Even at this young age, they begin to conceptualize and establish connections. After the age of three, concept development begins to include language—questions are asked, new relationships are discovered between old and new concepts and deeper comprehension develops. Unlike facts, concepts cannot be tested for wrong or right answers. Concepts are abstract and can be presented in various ways; there is no correct answer because the concept characteristics vary from person to person. Concepts are also hierarchical and include other concept categories, making concept understanding more complex but beneficial in expanding knowledge.

Meaning of Concept Mapping:
The knowledge that we have about a subject area consists of a construction of the concepts of that knowledge area into a coherent hierarchical system. These concepts are linked together, forming propositions that are distinctive for each individual. This system can be symbolized by concept mapping. Concept mapping is a visual representation of the relationships between concepts held by an individual, materials of a lecture, textbook, or laboratory exercise. By concept mapping even old and familiar material, we often recognize new relationships and meaning. The attached figures show examples of concept maps.

The Theory of Learning Used by Concept Maps
Concept mapping draws heavily on the theory of learning proposed by David Ausubel. This theory started from his stance that: ‘If I had to reduce all of educational psychology to just
one principle I would say this: The most important single factor influencing learning is *what the learner already knows*. Ascertain this and teach him accordingly’. [David Ausubel (1968)]

Key to this theory of learning is the proposition that in the process of meaningful learning, people construct meanings for concepts and propositions based on experiences, building up their knowledge structure. A clear distinction is made between rote and meaningful learning, here, and the students’ prior and existing knowledge is more actively utilized to make sense out of the new knowledge they are learning.

In the more traditional conception of teaching and learning, the student tends to be conceived of as an empty vessel needing to be filled with the knowledge held by the teacher or lecturer as ‘expert’. Learning is demonstrated through the ability to memorize and repeat – ‘rote’ learning.

By contrast, Ausubel argues that meaningful learning involves changing one’s current knowledge as a result of the comprehension of new knowledge. This process is called “assimilation” and there are four fundamental processes that lead to assimilation:

1. Progressive differentiation of concepts and relations over time.
2. Superordination of concepts under more general, more inclusive concepts.
3. Subsumption of new concepts into existing, more general concepts and propositions.
4. Integrative reconciliation to achieve coherence and consistency over time.

In order to assimilate and make sense of new knowledge, students must have opportunities to use what they already know to make sense of what they don’t yet know, and fit that new knowledge into existing frameworks, and adapt and change these over time. ‘Meaningful learning involves the assimilation of new concepts and propositions into existing cognitive structures’.

This difference between rote and meaningful learning is illustrated by following figure -
**Procedure of Building a Concept Map:**

1. Identify the key concepts in a paragraph, research report, and chapter; or simply think of the concepts of a subject area and list them. Some people find it helpful to write the concept labels on separate cards or small pieces of paper, so that they can be moved around.

2. Rank the concepts by placing the broadest and most inclusive idea at the top of the map. It is sometimes difficult to identify the broadest, most inclusive concept. It is helpful to be
aware of the context of the concepts we are dealing with or to have some idea of the situation for which these concepts are arranged.

3. Work down the paper and add more specific concepts.

4. Connect the concepts by lines. Label the lines with action or linking words. The linking words should define the relationship between the two concepts so that it reads as a true statement, or proposition. The connection creates meaning. When you can hold together a large number of related ideas, you can see the structure of meaning for a given subject area.

5. Specific examples of concepts can be added below the concept labels. (e.g., golden retriever is a specific example of a dog breed.)

6. Perhaps you can already see ways that the concept map could be made differently. Remember there is no one way to draw a concept map. As your understanding of relationships between concepts changes, so will your maps. This is what gives the map power and flexibility. Refer to your previous maps to help you visualize the evolutionary process of your understanding.

**Learning Concepts by Concept Mapping**

Concept mapping is a valuable visual learning and thinking technique that helps students understand and communicate a concept and its connections between examples and ideas.

**Concept mapping serves several purposes, helping students:**

- Brainstorm and generate new ideas
- Discover new concepts and label propositions that connect them
- More clearly communicate ideas, thoughts and information
- Integrate new concepts with older concepts
- Enhance knowledge on any topic and evaluate the information

Concept mapping is a valuable theory of learning that teachers can use to evaluate a student’s level of understanding. A concept map is meant to be constantly changed, added to and reconstructed as new information and knowledge is learned (which is why it’s usually easier
to concept map using a computer); the goal is to have the student be able to explain each part of the concept map and their reasoning behind the concepts and connections they made.

A concept map revolves around a main idea, a main concept. Often times, it’s helpful for a student to choose a topic that either needs to be solved or has a conclusion that needs to be determined. From that main idea, related key concepts are brainstormed and added to the map. This is done in hierarchical order; those key concepts then expand to other sub-concepts and ideas. Linking phrases and words help connect all of the ideas and thoughts on the concept map and bring some organization and context to the order of the concepts. Concept maps can be read as sentences starting from the main idea and working out along the sub-paths.

**Concept Maps in Science Education:**

Concept maps can help us to identify, understand, and organize the concepts we plan to teach. They help us specify key relationships (propositions) needed for understanding. When students draw their own concept maps, or when maps are drawn from interviews with students, concept maps can help us identify what our audience already knows. Since a key principle of educating is to begin with what the learner already knows, finding this out is a very important initial step in any educational endeavor. Maps also can help learners comprehend their existing knowledge and aid them in relating new concepts to those they already hold. Since we think with concepts, this representation of the learner’s existing cognitive structure helps the teacher design educative events that the students understand. When students are able to relate these educative events to new concepts, meaningful learning has taken place.

**Why are they useful in learning and teaching?**

- to generate ideas (e.g. brainstorming)
- to design a complex structure
- to communicate complex ideas
- to illustrate the relationships between different components or processes
- to aid learning by explicitly integrating new and old knowledge
- to assess understanding
- or diagnose misunderstanding
Differences between making mind maps and concept mapping

Concept maps provide an elegant, easily understood representation of an expert’s domain knowledge. They are more like webs, showing links between concepts in a more complex way, and they can allow for a range of complexity, from very simple to very complex.

Mind maps are also useful but they tend to be more ‘linear’ in their representation of knowledge, and often it is difficult to show complex links between different concepts, or to communicate the meaning of the concepts themselves with a mind map.
CONCEPT MAP OF
PSYCHOLOGY
AN INTEGRATIVE
ENVIRO-BIO-PSYCH
APPROACH

PSYCHOLOGY

is the

SCIENTIFIC STUDY

of

BEHAVIOR
(SKELETAL & VISCERAL)

involves

MIND
(MENTAL ACTIVITY)

involves

NATURE-NURTURE PROBLEM
addresses

RELATIVE ROLES & INTERACTION
of

MIND-BODY PROBLEM
addresses

RELATIONSHIP
between

ENVIRONMENTAL
(experimental)
INFLUENCES

consists of

SOCIAL
STIMULI

NON-SOCIAL
STIMULI

BIOLOGICAL
(anatomical, physiological, etc.)
MECHANISMS

consists of

NERVOUS SYSTEM

ENDOCRINE SYSTEM

IMMUNE SYSTEM

FREE WILL VS.
DETERMINISM
PROBLEM

embodies

PLANNING
THINKING
CONSCIOUSNESS
(LANGUAGE)

SENSATION/
PERCEPTION

ATTENTION

MOTIVATION

EMOTION

HUMAN HISTORY

EVOLUTION

CONCEPT MAPS

JAY E. GOULD
JUNE 2001

(→ INDICATES “AFFECTS”)


INNOVATIONS IN 21st CENTURY EDUCATION
The Benefits of Using and Making Concept Maps for both Lecturers and Students:

With students: concept maps can be taught and made:
1. In order to assess existing knowledge prior to beginning a teaching/learning session;
2. As a reflective practice to create and make explicit mental linkages surrounding a concept; and/or
3. As a group exercise to improve group problem solving
4. To review problem-solving options
5. To summarize understanding and identify misconceptions
6. To evaluate student progress
7. To evaluate course/program outcomes

With teachers: in thinking about your curriculum, concept maps can help you to:
1. Map out the key concepts you want to teach and the links and relationships between them
2. Map out the points within the course at which you want or need to assess your students and how the assessment links to what you are teaching and they are learning
3. See at a glance where there are gaps in the learning process, and where there are very dense areas that may need to be further unpacked for your students
4. See at a glance how the different parts of your course fit together

For both: the process of drawing the map:
1. Helps the designer understand the domain
2. is a creative process – new discoveries are made as the map is drawn
3. Makes the links between concepts and propositions clear, and thus the meaning-making and knowledge construction process is made more visible and more tangible
4. Shows the designer the gaps as well as the links, so can promote further learning, action and understanding

In short .Concept maps are widely used in education for the following purposes:

- Note taking and summarizing gleaning key concepts, their relationships and hierarchy from documents and source materials.
- New knowledge creation: e.g., transforming tacit knowledge into an organizational resource, mapping team knowledge
- Institutional knowledge preservation (retention), e.g., eliciting and mapping expert knowledge of employees prior to retirement

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- Collaborative knowledge modeling and the transfer of expert knowledge
- Facilitating the creation of shared vision and shared understanding within a team or organization
- Instructional design: concept maps used as Ausubelian "advance organizers" that provide an initial conceptual frame for subsequent information and learning.
- Training: concept maps used as Ausubelian "advanced organizers" to represent the training context and its relationship to their jobs, to the organization's strategic objectives, to training goals.
- Business Concept Mapping used as part of business analysis activities.
- Increasing meaningful learning for example through writing activities where concept maps automatically generated from an essay is shown to the writer.
- Communicating complex ideas and arguments
- Examining the symmetry of complex ideas and arguments and associated terminology
- Detailing the entire structure of an idea, train of thought, or line of argument (with the specific goal of exposing faults, errors, or gaps in one's own reasoning) for the scrutiny of others.
- Enhancing metacognition (learning to learn, and thinking about knowledge)
- Improving language ability and Knowledge Elicitation
- Assessing learner understanding of learning objectives, concepts, and the relationship among those concepts

CONCLUSION:
Concept maps promote the meaningful and active learning, leading to obtain better marks in the final exam and allow organize the learning with the goal of learning, not of memorizing. Concept maps allow following the subject continuously and demanding an effort of synthesis. Concept maps can be used as an evaluating tool, testing the previous knowledge related to a subject which understanding is basic to continue learning or also during the teaching-learning process. Concept maps as a knowledge organizing tool help students to understand, follow-up, and learn subjects with a high load of contents. The development of these activities in teams let students to get better their social capabilities. The presentation and discussion of concept maps improve communicative skills of the students. The realization of concept maps allows that the student to develop generic.
Teachers and learners can look together at concept maps and discuss the meanings represented by them. Thus, maps become tools for exploring and negotiating meaning. The teaching event may be a lecture, discussion or laboratory activity. The sequence and inclusion of materials for the educative event can be selected on the basis of the concepts identified from three areas for which concept maps can be constructed: the curriculum, the teacher and the learner. Sharing the meaning of this knowledge with the learner empowers him to make decisions or act based on thinking that is rooted in understanding. Positive feelings often accompany the experience of connecting new information to existing knowledge in a meaningful way. We learn by adding new concepts to the existing framework, causing the structure to shift and change over time. As new learning continues to occur, it is strengthened because it is incorporated into this existing system.

References:


Common Core State Standards and Visual Learning: Part 1

Moving Away From Lectures: Visual Learning Supports New Learning Models
Transaction Analysis embedded in Decision Making

Ms. Shadab Paloji,
Asst Professor, St. Xavier’s Institute of Education, Mumbai

"In any moment of decision the best thing you can do is the right thing, the next best thing is the wrong thing, and the worst thing you can do is nothing."

--------------Theodore Roosevelt

Abstract: Life skills have been defined by the World Health Organization (WHO) as “abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life”. They represent the psycho-social skills that determine valued behavior and include reflective skills such as problem-solving and critical thinking, to personal skills such as self-awareness, and to interpersonal skills. Practicing life skills leads to qualities such as self-esteem, sociability and tolerance, to action competencies to take action and generate change, and to capabilities to have the freedom to decide what to do and who to be. Life skills are thus distinctly different from physical or perceptual motor skills, such as practical or health skills, as well as from livelihood skills, such as crafts, money management and entrepreneurial skills. There is no definitive list of life skills; certain skills may be more or less relevant to us depending on our life circumstances, our culture, beliefs, age, geographic location etc. Perhaps the most important life skill is the ability to learn. By learning new skills we increase our understanding of the world around us and equip ourselves with the tools we need to live a more productive and fulfilling life. Life skills are not always taught directly but often learned indirectly through experience and practice.

Communication Skills

Interpersonal Skills are the skills we use when dealing with other people, for example we use both verbal and non-verbal communication techniques when engaged in face-to-face communications.

Personal Skills

Personal Skills are the essential life skills we need to help maintain a healthy body and mind.
We are what we eat. We are all aware of the benefits of a healthy diet; Stress can be managed through what we eat, and when we eat it.

How we manage and cope with emotions – Anger and Stress can both be detrimental to our communication skills and also to our health. Learning about anger and stress, recognizing what may trigger them (in us and others), what the symptoms are and how to control or manage such emotions through Anger Management can greatly enhance the quality of our lives.

Many people battle with low self-esteem and confidence which can cause stress and prevent us from reaching our full potential. Improving Self-Esteem and Building Confidence provide practical ways to overcome these issues. Improved confidence and self-esteem are also linked with how we present ourselves to others i.e. Personal Presentation and Personal Appearance.

For most people, most of the time, aggressive behavior is uncommon. Nevertheless many people have experienced some kind of aggressive behavior in themselves or others at some point during their lives. By recognizing the triggers and symptoms of aggression we can adopt communication strategies that can help to reduce or avoid aggressive behavior.

Written Literacy

Communication is a key life skill but it is not always an Interpersonal Skill. Many of us communicate using the written word - through letters, emails, text messages, social network feeds and a host of other methods. Being able to write clearly and concisely is a very powerful way to communicate, either one-to-one or to a much larger audience.

Negotiation

Negotiation is a method by which people settle differences. It is a process by which compromise or agreement is reached while avoiding argument.

In any disagreement, individuals understandably aim to achieve the best possible outcome for their position (or perhaps an organization they represent). However, the principles of fairness, seeking mutual benefit and maintaining a relationship are the keys to a successful outcome.
Assertiveness

Assertiveness is a skill regularly referred to in social and communication skills training. Often wrongly confused with aggression, assertive individuals aim to be neither passive nor aggressive in their interactions with other people.

The Concise Oxford Dictionary defines assertiveness as:

“Forthright, positive, insistence on the recognition of one's rights”

In other words:

Assertiveness means standing up for your personal rights - expressing thoughts, feelings and beliefs in direct, honest and appropriate ways.

Much emphasis is given to problem-solving and decision-making in the modern workplace – these skills are also very desirable in our day-to-day lives.

Life skills and Children’s Right

The United Nations Convention on the Rights of the Child (UN, CRC, 1989) which has been approved by 191 countries explains how societies can enable children to develop well. It lists; the services children should be provided with (including health, education, a chance to play); the factors that children needs to be protected from (for example, exploitation and abuse); and the need for the children to participate in decisions that affect them.

The five core life skills are:

- Decision making
- Problem solving
- Critical thinking
- Creative thinking
- Communication and interpersonal relationships
- Self awareness
- Empathy
- Coping with stress and emotion

Decision making

When trying to make a good decision, a person must weigh the positives and negatives of each option, and consider all the alternatives. For effective decision making, a person must
be able to forecast the outcome of each option as well, and based on all these items, determine which option is the best for that particular situation.

Problem solving and decision-making are important skills for life. Problem-solving often involves decision-making, and decision-making is especially important for management and leadership. There are processes and techniques to improve decision-making and the quality of decisions. Decision-making is more natural to certain personalities, so these people should focus more on improving the quality of their decisions. People that are less natural decision-makers are often able to make quality assessments, but then need to be more decisive in acting upon the assessments made. Problem-solving and decision-making are closely linked, and each requires creativity in identifying and developing options.

Most often than not, we are behaving and acting under the influence of any dominant personality state within us. So when we take any decision we take it with our perspective of parent, child, or adult. To check and make the individuals realize this, the activity that can be conducted is of decision making with the ego states acting upon it.

Teacher’s reflective question: What skills do my students have in making rational decisions?

Title: Decision Making Wheel
Connections: Concept: know thyself – develop a better understanding of themselves
Competencies: learning effective strategies for positive interaction with others plan before deciding / deciding and acting / monitoring and evaluating.

Rationale/ Background: Thinking Skill / Process
Students will learn to think about options and the consequences of those options in making decisions.
There are various games which the students can play with their dominant states prominently acting upon their minds.

Students can be given games like working on solving the Rubik cubes, puzzles, puzzling situations etc. students work in team of two people, partner A and Partner B. All Partner A’s have to be debriefed separately about their role as instructor, and partner B’s about their role as people following instructions. For one round the participants play in the roles for which they are debriefed then second round of game they play their normal self which Then the
second phase is where there is reflection and discussion upon the activity with respect to the life skills

**Setting the stage:** Open a discussion on decision – making strategies. Have you ever made a choice that resulted in a consequence that you did not want? Invite the student to share. How do we decide whether we should do something or not? How do you make a choice or a decision? If we want to improve our consequences, we have to improve our decision making strategies.

**The Activity: (Engage Everyone): 15 min**
- There are various problems in the form of Rubik cubes, and puzzles presented to the students.
- The students are divided into teams with two people in each team.
- From each team one partner is called out and thus there are two large groups with a defined role for each group.
- Each group is separately debriefed regarding their role in the team.
- One partner (partner A) acts as an instructor and the other (partner B) acts as the person following instruction.
- The game starts and continues for 5-7 min with each person playing his / her role in dealing with the challenge.
- After 7 min students are instructed to come out of the role and behave normally, more or less is in adult state where they solve the problem in consultation and consensus with each other.
- Again they deal with the challenge.
- The game continues for 5-7 min, till they come to a solution.
- Now students are debriefed about the decision making wheel and asked to fill it with the perspective of experience they had through the game.

**Final Discussion: 7 min**
1. What were the challenge / problem?
2. What were the choices you had?
3. What do you think the consequences of these choices were for yourself and others who were involved?
4. What values did you need to consider?
5. In the first phase which ego state was dominant in partner A, partner B?
6. What were your feelings (Partner A and Partner B)?
7. In the second phase which ego state was dominant?
8. What were your feelings (Partner A and Partner B)?
9. Is there anything you needed to learn about the challenge?
10. Did you need to ask for help? Who would you ask?
11. What was your decision?
12. Do you think you made the right decision? Why?

**Closing session: Rhythm Clapping Exercise**

Participants are asked to close their eyes and think about a rhythm of a song that they like the most and when given the cue they start clapping in their own rhythm and slowly and increase the speed eventually and then it is noticed that everybody starts clapping finally in the same rhythm. This also shows how we tend to move with the rhythm of the group which we belong to eventually and our decision making is also affected by the group.

*Activity Sheet*

*Decision Making Wheel*

This wheel will help you to make better choices in your life. When you have an important decision to make, start by stating the problem in the hub of the wheel. Next, move through the 9 choices, one by one. When you have a decision make fill in the blanks.
References

http://www.businessdictionary.com/definition/decision-making.html#ixzz2xcp8SWKZ
Creativity in Education

Ms. Suvarna Walse Patil and Ms. Swati Khade
Associate Professor, Department of Education,
Padmashree Dr. D.Y. Patil University, Navi Mumbai

Abstract: Creativity is nothing more than seeing and acting on new relationships thereby bringing them to life. While there are many definitions of innovation, it is defined here very simply: using creativity to add value. Value can be economic, social, psychological, or aesthetic. Creativity is not a personality trait available to only a few. Research has shown everyone has some creativity, but it has been stifled by Freud’s thinking that artistry and creativity are associated with mental illness and the scientific emphasis on materialism and analytical thinking.

There are 120 different, special, and measurable aspects of creative thinking which particularly distinguish humans from other species. These wide-ranging creative faculties have been, and continue to be, critical to mankind’s ability to adapt to changing situations, environments, and systems. Extensive studies of creative thinking have firmly established that individuals exhibiting higher than average scores in creative thinking also exhibit higher than average scores in areas of mental emotional health. 

The term ‘creativity’ was widely used in the schools surveyed but there were variations in what was meant, ranging from an innate attribute to an approach and set of skills that could be cultivated. All the schools initially offered examples of ‘creativity’ in subjects commonly thought of as intrinsically creative, such as the visual and performing arts. However, when inspectors asked about ‘creative ways of learning’, examples were offered from most subjects across the curriculum. Teachers and senior leaders most confidently identified and evaluated creativity as an aspect of learning when it was translated into specific activities such as those set out by the Qualifications and Curriculum Authority’s (QCA) publication Creativity: find it, promote it, rather than expressed as an abstract idea. Creative learning was widely understood to be characterized by:
A variety of theorists, using case studies, experiments and a variety of research methods, have attempted to better understand the sources of creativity and innovation in individuals. While these efforts have contributed significantly to broadening our comprehension of the subject, there is nonetheless disagreement between theorists and many hypotheses that remain to be fully substantiated. The challenge lies partially in the nature and definition of creativity itself. Broad, complex and multi-faceted, creativity can take many forms and can be found within a variety of contexts. It is embodied by individuals with a broad range of personal characteristics and backgrounds. It appears that the only rule is that there are no hard and fast rules concerning the sources of creativity. As such, the following paragraphs synthesize the current viewpoints, with the caveat that our understanding of the topic is still a work in progress.

**Components of creativity**
Three Components of Creativity

Multiple experts provide frameworks and hypotheses on the sources of creativity yet; it appears that the vast majority of their important contributions to the theory can be categorized as falling within Amabile’s three intersecting circles above. Thus, this section of the paper will make use of Amabile’s framework as the organizing principle, within which other theorists’ viewpoints are categorized.

Cognitive psychology provides the most prolific and developed perspective on the sources of individual creativity. In 1950, J.P. Guilford, then President of the American Psychological Association stated in his presidential address that the topic of creativity deserved greater attention.

Following this seminal call to action, psychological research on creativity expanded significantly. These efforts have concentrated on the cognitive processes behind creativity, the characteristics of creative people, the development of creativity across the individual life span, and the social environments most conducive to creativity Teresa Amabile, PhD in Psychology and Head of the Entrepreneurial Management Unit at the Harvard Business School, has provided the field with one of the most simple and yet comprehensive frameworks for the topic. As depicted in the diagram below, creativity arises through the confluence of the following three components:

1. **Knowledge**: All the relevant understanding an individual brings to bear on a creative effort.
2. **Creative Thinking**: Relates to how people approach problems and depends on personality and thinking/working style.
3. **Motivation**: Motivation is generally accepted as key to creative production, and the most important motivators are intrinsic passion and interest in the work itself.

Creativity and Teaching:
1. In schools with good teaching, there is not a conflict between the National Curriculum, national standards in core subjects and creative approaches to learning. In the schools which were visited for this survey, careful planning had ensured that the prescribed curriculum content for each subject was covered within a broad and flexible framework and key skills were developed. These examples were accompanied by better than average achievement and standards or a marked upward trend.
2. Pupils who were supported by good teaching that encouraged questioning, debate, experimentation, presentation and critical reflection enjoyed the challenge and had a sense of personal achievement. The confidence they gained encouraged them to develop and present their own ideas with greater imagination and fluency. Approaches developed successfully in traditionally ‘creative’ subjects, such as the arts and English, were often incorporated into other areas, such as science and mathematics.

3. Inspectors found that the term ‘creativity’ was subject to a variety of interpretations and applications. Teachers were seen to promote creative learning most purposefully and effectively when encouraging pupils to question and challenge, make connections and see relationships, speculate, keep options open while pursuing a line of enquiry, and reflect critically on ideas, actions and results.

4. In a small number of the schools visited, pupils’ personal development as creative learners was not matched by their progress in core academic skills such as literacy and numeracy. This happened where curriculum planning was not sufficiently well-rooted in the content and skills of the National Curriculum. The acquisition of basic skills remains of fundamental importance.

5. Pupils made little progress when the outcomes expected were insufficiently challenging and when they received insufficient guidance. Occasionally, teachers failed to grasp that creative learning was not simply a question of allowing pupils to follow their interests; careful planning was needed for enquiry, debate, speculation, experimentation, review and presentation to be productive.

6. The effective promotion of creative learning depended on the quality of leadership and management and on teachers’ subject knowledge being secure and extensive enough to support pupils’ enquiry, independent thinking and debate.

7. Good professional development within the school was a key factor in helping teachers to encourage and assess creative approaches to learning and improve their subject knowledge. Externally produced resources and short training courses had limited impact without local training and continuing in-school support.
8. Whole-school commitment to developing and using technology habitually also enhanced pupils’ confidence and engagement.

9. Ways of recording and evaluating pupils’ development as learners, rather than their attainment at the end of a unit or a key stage, were not generally well developed or embedded beyond the Early Years Foundation Stage.

10. Partnerships that were planned to complement schools’ mainstream curriculum made a positive contribution to pupils’ learning and personal development.

Creativity in Education:

- The survey schools which had been judged to be outstanding identified a number of factors which had contributed to their development. However, in all the schools visited, one particularly important factor was their confidence that the aims and objectives of creative approaches to learning were worth pursuing. Primary and secondary pupils were emphatic in supporting such approaches. The following responses from primary school pupils were typical. ‘In my learning, sometimes it’s good to work independently – but sometimes we talk things through with talk partners and this helps us learn.’ ‘We combine lessons a lot here, like literacy and drama – it helps us make connections.’ ‘We get to THINK about things!’

- ‘Projects include all sorts of subjects so you have to use your brain more!’

This was echoed by students in the secondary schools visited: ‘We are given the freedom to explore ideas and are encouraged to go as far as possible.’

- Pupils’ enthusiasm and sense of achievement were shared by almost all staff in the schools visited. In the four primary and four secondary schools where any concern was expressed about creative approaches to learning being a successful preparation for external assessments or where pupils’ achievement was not in fact enhanced, this reflected teachers’ lack of confidence in their ability to combine the two effectively or their limited skills in developing pupils ‘ability to question, speculate, solve problems and evaluate what they had done. The following examples illustrate the point. The first is from a primary school and the second from a secondary school. A number of year groups had inexperienced staff who did not make the most of enjoyable activities to develop pupils’ skills in enquiry, decision making,
inventive problem-solving and self-evaluation. Pupils were, for example, clearly enjoying designing a time machine so they could travel back to meet the Egyptians for their topic work. The impact of this potentially very good activity was limited because the teacher failed to promote any higher order thinking. Pupils were not encouraged to evaluate each other’s ideas and opportunities were missed to make connections with mathematics and science, even though there were clear opportunities to do so. Although teachers asked a good variety of questions, opportunities for pupils to ask questions were limited. In one less successful lesson, pupils were asked to be creative in suggesting improvement to ‘a’ school rather than to their own on another known school. Here the theoretical nature of the task failed to motivate learners. The lack of choice given about their individual contribution to the activity compounded the problem, with pupils unclear about why they had been allocated a particular task.

- The secondary schools in the survey ranged from those which exercised academic selection to those whose pupils arrived with low levels of prior attainment, often from disadvantaged backgrounds and in the early stages of learning English. The decision to invest time and resources in promoting creative learning was not taken lightly and they monitored the impact systematically.

- A greater emphasis on pupils’ independence as creative learners did not imply any lessening of rigor; challenging topics were explored in creative ways. For example, a sixth form group investigated the law of diminishing returns, using people and tennis balls. The students were able to explain how they had analyzed the concept collaboratively, worked out how to put their understanding to the test, organized them through the activity, evaluated.

The outcome, refined the activity and, finally, presented their conclusions. They could explain what they now understood about the topic that they had not understood at the start and were emphatic about the benefits of this creative approach to learning. For most schools in this survey with a wide ability range, a focus on creative learning was driven by the need to break down barriers to learning and improve achievement. In all cases, the survey found that this was effective. The emphasis placed by staff on learning being a collaborative business, founded on investigation and firsthand experience, encouraged pupils to feel safe in contributing their ideas, being inventive, making connections and experimenting with
practical approaches to problem-solving. Reviewing their learning constructively with their peers became an accepted and unthreatening part of the process. Pupils across the range of ability and from different social and cultural backgrounds responded positively, as illustrated in these notes made by an inspector during the survey. Making learning personal the creative and open-ended way that teachers approached learning meant that all pupils felt they could succeed. This was particularly apparent when teachers made it clear that there was no single right answer.

The schools in challenging circumstances which positively promoted creative learning demonstrated particularly marked improvement in pupils’ achievement. Expectations were high and, in almost every case, pupils of all abilities were challenged successfully. It was well understood that trial and error aided learning.

In the secondary schools visited, the survey found similarly persuasive examples of the positive impact of creative learning on students’ motivation, progress and attainment. With this rather different approach, many students with previously low attainment and disaffection gained confidence and then competence in working towards accreditation to prepare them for future employment, as the following case study exemplifies. Creativity breeds success in a city secondary school, the attainment of students on entry was well below the national average and the number with a learning difficulty was higher than expected nationally. There was a steadily growing diversity of cultural background with over 50 different home languages. The school’s challenge was to find ways in which to engage students, build on their strengths and give them the knowledge, skills, confidence and perseverance they needed to meet National Curriculum requirements. For example, feedback from pupils and evidence of the work produced showed the positive impact of a dramatic approach to science, with the staging of a crime scene in the gymnasium leading to a challenging programme of forensic enquiry. In addition, pupils who had entered the English education system in their early teens, with limited experience of primary education and with the challenge of working in an acquired language, found that translating some aspects of chemistry, such as bonding, into dance diminished their nervousness and developed their understanding.

During the survey visit, observations of lessons and scrutiny of the students’ work confirmed that creative styles of learning kept them focused on tasks, interested and eager to succeed in all subjects across the curriculum. The students explained that being offered a variety of
approaches, including access to information and communication technology (ICT), meant that they did not give up when they encountered problem.

In all the primary schools, including the two nursery schools, the survey found evidence of improved standards and strong personal development when pupils were encouraged to:

1. develop their understanding by questioning what had been presented to them
2. imagine what might be
3. make connections
4. present their ideas to their peers for review.

Phonics teaching is the daily programme, often to smaller groups of children of similar abilities. The sounds being learnt and any phonically irregular words being taught at that time were reinforced through creative activities when the children were encouraged to make connections and construct stories through play.

This combination of relatively formal, teacher-led learning and more independent exploration and discovery ensured that, very early on, pupils learn how to connect the latter with the necessary knowledge and skills. This increased the pupils’ confidence in their speaking, reading and writing. In an infant school, for example, standards in Year 2 consistently exceeded the national average. The teachers identified the creative approaches to speaking and listening, involving imaginative role play, as a key component in how well pupils improved their skills in conversation. The teachers also provided evidence of how the pupils’ language development fed into their improved confidence in writing.

**Personal development and creativity:**

Pupils’ confidence, sense of purpose and pride in achievement were very evident in all the schools visited. Inspectors’ discussions revealed that, in the schools which deliberately set out to encourage independence, adaptability, imagination and curiosity, most of the pupils had very positive attitudes to learning. In all but two of the 44 schools visited, the survey found pupils ‘personal development, in terms of the activities and attitudes characterizing creative learning, to be good or outstanding. The most striking examples of pupils’ positive personal development were presented by those who came from challenging circumstances, as the following example illustrates. Making a difference an eight-year-old girl, who, according to her head teacher, had been ‘transferred out’ of more than one school because of her
aggressive behavior, said: ‘Here we don’t do biting and spitting? We do work things.’ At the
time, she was working with another child and a teaching assistant on creating mathematics
questions for the rest of the class to answer. Mathematics was more than ‘doing sums’, she
pointed out. She was taking very seriously her responsibility to help others grasp what the
class was studying by embedding the relevant calculations imaginatively within as election of
‘real life’ cameos. She was determined that her questions would catch the imagination of her
peers as well as challenge their understanding. She had high expectations, was quick to
identify weaknesses in her own or her partner’s suggestions and showed a level of
concentrated engagement that the teaching assistant said would have been unimaginable not
long before. She was confident of her role and her worth and keen to contribute positively to
her class’s learning.

Pupils were seen to tackle their personal areas of difficulty more steadily when they could
offset them with achievement in an activity that gave them scope for self-expression and self-
esteem. A teenager, for example, who struggled with most of the core curriculum and with
acquiring English language skills, proudly demonstrated her drumming skills before
reflecting: ‘Anyone can play the drum— it takes love to play it well. ‘Pupils across the age
range responded enthusiastically and with commitment to opportunities to contribute
positively to their school or local community. Such opportunities drew on their capacity as
creative learners. This was especially true when they could see clearly how they were
developing skills for later life, for example through participating in decisions about the design
of new school facilities or collaborating with professionals to present a radio programme or
make a film. In the following example from one of the primary schools, creative ideas, shared
planning, well-managed team work and self- and peer-review all emerged as pupils
assembled a weekly broadcast. The week ‘on air’ the director of the local radio station came
to the school each week. Wither team she had built a radio studio in the school at very
reasonable cost and continued to fund the project. A telephone link had been installed in the
studio and pupils now carried out interviews with celebrities such as the Look North weather
man. A media team in each class was responsible for taking forward pupils ‘work and ideas.
Once the content was chosen and shaped, the team worked in the studio to prepare the
broadcast. Team members provided support and guidance for pupils who took part on an
occasional basis. When special visitors were brought in for interview, the pupils always
designed the questions, in consultation with staff, and showed their skills in keeping
questions open-ended. They played a key role in editing the recorded material each week into a 10-minute programme. Participation was wide. Classes took MP3 players out on visits and interviewed people in different settings. Outside the Houses of Parliament, for example, they asked visitors what they thought about the building and what it represented. Every class listened to the weekly broadcast before they went home on a Friday and a podcast was made available on the website for families to access during the week. In discussion with pupils it was clear that this sustained activity reinforced a sense of community through the school as well as developing self-discipline, teamwork, time management and communication skills, creativity and critical thinking.

**Effective teaching and Creative learning:**

Creative learning was often presented under a different banner, for instance where it was being developed as part of a whole-school approach to the ‘enjoy and achieve’ outcomes of the Every Child Matters agenda. The schools that encouraged creative approaches to learning deliberately set out to promote a variety of ways of thinking and problem-solving. The survey judged eight of the 24 nursery and primary schools to be outstanding in boosting pupils’ achievement and enjoyment of learning, 15 were good, and one was satisfactory. In the secondary schools, the profile of judgments on the effect of creative learning was similar: five of the 19 schools were outstanding, 12 were good and two were satisfactory. In both the primary and in the secondary schools visited, the most effective teaching made good use of creative approaches, and also helped the young people develop their own creative abilities. The following aspects were observed.

1. Teachers guided but did not over-direct pupils.
2. Considerable emphasis was placed on developing skills, especially problem solving and communication, with pupils able to track their progress and to understand how one level of competence led on to the next.
3. Teachers’ skills in questioning pupils were excellent. They fostered a spirit of enquiry and an awareness of there being multiple possibilities rather than one acceptable answer.
4. Pupils with widely differing abilities and interests were fully engaged and appropriately challenged.
5. Teachers and pupils used many kinds of technology effectively: to gather information, to model possible solutions to complex questions, to construct presentations and to communicate in an engaging and provocative way.
6. Role play was used to explore ideas, to encourage empathy and speculation, to practice working in teams and making decisions, and to build confidence.

7. Teachers and pupils responded enthusiastically, purposefully and with curiosity to opportunities offered by partnerships and outsiders with specific expertise. Intelligent planning was the key to effective and creative learning, especially so that the degree of management involved was unapparent to the pupils. They then had the sense of individual discovery rather than of seeing themselves shepherded along a path that had already been mapped out for them. The following example from a nursery class illustrates this well. Getting to grips with the natural world the objective was to heighten young children’s awareness of the natural world around them, to stimulate their imagination and to develop their language. The teacher had planned carefully to ensure that aspects of creative learning, such as exploring and seeing relationships, were encouraged in and developed by each child. The teacher began the session by describing the challenges and needs facing small creatures determined to survive and thrive in a very special place, namely the garden area of the grounds to which the nursery had direct access. The pupils listened attentively to the cameos of life and death in the mini beast world. Then, working in small groups, they selected a mini-beast from a range of pictures as ‘their’ creature. They asked questions and speculated about the needs and probable pattern of their creature’s existence. ‘What does it like to eat?’ ‘Where does it like to live?’ ‘What scares it?’ Well-prepared, they tested their speculations in the school garden against what they could see, feel, smell and hear. Back in the classroom, they discussed what they had found out. The teacher used open-ended questions to prompt responses and highlighted useful vocabulary. The children’s sense of ownership of ‘their’ creature and of the information they collected and presented about it was striking, as was the seriousness with which they listened to the information presented by others. By the end of the session they were able to explain some of the ways in which creatures sharing an environment affected each other’s living and dying.

8. Across the age range, teachers’ questioning provided opportunities for pupils to be creative. In the less effective lessons, questioning too often focused on a relatively narrow set of responses. This was inhibiting, even in subjects where basic information and rules were essential as foundations for more investigative approaches. In modern languages, for example, there was clearly a correct way in which to ask the time or ask for directions; learning was more effective, however, when pupils were given
scope to experiment with vocabulary and sentence structure. An incorrect response was not simply dismissed; when appropriate, differences between the intention of the initial response and its likely interpretation by a native speaker were explored.

9. Effective questioning stimulated higher order thinking skills, to encourage pupils to apply their learning to new situations and to think of alternatives to standard solutions. This challenged more able pupils especially but, well managed, successfully engaged pupils across the ability range. A productive balance between instruction and independent enquiry marked out the most successful lessons.

10. Vocabulary used by pupils, such as ‘zigzag’ and ‘chequered ’, as well as to mathematical terms such as ‘semi-circle’ and ‘rectangle’. Then, confidently and independently, pupils were able to produce and analyze, in basic mathematical terms, their own created shapes and patterns. The four or five most able pupils worked on computers, arranging a given selection of shapes into as many patterns as they could and evaluating each other’s constructions. In primary and in secondary schools, role play was often used effectively to encourage questioning and attention to detail, and to extend the topic imaginatively. ‘Hot seating’, a concentrated form of role play, gave pupils valuable opportunities to explore ideas and events imaginatively.

11. Inventive use of spaces and materials encouraged creative learning. In one of the infant schools, for example, an old, ‘well-worn’ building stimulated learning through providing space and inspiration for lively art work, three-dimensional constructions and animation projects. The displays celebrated individual achievements and encouraged other pupils.

Closure:
Everyone has unique knowledge and experiences that can be tapped, given the proper environment. This environment must be free flowing and non-judging to take people through the mental block they learned in early childhood. These blocks are associated with the risk of being wrong. The motivation for innovating comes largely from the joy of doing something that has never been done before. It is like going on an expedition and risking everything to be the first person to climb a mountain or sail around the world. It taps the same drive that exists within a composer or an artist who wishes to create something forever.
References:
http://www.unc.edu/~gdhughes/ARTICLES.HTM
http://www.unc.edu/~gdhughes/ARTICLES.HTM
http://www.unc.edu/~gdhughes/Processes.htm
Enhancing Grammatical Accuracy among upper primary students through Game Based Learning Strategy

Ms. Dimple Varshney
Alumnus (M.Ed.), K. J. Somaiya Comprehensive College of Education, Training and Research

Abstract: The main purpose of the study is to explore the effects of the use of games as a teaching strategy for raising the grammatical accuracy level of upper primary students of St. Theresa high school as a second language. The study aims to determine the views of upper primary learners with regard to learning Grammar with games. The study focuses on the resources which can assist our teaching of grammar while providing a relaxed atmosphere and motivated students. Such activities involve students’ participation and we let our students use their long-term memory and learn effectively during such activities. So there is an undeniable fact that if our concern is to provide a successful and beneficial teaching, we must not hesitate to use games activities, which bring the structural, pragmatic, prosodic and communicative aspects of language together, in our language classrooms.

The study was conducted on 45 students of St. Theresa School as an experimental group and received 18 periods over 1 week of grammatical instruction by the teacher. The data was collected by using grammatical accuracy test and focus group interviews to get profound insight about the students’ opinions.

Descriptive analysis method was used for the analysis of the data obtained. As a result of the study, it was concluded that learning grammar with games was effective in learning English in that it increased students’ motivation, changed their attitudes to English classes positively, increased their self-confidence, peer interaction and teacher students interaction and thus led to better and more retainable learning in grammar and augur well for an eventual improvement also in the rate of grammatical accuracy.

Key Words: English grammar, learning English with games.

Introduction
India is a vast country with many regional languages. Yet the people in India give much importance to learn, read and write English -a language which is accepted universally and forms the means of effective communication worldwide. Hence the Indian learners yearn to
learn it effectively to gain command over language skills by acquiring perfection in terms of grammar, pronunciation, vocabulary, etc. of the language. Grammar teaching is a structure based formal activity that helps the learner to develop language skills further. Therefore a teacher must be trained to use well developed and advanced techniques in a language classroom to teach grammar. Grammar is the branch of linguistics that deals with the form and structure of words (morphology) and their interrelation in sentences, called syntax (meaning). The study of grammar is important as it reveals how language works and forms an important aspect in both English acquisition and learning.

Previously grammar was taught in such a way where the learners learnt the grammar rules but failed to apply them in the real life situations. This explicit grammar study and the grammar-focused lessons were often not communicatively based. This became boring, cumbersome and difficult for learners to assimilate.

It is essential to teach elements of language and develop communicative abilities in our students. For this a teacher should think of different ways of introducing the sounds, structure and vocabulary of English, including colloquial forms of conversation and the four basic communication skills. Grammar teaching should be implicit, or explicit, as teaching / learning conditions may dictate. The various learning styles and intelligence strengths of the learners should also be considered while adopting methods and techniques in teaching grammar because there is no one best way to introduce and provide practice in them. All these innovative techniques which are based on communicative activities can be used effectively for all phases of a grammar lesson; thus the present day teaching of grammar will gain a new insight. So there is need to make the learning of grammar interesting and enjoyable hence, researcher has used Game Based Learning strategy.

**Aim of the study**

The researcher conducted the study keeping the following aims in mind

- To develop an intervention strategy for teaching Grammar in English
- To develop an intervention strategy based on Game Based Learning
- To test the effectiveness of Game Based Learning Strategy for enhancing grammatical accuracy in English language among upper primary students
Objectives of the study

In order to fulfill the above mentioned aims, the objectives were as follows:

O1: To enhance the grammatical accuracy among the students through GBL

O2: To ascertain the pretest scores of Grammatical Accuracy in English Language among standard seven students of St. Theresa High School;

O3: To design and implement Game Based Learning Strategy for Enhancing Grammatical Accuracy in English Language among standard seven students of St. Theresa High School;

O4: To ascertain the post test scores of Grammatical Accuracy in English Language among standard seven students of St. Theresa High School;

O5: To compare the pretest and post test scores of Grammatical Accuracy in English Language among standard seven students of St. Theresa High School;

O6: To study the received utility of the intervention strategy based on Game Based Learning for enhancing grammatical accuracy in English language among the students.

Hypotheses

In pursuit of above objectives, the following null hypothesis was formulated:

There is no significant difference in the pretest and post test scores of Grammatical Accuracy in English Language among standard seven students after using Game Based Learning Strategy.

Research Question

In pursuit of above objectives, following research questions are raised:

1) What are some of the grammatical inaccuracies present among students of std seventh?

2) What is according to the students of std 7th the effectiveness of the game based learning strategy for enhancing grammatical accuracy among them?

3) What are some of the difficulties the researchers go through in executing gbl strategy among the students of std seventh?
Methodology

The researcher has used a Mixed – Method Research Design of Embedded Experimental Type.

The Embedded Design used by the researcher is a mixed methods design in which one data set provides a supportive, secondary role in a study based primarily on the other data type. The Embedded Design used by the researcher includes the collection of both ‘quantitative’ and ‘qualitative data’, but one of the data types plays a supplemental role within the overall design.

The present research was conducted in three phases which are represented diagrammatically as follows:
Participants:

The sample of the present research comprises of 45 students of standard VII of St. Theresa High School, Ghatkopar.

Tools of research of the study

The researcher use following tools for collecting data-

1. Intervention strategy based on Game Based Learning
2. Grammatical Accuracy Test.
3. Focus Group Interview Schedule.
4. Daily reflection of the researcher.

Techniques of Data Analysis

a. Descriptive Analysis

✓ Measures of Central Tendency: Mean, Median and Mode.
✓ Measures of Variability: Standard Deviation
✓ Measures of Divergence from Normality: Skewness and Kurtosis
✓ Measures of Probability: Fiduciary Limit

b. Inferential Analysis

The researcher used t-test to find out the significant difference between means of pre and post intervention grammatical accuracy scores.

The following table shows a relevant statistics of pre-intervention and post intervention achievement in grammatical accuracy scores of standard seventh students.
**Major findings of the study**

1] The null hypothesis of the study stated that “There is no significant difference between pre-intervention and post intervention grammatical accuracy scores of standard VII students”. The obtained value of ‘t’ for pre intervention and post intervention grammatical accuracy scores of standard seventh students is 9.71 which is greater than the table value of 2.69 at 0.01 level of significance which means that the null hypothesis was rejected. Thus, there is a significant difference between the pre-intervention and post intervention grammatical accuracy scores of standard VII students. The value of $100 \cdot \omega_{est}^2$ obtained is 53% which means that there is 53% variance in the grammatical accuracy and its association with training in intervention strategy based on Game Based Learning.

2] Analysis of data collected through focus group interview of standard seventh students to determine the perceived utility of the intervention strategy in enhancing grammatical accuracy of English language revealed that the intervention fostered grammatical accuracy of English language by using Game Based Learning Module which help students in enhancing their writing and speaking skill, learning and understanding grammar rules, create confidence and interest among the students regarding the topic.

**Conclusion**

1] This study aimed at developing and evaluating an intervention strategy based on Game Based Learning strategy for fostering positive attitude towards learning of English grammar. After implementation of the module, the researcher statistically found that there is a
significant difference between pre and post intervention grammatical accuracy scores of standard VII students of St. Theresa High School. This increase may be attributed to:

- Game Based Learning intervention strategy.
- Activities related to Game Based learning for enhancing grammatical accuracy of English language used by researcher helped to develop grammatical accuracy in making sentences.
- Conducive classroom environment which is the important feature of GBL education.
- Ingenuous participation of learners.

2] The students of standard VII of St. Theresa High School found the intervention strategy based on Game Based Learning to be effective in enhancing grammatical accuracy of English language because

The positive response given to the intervention leads the researcher to conclude that every school needs to adopt Game based Learning strategy and direct the youth towards developing their grammatical accuracy of English language. After all, in the education of our youth, lies the hope of a better tomorrow

References:


Websites
An Innovative Strategy for Addressing Diversity in a Science Class

Dr. Pooja Birwatkar
Visiting Fellow, Homi Bhabha Centre for Science Education, Mumbai

Dr. Sugra Chunawala
Associate Professor, Homi Bhabha Centre for Science Education, Mumbai

Abstract: A project called 'Science Education and Diversity' (SED) funded by the European Union's FP7 programme was initiated by the University of Exeter in 2010 and was simultaneously conducted by the six partner countries, namely UK, Netherlands, Turkey, Lebanon, India and Malaysia. The Indian chapter was conducted by the Homi Bhabha Centre for Science Education and was completed in 2012. It aimed to understand the relationship between science education and diversities. The present paper gives a broad summary of phase three of the project which was an intervention carried out in 3 secondary schools of Mumbai, where the topic “Biological diversity” was taught to class VIIIth students. Using a design based pedagogical framework an attempt was made to use the topic to also address the diversities in human beings (gender, religion, culture, etc). The pre-intervention findings showed that teachers largely ignored addressing diversity in the classroom in their teaching-learning activities. Post-intervention too there was not much change observed in the teachers’ stance. The paper provides implications for addressing diversities through the school curriculum.

Key words: diversity, science, gender, religion, culture, intervention

Introduction

Homi Bhabha Centre for Science Education was involved in an international project called Science Education for Diversity (SED). The main aim of this project was to analyze how the involved countries namely Lebanon, Turkey, UK, Netherlands, Malaysia and India were addressing diversity (religion, caste, regions, languages, religions, socio-economic classes, habitation and gender) via science education.

The project was conducted in three phases. The first phase consisted of studying the educational policies of the country regarding diversity and science education. The second phase assessed the attitudes and views of students and teachers regarding diversity and
science education. The present paper provides highlights of the third phase which involved an intervention in a few schools. The main objectives of this intervention were:

- Developing a pedagogical theoretical framework to make science education suitable for diverse learners.
- Providing training to teachers regarding the different aspects of this framework.
- Devising activities to engage science teachers in teaching science to culturally diverse students.
- Developing an understanding of the issues that need to be addressed when attempting to transfer good practices suggested by the theoretical framework into different settings.

**Science and Diversity: The relationship**

While science is depicted as being objective, non-negotiable, culture and value free by most science curriculum (Schwedes, 2008) it is pertinent to note that the interaction between different aspects of diversities do affect attitude towards science as well as science outcomes (Lee and Luykx, 2006). According to Driver et al., (1992) personal experiences and environments shape the way the students understand the natural world. When students from diverse cultures come to school they bring with them an already constructed knowledge structure that includes their home language, their cultural experiences as well as the values they learn as a part of their family and community life. Their experiences may at times differ or be antagonistic to what they learn in their science classes.

A study by Lawson and Thompson (1988) has indicted that students do possess alternate conceptions regarding scientific ideas that have roots in their personal experiences and backgrounds and could be potential obstacles in the path of learning. The situation wherein students in their science classes carry ways of knowing that are different from science perspective can be challenging as there is discontinuity of students knowledge with nature of science or way science is taught in school (Atwater, 1994 and Gallard, 1993). In the face of such discontinuities between scientific views and cultural experiences, the students need to continuously shift between their already constituted knowledge derived from their cultures and the scientific knowledge offered in the school environment if they do not want to abandon either of them.
Addressing diversity in the Indian education context

Look at the Indian scenario one finds that students in India education system are viewed as a homogeneous mass and subjected to a uniform curriculum which does not pay much attention to diversity on the country (Chunawala and Natarajan, 2012). Along with lack of basic and infrastructural resources there are also huge urban rural disparities and lacunae in the curriculum (India Science Report, 2005).

The National Curriculum Framework for Teacher Education (NCFTE), 2009 while reviewing the status of school education does point out the regional, social and gender disparities still continue to pose challenges and the need now is of teachers who can integrate academic learning with social and personal realities of learners and responding to diversities in the classroom. NCFTE further envisions a teacher education curriculum that reciprocates to diversities.

A report titled 'Inclusive Classroom, Social Inclusion/Exclusion and Diversity: Perspectives, Policies and Practices' by Deshkal Society, Unicef India and Care India came up in 2010. This report has recognized several key concerns that policy makers and practitioners in Indian education system need to focus on like recognizing the increasing flow of children with wide range of diversities into the education system and this bringing forth several challenges and issues that need to be recognized first. The study also suggest that school based practices and processes in the wake of such diversities needed to researched into which could aid in developing effective pedagogical strategies and practices. These teaching learning practices need to be regularly evaluated and feedback is to be generated leading to improvisations.

Design based Framework of Intervention

Design-based research is a cyclic process which leads to transforming the theoretical framework of teaching-learning into novel and effective learning situated in the context of the local educational settings, and consequently increasing potential for educational innovations (The Design-Based Research Collective, 2003). For our intervention the design based framework developed focused on a “guided collaborative critical reflection on action as method of CPD (Continuous Professional Development of teachers)”. It highlighted the following aspects in teaching-learning:
• Relevance of teaching material which can be
  - Controversial issues-based
  - Science related events in the media
  - Everyday world of students

• Guided Collaborative Inquiry based Science education
• Dialogic Teaching---Teaching for and through dialogue involving
  - Argumentation
  - Responsiveness to multiple voices
• Critical Epistemology: Reflection on ways of knowing
  - Reflection on one's own thinking and assumptions

The Intervention phase

The intervention programme was also divided into three phases:

• **Phase I: Pre intervention phase**
  - Classroom observations and teacher and student questionnaires and interviews

• **Phase II: Intervention phase**
  - Lesson planning and execution

• **Phase III: Post intervention phase**
  - Feedback

A brief outline of these phases is given in the flow chart below (Fig. 1). As seen from the framework, data was collected in all the 3 phases of the intervention. The collected data was both qualitatively and quantitatively analyzed.
As a part of the project, an intervention was carried out wherein science lessons were planned and taught in a way to sensitize teachers and students to diversities. This paper gives an account of one such intervention programme where the topic ‘Biological Diversity’ was taught to class VIIIth students in three English medium schools of Mumbai district. The choice of this topic was made by the teachers. In our workshop with teachers we initially introduced them to our framework and once the topic was decided by consensus, activities were planned and shared by all 4 teachers (3 female and one male).

**Research Question:** What kind of interventions would help bring about meaningful engagement in integrating issues of science education for diversity in the curricular context?

**Methodology:** As a part of the project, an intervention was carried out wherein science lessons were planned and taught in a way to sensitize teachers and students to diversities.

**Sample:** The sample size in this study was 161 students from 3 English medium schools of Mumbai district with 43% being girls and 57% being boys. The sample of teachers consisted of 3 female and one male.

**Tools** used were researcher's checklist and teacher feedback questionnaire.

**Researchers' check-list:** This check-list was used during the observation of the transaction of the lessons in the pre intervention phase and during the intervention phase. It had various items which were related to different aspects of the classroom teaching like: About the classroom, Form of address in the classroom, Classroom situation, Methodology of teaching, Topic and Teaching, Quality of delivery, Behavior in the classroom, Classroom interaction, Students' contribution to the lesson, Nature of science and Issues of diversity.

**Teacher's feedback questionnaire:** Post intervention a questionnaire was given to each teacher to get their feedback regarding different aspects of intervention like about lesson plan and its implementation and science education and diversity. There were total of 27 questions under these sections which were aimed to know the kinds of diversities teachers perceive in their classroom, whether before intervention they addressed these diversities via science teaching or not, which stance does the teacher adopts while dealing with diversities in the classroom. Further it aimed to know teacher's views on the lesson plans made for intervention programme, their involvement and satisfaction level in preparing the lesson plan as well as the shortcomings of the intervention programme. They were asked about the issues and areas
which were addressed through the lesson plan and also the type of diversities which the lesson addressed.

The choice of this topic was made by the teachers. In our workshop with teachers we initially introduced them to our framework and once the topic was decided by consensus, activities were planned and shared by all teachers.

Session I: Introductory session on Biological diversity

The lesson began by assessing the previous knowledge of the students through questions which tapped experiences of students and allowed discussion such as:

**What form of structure/growth appears on the moist piece of bread if left in a room for few days? Is this growth living or non-living?**

Through examples given by both teachers and students, a discussion was initiated regarding the diversities that exist on earth. The discussions focused on inter and intra species differences in diversity. As an example of intra species differences, the teachers asked the students to identify the diversities amongst themselves. The teacher prompted the discussion by asking: “Do all of us in this classroom look alike?” and then asked them to state the differences and the similarities. Some of the differences referred to the color of hair, skin, eyes, shape of face, height, sex, etc. A worksheet on different traits and the variations in them across people was given to students to fill and later discussed.

**A few examples from the worksheet**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Variation</th>
<th>Indian</th>
<th>Chinese</th>
<th>African</th>
<th>American</th>
<th>Tundra region</th>
</tr>
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<tbody>
<tr>
<td>Colour of eyes</td>
<td>Black</td>
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<td></td>
<td>Dark Brown</td>
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<td>Light Brown</td>
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<td>Other</td>
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Session 2: Relating biodiversity to human diversity

The session began with the teachers referring to some non-physical aspects among students that also differ, such as culture, ethnicity, language, belonging to a certain region and religion. An argument was initiated around the following topic in order to dispel some gender associated myths.

a) A common myth is that brain size is related to intelligence and since females have comparatively smaller brains so they are less intelligent.

Interestingly students were able to point out the flaws in this argument. A small excerpt from the discussion in one classroom is presented:

Teacher - *So do you think brain size and intelligence are related?*

Students- *No.*

T: *Can you please tell me why you think like that? Give me your ideas.*

S1(Girl)- *it depends on the knowledge of the person, not on the brain size.*

S2 (Boy)- *The person needs to know how to learn and become intelligent....Even if you have large brain, you should know how to learn.*

T- *So, if one has larger brain, then one can store more information, hence more intelligent?*

Students in chorus- *NO!*

b) Flash card activity

A set of flash cards (10 each) for the life forms in 7 categories Pisces, Amphibia, Reptilia, Aves, Insects, Plants and Mammalia were made. Another unique category unique was a

<table>
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<tr>
<th>Feature</th>
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<th>Chinese</th>
<th>African</th>
<th>American</th>
<th>Tundra region</th>
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<tr>
<td>Height</td>
<td>Short</td>
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collection of human beings (both men and women) from all over the world- South American tribal, people from Tundra region, Caucasians, Middle Eastern people, Chinese, Indians and Africans. They differed from each other from the color of their skin (white, brown, black), hair color (red heads, brunettes, black hair, blonde), color of their eyes (black, brown, green, blue), height, weight, stature, physical features etc.

The students were divided into groups and each group was given a set of flash cards of a life form and a worksheet. The group task was to first find out the similarities between the photos on the flash cards and then the differences between them.

![Picture 1: Students working in groups with flash cards](image)

The aim of this activity was that students would be able to distinguish between inter-species and intra-species diversity. For example, students were expected to notice that there are different species of fish, but there are similarities among the different species. Thus they would be able to identify difference among various species and also identify differences that can be seen within the same species.

In case of the set of flash cards about human beings, the teachers pointed out that apart from physical differences many of the differences were cultural arising out of differences in dress/ornaments, among people of different ethnicity, region etc. Another aim of this activity was to get students to work together in groups and defend the points over which diversity exists. There was lot argumentation, debate, collaborations and student-group interactions along with peer learning. One question in the worksheet was interesting and was aimed at getting students insights into how they themselves feel about living in a diverse society. The question was as follows:
Would you like to live in a community where all human beings—Look and talk in the same way

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<tr>
<th>Yes</th>
<th>No</th>
<th>I don't know</th>
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<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>I don't know</td>
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</table>

Follow the same religions and customs

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th>I don't know</th>
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<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>I don't know</td>
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</table>

Have the same opinions/views

<table>
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<tr>
<th>Yes</th>
<th>No</th>
<th>I don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>I don't know</td>
</tr>
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</table>

Give reasons for your answer.

Most of the students felt they would like to live in communities which are diverse and marked “no”. Through their answers it was clear that they did understand that people are different i.e. they speak different language, follow different religion and hence there should be tolerance towards accepting this diversity. They felt that living with diverse people would provide them opportunity to learn and gain knowledge about different and new things. One student voiced that we require diversity because diversity allows us to have choices in our life. According to another student, if everybody is same then how can people get to know about new things? Some students stated that if everybody would have followed same religion and same customs then it would have not been possible to know about the good things about other religions and there would have not been any novelty in festivals. A few students were not in favor of living in a diverse atmosphere mostly because of the conflict factor and worry over violence. Many among them were of the opinion that following same language or religion and having same opinion would help to increase unity among people and would also decrease discrimination that takes place against anyone in the community.

c) Gallery walk

Students were asked to bring forest products from their homes. Students were quite excited and brought a range of items from medicinal to objects of everyday use that are used by almost everyone.
Picture 2: Forest products brought by students and the Forest Products displayed for Gallery walk

These objects were all arranged and the students had a gallery walk where they saw the wide variety of products brought by others. The teacher pointed out that forests serve us in so many ways and a decline in their numbers can bring in shortages of these products and disrupt harmony. The decline in forests due to humans was consciously linked by the teacher to the declining female sex ratio in India which is also cultural and not biological. Another activity was undertaken wherein a map of India was displayed. Post-its having male/female ratio of different states of India written on them were given to students and they were asked to place these post-its to the corresponding states on map of India. The activity increased students familiarity with the states of India and male female ratios in differing states. The teacher discussed reasons for the unequal ratios and differences in states regarding male female ratios.

Picture 3: Map of India with sex ratio post-its put by students
Classroom observations during the intervention

The lesson plan was designed to facilitate dialogic teaching. Dialogic teaching is a two-way process which improves teacher and student communication as well as student-to-student communication. It is also a medium through which students can sharpen and elaborate their thoughts. When a teacher uses this type of pedagogy, it can lead to shared knowledge and better understanding of the domain (Bereiter and Scardamalia, 2005).

A form of dialogic teaching, that is, argumentation, was given particular importance in our lesson plans. Students in an argumentation process will try to articulate reasons for supporting their claim, in an attempt to convince others of the same. The process also involves expressing doubts, asking questions as well as considering and highlighting alternate views (Driver, Newton and Osborne, 2000). The pre-intervention phase questionnaires indicated that most students never argued with their teacher even if they had some doubts/disagreements regarding what was taught during science classes.

The lesson plan had activities, such as debates and group work which facilitated dialogic interaction between students. Teachers did initiate questions and also allowed students to raise questions and argue their reasons with other students as well as with the teacher. The classroom observations during intervention showed that dialogue between teacher-student, student-student and student-group increased considerably.

The views of teachers regarding diversity and the programme to address them

The teachers had a neutral stance on gender diversity. They felt that there was no need to focus on the different interests or experiences of boys and girls and they claimed that students were students and science was neutral. When teachers were asked prior to the intervention regarding the kind/s of adjustments they made in their teaching on account of cultural differences amongst their students it led to some interesting findings. One teacher had actually previously never made any adjustments but would like to do so now while another teacher accepted that though he did make some adjustments these were limited.

After observing the classroom situations in pre-intervention and intervention phase as well as interactions with teachers, reviewing their responses in the phase two, it was gathered that the teachers did not reflect on diversity amongst students and the role it could play when they were planning for the teaching learning process. According to researchers that have dealt with instructions which have been culturally relevant, a teacher can address the interests of their students and help in skill building if they have knowledge regarding the students' socio ethnic
cultures, their values as well as their languages and literary practices (Abt-Perkins and Rosen, 2000).

**Evidences regarding students understanding and making progress in the lesson**

Teachers were asked what evidence they had that students had made progress in the lesson taught during intervention. Teachers mainly concentrated on evaluating the performance of the students on the basis of some oral or written form of examination and in some cases assignments. Such tests would have focused only on textual and content related information and would have been confined within the boundaries of the text of the chapter. What the teachers failed to appreciate was that the intervention was not meant only to make the students merely know the contents of the chapter which would have happened even in the regular classroom sessions.

Berry (2006) in a study on teachers’ assessment practices for classroom diversity found that teachers were more concerned with the academic needs of students in comparison to social and affective domains. The aim of the present intervention was to make teachers respond to the diversities in the science classes and help students become aware of these and also be able to have a voice.

**Implications**

The role of teachers is crucial in terms of generating a population of students who are well equipped to handle diversity. There is a need for teachers to plan lessons in such a way that these allow for linkages with gender and cultural diversity. However teachers are themselves unsure that this is a legitimate step that they should undertake. This clarity can be achieved if there are attempts made by professional teaching institutes to initiate analysis of the curriculum for the professional teacher training courses in terms of making the would-be teachers sensitive to issues of diversity and equipping them with strategies to deal with it. Attempts need to be made to design modules for in-service and pre-service teachers regarding how to address diversities within the curriculum. Researches also need to be conducted in areas such as;

- Survey of the effect of the multicultural backgrounds, linguistic abilities, religion and regional disparities, gender, socio-economic status of students on teaching and learning.
- Reviewing of the best practices evolved in different countries in terms of dealing with diversity via science teaching and evaluating their feasibility in the Indian context.
• Correlation studies on teachers' effectiveness in dealing with diversities with factors like teaching experience, teacher's own culture, ethnicity, gender and native language as well as kind of professional preparation program could be conducted.

Conclusion

Diversities of all kinds are a feature of heterogeneous Indian classrooms. Though it may seem on the surface as an issue that has no direct bearing on learning, research has indicated that diversities (religion, culture, region, gender, etc) influence how students learn in a classroom. The scene in a diverse classroom should boast of rich spaces for dialogue, platforms for bringing and appreciating diverse viewpoints and of course suitable pedagogy and culturally responsive and sensitive curriculum. The most crucial aspect of curriculum for a diverse class has to be its deliberations on the interconnectedness it should have with the students’ diverse experiences and exposures. There is need to develop ways and means through which the curriculum responds to these diversities in a constructive way. For successfully teaching children who are diverse it is important for teachers to develop knowledge and skills and realize that “all children can learn” (Banks et al., 2005, p.270). While this paper explored linkages of a topic in science curriculum, the findings of the study were encouraging and suggest that there is a need addressing them through curriculum a serious thought.

References


Learning Outcomes of Flipped Classroom in relation with Learning Theories

Ms. Reema S. Mani

PhD student, Gandhi Shikshan Bhavan’s Smt. Surajba College of Education

Abstract: The Flipped Classroom is an exciting new pedagogical tool that involves sending learning material via online videos before class and assigning classroom time for handling difficulties. Though it is gaining momentum in USA, it is not heard of much in India. There are many school and college-based reports that state the success of the Flipped Classroom. Bishop and Verleger (2013) suggest that in the absence of controlled experimental/quasi-experimental design, further objective examination of learning outcomes is required. This paper examines what are the learning outcomes that could be studied and the views from those who are practicing the Flipped Classroom approach in our midst.

Introduction:
Each time a new model of pedagogy comes up, there is great curiosity around it. The Flipped Classroom is not so new, though. The idea was first used to promote the model of introducing the lesson before class and to focus on the processing part in class (Walvoord and Anderson, 1998). Inverted Classroom as it was known then was used to increase suitability of course material to match different learning styles (Lage, Platt and Treglia, 2000). Checks were carried out on students through worksheets to see if they were prepared and the class time was utilized in assimilation of the lesson. Another successful experiment brought a modified version of inverted classroom – students would gain prior exposure, followed by quizzing in class during which they answered with hand-held clicking devices. The teacher was able to see data immediately. If the number of students answering correctly was very large (more than 70%), they moved on to next topic; if it was very small (less than 30%), they revisited the concept. And if the numbers varied from 30% to 70%, small groups would be formed to discuss and explain to each other and another round of quiz would be carried out. (Mazur and Crouch, 2001). In 2007, Bergmann and Sams flipped their classes in their district school in Colorado. And the Flipped Classroom began to gain bigger momentum.
The Flipped Classroom is not about simply online streaming of videos to impart lessons and using class time to write homework. It is a paradigm shift from the teacher lecturing in front of a class of passive learners to an active class where learning difficulties are solved. It is ‘a means to increasing and engaging personalized contact time between students and teachers, that creates an environment where students take responsibility for their own learning’ (What It Is.., 2011). The one unifying characteristic of all flipped classroom is the desire to redirect the attention in a classroom away from the teacher and onto the learners and the learning (Bergmann and Sams, 2012). In fact, Bergmann and Sams encourage teachers to ‘explore and hybridize’, adapting from a Flipped Classroom model to what one already knows to be a good teaching practice.

Flipped Classroom has been hailed as the way forward by educationists but here in India, several questions might be raised. Some questions are: 1) What are the learning outcomes of Flipped Classroom? 2) What are the attitudinal or socio-economic pre-requisites for this practice?

**Literature Review**

There are numerous reports from various schools about the success of the Flipped model. For example, teachers have reported improved test scores – 67% of 453 teachers surveyed (Survey on Flipped Classrooms, 2012). Clintondale High School, Michigan and Byron High School, Minnesota reported dramatic improvement in course passing rates. Nearly 95% of the students and over 80% of the parents named Flipped Classroom as their preferred model of learning (Case Studies – Flipped Learning).

Cynthia J. Braeme (2014) explains the success of Flipped Classroom on the theoretical basis of meta-cognitive approach to learning. She says that the children perform lower level functions outside of class and higher functions of application, analysis, and synthesis in class with the support of their peers and teachers. The probable reasons why students learn better this way are ‘a) they might have a deep foundation of factual knowledge, b) understand facts and ideas within contextual framework, c) organize knowledge to facilitate retrieval and application.

Bishop and Verleger (2014), in their analysis, have adopted a stricter definition of a Flipped Classroom with the view that a broad definition will be make it impossible to test any hypothesis and reading assignments should not be counted as flipped. Furthermore, they find
inconsistencies in the activities used across the 24 studies that they compare. These activities are also specific to the situation and hence prevent generalization.

**Scope**

Although in absence of quantitative studies, generalizations are not possible, lack of hard evidence does not completely banish any theory. The aforementioned authors also suggest that further studies may be carried out under controlled conditions with pre-stated, clearly defined, research based activities. More objective studies are needed to evaluate learning outcomes of Flipped Classroom.

The intent of this paper is to look into the learning outcomes of Flipped Classroom stated in various sources of literature and to find their compliance with established learning theories for further research. The study is not looking into the evolution of learning theories, which is beyond the scope of this paper. It is not analyzing data to establish any report as qualified evidence of generalizability. In fact, most of the reports studied are specific to the situation and qualitative in nature – Particularity and not generalizability is a characteristic of qualitative research (Creswell, 2012); the survey done to understand the practice in Mumbai is also qualitative.

**The Argument and the Analysis:**

The Learning outcomes:

1) *Turning Bloom’s Taxonomy (revised) upside-down:* According to Bloom’s Taxonomy (revised), skills are classified from the simple to complex i.e. one cannot move to higher order without going through the simpler skills like remembering (Anderson and Krathwohl, 2001). In a Flipped Classroom, the reverse can happen – student create first and go on to application of principles, analysis, finally moving on to remembering as a consequence of all their previous actions.

2) *Increased student-teacher interaction and One-to-One Tutoring:* Flipped Classroom provides with more and fruitful student-teacher interaction time. The teacher is able to focus on students’ problems. This tutoring helps students gain significantly over a conventional class – ‘using the standard deviation (sigma) of the control class, the average student under tutoring was about two standard deviations above the average of the control class’ (Bloom,
1984). Doing ‘homework’ in class also allows for teachers to understand their students’ needs better. (Fulton, 2012)

3) **Leveraging learning and Zone of Proximal Development**: The Flipped Classroom leverages learning on the child’s previous knowledge. This allows the child to explore study areas in greater depth, based on her/his readiness or the zone of proximal development, so that they are challenged and yet not demoralized (Vygotsky, 1978). Studies done in classrooms with attention to student levels have shown increased test scores (more than 67%), especially for students in Advance Placement Classes and those with special needs (Survey on Flipped Classrooms, 2012). **Pacing allows differentiated learning.** Lectures do have their benefits (Schwerdt and Wupperman, 2010) but flipping helps pacing the lesson as per student requirements. This benefits the inclusive learning environment greatly (Lage, Platt and Treglia, 2000). Instructors who have put Flipped Classroom into practice have claimed that there is a trade-off between the control in student hands and the complexity of the information (Talbert). The availability of the video anytime enables remediation whenever needed.

4) **Positive, improved learner attitudes and Classroom Management**: Teachers often find it difficult to manage classroom behavior and it is necessary to use free time as a consequence of behavior and deploy strategies to use this free time (Serna and Osbourne, 1993). The teacher in a flipped classroom learns to have a way with controlled mess. Engaging activities for class are required to fill up all the time freed up from lecture. Teachers who flip are prepared with these activities.

5) **Flipped Learning in Higher education shows how to learn**: Flipped Learning is proving to be even more significant at higher education classes. An Enrolment Physics Class was divided into Control and Experimental groups. The Control group was taught using the passive lecture method and the other group was engaged in instruction based on research principles of active learning. The active learning group showed nearly double the rate of student engagement, attendance up by 20% and better test scores (DesLauriers, 2011). Active learning principles focus the responsibility of learning on the learner (Bonwell and Eison, 1991).

6) **Touching first base with students and Just-in-Time Teaching**: More and more higher education institutions are flipping their classrooms (Shumski, 2014). Positives reported from these colleges include students getting more engaged in class because they are hearing the
things they want to know, they are able to indulge in real-life discussions extending their subject matter, and they are grasping underlying concepts in higher mathematics. Learners in these courses come from varied backgrounds with differing exposure to the subject they are planning to study. Exposure to initial concepts via online lessons and getting their responses helped teachers gauge where they are to be able to tailor the classroom lesson or activities accordingly (Novak et al, 1999).

**Digital Classroom:**

One may question whether the increasing use of digital technology will make the teacher redundant altogether. On the contrary, it might help narrow the teacher-student gap in today’s world. For today’s youth, using digital technology is a method of social acceptance. According to Purcell-Gates (2007), as a whole, literacy practices are patterned by the personal and social everyday lives: the way one sends greetings, makes lists, reading instructions etc. This is true of today’s students.

**Use of Internet technology in India:**

Another argument regarding the use of Flipped Classroom might be the penetration of the Internet in India. Internet usage in India is only 16%. Of which the rural population accesses Internet over the phone (42%) and in local language. This might make flipping the classroom seem not such a brilliant idea, but language was not supposed to be the problem in delivering pedagogy. Teachers can record lectures in the native language. And Internet accessibility is expected to grow by 18% every year. The possibility of using technology for education is ever widening.

**Flipped Classroom In India:**

Reports reveal that flipped learning has been used by Indian School of Business (ISB), S. P. Jain Institute of Management and Research (SPJIMR), Indian Institute of Technology (IIT) – Guwahati. AFTP and Creatist (from Assam Univeristy) are tools available for managing content, security and delivery, get learner activities and gauge audience responses. One of the schools employing flipped learning is R. N. Podar School in Mumbai.

In a survey conducted, students showed no awareness of the term but replied in the affirmative when the method was described. Similar was the result of survey among business school scholars. One of the students said that the class was given cases to review and analyze
before class; these cases would be in the form of print or videos. One of the advantages, he points out, is that he can replay the video as many times as needed and can retain the link for recall at a later date. Another student identified the accessibility such an instruction can provide, especially for those who are not able to attend a class for some reason.

At SPJIMR, this has been used for pre-foundation courses and plans are on to use it on a regular basis across all programs. The response to using flipped learning for pre-foundation saw increase in student engagement in the classroom. Dr. Debasis Mallik, Associate Professor, SPJIMR, explains that this technique of imparting knowledge is extremely useful since participants to management courses come from diverse backgrounds. A student may have no knowledge of Advanced Statistics. Through online lessons prepared by the instructors and posted through a cloud service provider subscribed to by the institute, such students can be ready to face the classroom after going through the video lesson as many times as required. (Novak et al)

Students and facilitators, across the survey, agreed that face-to-face methods are the best but this method is definitely an interesting alternative.

When quizzed about tracking student progress, Dr. Mallik gave a simple solution – pose more questions than the students can answer; that way there is no scope of checking with friends or ‘cutting-pasting’. In any case, the students will be more attentive for the next session.

**Conclusion**

There are learning outcomes of Flipped Classroom that are in conjunction with learning theories. These learning outcomes may be studied further to firmly establish the influence of Flipped Classroom. It could well pave the way for flipping more classrooms.

Flipping the classroom is an interesting possibility to engage with technology-obsessed generation. What might prove to be the constraint though is the investment required at the institutional level or more importantly, at the personal level. The motivation for spending time apart from regular working hours to create video lessons that are effective is most important. An added boost might be given by a certain observation made by Dr. Mallik – ‘(the students) have been hearing my voice for much longer before they come to class. So, when they come to class, the connection is much higher’.

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References


Bergmann, J. and Sams, A. (2012). Flip Your Classroom: Reach Every Student In Every Class Every Day. ISTE and ASCD.


Case Studies: Flipped Learning. www.personschool.com


Survey on Flipped Classroom – Infographic on Teacher and Student Engagement. (June 2012). Conducted by Classroom Window and Flipped Learning Network. www.flippedlearning.org


Online Course: Learner’s Hub towards Learning and Socialization

Dr. Reni Francis
Asst. Professor, Pillai College of Education and Research, Chembur

Abstract: Online course has bridged the gap between classroom practices and self-learning strategies. It has enhanced the importance of paced learning. The objectives of this study were adopting differentiated teaching learning activities, enhancing web skills among the student teachers, using online courses as a medium for socialization, evaluating the effectiveness of online courses in learning strategies. The Online Course was initiated in Course I - Philosophical Foundations of Education through an online course offered by Course Networking. The topics were - Idealism, Naturalism, and Pragmatism. The weekly tasks consisted of you tube clipping, case studies, written material, teacher anecdotes etc for which opinion was raised through a poll and suggestions. The major highlight of this practice was witnessed with the overwhelming response by the student teachers, their initiative to learn through an online medium of instruction. Student teachers who were not very well versed with the use of technology had taken extra efforts to bridge the technological gap and were with par with the others through peer tutoring. The study emerged as an innovative and interactive teaching learning strategy giving opportunities for learner to focus on independent learning, reflective thinking, online learning and using web as a vital resource in learning. The student teachers were more confident in their approach towards online learning and using of computer/ technology in the teaching learning process.

"You can't teach people everything they need to know. The best you can do is position them where they can find what they need to know when they need to know it."

(Seymour Papert)

Introduction
Globalization and technological change have created a new global economy “powered by technology, fuelled by information and driven by knowledge.” As access to information continues to grow exponentially, schools cannot remain mere venues for the transmission of a prescribed set of information from teacher to student over a fixed period of time. Rather, schools must promote “learning to learn,” i.e., the acquisition of knowledge and skills that make possible continuous learning over the lifetime. “The illiterate of the 21st century,” according to futurist Alvin Toffler, “will not be those who cannot read and write, but those
**who cannot learn, unlearn, and relearn.**” Education today has assumed a bigger challenge towards several dimensions of student participation surpassing the four walls of the school to the dynamic learning community. Learning is dynamic and students need to be actively involved in the learning process rather than being passive listeners. The learning environment adds the treasure of existing knowledge with the help of materials provided to them. This enables the children to learn more, be actively involved in their learning through well grounded activities that makes learning involving, interactive and integrative. Initiating the use of learner-centered activities in the teaching learning environment makes learning more individualized and kindles the flames of a motivating teacher - student interaction.

**ICT- A roadmap to Education**

ICTs are a potentially powerful tool for extending educational opportunities, both formal and non-formal sections of the society.

- **Anytime, Anywhere and Anything.** One defining feature of ICTs is their ability to transcend time and space. ICTs make possible asynchronous learning, or learning characterized by a time lag between the delivery of instruction and its reception by learners. Online course materials, for example, may be accessed 24 hours a day, 7 days a week. ICT-based educational delivery (e.g., educational programming broadcast over radio or television) also dispenses with the need for all learners and the instructor to be in one physical location. Additionally, certain types of ICTs, such as teleconferencing technologies, enable instruction to be received simultaneously by multiple, geographically dispersed learners (i.e., synchronous learning). ICT’s also helping in capturing any information from anywhere through the web.

- **Access to remote learning resources.** Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries (and available in limited quantities) for their educational needs. With the Internet and the World Wide Web, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time of the day and by an unlimited number of people. ICTs also facilitate access to resource persons—mentors, experts, researchers, professionals, business leaders, and peers—all over the world.

**Learner Centered Environment through ICT.**

ICT-mediated education can promote the acquisition of the knowledge and skills that will empower students for lifelong learning. When used appropriately, ICTs—especially
computers and Internet technologies—enable new ways of teaching and learning rather than simply allow teachers and students to do what they have done before in a better way. These new ways of teaching and learning are underpinned by constructivist theories of learning and constitute a shift from a teacher-centered pedagogy—in its worst form characterized by memorization and rote learning—to one that is learner-centered.

- **Active learning.** ICT-enhanced learning mobilizes tools for examination, calculation and analysis of information, thus providing a platform for student inquiry, analysis and construction of new information. Learners therefore learn as they do and, whenever appropriate, work on real-life problems in-depth, making learning less abstract and more relevant to the learner’s life situation.

- **Collaborative learning.** ICT-supported learning encourages interaction and cooperation among students, teachers, and experts regardless of where they are. Apart from modelling real-world interactions, ICT-supported learning provides learners the opportunity to work with people from different cultures, thereby helping to enhance learners’ teaming and communicative skills as well as their global awareness.

- **Creative Learning.** ICT-supported learning promotes the manipulation of existing information and the creation of real-world products rather than the regurgitation of received information.

- **Integrative learning.** ICT-enhanced learning promotes a thematic, integrative approach to teaching and learning. This approach eliminates the artificial separation between the different disciplines and between theory and practice that characterizes the traditional classroom approach.

- **Evaluative learning.** ICT-enhanced learning is student-directed and diagnostic. ICT-enhanced learning recognizes that there are many different learning pathways and many different articulations of knowledge. ICTs allow learners to explore and discover rather than merely listen and remember.

- **Motivating to learn.** ICTs such as videos, television and multimedia computer software that combine text, sound, and colorful, moving images can be used to provide challenging and authentic content that will engage the student in the learning process. Interactive radio likewise makes use of sound effects, songs, ——dramatizations, comic skits, and other performance conventions to compel the students.
Online Course: Online courses are those in which students and instructors are not in the same physical space at the same time; instead, they interact online (via the Internet). There are usually weekly readings/lectures, assignments, projects and/or journals, discussion boards and live chat sessions throughout the session. There are weekly deadlines for the work that will be posted in your course site.

Socialization: Process by which individuals acquire the knowledge, language, social skills and values to conform to the norms and roles required to be a part of a group.

Title of the study
Online Course: Learner’s Hub towards Learning and Socialization.

Objectives of the study
- Using differentiated teaching learning activities.
- Enhancing web skills among the student teachers.
- Using online course in learning.
- Online course as medium for socialization.
- Evaluating the effectiveness of online course in learning strategies.

Research questions and Hypotheses
R1: To what extent has the online course assisted in differentiated teaching learning activities?
R2: To what extent has the online course assisted in the process of socialization?
H1: There is no significant difference between the traditional approach and the online approach of learning.

Research Methodology
The research methodology adopted a Two Group Post – test Experimental design.

Sample for the study
The sample for the study includes B.Ed. students of Pillai College of Education and Research, Chembur

Data Collection
The data was collected through a post test on Idealism, Naturalism and Pragmatism. Informal discussions, field notes were taken to collect data on the effectiveness of Online course as a means of Socialization.

Data analysis
The data was analyzed through ‘t’ – test.
Strategy Adopted: The researcher adopted the Online Course to curriculum transaction. A group of 40 students were taught through the online course designed by the researcher through The Course Networking - e-learning website. Online Course in Course I - Philosophical Foundations of Education: Impact of Philosophies in Education - Idealism, Naturalism, Pragmatism.

- The weekly tasks consisted of YouTube clipping, case studies, written material, teacher anecdotes etc for which opinion was raised through a poll and suggestions.
- The student teachers highlighted their views on the topic dealt. Scores were awarded to the student teachers for their responses.
- Student teachers who were not very well versed with the use of technology had taken extra efforts to bridge the technological gap and were with par with the others through peer tutoring.
- Weekly updates of events - tasks updates were given as email. Their progress was also intimated through email.

Another group of 40 students were taught through the Traditional approach - Lecture Method. A post test was done to find out the effectiveness of the Online course to curriculum transaction.

**Findings of the study:**

*In pursuit of the Research Questions*

R1: To what extent has the online course assisted in differentiated teaching learning activities?

The appropriate use of web technology has turned to be a prominent factor in catering to a learner centered environment in both content and pedagogy through theoretical and practical scope of education. It empowers student teachers for lifelong learning through a systematic and well designed implementation of the curriculum. A major shift from the traditional to an informative society can be witnessed through productive learning rather than mere reproductive learning.

**Motivating to learn:** The students were motivated to learn through the different activities, that encouraged them to acquire information and answer the queries and get involved in discussions.
**Facilitating the acquisition of basic skills:** The student teachers who were not aware of basic skills were given training, which enabled them to be a part of the online course

**Enhancing teacher training:** Web based learning allows teachers to participate effectively in a rapidly changing world. The introduction of online courses in B.Ed can immensely lead to growth in technology's version, to satisfy the needs and wants of the community over time. The student teachers’ play the role of future nation builders, torch bearers; facilitators etc to embark on these qualities the teacher training institutions should be streamlined as per the global needs of different methods of teaching.

**R2: To what extent has the online course assisted in the process of socialization?**
Socialization has become an indispensable attitude towards personality development of every individual. The students learnt through Share and Care activities wherein the techno- savvy student teachers’ support those student teachers who have been deprived of web based learning. These interactions fostered a bond of uniformity among the students which led in the teaching learning of subjects to get a deeper understanding of concept, the knowledge of various support media for ICT thereby getting familiarized with contemporary teaching-learning strategies, learning basic computer skills, encouraging the use of computers in daily life to keep pace with ever demanding technology oriented society, accessing information and educational materials that facilitate technology mediated communication, making presentations for effective teaching- learning, preparing lessons for enhancing content delivery and make lessons attractive, communicating with friends, communicating with teachers and personal development.

**In pursuit of the Hypothesis:**

**H1: There is no significant difference between the traditional approach and the online approach to learning among the B.Ed student teachers.**

**Interpretation:** The calculated ‘t’ value is 3.42. Table value of t for df80 is 3.19 at 0.01 levels. The calculated ‘t’ value 3.42 is higher than the table value and therefore it is significant at 0.01 level. Hence the null hypothesis is rejected.

**Conclusion:** There is significant difference traditional approach and the online approach to learning among B.Ed student teachers.

**Discussion:** The teaching learning process is an inherently social process and the teachers need to be careful of the social and emotional dynamics that plays a vital role in the
classroom. The researcher effectively catered to a learning environment that focused on online course to learning. The e-learning portal gave an experience and exposure to students to learn and to socialize. It catered to hands on experience in learning. it fostered group cohesion and group compatibility. The differentiated approach to learning has helped in erasing the monotony in learning and thus students responsible for their learning. The traditional approach to learning is very monotonous and creates interest to a small extent. Hence the online approach motivated them to learn at their pace and space.

Suggestions: Online Learning has highly emerged as one of the foremost modern factors shaping the global economy thereby generating prompt changes in society. Teacher education institutions and programmes play a vital role in providing the necessary guidelines, leadership in adopting new pedagogy in the B.Ed. programme to deal with the current demands of society and enhancing teaching-learning process. Few implications to teacher education institutions:

✓ **Learning Resource Centre:** A Learning Resource Centre (LRC) with well equipped ICTs could be established giving an opportunity to teachers and students to learn, and teach using flexible modes and innovative methods of teaching.

✓ **Provide training programmes for teachers:** Integration of online courses at various levels of curriculum development, assessment system, and teacher incentives aids in their professional development.

✓ **Make web based approach as a priority:** In the forthcoming technology oriented society, it is become mandatory for the teachers to acquire skills and knowledge which could be achieved by suitably adopting web based approach in the teaching learning environment.

✓ **Mainstream web based learning in all Subjects:** Web based learning should be infused into the entire curriculum. During the B.Ed. course the student teachers should learn how to incorporate online courses into their own subjects. Restricting technology experiences to a single course or a separate area of teacher education will not prepare students to be technology-using teachers. More attention is needed for this integration into the curricula.

✓ **Adequate Computers in the Laboratory:** With adequate computers in the laboratory student teachers’ have greater access to ICT at the B.Ed. level. Student teachers get hands on experience in their learning process.
Class Website: The best way to display student's work would be to create a web page designed just for the class. Once a web page is designed, teachers can post homework assignments, student work, famous quotes, announcements and much more.

Conclusion

Online learning in education is not self-transformative. It requires efforts on the part of the teacher educator to devise strategies that will help them create a learning environment suitable for their student teachers to learn at their pace. It should also give opportunities for student teachers to interact and enhance their social skills. It should also be taken care that ICT should be made us a priority.

References


‘Information and Communication Technology’, retrieved on 26th Nov, 2009, from, http and communication technologies


Disability and Access to Educational Opportunities: A Study of Universities in Delhi

Mr. Kunwar Siddharth Dadhwal
Ph.D. Research Scholar, Centre for Political Studies, JNU

Abstract: The study was motivated by an experience of mine within the premises of Jawaharlal Nehru University (JNU), which brought to light the extent to which the existing facilities were not conducive to disability. It led to an inquiry of the accessibility to educational opportunities for students with disabilities, with regard to the built environment of university campuses and perceptions towards such students. As an extension to this study, the notion of accessibility is also being expanded – to see it not merely in terms of access to the physical infrastructure and facilities, but also as acceptability, participation and representation within universities.

This study is an attempt to look into these issues through the vantage point of students with disabilities and their access to opportunities. The study has limited its focus to students with visual disability and with loco-motor disability in certain universities of New Delhi. The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995, has been used to set the broad parameters by which the accessibility of educational institutions can be understood. The paper analyses disability through a Marxist paradigm as well as through the concept of the disability as a societal construct proposed by the social scientist, Martha Nussbaum. Through this, I plan to examine the disabled body as a ‘construct’ and as the ‘other’. The study further proposes to contest the myth of the ‘perfect’ body and definitions of the disabled as the other of the ‘normal’ body and to form a parallel and alternative discourse around this contested space of the disabled body.

Introduction

‘Vision without eyesight is more powerful than eyesight without vision’

‘Accessibility does not require eyesight but vision. A step towards broader understanding can remove the crutches of narrow minds.’

-Swami Vivekananda
The study was motivated by an experience of the members of the team within the premises of Jawaharlal Nehru University (JNU), which brought to light the extent to which the existing facilities were not conducive to disability. It led to an inquiry of the accessibility to educational opportunities for students with disabilities, with regard to the built environment of university campuses and perceptions towards such students. As an extension to this study, the notion of accessibility is also being expanded – to see it not merely in terms of access to the physical infrastructure and facilities, but also as acceptability, participation and representation within universities.

This study is an attempt to look into these issues through the vantage point of students with disabilities and their access to opportunities. The study has limited its focus to students with visual disability and with loco-motor disability in certain universities of New Delhi. The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995, has being used to set the broad parameters by which the accessibility of educational institutions can be understood. Not only has the immediate environment of the educational institution been looked at, but other enabling factors, such as transport to and from college have also been looked into.

Educational provisions are considered to be one of the most enabling social goods which ensure a fuller realization of the capabilities of the self and also enhanced participation in social, political and economic processes, which are again essential in constructing a self-constitutive of dignity and self-worth.

Martha Nussbaum elaborates the capability approach which states that a basic social minimum will be provided by focusing on human capabilities, that is, what people are actually able to do. Further, she argues that the capabilities in question should be pursued for each and every person, treating each as an end and none as a mere tool of the ends of others.

The capability approach specifies some basic conditions for a decently just society, in the form of a set of fundamental entitlements for all citizens. These entitlements derive from the very notion of human dignity and a life that is worthy of human dignity. This idea can be further complicated by questioning the notion of citizenship itself and examining whether the disabled are recognized as full citizens in the first place.

On the other hand, instead of asking about people’s satisfaction, or how much resource they are able to command, Dr. Amartya Sen uses the term capability to ask what they are actually
able to do or be. Dr. Sen also insisted that it is in the sphere of capability that questions about social inequality and inequality are best raised.

However there are instances where this access to education (and thus to all that which follows from it) can be hampered by physical or attitudinal factors – either brought about through oneself or through interactions with others. Physical disability provides us with a vantage point to ascertain what these barriers could be. Further, it also provides us with a window to look into various aspects of educational provisions and their interaction with impairment – whether they then create ability or disability.

Disability can also be understood as something grafted onto the body – the disabled body which becomes the other of the ‘normal’ body. It is through the idea of the normalized body that its other gets constructed and is also put into a hierarchy. The myth of the perfect body gets even more emphasized when the body becomes the site of material and knowledge production. In the field of education, this becomes relevant in simple ways like choosing a course and more complex ones like being gainfully employed. When the standards of efficiency and requirements of disciplines are so rigidly defined by the standards of a normal body, what happens to those bodies which do not meet this constructed norm? Seen through a Marxist paradigm, the disabled body is cast aside under capitalist labor relations as being a less efficient ‘machine’ in the pursuit of surplus accumulation.

**Research Methodology**

The present paper is based on data collected by a study carried out from 24 March 2009 – 27 March 2009. The study has analyzed responses of 61 students with disability from University of Delhi (DU), Jamia Milia Islamia (JMI), Indian Institute of Technology (IIT-D) and Jawaharlal Nehru University (JNU). Out of 1100 students with disability in the University of Delhi, our sample has covered 50. Four students with disability from JMI, out of which two have loco motor disability and two have visual disability and one student with loco-motor disability from IIT has also been interviewed. Main objective of this research was to understand the paradigm of accessibility for person with disability in educational institution. In order to analyze this aspect, universities in Delhi were taken as case study.

In this study, disability is taken to mean the functional limitation of ordinary activity, whether that activity is performed alone or with others. The simplest illustrations are the incapacity for self-care and management in the sense of being unable or finding it difficult to move
about, negotiate stairs, wash and dress. This principle of limitation applies to other aspects of life as well. Further, person with disability means a person suffering from not less than 40% of any disability as certified by a medical authority.

Loco – motor disability means disability of the bones, joints, muscles leading to substantial restriction of the movement of the limbs or any form of cerebral palsy.

Visual impairment includes blindness and low vision. Blindness is defined as visual acuity of less than 3/60 or a corresponding visual field loss to less than 10 degrees in the better eye with best possible correction (ICD-10:54 visual impairment categories 3, 4, 5); low vision is defined as visual acuity of less than 6/18 but equal to or better than 3/60, or a corresponding visual field loss of 20 degrees in the better eye with best possible correction.

The research involved the collection of both quantitative and qualitative data through structured questionnaires, made available in Hindi, English and Braille. Three focus group discussions were also held, which were homogenous in terms of age (18-25), disability (visual disability) and type of residence (private hostels like Seva Kutir, Near Mukherjee Nagar, All India Confederation for Blinds, Rohini and National Association for Blind, Hauz Khas).

Detailed interviews were also conducted with four Principals / Vice Principals and members of administration from Shahed Bhagat Singh College, Indraprastha College for Women, SGTB Khalsa College, and Ram Lal Anand College. Convenors of Equal Opportunity Cells from Deen Dayal Upadhyaya College, Kirori Mal College, Kamala Nehru College, SGTB Khalsa College, and NTPC Resource Center of DU were also interviewed. Informal interviews were also conducted with the administration of Amarjyoti School, Vocational Rehabilitation Center and Geetanjali P.G Women Hostel, South Campus. The respondents were identified through personal contacts and data bases of certain organizations and college authorities, following it with snowballing and accidental sampling technique for expanding the reach and scope of survey.

**Limitations**

One of the primary limitations in this research project was the sample size. A more meaningful set of data would have needed a much larger number of respondents, but given the days that were available for fieldwork, this was not feasible. Compounding this problem was the timing of the fieldwork, which unfortunately fell at a time just after classes had
finished for the academic year and most students had taken study-leave for their end-of-year exams. Furthermore, our questionnaire was fairly extensive; this is obviously positive in terms of it gleaning a wide range of interesting data, but it was also a limiting factor to the number of questionnaire responses that we could gather. Although a draft questionnaire was ‘test-run’ on some students at JNU, and subsequently re-drafted, we found that some issues with the questionnaire remained. As we were looking at students with visual impairments as well as students with loco-motor disabilities, some of the questions applied to some students more than others. For example, the question about Braille printers obviously only pertains to the former category, whereas other questions were more specifically directed at those with loco-motor disabilities. This limitation might have been avoided by focusing on just one of these two categories, or by having two different questionnaires and analyzing some of the data together and other parts separately. Finally, although data is not available to corroborate this, it is possible that the demographic of our respondents does not match that of disabled Delhi University students as a whole.

Debate on Vocabulary:
In this study the term persons with disability has been consciously chosen instead of persons with impairment or handicap, persons being differentially abled or specially abled. In order to understand the reasons for using this terminology, it is imperative to distinguish between physical impairment and disability. Physical impairment refers to lack of any body part or having a defect in either a part or mechanism of the body.

This forms a part of medical understanding of disability which considers disability to be the problem of the concerned individual and completely ignores the possibility of social factors causing any kind of deprivation to the persons with impairment. Another perspective is provided by the social model according to which the onus of the transition from physical impairment to disability lies on the society. Michael Oliver, British academic and activist and physically disabled himself, prescribes to the social model and defines disability as ‘something imposed on top of our impairments by the way we are unnecessarily isolated and excluded from full participation in society.’

The term handicapped does not necessarily represent the condition of persons with disability. A person can become handicapped not only due to lack of physical or mental ability but also due to lack of material or financial resources or simply due to unfavourable circumstances. Thus the term can be equally applicable for an able bodied person as well.
A new set of terms which have replaced ‘persons with disability’ is persons who are differently abled or specially abled. Those who advocate the usage of these terms claim that the persons with disability can work as efficiently as persons who are able bodied but in a different way. The resources which they might use to achieve the same task might be different from those used by persons with able body. This is also seen as a more sensitive way to address persons with disability. The study does not favor the replacement of the term persons with disability to persons who are differently abled because it appears to be euphemistic and shifts the attention from the main problem faced by persons with disability - which is the attitude of society depriving them of equal opportunity and status.

Data Analysis:

<table>
<thead>
<tr>
<th>Institute/ College</th>
<th>Number of Respondents</th>
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<tr>
<td>CIE</td>
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<td>Daulat Ram College</td>
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<td>DDU College</td>
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<tr>
<td>Delhi School of Social Work</td>
<td>1</td>
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<tr>
<td>Durgabai Deshmukh</td>
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<tr>
<td>Faculty of Arts</td>
<td>1</td>
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<tr>
<td>Gargi</td>
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<td>Hansraj</td>
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<tr>
<td>Hindu</td>
<td>3</td>
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<td>IIT</td>
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<tr>
<td>IP College</td>
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<tr>
<td>Jamia Millia Islamia</td>
<td>5</td>
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<tr>
<td>Jawaharlal Nehru University</td>
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<td>Khalsa</td>
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<td>Laxmi Bai</td>
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<td>Maharishi Valmiki</td>
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<td>Miranda House</td>
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<td>Rajdhani</td>
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<td>Ramjas</td>
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<tr>
<td>Satyavati College</td>
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<tr>
<td>South Campus</td>
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<td>St. Stephen’s</td>
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<td>Swami Sardananda</td>
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<td>Vivekanand College</td>
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The findings of the study are divided into five sections: Course options available, institutional factors, issues of representation and participation, the numerical disparity between students with visual disability and with loco-motor disability and finally issues about perception. In the following sections each of these will be elaborated on.

Course Options Available:

According to Michael Oliver, ‘Being denied access to a certain thing to which everyone else is entitled, ones opportunities will remain limited and his/her feelings of social inferiority will
be reinforced’. The findings of the study resonate strongly with this statement in that students with disability appear restricted by which courses they can take. A broad trend which emerged was that students with disability are allowed to choose courses from social sciences, humanities or arts only – whether it is through subtle references or direct denials. Political Science, Hindi \ English literature, History, B.A. Programme and Music emerged as the major streams among our respondents. Students are often discouraged from choosing subjects from science or commerce streams or any other subject involving laboratory or field work for a variety of logistical reasons like restricted mobility. Subjects which entail laboratory\ map work\ excavation and those whose study material is not easily available in Audio\Braille form are further not available for students with disability.

Today technology, in the form of various screen readers, magnifiers, Optical Character Recognition (OCR) has made the printed world accessible to the ‘print disabled’. However this holds true only to those who are privileged with resources as well as the language of technology. It is observed that most students opt for Hindi medium, especially those hailing from North India and rural backgrounds because their primary education has taken place in Hindi. In higher education students with disability are unable to use the technology because of the unavailability of scanning software in Hindi, Urdu or Sanskrit.

Mir Mohammad, an information scientist from Jamia Millia Islamia, suggests that those who are born with disability, especially visual disability, should be trained in English at the primary level so that they can use software and other technology.

Institutional Factors:
... A wheelchair cannot be hidden; it is brutally visible.

--Robert Murphy, The Body Silent.

Perhaps what is more brutal is normalizing the sight of a wheelchair user struggling over constricted doors and chained entrances or that a student with visual disability is excluded because the presentation slides were not read out in the classroom.

The institutional factors discussed in this section become important because they enable access – not just to the built environment but also to what that built environment allows people to achieve. Access to education and the full realization of its gains is directly mediated by the infrastructural arrangements as well as the behavior which is thus generated.
Institutional facilities discussed here cover those facilities which have the power to provide an enabling built as well as behavioral atmosphere in educational institutions.

This study has limited these institutional facilities to include – infrastructural provisions like ramps with slopes, design of entrances and classrooms, structure of flooring and pathways, ease of use staircase design, toilets and signs within the premises. Further, certain factors like commuting to and from college premises, provision of scholarships, choice of courses and teaching techniques are also covered. In certain instances these facilities are also disability specific – for instance, scanners and Braille printers will be useful exclusively for the students with visual disability, while access to classrooms and toilets by wheelchair is a facility required only by students with loco – motor disability.

The purpose of this part of the study is not restricted to evaluating the existing institutional facilities provided to the students with disability within their institutions. Rather, the idea is to get a sense of what capabilities these facilities provide for the students. This partly explains why at times students from the same college, perhaps making use of the same facilities, have come up with varied responses when asked the same questions. Further, though certain audit reports may mention the existence of facilities, the student respondents in this survey may have reported the contrary. We can only presume here that this means that either the student has not accessed the facility or that it does not serve the requisite purpose for this individual.

Construction and planning happens keeping in mind a ‘normal’ body – not just the disabled but several variations of the body thus lose out. A change, deviation or even a variation from this normal itself gives rise to the idea of the ‘other’. It is through the body that political ideologies and cultural mores exert the greatest power. Disability thus exposes the constraints imposed on bodies by social codes and norms. In a society of wheelchair users, stairs would be nonexistent, and the fact that they are everywhere in our society seems an indication only that most of our architects are able-bodied people who do not think seriously about access.

In our study, while interviewing a non-disabled person about the need for infrastructural provisions in the form of ramps connecting different story of the building, an opinion which came up was, “This is not a hospital building but a college which we are taking about.”

By stating equality of opportunity one does not imply creating different ends for persons with disability. A person with disability applies different means to reach an end which may or may
not be similar to an able bodied person. Any environment can be disabling friendly, and need not be ‘renovated’ to ‘make’ space for the disabled.

Among the infrastructural facilities broad ranges emerged within the data sample. While certain features like ramps with slope were found to be present in a majority of colleges with numbers ranging from two (say in colleges like LSR) to 30-50 in institutions like JNU. However, students from colleges like Rajdhani College and Gargi College, in South Campus, DU reported the absence of any such structure.

On the other hand, provision of facilities like Braille and audio signs was universally absent in our sampling, with the exception of Deen Dayal Upadhaya College (DDU) where Braille signs have been installed. St Stephens College, in North Campus, DU has the provision of a Braille notice board but out of the four students with visual disability interviewed from St Stephens, none has recorded this facility as a Braille sign.

**Toilets:** Out of 29 respondents who attempted this question, 18 have responded that the toilets have enough space to access by wheelchairs. 22 respondents out of 45 replied in positive to whether there is a provision for at least one western style toilet in their college premises. The study further found out that a majority of respondents did not find adequate railing support in their toilets.

**Commuting:** A majority of respondents commute to/from college using DTC/Blue line bus. Auto rickshaws and cycle rickshaws come second. Further, an interesting detail which emerged was that almost all the respondents want their college to provide transport facilities. One reason maybe that public transport like DTC/Blue line buses are not very conducive to travel. Most respondents have replied that these buses may not stop at the designated place. Frequently the students with disability are discouraged from entering the private buses, because they may have passes and thus not pay fares. Some respondents have also reported hostile attitude of fellow passengers, especially in crowded buses, even when vacating the seat reserved for the disabled.

**Employment cell/Scholarships:** A majority of the respondents have opined that the Employment/Placement Cells in their colleges do not cater to their specific needs and have not been able to provide employment for any disabled student. In regard to scholarships about 50 % students are provided with scholarships or some form of monetary assistance by their respective college/university. However, in regard of reader/writer or escort allowance, most
respondents came up with broadly similar trends. In DU the students mostly get an allowance ranging from Rs. 300 – 700 per annum. However, this amount is seen as quite inadequate and most students seem to be spending the extra amount on their own. Further, these allowances are reimbursed, making the student shell out bulk amounts through the year.

Coursework and Library Facilities: Questions were asked about the following aspects: 59% respondents said that their colleges do not provide Braille print.6% respondents said they do not have an access to scanning facilities. About 72% said that their college provides them no special training in communication skills like English and computer literacy, while 50% replied that they get no assistance from their college in typing assignments or making presentations. 62% respondents have access to JAWS or KRUZWELL through the computers provided by the college. About 56% respondents do not have access to books or reference material in Braille or audio book format.

Cassettes and Recorders: While some colleges like St. Stephens and JMI have mechanisms for yearly subscription of MP3 recorders or I-Pods to visually students with disability, other colleges like Hindu give out 10 cassettes per student for the entire year – an amount which is woefully short. On the other extreme, colleges like Gargi have no such provisions.

One visually disabled respondent from Ramjas College reported that she was not allowed to use Braille slates in the library since the noise creates distraction for the others. Non provision of adequate scanned material in courses like history has led to a visually challenged student being asked to shift the course in JNU.

Flooring: A visually disabled respondent from Central Institute of Education (CIE), who uses a walking stick, mentioned that since the floors in his institute are quite slippery he is frequently afraid of falling down. This experience links up to another trend which the study came across. Most new building which are coming up, though should be and some are in tune with the disable friendly standards, they may actually be worst off because of features like tiled floors which tend to be slippery.

Through our data we can thus sum up that there is a serious imbalance between the theorization of capability to attain education and the ground realities. Although, increasingly more people now believe that disabled bodies should not be labeled as defective, yet we have not even begun to think about how these bodies might represent their interests in the public sphere for the simple reason that our theories of representation do not take account of them.
Representation and Participation:
In case of representation for students with disabilities, it is possible to employ two broad understandings of representation. According to John Burnham, the first notion/idea suggests that interests are better protected when the representation is by those who share the experience and interests of the constituency in question. The similarity of condition enhances the chances of opinions being considered more seriously. On the other side, according to Hannah Pitkin, representation can also mean ‘acting in the interests of the represented in a manner responsive to them’. According to this view, the activities of the representatives are more important than their composition or characteristics.

Based on responses and interviews, this paper argues for the first view on representation. In order to guarantee equal or proportionate presence, mechanisms of fair representation are required. The concept of ‘deliberate intervention’ is essential to break the link between social structures of exclusion and the reflection of these in levels of participation and influence. In addition, ‘When policies are worked out for rather than with a politically excluded constituency, they are unlikely to engage with all relevant concerns.’

In the University of Delhi, colleges like Shahid Bhagat Singh College, Kirori Mal College and SGTB Khalsa College, are instances where either an authority holder is disabled or there is a representative body for students with disability within the college. Such ‘presence’ accounts for the provision of better facilities for students with disability in these colleges.

Simultaneously, the overall lack of facilities in DU can also be attributed to the under-representation of students with disability in the college or university level students’ unions; as well as the lack of any significant forums or organizations for students with disability within the University. Most of the respondents also said that unions rarely took up issues pertaining to students with disability. Only 16% of the respondents said that their opinions were taken into consideration while setting up infrastructural facilities and mostly through informal mechanisms.

Affirmative action, primarily in the form of a 3 per cent quota for students with disabilities, is vital. In reality the required numbers are not met. According to the Access Audit Report carried out under the project ‘Accessible University of Delhi’ in 2007-2008, the total strength of the University was approximately 3, 00,000 and more than 700 students with disabilities were admitted to various colleges that year (though many drop-out). If the quota were met then the total number of students with disability, cutting across all courses and programmes
of study, would have been around 9,000. Apart from this glaring fact, other forms of discrepancies are noticeable. Most students with disabilities are concentrated in colleges located in a cluster in the North Campus. Many colleges, especially those considered to be on the periphery of DU, such as Ram Lal Anand College and Deen Dayal Upadhyaya College have none or very few students with disability [Ram Lal Anand (evening) – 0, Deen Dayal Upadhyaya (undergraduate courses) – 2]. Students may avoid these colleges due to varied factors; lack of transport facilities being one of the significant reasons. Consequently the absence of infrastructural facilities in certain colleges is often attributed to this lack of ‘presence’ of students with disability.

Participation of students with disability in extracurricular activities is restricted to limited spheres. There are hardly any infrastructural facilities encouraging the participation of students with disabilities in sports. Sports teams for students with disability are mostly absent. Participation in cultural activities is more prominent, though it is mainly restricted to music societies in colleges. Students with disability find their niche fairly easily in some activities, music being the prime example where integration with the rest of the student body takes place most often. There are several social and structural barriers at this point as well, whether in terms of indifference on the part of the peer group, teachers or other staff, or physical/logistical problems such as difficulty in participating in events held outside the college. This might require extraneous forms of encouragement for the students.

The concept of deliberate intervention on the part of the institution assumes importance in such a scenario. The Equal Opportunity Cell (EOC) (created on 27th June, 2006 in DU) is meant to address some of these issues. The EOC takes a fairly comprehensive view of disability when the main page of its website states: ‘The main problems faced by people viewed as disabled, or ‘with disabilities’, or of minority status, stems from disabling environmental, economic and cultural barriers. Disability and minority are therefore equal rights issues on a par with other forms of unjustifiable discrimination and prejudices.’

Further, the mission statement includes provisions such as ensuring barrier free access to all buildings of colleges, departments, libraries, hostels and offices of the University; a resource centre that specializes in addressing the needs of Persons with Disabilities in all categories including Visual, Hearing, Orthopedic, and Neurological; and short term courses for imparting employable skills for the disabled and for raising awareness about disability.
Each college is supposed to set up an Equal Opportunity Cell as well. For many colleges that were covered under this study, the current year is the first operational year of the EOC. The role of the EOC, still in its early days, is crucial towards bringing in the voices of the section of students with disability, teachers and non-teaching staff, thereby enhancing their ‘influence’ and presence in decision-making structures. The link between presence and building of capabilities seems fairly apparent in this context. If access to education is one of the most enabling social goods, then full and free participation of the disabled student has to be considered one of the essential capabilities in the development of the self, upon which hinges the very notion of a dignified self.

Disparity between the Numbers of Persons with Visual Disability and Loco-Motor Disability:

During the course of this study 15 students with loco-motor disability and 46 students with visual disability were interviewed. Several reasons were given by the interviewed persons to substantiate the disparity in the numbers of persons with visual and loco-motor disability. Principal of Shaheed Bhagat Singh College, University of Delhi, pointed out that, ‘Due to medical advancement and easy availability of medical facilities such as polio eradication drive as a part of State Welfare Scheme, the number of persons with physical disability has reduced. V.B Rastogi, Head of Social Works Department, Amarjyoti Rehabilitation and Research Centre said that the transport system is designed in such a way that it makes the persons with loco-motor disability unable to access the institutions. She gave the example recently constructed BRT corridor which is not at all disabled friendly. Further, she observed that many public institutions got ramps and handrails and other facilities, only when Stephen Hawking came for a visit to India.

Another reason was that loco-motor disability is not always a ‘by birth phenomenon’. Loco – motor disability can also be caused due to natural accidents or accidents caused due to human error. Therefore the proportion of persons with loco-motor disability can be low compared to persons with visual disability. Nisha Jain, member of Social Works Department, Amarjyoti Rehabilitation and Research Centre, said that economic background of persons with disability also matters in his/her accessing the institution. If a person with loco-motor disability is not from an economically sound family they cannot afford an attendant or a hire a private vehicle for the convenience of their ward.
A student pursuing Masters in Commerce from DU said that one of the reasons for less number of students with loco-motor disability is that they do not get concessions in hostels fee, as compared to a concession for students with visual disability.

Issues of Perceptions:

Jamia Millia Islamia poses a rather unique problem in terms of its social and linguistic profile. While the university has a well equipped technological support centre for students with visual disability which houses computers installed with special software and scanning facilities yet it is quite redundant for most students since they do not have an access to English. Most screen reading software like JAWS, Kruzwel, are not available in languages other than English. Since most students coming to JMI are from Urdu or Persian language background this poses an obvious problem.

The study came across similar trends in other institutions as well, where scanning of Hindi books is still not possible. For instance, respondents from IP College shared that even though they might learn computer skills in the Resource Centre set up under EOC, funded by National Thermal Power Corporation (NTPC) in DU, since their college does not provide adequate facilities, the skill is of no use to them in terms of education. Further, old, hard bound and underlined or highlighted books are also not suitable for scanning, making it a huge barrier for access by the students with disability. A visually disabled respondent from Gargi College also mentioned that teachers were afraid to let her handle the computers for a subject titled 'Information Technology', since they suspected that she would mishandle them.

A respondent from Rajdhani College also mentioned that the availability of new books is a significant problem, since they have to be converted into audio format or scanned – a process which takes considerable time. Thus the respondent suggested setting up a more streamlined process for the same. A student with visual disability from Hindu College expresses his experience, “I took Sanskrit initially but due to unavailability of audio recording and software, I was compelled to shift the course from Sanskrit to Hindi”.

Several respondents with visual disability came up with similar issues while dealing with administrative and college staff. For instance, a common problem which emerged was access to food menus and ordering food in the college canteens. One respondent from LSR shared that frequently the canteen staff would place the food in front of her without saying anything. The food would thus lie in front of her till someone would alert her. On the other hand, most
respondents found that the security staff was by and large sensitive to the needs of students in terms of providing assistance.

A major problem which emerged in almost all interviews was access to library facilities and books. Since in most places Braille catalogues and referencing in Braille is absent, invariably the students with disability have to take assistance of someone, thereby hampering their independence. As it came up in the study, the library staff would typically point out to books when inquired by the students with visual disability.

**Teaching Methodology:** The study found out that most respondents felt that the teachers were responsive to their needs once they were alerted to the requirements. However, still there exist certain perception based issues which came up. For instance, students in certain courses like geography, history, commerce and statistics which rely heavily on visual mediums like maps and graphs may find themselves at a loss if their needs are not included while preparing the teaching methods. Even in other courses frequently the instructors would write on the blackboards without reading out, or point to certain visual elements while not speaking about them. This has a further effect of discouraging students with visual disability from taking up these courses. The solutions which came up from the respondents themselves required simple procedures like reading out presentation slides or explaining the maps in greater oral detail.

Respondents with loco-motor disability described that universities like DU provide a concession for room rent for the students with visual disability, there is no such facility for former category. One male respondent from Delhi School of Economics who had a deformity of the left hand reported that he has faced problems while arranging for writers from the university – the common perception being that it is only the students with visual disability require this facility.

**Conclusion**

This study has been an attempt to link the institutional factors with attitudes and perceptions in order to expand the notion of accessibility to educational opportunities. If accessibility is understood solely as access to physical infrastructural facilities, then there is a huge chance of missing out or misinterpreting the requirements of the disabled. For instance, a Braille signboard may help in recognizing the classroom but what happens inside the classroom cannot be ensured by any such arrangement or any public policy initiative. That is the sphere where the notion of accessibility needs to be expanded to.
The provision of equal opportunities can create capabilities amongst students with disabilities that are easily at par with ‘normal’ human beings. The ‘normal’s’ tend to attribute a different capabilities list for persons with disabilities, which is a denial of individuality and stigmatizes the self. Therefore a student with disability performing one of the ‘normal’ actions of human life, surprises the ‘normal’s’. For instance, when one of our respondents, a student with low vision, received calls from all the IIMs, the press contacted the respondent expressing surprise.

An environment which provides capabilities not based on the understanding of the normal but rather treating the human variations as a spectrum, can thus not only be empowering but also provide one with the access to move out of the binaries of ‘normal’ and ‘abnormal’ and of ‘ability’ and ‘disability’. Most importantly however, such an environment ‘enables’ – not just a certain section but the entire human spectrum.

References

Access Audit Report, 2007-2008, project on Accessible University of Delhi, conducted by the Equal Opportunity Cell (DU) in collaboration with a Delhi based NGO Samarthyam.


Using Design and Technology Task to Foster Learning Through the ‘Joy of Making’ Among Students of Class VII

Dr. Pooja Birwatkar
Visiting Fellow, Homi Bhabha Centre for Science Education, Mumbai

Dr. Chitra Natrajan
Dean, Homi Bhabha Centre for Science Education, Mumbai

Abstract: Indian education system is yet to introduce design and technology subject in the curriculum. Design and technology courses in schools bring about a holistic development of students. This paper discusses the planning, development and implementation of a workshop based on tenets of design and technology. 19 students belonging to class VIIth (12 boys and 7 girls) participated in the workshop. The students were presented a realistic technical challenge in which they had to in groups design and produce an artifact which could move on water keeping in perspective the design brief presented to them. This paper discusses the planning and the actual model made by student groups. Barlex and Rutland (2004) framework is used to discuss the design decisions made by the students. This paper provides some implications for teacher professional development programs in terms of preparing teachers for using design and technology based interventions in classrooms.

Key words: design, technology, design and technology, artefact

Introduction
While many countries across the world (England, USA, Australia, New Zealand, Japan etc) have incorporated design and technology subject in their school curricula, Indian school curriculum has still not done so. Mahatma Gandhi’s Basic Education, which was craft centered education, led the Education Commission (1966) to introduce the concept of Socially Useful and Productive work (SUPW) in school curricula. Yet, in the years that followed SUPW has lost its meaning and relevance. Design is understood sadly as something that only designers can and are supposed to do, while technology is limited to those in relevant professional courses.

Understanding 'design', 'technology' and 'design and technology'
The most common understanding about the word design is to devise, draw, plan, propose, invent or sketch (Mitcham, 2001). According to Ara, F (2013), design is a discipline, a
process and a product. It is a discipline because it explores the relationships between the user, the product as well as the context in which the product is used. It is a process because it involves intentional and iterative problem solving that converts ideas into systems or products. It is also a product as it is an outcome, which could be a sketch, a model, a specification or a shape of the product. Literature review (Cross, 1995, Dorst and Cross, 2001) from human cognition point of view acknowledges that design as a basic ability can be developed amongst people. Technology in the broad sense refers to the human activity that transforms the natural environment to make it fit better with human needs.

McCraken (2000) describes the relationship between design and technology as follows: As a human soul is to the body, design is to technology. It is important to understand the interdependence and complementary nature of technology and design like the inseparable relationship between body and soul, technology is incomplete without design. Design cannot be fully appreciated without an understanding of technology. If technology is to be fully understood, then the concept of design needs to be understood (pg 87).

**Design and technology as a teaching strategy**

According to Davies (1996) children and designers showed similar thought processes as well as approaches to the design process. He gave an example of how both children as well as designers use play method to explore the design world and use drawings as visual notes. According to Papert (1993), people always learn better, while constructing anything be it a sand castle on the beach or a theory in physics. Therefore it is of crucial importance that opportunities for hands-on activities are provided to school students.

According to Stables (1997), design and technology courses in schools should have the aim of bringing about a holistic development of students and enable them 'to design what they make and to make what they design'. According to Ritchie and Hamson (1996), this making of products helps students understand better and clarify related concepts, and generate further ideas. A hallmark feature of design and technology (Dand T) education is that students not only design but make too, thereby involving processes like designing, building, testing and refining followed by further testing.
Method of the study

This paper discusses the planning, development and implementation of a 3 day workshop for VIIth std students following a course in design and Technology at Homi Bhabha Centre for Science Education.

About the Students

19 students belonging to class VIIth (12 boys and 7 girls) from different English medium schools of Mumbai district were selected.

Details of the workshop

Students worked in groups as learning is better if it takes place within a social context where there is peer interaction as well as interaction with adults and others in the social environment. This study attempted to do the same by providing students an opportunity to work in groups. Lottery method was employed while making the groups to eliminate the possibility of any sort of selection bias. The groups were asked to think of a name for their groups. The groups came up with the following names

1. Triple Tornado (3 boys)
2. Science Brain (2 girls and one boy)
3. PDA rocks (2 girls and one boy)
4. Chanakya(3 boys)
5. Scientific researchers (3 boys and I girl)
6. 3 Stars (2 girls and one boy)

Data Collection and Analysis:

A worksheet related to buoyancy was given in initial phase which provided data regarding their ideas about floating/sinking concept. Observations were carried out as students worked in groups. Each stage like planning (making of sketches), experimenting (buoyancy), designing and actual working were observed by the researchers and notes were made including the informal discussion that took place within the groups as well as with the researchers. Feedback forms given to the students at the end of the workshop which had items
related to the planning of the artifact, problems faced, previous experiences (including knowledge of science topics) that contributed, the modifications in future designs and the learning that happened. The data was qualitatively analyzed.

**Planning for the workshop:**

In the preparatory phase of this workshop, the foremost step was to first think of an artifact or anything in which principles of design and technology could be employed. The artifact could be concrete, abstract, aesthetic, functional or just an idea. We played with several ideas like making a multi-purpose uniform or a chair, designing a study area amongst several others. We structured our ideas on the basis of our experience that children get very fascinated by objects that move or rotate or show any other kind of mechanism which changes either their position or brings about any kind of change in them. A kind of thrill and excitement is experienced when one sees the object made by them actually showing some kind of technology. This is what can be attributed as the 'joy of making'. We wanted to give the students the joy of making and also derive immense satisfaction on seeing the artefact actually perform the designated function. After much deliberation we narrowed on the idea of making a 'boat'. Again here we debated that if we beforehand tell the students to make a boat then they all will make a similar kind. So we decided to modify and use the word 'toy' instead of boat.

**The Design Brief**

Next task was to make a design brief for which we took some expert help.

**Design Brief Given To Students**

You have to make a water toy and sell it to your friends in a stall in monsoon fair. Design your toy so that:

- Toy should float
- It should move at least 50 cm
- It should be made of easily available or waste material
- It should be attractive
- Size about 15 cm
- No battery cells only mechanical parts
On the basis of the design brief we anticipated some learning objectives that would be achieved by students during the course of the workshop.

**Learning Objectives:**

Students would learn to:

- Use the concept of brainstorming to generate ideas
- Use the scientific method of selecting the most feasible idea.
- Visualize the actual design in terms of possibility and imagination
- Use previous knowledge about concepts like floating and sinking when deciding about the materials of the toy
- Develop the selected ideas into planned designs keeping the constraints in mind

**Workshop plan**

Day 1: Planning and drawing the design.
Day 2: Making the model and testing it
Day 3: Modifying the model, testing it and giving feedback.

**The preliminary task (Day 1)**

For the first day we decided to explore their ideas about buoyancy and floating and other physics principles involved. To each group 19 objects were given. The groups had to analyze each object, discuss and generate a hypothesis regarding whether it would sink or float in water. Once their predictions were complete they had to now test the objects by putting them in water and again mark their observations.

**Observations regarding the task done by the groups**

<table>
<thead>
<tr>
<th>Item</th>
<th>Sink</th>
<th>Float</th>
<th>Sink</th>
<th>Float</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wooden block</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Aluminium foil</td>
<td>1</td>
<td>5</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Stone</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubber ball</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Item</td>
<td>Sink</td>
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<tr>
<td>Eraser</td>
<td>6</td>
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<td>6</td>
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<tr>
<td>Candle</td>
<td>2</td>
<td>4</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Plastic cup</td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Pins</td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Straw</td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Iron nails</td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Cardboard pieces</td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
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<tr>
<td>Crushed aluminium foil</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Plastic lid</td>
<td>1</td>
<td>5</td>
<td></td>
<td>6</td>
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<tr>
<td>Pingpong ball</td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
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<tr>
<td>Marble</td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
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<tr>
<td>Thermocole piece</td>
<td>6</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Cotton ball</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Sponge</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Ice cream stick</td>
<td>1</td>
<td>4</td>
<td>5</td>
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</tr>
</tbody>
</table>

**Making the design of the artifact on the paper (Day 1)**

In this stage the students first designed on paper their toy. Though we had asked the students to use scale and draw the artifact in actual proportions of measurement yet none of the groups actually did it. We asked students to put measurements across their sketches and draw more realistically keeping the calculations in place. Based on the artifact they proposed to make, we asked them for a list of the material they would require, keeping in mind one of the conditions of the design brief of using commonly available low cost resources.

**Actual making and working of the artifact (Day 2 and 3)**

The next day the material was provided to the students and they started working on their respective models. Given below is a summary of each group’s performance.
**Group 1: 3 stars**

This group was the first one to come up with the design on paper and suggest the use of a balloon as means to propel the toy forward. The group decided that their toy would be a boat.

**Sketch:** Showed a shape that looked like a flat vessel having elevated walls and being narrow at one end. A balloon was in the central inside part and tied to a straw which was coming out through a hole. The straw at one end was shown as means of filling air in the balloon. The drawing had an interesting feature in terms of the arrows that were put to show the difference in the direction of air and boat movement. Measurements were given in the drawing as 15 cm i.e the bottom was given as 15cm.

**Actual model**

The group had planned to make the toy with thermocol keeping in mind the floating sinking activity. The design was simple so group finished the task quite early and spends rest time either testing the boat or decorating it with thread and toothpicks. This was the first group to test the boat.

![Fig 1: Actual model of 3 stars](image)

**Group 2: Scientific Researchers**

**Sketch:** The design made by the group on paper had hardly any connection with the actual model they made. The paper drawing looks like a typical boat. There are no measurements mentioned.

**Actual Model**

The actual model that this group made was very different from their sketches. One boy came on the second day with an altogether different mode to make the toy with cardboard. His
fellow group members showed resentment towards his idea as it seemed vague and non-functional and asked him how he would prevent the cardboard from getting wet. They made use of propellers of cardboard. The problem with it was that the cardboard got wet and had to be assembled again to make it move.

![Image](image1.jpg)

**Fig 2: Actual model of scientific researchers**

**Group 3: Science Brain**

This group decided to make a kind of Ant as they called it.

**Sketch**

The drawing revealed that the group had made a sort of erect figure that represented the head and body made of 3 parts of the hand. The straw was shown as passing through all the balls. The figure was standing on some sort of base.

**Actual model:** The material they used was rubber balls. The basic design was to drill holes in 4 rubber balls and pass a straw with a balloon attached at one end through it. The group was very confident that the toy would move on water. Though lot of questions were asked regarding the possibility of toy not working or sinking of balls or tilting but the group was adamant on their stand that it will work hence they were given the freedom to make it

![Image](image2.jpg)

**Fig 3: Actual model of science brain**

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Group 4: Chanakya

They had decided to make a design in lines of a similar kind of situation in a popular Hindi film called *Tare zameen pe*.

**Sketch**

The sketch showed a leaf as the roof supported by vertical wood stick which was standing on a base made of cardboard. There were no measurements provided in the sketch or the mechanism by which their artifact would move.

**Actual Model:** The boat like thing made by them had cut open tetra pack box as the base. For the wooden sticks ice cream sticks were used and the leaf was put at the top supported by the 4 ice cream sticks. The problem with the design was that the ice cream sticks were not able to support the leaf and the structure looked collapsed. They after testing in water tub discovered that the model does not move plus does not stay steady on water. They then modified the model and removed the leaf. The structure now had a sponge as a base and ice cream sticks now were put like oars.

![Fig 4: Actual model of Chanakya](image)

Group 5: PDA Rocks

**Sketch:** The sketch made by them looked like a boat. It had 2 balloons like structures attached to a pipe like thing. The design had no depiction of any kind of measurements.

**Actual Model:** The final structure had thermocol as a base as well as supporting walls on 2 sides making an open box like structure. There was a straw running inside with a balloon attached to it at one end. The mechanism was that once air is blown and the balloon is filled
in air the artifact is put in water and air from balloon is released making the artifact go forward in water.

Fig 5: Actual model of PDA rocks

**Group 6: Triple Tornado**

**Sketch:** The sketch made by the group actually was not well defined. It neither was clear nor had any dimensions.

**Actual Model:** The arrangement had ice cream sticks arranged in vertical and horizontal rows with straws on either side. However from the design it is not clear as to how the artifact would move forward. They later modified the design. The mechanism was that as air is filled in the balloon and the structure is kept on water due to air release the artifact would be propelled forward.

Fig 6: Actual Model made by triple tornado

4. Framework adopted for analyzing the activity of designing and making

The study used Barlex and Rutland (2004) framework for design decisions for analyzing the types of design decisions students made.
1. **Conceptual decisions** requiring students to think about the overall purpose of the design that is what is the sort of the product and what it does. In this study, students were very clear about what purpose their toy would be for. Some groups like the groups who made an 'ant' like toy however could not make a very clear conceptual decision. Students came up with varied type of designs some of which were too complex to be created or too ambitious or too complicated.

Students did not reflect on whether the design on paper was clear, did it actually meet the constraints imposed, ease of making and using it. They were very excited to make it rather than focus on designing and planning for it first. Students made sketches on paper without any specifications of measurements though they were told to. Later when asked to use measurements they randomly put some numbers without doing calculations regarding how the measurements affected the model and the proportions of various parts of their model. Most of them had already conceptualized in their minds what kind of toy they would be making and were very confident regarding these mental images. They did not probably think measurements were crucial. Even when they gave measurements, their actual models did not follow the measurement criteria they had pre decided. A refinement in their sketches was needed.

2. **Technical decisions** require the students to consider “how the product will work” and the nature of the components and materials required to achieve this. Students did not understand how the principles of science would work in their artifacts. There was no explanation provided by them during the course of designing and even while demonstrating but through trials and watching the performance of the other groups they understood simple mechanism oh how air in a balloon when released results in propulsion or basic concept of floating and buoyancy or force. The design on paper did not indicate how the toy would move. Trial and errors method was sought for refinement of designs.

3. **Aesthetic decision** regarding the students to thinks ways in which their product would appeal to the senses. Initially the groups especially the girls in the groups were quite keen on beautifying the product. They used some kinds of additional decorations on their toys but later they realized that it was posing as hindrance to the actual working of the 'toy' as buoyancy of their 'toy' was getting affected. However groups did indulge in painting and coloring the 'toy' and trying their level best to make it look attractive. Later though they
concentrated only on the working mechanism without paying much attention to how it looked but rather on how it worked.

4. **Constructional decisions** regarding how to make the production. Only some of the designs on the paper reflected that students were mentally able to visualize the images of the products they wanted to make. None of the designs depicted the back view or side view. It was only the front view. Students told about the material they would need to make the toy on basis of the floating sinking experiment. To some extent this experiment did contributed a lot in making of the artifact. Apart from learning about buoyancy, the exposure to the objects during the floating / sinking experiment did influence the lists of items students wanted for their artifact. They mentioned every day easily available material like thermocol, straws, tertapacks, balloons, tapes, cardboard pieces etc.

5. **Marketing decisions** requiring students to consider who the product is for, what is its cost, where it will be sold? Students did not market the product well. They only talked of low cost material and ease of making rather than the technological aspects.

**Conclusion**

Indian education system still has a long way to go in terms of giving priority to including design and technology Education. The detachment of school lessons from real life issues makes students learn the content for only evaluative purposes as they do not see the relevance otherwise. Design being interdisciplinary can help to integrate knowledge, skills and values across several disciplines like arts, science, mathematics and humanities so that a holistic perspective is generated. As seen from this study, designing activities do influence the learning of science concepts (Roth, 2001). Through the exercise of making the artefact move on water, students did come to realize important concepts like propulsion, force, streamlining, buoyancy though there was no direct attempt made by the facilitators to teach them these concepts. There was lot of peer learning that occurred. Creativity potential is abundant in students as seen in this study and education has to exploit it. This study provides some implications for teacher professional development programs. It is crucial to include design and technology education in teacher tool box. Teacher training courses can include small workshops, short terms courses or even projects on design.
References


Enhancing English Speaking Skills of Upper Primary Vernacular Medium Students: An Experiment with ICT Integration

Ms. Anu Madhok
Alumnus(M.Ed), K.J.Somaiya Comprehensive College of Education, Training and Research

Abstract: The contemporary position of English is that of the most prominent link language throughout the country. The proficiency in the language has become almost a necessity for successfully operating in the different spheres of life. However, the objectives of teaching English have not been achieved yet. This is especially true in vernacular medium schools which are faced with many problems in developing skilled practitioners of English. The vernacular students do not acquire any skill of the language and are especially under-confident in speaking English.

The main reason for such a situation could be the absence of any concrete and applicable language formula. In such a scenario, Information and communication technology (ICT), which has become a prominent part of education, offers numerous means of improving teaching and learning in the classroom. The nature of ICT being interactive and dynamic nature, it has the potential to meet the needs of individual students by providing opportunities to direct their learning and to pursue information, or complete tasks, in ways which meet their own interests and needs.

The researcher experimented this philosophy by using a variety of software applications to train upper primary vernacular medium students in English speaking. The results of the study revealed significant improvement in the speaking skills of sample students and also showed marked improvement in their confidence to practice the language in day-to-day life.

Introduction:
English, although a foreign language is now as much an Indian language as any other. English has been taught in our schools and colleges for many decades. It occupies the position of associate official language. It is used widely as a link language in offices and among the educated people. It is not only a compulsory subject at school, college and university but is also the medium of instruction to the large extent. It is the language of
science and technology. It occupies the position of a second language in the school curriculum and for higher education. English language has been assigned the role of library language. Without exception every secondary school child has to learn English as a subject, usually for six years but in some cases for three years only. This contemporary position of English in India shows English language teaching occurring at all levels of Education, mainly as a second language. However, the objectives of teaching English have not been achieved yet. This is especially true in vernacular medium schools for the following reasons:-

- Interference of mother tongue
- Lack of understanding of the target culture
- Over-crowded classrooms
- Lack of infrastructure and facilities
- Lack of exposure to the language
- Ineffective textbooks
- Delayed introduction of English at school level
- Exam-oriented teaching pattern

Therefore, the vernacular medium students suffer from a syndrome that does not allow them to perform well in higher education courses. It is clear from the above discussion that English language standards have been deteriorating over the years and basic oral skills have been appalling due to lack of usage and reflective. At the moment, it is the duty of teachers to cater to the practical needs of the learners, to make them competent enough to interact with one another and remove the fear from the minds of the students by providing them moral support more as a facilitator rather than a traditional type of instructor. The students particularly from vernacular languages who take admission schools should be trained properly in four skills of English - Listening, Speaking, Reading and Writing. Collaborative techniques like reading club, dialogue chains, role play, book review, group discussion etc. may be very helpful in improving their communication skill and create confidence in them.

To achieve this, there is a need for involvement of the students by providing them with opportunities to practice speaking in classroom activities so that they will acquire adequate command over speaking skills. With the advent of technology, to have an interactive classroom is possible and easy. This can help the vernacular learners to master the communicative competencies in an effective way. ICT-based tools can be used effectively to
train vernacular medium students in English, so that they develop the habit of speaking fluently in English like they do in their mother tongue.

“We need technology in every classroom and in every student and teacher’s hand, because it is the pen and paper of our time, and it is the lens through which we experience much of our world.”

~ David Warlick

Current ways of imparting school education use extensive ground work in the field and require both large numbers of trained personnel as well as committed individuals working in a world where access to technology is going to determine the gap between the haves and the have-nots. Information and communication technology application constitutes an absolute necessity, given huge dispersed populations in a sub-continent; inadequate resources and mind boggling needs. The new technologies offer us the chance to telescope decades of infrastructure building and development activities by providing us with the advantage of high speed delivery with no dilution in quality; wide reach; individualization of learning in a anytime, anywhere situation; and interactivity, a low per unit cost. These technologies and facilities can also be equally used for language teaching.

The utilization and integration of ICT tools can indeed assist students in acquiring English Language competency as well as enhance the quality of their learning experience. So there is an urgent need for vernacular medium teachers, with time to become pro-active in identifying subjects to be learned with educational technology in ways that show the added value of educational technology applications, establishing teaching strategies which meet learners' needs and integrating ICT in learning activities into the classroom.

This has inspired the researcher to design an ICT Integrated Instructional Module to equip the vernacular medium students with the basic communicative competencies in English by providing an ICT-based learning environment.

Aims of the study

1. To develop an ICT Integrated Instructional Module to enhance the spoken English of vernacular medium students;
2. To test the effectiveness of the ICT Integrated Instructional Module in enhancing the spoken English of vernacular medium students.
Objectives of the study

1. To ascertain the pre speaking skill test scores of the vernacular medium students;
2. To design and implement an ICT Integrated Instructional Module for enhancing the spoken English of vernacular medium students;
3. To ascertain the post speaking skill test scores of the vernacular medium students;
4. To compare pre and post speaking skill test scores of the vernacular medium students;
5. To study the perceptions of vernacular medium students regarding the utility of the ICT Integrated Instructional Module.

Hypothesis

In pursuit of objectives (1 to 4), the following null hypothesis is formulated-
H_0 - There is no significant difference between the pre-test and post-test scores of the vernacular medium students on a test of spoken English.

Research Questions

In pursuit of objectives 1 to 4, the following research question was framed-
R1 - What is the extent of effectiveness of the ICT Integrated Instructional Module on the spoken English of the vernacular medium students?

In pursuit of objective 5, the following research question was framed-
R2 - What are the perceptions of the vernacular medium students about the utility of the ICT Integrated Instructional Module?

Review of Related Literature

1) Mangal, S.K. (2011) studied about ‘Language Laboratory established and functioning.’
   In this article, the author explained in detail about the various types of language laboratories and their uses and applications. He stated that Language lab provide tremendous scope and opportunities for teaching and learning of the essentials related to the acquisition of basic skills, understanding and application of a new Language. Hence, efforts should be sincerely made in establishing Language Lab in our Schools along with making our language teachers operate them in an effective way for the proper realization of the objectives of teaching of English.

The researcher has said that communication skill is an essential part of any profession. But in rural areas in India, English is introduced only from 5th or 6th class onwards as the second or third language and the students are neither made aware of importance of English nor trained properly to have command over the language. The researcher suggests that, it is the duty of teachers to cater to the practical needs of the learners, to make them competent enough to interact with one another and remove the fear from the minds of the students by providing them moral support more as a facilitator rather than a traditional type of instructor.

In conclusion, the researcher suggested that teaching of grammar can be made more interesting through visual (Power Point Presentation) presentation of the topics instead of traditional method of teaching it through blackboard. As far as pronunciation of the words is concerned, the researcher concluded that in order to achieve the goals of language learning today, every college should be provided with language lab, sophisticated equipments like computers, LCD Projectors etc., and all the problems faced by the vernacular medium students can be successfully overcome by practice.


The researcher, in this study, looked into a very crucial area of language learning of vernacular medium school students has and attempted to analyze the position of such students when they go on to pursue their higher studies. The hindrances faced by the vernacular medium school students while studying Engineering at college level are brought to surface in this research. The objectives of the study were to find out the handicaps of vernacular medium students and to equip the students from vernacular medium schools to acquire skills of effective communication through the help of modern teaching aids.

The findings of the study revealed that students have handicap in comprehending the all-English syllabus, it also crucially undermines the student’s ability to communicate with teachers and peers. More than 50% of non-English medium students say their cognitive process has been affected by the language factor. Fast delivery and differentisng speeds of lectures along with unfamiliar pronunciation by lecturers are reasons for their poor performance. It was concluded that computers can develop the communicative skills at the own pace of the learners.
4) Dr. R. Sivakumar and P. Ponraj (Lecturer in Education), Department of Education, (2007), Annamalai University, Cuddalur conducted a study on “Information Technology in Education”

Stating that Information technology related products would enhance and strengthen the process of learning and that the entire system of education should use IT products and enhance them periodically, the authors stressed that the teachers should enhance their skills to use IT related products. Apart from synchronous face-to-face instructor-student interaction, there is enormous potential for a synchronous interaction between students and instructor via emails, video-conferencing, online etc. The authors mentioned that web-based learning and web-assisted classroom instruction will enable the teacher to use animation, 3D pictures and multimedia to explain concepts easily. The conclusion of the article stated that introducing and implementing advancement of IT related products would enhance the entire system of teaching and learning.

5) Sree Rekha, R. (2008) conducted a research on ‘Teachers’ Attitude towards the Use of ICT in English Language Teaching’

The researcher attempted to study the Attitude of Teachers towards the use of ICT in English Language Teaching (ELT). In pursuit of this aim, her objectives were to find the attitude of secondary school English language teachers towards the use of ICT in ELT and to compare the attitude of secondary school English language teachers categorized on the basis of gender, locality, management and experience.

For the study, she formulated an ICT Attitude Scale for language teachers, which was duly validated by experts. The tool was administered to a representative sample of 120 secondary level English language teachers, of Thiruvananthapuram district, Kerala.

The findings of the study were that 53% of teachers were positive to a great extent and 37% of teachers were positive to some extent. There was no significant difference between the attitude of teachers categorized on the basis of gender, locality, management and experience.


The objectives of the study were to find out the effectiveness of computer assisted instruction in achievement of English language education and to compare the achievement in English
language education of the control group (Traditional method) with that of the experimental group-I without discussion (Computer Assisted Instruction) and experimental group-II with discussion (Computer Assisted Instruction).

In this study, there were two experimental groups. One was Computer Assisted Instruction without Discussion and the other was Computer Assisted Instruction with Discussion. The investigator has also administered the Aptitude in English Language Test, Teaching Profession Perception Scale (TPPS) and Attitude towards English language Teaching Scale, Teaching Competency Scale and Chattell’s 16PF Questionnaire to the control group and to the two experimental groups. The collected data was analyzed.

The findings revealed that Computer Assisted Instruction proved to be more effective in teaching English language education than the traditional method.

7) Narasimham, Y. (2012) studied about ‘Attitude of the Secondary School English Language Teachers towards Using Information and Communication Technology.’ The objective of the research conducted was to study the attitude of secondary school English language teachers towards using ICT. 120 English teachers were selected on the basis of purposive sample random sampling from urban (60) and rural (60) areas. A questionnaire developed by the researcher was used as a tool to collect data. The finding of the research showed that the English teachers under study showed quite a positive attitude towards using ICT.

8) David Wilson, D., and Thayalan, V. (2007) conducted research on “The Significance of the Language Laboratory in Communication” Authors of this article attempted to highlight the significance of the language laboratory and its challenges imposed on the learner and teacher. This article discussed the various features of a language laboratory. As it is a technological aid for learning, it has found to have a number of advanced facilities that can help a student to learn language with proficiency to communicate. The electronic devices used in the laboratory can stimulate the eyes and ears of the learner to acquire the language quickly and easily. A learner can get the experience of having interaction with native speakers through the laboratory. Hence, according to the authors, language laboratory has become the need of the hour in any language learning process for communication.
Epilogue

On reviewing the related literature, the researcher came across various studies that recommended the implementation of ICT in education.

Thus, the following gaps have been discovered by the researcher in the related literature review:

- Many researchers have tried different collaborative techniques for English language teaching, but not many have experimented using ICT-based techniques.
- In India, the concerns vernacular medium students with regard to English language learning, haven’t been sufficiently discussed.
- The integration of ICT for English language learning has not been streamlined particularly for vernacular medium learners.
- Although, communicative skills have been elaborately discussed, not many exclusive studies have been conducted on vernacular medium school students in India, focusing on ‘speaking skills’ among other major language skills.
- Majority of the research has been focused on the importance of English language of vernacular medium learners at higher education, rather than at the primary school level.
- Studies about innovative techniques for improving English communicative competencies of vernacular medium students at the primary level are scanty.

This prompted the researcher to study the impact of technology-based language teaching at a level where the acquisition of language fundamentally begins to take shape and is most effective, i.e., at the primary school level.

The present study, therefore, intends to address the identified research gaps and thus the objective of the study is to evaluate the effectiveness of an ICT Integrated Instructional Module for enhancing the Speaking Skills of Upper Primary Vernacular Medium Students.

Intervention

The researcher used mixed method embedded experimental design. Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in many
phases in the research process. As a method, it focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone.

The experimental design adopted in the study is the Mixed Embedded Experimental Research Design.

In the present study, a mixed method approach has been used to gauge the effectiveness of the ICT Integrated Instructional Module on the enhancement of English Speaking Skills of the vernacular medium students.

This design can be diagrammatically represented as follows:-

As evident from the diagram above,

- Quantitative data has been primarily used to ascertain the difference in pre-test and posttest scores of the participants in spoken English.

In the present case, analysis of quantitative data has been done through ‘t’ test of the mean scores of sample students in the test of spoken English before and after intervention.

- Qualitative data collected has been used to support and explain the findings obtained through quantitative analysis.

In the present case, analysis of qualitative data has been done through open-coding of semi-structured interviews of the sample students after intervention.
The final interpretation has been based on the combined results of the quantitative and qualitative analysis.

**Population:**
The population in the present study included all vernacular medium school students in Mumbai city affiliated to SSC Board.

**Size and Composition of the sample of the Study:**
The technique used for selection of sample in the present study was Purposive and Convenient Sampling. The sample comprised of 39 upper primary vernacular medium students, all from class VII-A of S.K Somaiya Vinaymandir School, Vidyavihar, Mumbai. The medium of instruction of the school was Gujarati. The students of the particular school were selected as it was within the vicinity of the college where the researcher intended to conduct the intervention programme, using the resources like computers, projector, speakers, digital language lab, etc.

This enabled the researcher to utilize the infrastructural facilities needed for the intervention programme, which were otherwise not available in the school of the participant students. The easy access to students and consent of the school authorities made the researcher choose the sample of the study.

The sample students were residents of Vidyavihar and nearby areas like Ghatkopar and Kanjurmarg. The mother tongue of all sample students was Gujarati. The sample consisted of 12 girls and 27 boys ranging from age 11 to 13 years. Most participants belonged to the rural localities of Mumbai, of low socio-economic backgrounds. The confidence level and English speaking skills of the students was inadequate as per their age and most of them were not motivated to learn English.

**Tools of the Present Study:**
As the study aimed to train vernacular medium school students in spoken English, the tools used by the researcher were:-

i. Criterion Reference Test on Spoken English developed by the researcher
ii. ICT Integrated Instructional Module developed by the researcher
iii. Semi-structured interviews

Due care was taken by the researcher to ensure the validity and reliability of the tools.
Criterion Reference Test on Spoken English:
Criterion Reference Test is intended to measure how well a person has learned a specific body of knowledge and skills. After reading many articles and books concerning the development of speech, important skills required for speaking and the methods used to teach speaking, the researcher selected eight important skills of speaking to be incorporated in the test. These speaking skills were:-

1. Sentence pattern,
2. Grammatical accuracy,
3. Body language,
4. Right vocabulary,
5. Fluency,
6. Right content,
7. Pronunciation, stress and intonation,
8. Pair-co-ordination.

Under the guidance of subject experts, a Criterion Reference Test was developed by the researcher.

ICT Integrated Instructional Module:
In the present research the ICT Integrated Instructional Module was developed by the researcher in order to organize a structured programme to enable the vernacular medium students. It was developed with a view of enabling the students to acquire understanding of simple conversations in English, develop interest in language learning, help achieve a level of competency in spoken English and to build confidence in practicing English speaking.

The module was prepared for eight days of intervention, two hours each day. Simple conversations in English were presented through the module. Few speaking skills were catered every day by incorporating various software applications (like Prezi, PowToon, WMM, Audacity, MS PowerPoint, etc) individual and group activities,. These speaking skills were developed through basic communicative competencies (Fig. 3.1), out of which one communicative competency was used as the theme for each day.
## Module Design

<table>
<thead>
<tr>
<th>Day</th>
<th>Theme</th>
<th>Software used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Greeting, introducing yourself, favorites</td>
<td>PowerPoint, YouTube video</td>
</tr>
</tbody>
</table>
| 2   | Telling the time  
At a movie ticket counter  
Taking a taxi       | PowerPoint, PowerPoint, YouTube video |
| 3   | Restaurant  
Asking for permission  
In a new city        | Prezi, WMM, Audacity |
| 4   | See and tell pictures  
My classroom  
My best friend      | MS Word, Prezi, Prezi |
| 5   | How I spent my holiday  
A day at a beach  
Story telling       | WMM, Prezi, YouTube video |
| 6   | Cricket match  
Use of must and should  
Mother and son     | WMM, YouTube video, PowerPoint |
| 7   | Fruit seller  
Asking for directions | PowerPoint, Audacity |
| 8   | Making an appointment with doctor  
Just dial  
Ordering pizza    | Audacity, PowToon, PowToon |

As evident from Table above, a variety of software applications were used for conducting lessons on different topics. The use of these software applications in the present study is explained below.

The software applications used by the researcher are:-

**PowToon** - It is an online presentation software tool that allows a user to create free, animated video explainers as an alternative to textual teaching. The researcher used PowToon for creating videos showing ‘telephonic conversations’ using animated characters.
Audacity - It is a multi-track audio-editor and recorder. The researcher used this software for recording conversations in her own voice and playing the audio recording during the sessions. The topics like ‘In a new city’ and ‘Asking for directions’ were catered using this software owing to its good quality audio and ease in editing the recordings.

MS PowerPoint - It is a slide-based presentation program developed by Microsoft. The researcher used this software for a variety of presentations where pictures or model conversations were to be shown in small parts for focused attention. Different types of templates and colorful slides were used to make the session captivating.

YouTube videos - YouTube is a video-sharing website that allows download and upload of videos. It was used by the researcher to present relevant and simple videos available on the website. This software was especially useful for showing short stories to the students in order to illustrate narration.

Windows Movie Maker (WMM) - It is a freeware video editing software by Microsoft. The researcher used this software for creating a sequential flow of events including conversational dialogues and pictures. The presentation made using this tool appeared like a movie to the students. The topics like ‘How I spent my holiday’ and ‘Cricket match’ were covered using WMM.

Prezi - Prezi is a cloud-based (SaaS) presentation software and storytelling tool for presenting ideas on a virtual canvas. This product employs a Zooming User Interface (ZUI), which allows users to zoom in and out of their presentation media, and navigate through information. The researcher used Prezi mainly for description and narration of events aided by advance graphic options.

MS Word - Microsoft Word is a word processor that allows usage of many features and layouts. It was used only for one presentation during the module to show still images to the students in order to elicit description of the images.
Communicative competencies catered in the module:

- Giving and seeking information
- Making a request
- Description
- Narration
- Conveying notion of possibility, necessity and obligation
- Conveying notion of quantity, size, distance, weights and measures

The researcher developed conversational situations on different topics based on the communicative competencies listed above.

Day wise Stratification of the ICT Integrated Instructional Module:

The day wise time-table of the eight day intervention program made by the researcher is as follows:-

### Day 1

<table>
<thead>
<tr>
<th>Dimension catered</th>
<th>Grammatical accuracy, right vocabulary, right content, body language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>Greeting, introducing people, favorites</td>
</tr>
<tr>
<td>Communicative Competency</td>
<td>Giving and seeking information</td>
</tr>
<tr>
<td>Activity</td>
<td>Warm up activity of introduction; greeting, introducing and favorites</td>
</tr>
<tr>
<td>Game</td>
<td>Game-introducing your partner</td>
</tr>
</tbody>
</table>

### Day 2

<table>
<thead>
<tr>
<th>Dimension catered</th>
<th>Sentence pattern, grammatical accuracy, right vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>At a restaurant, asking for permission, canteen</td>
</tr>
<tr>
<td>Communicative Competency</td>
<td>Making a request</td>
</tr>
<tr>
<td>Activity</td>
<td>At a restaurant; Asking for permission; In a new city; Language lab</td>
</tr>
</tbody>
</table>
### Day 3

<table>
<thead>
<tr>
<th>Dimension catered</th>
<th>Right content, sentence pattern, grammatical accuracy, pair co-ordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>Telling the time, at a bus stop, at a movie ticket counter</td>
</tr>
<tr>
<td>Communicative Competency</td>
<td>Making a request</td>
</tr>
<tr>
<td>Activity</td>
<td>Telling the time</td>
</tr>
</tbody>
</table>

### Day 4

<table>
<thead>
<tr>
<th>Dimension catered</th>
<th>Sentence pattern, fluency, pronunciation, stress and intonation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>My classroom, see and tell pictures/scenes, My best friend</td>
</tr>
<tr>
<td>Communicative Competency</td>
<td>Description</td>
</tr>
<tr>
<td>Activity</td>
<td>My classroom</td>
</tr>
</tbody>
</table>

### Day 5

<table>
<thead>
<tr>
<th>Dimension catered</th>
<th>Fluency, body language, pronunciation, stress and intonation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>How I spend my holiday, a visit to a beach, story telling</td>
</tr>
<tr>
<td>Communicative Competency</td>
<td>Narration</td>
</tr>
<tr>
<td>Activity</td>
<td>How I spend my holiday</td>
</tr>
</tbody>
</table>

### Day 6

<table>
<thead>
<tr>
<th>Dimension catered</th>
<th>Grammatical accuracy, pair co-ordination, right content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>Fruit seller, asking for directions</td>
</tr>
<tr>
<td>Communicative Competency</td>
<td>Conveying notion of quantity, size, distance, weights and measures.</td>
</tr>
<tr>
<td>Activity</td>
<td>Fruit seller</td>
</tr>
</tbody>
</table>
Day 7

<table>
<thead>
<tr>
<th>Dimension catered</th>
<th>Grammatical accuracy, pair co-ordination, right content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>Cricket match, two friends, mother and son</td>
</tr>
<tr>
<td>Communicative Competency</td>
<td>Conveying notion of possibility, necessity and obligation</td>
</tr>
<tr>
<td>Activity</td>
<td>Use of must and should</td>
</tr>
<tr>
<td></td>
<td>Cricket match</td>
</tr>
</tbody>
</table>

Day 8

<table>
<thead>
<tr>
<th>Dimension catered</th>
<th>Fluency, pronunciation, stress and intonation, pair co-ordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme</td>
<td>Telephonic conversations</td>
</tr>
<tr>
<td>Communicative Competency</td>
<td>Integrating all communicative competencies</td>
</tr>
<tr>
<td>Activity</td>
<td>Making an appointment with doctor</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Semi-structured Interviews:
In order to have an insight of the students’ perceptions about the utility of the ICT Integrated Instructional Module, the researcher conducted semi-structured interviews with the participants, after the intervention programme. The researcher asked open-ended questions to study the perceptions of the students regarding the utility of the ICT Integrated Instructional Module. Open-coding was used to analyze the responses given by the participant students.

Data Analysis
The data was analyzed with the help of descriptive and inferential analysis.
Quantitative analysis

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Mean</th>
<th>SD</th>
<th>Table value</th>
<th>‘t’ test value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.05</td>
<td>0.01</td>
</tr>
<tr>
<td>Before</td>
<td>9.05</td>
<td>1.53</td>
<td>2.02</td>
<td>2.71</td>
</tr>
<tr>
<td>After</td>
<td>26.73</td>
<td>5.38</td>
<td></td>
<td>19.72</td>
</tr>
</tbody>
</table>
Qualitative analysis

In the present study, research question 1 (R1) has been framed in pursuit of objectives 1 to 4 and research question 2 (R2) has been framed in pursuit of objective 5.

R1 - What is the extent of effectiveness of the ICT integrated instructional module on the spoken English of the vernacular medium students?

To answer this research question, the researcher has used inferential analysis. The obtained results of inferential analysis indicate that there has been a difference of 48% in the mean scores before and after intervention.

The value of percent mean before intervention was 21% and after intervention was 69%. The difference between the two values is 48%. Hence, this shows that the ICT Integrated Instructional Module was significantly effective to the extent of 48% in enhancing the English speaking skills of the Upper Primary Vernacular Medium Students.

R2 - What are the perceptions of the vernacular medium students about the utility of the ICT integrated instructional module?

To answer this question, the researcher collected responses given by the sample students through semi-structured interviews. Open coding of the responses was carried out, based on which the researcher has tried to answer the research question as given below.

The responses of the students can be broadly categorized into the following two dimensions:

**Challenges faced by sample students**-
- Phobia of speaking in English
- Difficulty to pronounce new words
- Conversing in English without using their mother tongue.
- Less motivated towards learning with the help of an ICT Integrated Module
- Difficulty to include ‘magic words’ taught to them during intervention like ‘Thank you, Please, Sorry, May I..., etc
- Inceptive reluctance to learn a language only by way of ICT-based techniques and activities, without writing and memorizing notes.

**Positive responses**-
- The new-found ability to pronounce words correctly and the knowledge of using them appropriately while speaking made students enthusiastic and motivated to learn.
Thereafter, to be able to practice those words, phrases and sentences during sessions gave them further confidence.

- Most students said that they enjoyed the use of graphics, videos and audios for English lessons. They said that they never felt fatigue or boredom during sessions.

- Majority of students said that they always wanted to be able to include English words in their communication but were not sure of the pronunciation. During and after intervention, the students tried to use small sentences and magic words taught during sessions, while conversing at school and at home.

- Few students expressed their desire to incorporate a similar module in their daily timetable for English class. They said it would help them considerably to speak better English and would eventually benefit them in education.

**Findings**

- Thus, there was significant difference in the Pre-test and Post-test scores of the vernacular medium students with respect to the following dimensions of spoken English:
  1) Sentence pattern
  2) Grammatical accuracy
  3) Body language
  4) Right vocabulary
  5) Fluency
  6) Right content
  7) Pronunciation, stress and intonation
  8) Pair-co-ordination

- The variance of the module was found out to be 83% which implies that the ICT Integrated Module was effective in enhancing the English Speaking Skills of the vernacular medium students to the extent of 83%.

- The responses of the students collected through semi-structured interviews indicated an overall positive perception of the students about the utility of the module.

- The sample students, on being interviewed said that they felt more confident to use English while conversing after the intervention programme.
The vernacular medium students expressed their desire for a longer duration of the ICT Module as they felt it would improve their oral competencies in English to a considerable extent.

Majority of the students said that they enjoyed learning English through games and watching audio-visual stimulators.

**Conclusion**

On the basis of the findings as mentioned above, the following conclusions can be drawn:-

1) There is a significant difference between the pre-test and post-test scores of the students.
2) The module has a definite, positive impact on enhancing the English Speaking Skills of the vernacular medium students.
3) The responses of the students regarding the perceived utility of the module clearly indicate that the vernacular medium students would prefer to learn English conversational skills, so that they can use the language for every day communication with ease and confidence.
4) Also, the use of ICT for teaching English was received very well by the students and they expressed their desire to learn the foreign language using advanced audio-visual aids for better understanding.

Due to the significantly positive results in the post-intervention tests and the boost in confidence as exhibited by the students on completion of the ICT integrated instructional module, the researcher strongly recommends that ICT should be integrated in the teaching-learning process of language, especially for EFL learners. The effective integration of ICT can definitely make a considerable difference in the existing standards of English speaking among the vernacular medium school students.

**Suggestions for Teachers**

Teacher is the gateway of knowledge for all children. On the basis of the conclusions drawn from the present study, the following suggestions are recommended for the teachers:-

- The outdated approach of meeting the needs of the non-English medium learners should be replaced by contemporary practices using technological advancements.
- Refresher and orientation courses, workshops for teachers should be held to understand deal with the real issues that emerge out of classroom experience.
• Knowledge labs or institutional arrangements where teachers can continuously upgrade their abilities and become better equipped to deal with the needs of the students should be provided for.

• With the help of such knowledge labs, continuous development of the whole gamut of learning, resource facilities which are practically non-existent at present, should be developed.

• Sufficient practice should be given to vernacular medium students in spoken English,

• Teacher should model correct speaking skills in classroom and encourage the use of English.

• The students should be taught daily life conversations which render more utility to the students.

**Suggestions for Policy-Makers**

• English should be introduced at an earlier stage in school for easier and smoother language acquisition.

• An achievable target should be set for the students whose second or third language is English and efforts should be directed towards the achievement of the target.

• Policy makers should provide appropriate assessment for measuring the achievement in English language, so that the actual level of proficiency can be determined.

• Emphasis should be laid on ‘communicative competencies’ instead of merely written exams to ascertain the mastery over foreign language.

• Training courses during vacations for students and refresher courses for teachers should be made available to those who feel its requirement for improving English communicative skills.

**Suggestions for Further Research**

The present research can serve as a foundation for several other researches:

• The present experiment can be conducted on a large scale of students for a longer period of time to see if major progressive improvements are possible in foreign language training.

• Similar studies using ICT-based tools can be introduced at different levels of school to determine its impact on different age groups.
• Using collaborative and innovative techniques for language teaching can be experimented with the vernacular medium students.

• A study on using ICT module to enhance all the four skills of language-speaking, listening, reading, writing can be conducted to measure its effectiveness.

Summing it up

“The limits of my language are the limits of my world.”

~ Ludwig Wittgenstein

Due to the significantly positive results in the post-intervention tests and the boost in confidence as exhibited by the students on completion of the ICT Integrated Instructional Module, the researcher concluded that the effective integration of ICT can definitely make a considerable difference in the existing standards of English speaking among the vernacular medium school students.

The researcher strongly recommends that ICT should be integrated in the teaching-learning process of language, especially for EFL learners.

This study attempted to integrate ICT in the pedagogy of language learning for developing speaking skills. It was found that ICT provided good opportunities to students to practice language. It proved to be effective in enhancing the speaking skills of vernacular medium students (inferential analysis). The perceptions of the students about the utility of the module indicated the positive impact that the module had in developing the confidence of English Speaking among the students. (R2)

Thus, it is safe to say that ICT can offer the solution for dealing with existing difficulties involved in language teaching and make it possible to achieve considerable improvement in the acquisition of a language.

ICT presents a powerful learning environment for learners in the classroom. As teachers are the main characters to employ ICT in educational contexts, they should be trained in how ICT can be integrated into the teaching process. The use of information technology maintaining contact, that bond between us that let our students know that support was only a click away, and at the same time giving them a sense of freedom to work on the areas of their learning that they considered important. These tools also promote authentic communication in an
environment where this input is scarce and at the same time helps prepare them for the technological work place of the future.

The researcher personally believes that change is needed in the culture of teaching and learning so that ongoing, situated, participatory, and collaborative approaches are accepted. Finally, collaboration between the training providers and the schools is necessary as is a change in beliefs about the use of ICTs in education and for this scaffolding will result in solid language gain to vernacular medium students.

The use of ICT can help make learning language more realistic and functional. By adapting our teaching goals, methods and assessments to incorporate new technologies, language learning becomes more alive and relevant to daily living. However, a great deal of the success comes from preparing students to interact and learn in this technology-driven environment. Therefore, if we try to integrate technology in our teaching, our new, refocused approach to teaching will propel us a long way to making ICT a more rewarding partner in the teaching and learning process. Thus, ICT can be viewed as an effective tool for enhancing educational practices in any field.

References


Journal of Language Teaching and Research, ISSN 1798-4769, Volume 1, Number 5, Sept. 2010


Mangal, S. K., Language Laboratory established and functioning. Edutracks 10(7), 11-14, March 2011.


Effectiveness of Mobile Application as an Assessment Tool in testing the Conceptual Clarity in Science among High School Students

Ms. Gauri Bhat
Co-ordinator and Senior Science teacher, Metropolitan Central School, Bengaluru

Abstract: Mobile phone usage today has become an indispensable part of human lives. It is a device that has formed a part of our everyday being. It simply cannot be denied as a sheer fact that students of today are heavily dependent on the usage of mobile phones. The researcher through this survey has tried to judge the effectiveness of a mobile application in testing the Conceptual Clarity in Science among High School Students.

Introduction
With the rise in technological discoveries and with the advent of interesting mobile applications, it is increasingly becoming difficult to restrain the students of today from the usage of mobile phones. Moreover the user-friendly applications find amongst the students such a great popularity that they find it immensely irresistible to shun the usage of such applications.

According to Bruner’s theory of constructivism, learning is a social process where students construct new knowledge based on the current one. As per this theory, mobile application draws attention of a large number of students as the functioning of mobile phones is not naive to students of today. Hence, they find the association of studies and mobile phones very much a fun-filled one.

As rightly quoted by Ignacio Estrada, “If a child cannot learn the way we teach, maybe we should teach the way they learn”. Therefore the researcher feels that this method of assessment can be a very effective one indeed in drawing out the conceptual clarity in the best possible hassle-free manner.

Studies Conducted In India
Dighal, K.C. (1985) studied improved methods of science teaching with a sample size of 500 students. The objectives of the study were to explore how to make life sciences lively, realistic and interesting to the students and to remove drudgery in the teaching of biological sciences. They found a significant difference in the effectiveness of self-activity method. The
study also revealed that the preparation of charts, arrangement of film shows by the school and orientation programs for life science teachers brought better results.

**Sushma** (1987) studied the effectiveness of teaching biology by Concept Attainment Model and Biological Science Inquiry Model on a sample size of 78 students. The objectives of the study were to study the effects of Concept Attainment Model and Biological Science Inquiry Model based teaching on pupil’s achievement and to compare the effectiveness of Concept Attainment Model based teaching, Biological Science Inquiry Model based teaching and the traditional teaching approach on pupil’s achievement. She found that the Concept Attainment Model and Biological Science Inquiry Model were found effective at 0.01 level when the means of pretest and post test scores were compared by applying t-test also the Concept Attainment Model was found more effective than the Biological Science Inquiry Model and the Biological Science Inquiry Model was found more effective than conventional teaching.

**Mahapatra, B.C.** (1995) developed a software package to teach chemistry to class IX. The sample consisted of 67 students. The objective of the study was to develop a software package and to test its effectiveness on the academic achievement of students on a criterion referenced test. It was found that developed software package was found to be effective in terms of achievement of the students on a criterion referenced test as 75% of the students achieved >60% of marks and there action of students towards different aspects of the software package was positive.

**Joshi et al** (1997) studied the effectiveness of software in terms of reasoning ability of science. The sample consisted of 67 students. The major objective of the study was to compare the developed software with traditional method in terms of reasoning ability in science. They found that the adjusted mean scores on overall reasoning ability in science and its aspects of the students taught through developed software packages differed significantly from the taught through traditional method.

**Singh, B.** (2005), studied the effectiveness of Computer Assisted Instruction for teaching Biology. The objective of the study was to compare the effectiveness of Computer Assisted Instruction (CAI) with respect to the lecture method on the topics ‘Tissues and cell’. He found that both the methods were effective in enhancing the learning about cell and tissues while lecture method was more effective than CAI for the teaching cell, CAI was more effective then lecture method for teaching tissues.
Studies Conducted Abroad

Rachel et al (2011) conducted a workshop on information processing and self-testing on biology students. The objectives of the study was to teach students self-regulating techniques with visualization based exercises as a foundation for learning and critical thinking with respect to two areas namely information processing and self-testing. They found that long term relation of a self-testing effect across question levels and student achievement is a promising endorsement for a future large scale implementation and further evaluation.

William et al (1999) conducted a research using technology to implement active learning in large classes. The objective of the study was to make it easier to engage students in learning activities during lecture and to enhance communication among students and between the students and the instructor. They found that an interactive student centered classroom helps to create a classroom environment that accommodated a wider variety of student learning styles, making the learning of science a much more positive experience for students.

Moravec et al (2010) conducted a research study to test the effectiveness of learn before lecture strategy in introductory classes of biology. The objective of the study was to create time for active learning without displacing content for introducing material before class in a large introductory biology course. The results demonstrated that learn before lecture combined with interactive exercises can be implemented incrementally and result in significance increase in learning gains in large introductory biology classes.

Epilogue

The review of the various studies conducted in India and abroad showed that the studies were generally experimental in nature trying to infuse technology, in order to promote self-assessment among students, to develop skills in both deductive and inductive reasoning, hypothesis forming and developing tests for the hypothesis. Some others developed software to teach physics and chemistry and to develop reasoning skills. According to the research, technology-based strategies have been shown to improve the relevancy and richness of students’ learning experiences nurture collaborative learning environments and motivate and engage students; offer choice and flexibility to students; improve students’ chances of academic success. However, the researcher found that a very few studies were conducted on high school students to assess the conceptual attainment in Science using Mobile phone application. Hence the researcher felt the need to conduct this study.
**Rationale of the Study**

NOTE:- The Mobile Application about which the researcher is referring to in this survey is ‘Cram Buddy’ designed by Mobitatva- a leading web portal in providing support in Science through online education.

Usage of mobile application involves the creation of a self-assessing environment in an informal setting that encourages the learner to test his level of attainment of knowledge without the fear of being judged or graded or remarked. The student-centered nature of such an assessment tool requires the students to employ their knowledge of mobile phone usage in testing their conceptual clarity by downloading the application, answering the questions and obtaining a suitable confidential score. Employment of such a methodology encourages students to use learning and integrative techniques of self-assessment. Apart from their duty as a learner, the student is required to play the role of an evaluator as well. The student here is provided with the required space and time of performance as per his requirement. With no specific and rigid marking pattern along with the absence of grade orientation methods, the application becomes very much student friendly.

**Objective of the study**

To ascertain the effectiveness of Mobile application as an assessment tool in testing the Conceptual Clarity in Science among High School students

**Research Design**

The study is a descriptive survey seeking to assess the Conceptual Clarity in Science among High School students.

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>My Opinion</th>
<th>YES(%)</th>
<th>NO(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I enjoy using mobile phones for browsing data</td>
<td>70.84</td>
<td>29.16</td>
</tr>
<tr>
<td>2</td>
<td>Downloading mobile applications is a waste of time</td>
<td>14.53</td>
<td>85.47</td>
</tr>
<tr>
<td>3</td>
<td>It is fun to check my knowledge this way</td>
<td>56.25</td>
<td>43.75</td>
</tr>
<tr>
<td>4</td>
<td>I would like to assess myself in all the subjects in this way</td>
<td>77.50</td>
<td>22.50</td>
</tr>
<tr>
<td>5</td>
<td>I wish my final exam is also conducted in the same way</td>
<td>83.34</td>
<td>16.66</td>
</tr>
<tr>
<td>6</td>
<td>It is difficult for me to comprehend this form of</td>
<td>8.34</td>
<td>91.66</td>
</tr>
</tbody>
</table>
assessment

<table>
<thead>
<tr>
<th></th>
<th>Working with friends helped me gain a competitive spirit</th>
<th>45.84</th>
<th>54.16</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>This helped to analyze my area of weakness in the subject</td>
<td>68.75</td>
<td>31.25</td>
</tr>
<tr>
<td>9</td>
<td>The format of this was easy to follow and understand</td>
<td>95.88</td>
<td>4.12</td>
</tr>
<tr>
<td>10</td>
<td>I find it useless as it does not cover the content in detail</td>
<td>33.34</td>
<td>66.66</td>
</tr>
</tbody>
</table>

**Participants**
A purposive sampling was conducted to ascertain the effectiveness of Mobile Application as an assessment tool in testing the conceptual clarity in Science among High School Students. A total of 240 students participated in the same.

**Tool**
The tool consisted of an opinionnaire in the Yes/No format which had statements like ‘I enjoy using mobile phones for browsing data’, ‘Working with friends helped me gain a competitive spirit’ etc.

**Conclusion**
From the above data interpretation, the following conclusions can be aptly derived
1. 56.25% of the students feel that it was fun to check their knowledge this way.
2. 68.75 % of the students feel that this helped them to analyze their area of weakness in the subject.
3. 95.88 % of the students feel that the format of this was easy to follow and understand.

**Inference**
It can be rightly inferred that Mobile Applications do have a definite impact on High School students as an assessment tool in testing the Conceptual Clarity in Science.

**Suggestion**
Through this descriptive survey, the researcher found that the High School students had a definite liking towards the Mobile Application as an assessment tool in informal settings.
They found it easier in this way to attain Conceptual Clarity and retained high levels of interest in the subject. The researcher would like to suggest the inclusion of such methods in the daily teaching-learning process so that the students do not merely rote-learn the subject but genuinely be proficient in it along with lot of interest.

**References**


Sushma(1987) Effectiveness of Concept Attainment and Biological Science Inquiry Models for teaching Biological Sciences, Buch’s Vol 1, p75.


Outcomes in a Large Introductory Biology Class, CBE - Life Sciences Education, v9, n4, p473-481.


Junior College Students’ Usage of Social Networking Sites For Their Personal, Academic Work and Their Comparison Based On Faculty

Ms. Sandychris Inchiparamban
M.Ed. Student (2013 – 14), Department of Education, University of Mumbai

Dr. Sudha Pingle
Assistant Professor, Department of Education, University of Mumbai

Abstract: Social networking sites are the buzz words today and are so popular among the youth that they seem to be glued to these sites. This research paper aimed to study the use of social networking sites among junior college students for their personal and academic work based of faculty. The random sampling technique was used and the sample consisted of 171 Arts, 179 Commerce and 130 Science students studying in junior colleges in Greater Mumbai. A questionnaire on the use of social networking sites for personal and academic work was used. Data was analyzed using descriptive statistics and ANOVA. Findings indicated that all students, irrespective of their faculty, used social networking sites for both personal and academic work to the same extent. Findings also revealed that Facebook and YouTube were the most preferred social networking sites for personal work, while Google and Wikipedia were preferred for academic work. A significant finding, here, was the use of WhatsApp, a mobile messaging application, for both personal and academic work.

Introduction

The world, as we know today, is called by many as a “global village”. Humans in one corner of the world can communicate with humans in another corner. This has been made possible by the magnificent progress in the field of science and technology which, in turn, has led to stronger and more efficient communication systems. The way we communicate today has made our social relationships and networks even more complex.

The 21st century has seen a quantum leap in what is known as social networking. Through this, it is possible to make friends, exchange resources, share information and many more things. Now, social networking could happen in schools, colleges, universities, parks or any other place. However, social networking, in context of this study, refers to the use of Internet to get in touch with people, among several other things.
Social networking sites act as online communities and provide people a chance to socialize with others anywhere in the world. Also, getting in touch with people from various cultures, races and having different traditions may help users learn a thing or two about the same. And, the best thing is that one is never too old to join a social networking site.

Although social networking seems to have its benefits, it is always wise to be careful when one is a part of a social networking site. Viruses, fake profiles and the likes could be dangerous many a times and may also make one lose faith in them. It could lead to undesirable events.

The youth, being the major users of social networking sites, use these sites for several purposes. These could include updating a status, uploading and sharing photographs and videos, listening to music, surfing or even playing games. A major benefit of being on social networking sites is that one can find old friends and make new friends.

Social networking sites are also being used in academics, albeit gradually. A look at whether the youth actually so use social networking sites for academic purposes and how this is being done needs to be established.

**Need of the Study:**
The present century boasts of being driven by technology. And, it is this technology which has somehow even led our socializing skills to be dependent on it.

Technology is not far behind when it comes to influencing the youth. In the present times, most of the youth is glued to technology and may even be lost or feel handicapped without it. From connecting to people around the globe to studying, it is technology that the youth prefers today.

The focus of this study was to compare the use of social networking sites for personal and academic work on the basis of faculty. The faculties of Arts, Commerce and Science have different course content, which is in many ways unrelated. It may be said that Arts students may be heavy users of social networking sites for the simple reason that these sites act as a gateway for expression of ideas and emotions. This, one may assume, goes with the courses
studies in Arts. Commerce students have to deal with economics, finances and the likes and may probably use social networking sites to a lesser extent. And, Science students, with their theories, laws and principles may actually find less time for social media. This study, therefore, helped to understand what really is the scenario and if there exists a difference in the use of social networking sites between Arts, Commerce and Science students.

Definitions of Terms

Conceptual Definitions

**Social Networking Sites:** These are web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection and (3) view and traverse their list of connections and those made by others within the system.

Abbreviated as SNS, a social networking site is the phrase used to describe any website that enables users to create public profiles within that website and form relationships with other users of the same website who access their profile.

A social networking website is an online platform that allows users to create a public profile and interact with other users on the website.

**Personal Work:** Personal work is defined as having to do with or belonging to a particular person or concerning a person’s private life.

**Academic Work:** Academic work is defined as having to do with education or study. It refers to study.

Operational Definitions

**Use of social networking sites for personal work:** This is defined as the use of social networking sites such as Facebook, Orkut, Hi5, Netlog, MySpace, Flickr, LinkedIn, YouTube, Twitter, Tumblr and any other websites by students for their private work such as:

- displaying personal information
- putting up a status
- chatting and messaging
• playing games
• reading general literature
• watching videos and listening to music
• searching for people
• uploading photos and videos
• downloading various types of media
• sending wishes
• finding useful information
• creating and being part of interest groups and promoting hobbies
• following a celebrity
• looking for jobs or a relationship
• buying things online

Use of social networking sites for academic work: This is defined as the use of social networking sites such as Facebook, Orkut, Hi5, Netlog, MySpace, Flickr, LinkedIn, YouTube, Twitter, Tumblr and any other websites by students for their private work such as:

• looking up and posting assignments
• acquiring academic information
• discussions on academic topics
• watching educational videos/movies
• checking grades on assignment
• passing on notes
• being part of academic circles/groups
• collecting academic data and filling out educational surveys
• taking a quiz/test
• posting queries
• participating in conferences
• looking for latest developments in an area of study
• accessing online libraries
• downloading study materials
• promoting college events/activities
Aim of the Study:
To study and ascertain the difference among junior college students’ usage of social networking sites based on their faculty in the following variables:
   a. Personal Work
   b. Academic Work

Objective of the Study:
To study and compare junior college students’ usage of social networking sites based on faculty in the following variables:
   a. Personal Work
   b. Academic Work

Hypothesis of the Study:
There is no significant difference between junior college students’ usage of social networking sites based on faculty in the following variables:
   a. Personal Work
   b. Academic Work

Sampling Technique and Sample
For the present study, the probability sampling technique was used under which simple random sampling method was used. The sample for the present study consists of 171 Arts, 179 Commerce and 130 Science students studying in junior colleges located in Greater Mumbai.

Methodology
The present research study is a descriptive research study, under which the causal comparative method was used. This study compares the use of social networking sites for personal and academic work among junior college students on the basis of their faculty (Arts/Commerce/Science).

Data Analysis
The data was analyzed using descriptive statistics and the t-test.
Findings and Interpretations
Following are the findings of the present study:

a. There is no significant difference between junior college students’ usage of social networking sites for their personal work based on faculty \( (F = 2.08; P = 0.12; P > 0.05) \).

This finding can be supported by the responses obtained for each of the sets of items designed to understand the use of social networking sites for personal use. The responses obtained for the use of social networking sites for displaying personal information were found to be more or less the same among the Arts, Commerce and Science students. Facebook was found to be the most preferred social networking site probably because Facebook is being used by a number of people worldwide. As a result of this, it is easy to find people one knows and also make new friends.

Results also revealed that the use of social networking sites for varied activities such as listening to music, surfing, finding hobby related information, writing recommendations and seeking jobs was more or less the same for the Arts, Commerce and Science students. Again, Facebook was found to be the most preferred site for this purpose. YouTube was also found to be a favorite. Facebook would be a favorite among the students because it makes available a number of features for the user such as posting status, sending messages, uploading photos, etc. and YouTube because of the quality music and videos it makes available for its users.

Similarly, results for the use of social networking sites as a medium of “being connected,” revealed that all students, irrespective of the faculty, use social networking sites, mostly Facebook, to remain connected to their friends and family. An important finding here was the increasing use of WhatsApp, a fairly recent mobile application. The reasons that Facebook and WhatsApp are preferred would be because of the instant connection that they afford to their users.

Also, results revealed that students from all three faculties logged in to social networking sites to the same extent. Facebook, probably for the exciting virtual world it provides its users with; YouTube, for being the most preferred music site; and WhatsApp, for free and instant messaging were found to be logged into the most.
Although there is no research conducted on the comparative use of social networking sites according to the faculties of Arts, Commerce and Science, there are research studies conducted which refer to the increased use of social networking sites among the youth. Meena, P.S., Mittal, P.K. and Solanki, R.K. (2012), in their study, found that teenagers are devoting significant time to social networking on websites. Kist, W. (2013) has stated that electronic communication has become part of life of many people over the last ten years.

News Medical (2013) has also reported that adolescents are increasingly using social networking sites and mobile technology to express suicidal thoughts and intentions as well as to reach out for help.

It can also be stated that students, irrespective of the faculty are using computers and the Internet for their personal work because the use of these tools is helping the youth stay connected with their peers. Activities such as chatting, watching videos, listening to music, etc. is commonly carried out by most youth and therefore, the increasing use of the Internet, specifically social networking sites, for these purposes.

Additionally, the society today is driven by technology. Technology has enabled sending messages in a mere second from one corner of the world to another. Therefore, in this fast world, the youth definitely prefer to use technology including social networking sites to stay connected with their friends and family rather than writing out long letters. Even a movie today could be downloaded and viewed in a matter of few seconds rather than standing in long queues to get tickets. This only shows that if one isn’t technology-savvy today, then he/she may probably be looked down upon as being “technologically backward.”

b. There is no significant difference between junior college students’ usage of social networking sites for their academic work based on faculty (F = 2.67; P = 0.06; P > 0.05).

The finding that there is no significant difference between Arts, Commerce and Science students in the use of social networking sites for academic work can be supported by the responses obtained on the items in the tool.

The responses obtained to check the use of social networking sites for college-related activities such as posting changes in time table or information about college events revealed
that students from all three faculties used social networking sites, mainly Facebook for this purpose followed by WhatsApp. The reasons why Facebook and WhatsApp are preferred could be the ease of use of these two media (through the computer or the mobile phone) and the surety of the information reaching several people.

Results also indicated that students from Arts, Commerce and Science used websites such as Google and Wikipedia for conducting actual academic work such as reading academic literature, gathering information for research and downloading study matter, to the same extent. The probable reason here could be that websites such as Google and Wikipedia enable students to find a lot of relevant information related to their chosen field.

However, a negative response among all students for the use of social networking sites for “being part of academic circles and the activity therein,” was obtained. Very few students actually belonged to these online academic circles and even fewer created such academic groups or posted anything on these groups. This could be because of the fact that the youth probably view social media as a gateway for more fun activities than studies. Students may also want to meet up personally and form study groups rather than on the social networking sites.

Similarly, students, irrespective of their faculty, showed poor response when using social networking sites for other academic-related activities such as checking graded assignments online, looking for jobs, looking up educational institutions, opportunities to study abroad, etc. The reason here could be that the educational institutions themselves are not using the social networking sites for academic purposes and it is only very rarely that study or job opportunities would be made available by institutions on social media.

Further, there have been no researches conducted on the comparative use of social networking sites according to the faculties of Arts, Commerce and Science, although, there are research studies conducted which refer to the increased use of social networking sites among the youth for academic purposes. VanDoorn, G. and Eklund, A.A. (2013) studied social media, specifically Facebook, and the teaching-learning potential of symmetrical, synchronous communication through Facebook. Veletsianos, G. and Navarrete, C.C. (2012), through their case study, found that learners enjoyed and appreciated both the social learning
experience afforded by an online social network and supported one another in their learning, enhancing their own and other students’ experiences.

Further, through his study, Chen, P. (2011) found that there is a high degree of learner engagement when social networking sites were used as a platform to provide a supportive and social infrastructure in an urban educational context. Also, Moran, M., Seaman, J., and Tinti-Kane, H. (2011) state that faculty are big users of and believers in social media and use social media for the courses they teach, believing that video, podcasts, and wikis are valuable tools for teaching and a majority report that social media sites can be valuable tools for collaborative learning.

This finding can be additionally supported by the fact that today an enormous amount of information, related to any field of study, is available at the click of the mouse. With the help of social networking sites, important academic information can be acquired and passed on to others since these sites help in being “connected” to others.

The free use of these sites enables discussions, chats, video and audio conferencing, blogging, sending messages, etc. that, in turn, aids academics to a great extent. All this, in turn, has increased the significance of self-paced learning, thereby, shifting the focus on online and distance courses. Not only distance course, even in formal institutions, there is a lot of talk about independent learning. The role of the teacher is moving to that of a facilitator and a guide. This is because the students possess a lot of information, thanks to the use of the Internet and social media.

However, in the Indian context, we are still to make use of social networking sites to their fullest potential. This has to begin with the teachers who still prefer to go buy the traditional routes.

Discussion
It was seen that social networking sites are being used for both personal and academic work by all students irrespective of their faculty. The reasons that can be attributed in this case could be:
• The society, being technologically driven, expects students to be technology-savvy and if one isn’t, then he/she may probably be looked down upon as being “technologically backward.”

• A lot of information, related to any field of study, is available at the click of the mouse. With the help of social networking sites, important academic information can be acquired and passed on to others.

• The free use of these sites enables discussions, chats, video and audio conferencing, blogging, sending messages, etc. that, in turn, aids academics to a great extent. All this, in turn, has increased the significance of self-paced learning, thereby, shifting the focus on online and distance courses.

Findings also indicate that the social networking sites Facebook and YouTube were the most preferred for personal work among the youth for the following reasons:

• The ease of communication
• Exciting virtual world
• Features such as chat, messaging, putting up a status, games, music, etc.
• Being connected to people around the world

Another important finding was the preference for Google and Wikipedia for academic work. The reasons why these sites were preferred over others could be:

• Availability of ample information related to any field of study
• Easy access

Another significant finding was the increasing use of the relatively new mobile messaging application, WhatsApp, by students for both personal and academic work. WhatsApp was found to be a favorite among the students for the following probable reasons:

• Free messaging
• Support for video, audio and picture messages
• Easy access

**Recommendations**

Based on the findings of the present study, the researchers have the following recommendations to make:
1. Use of social networking sites will pave way for virtual learning which is the trend in education today.
2. Those students who are working can also avail of social networking sites to study.
3. Teachers, today, are seen as facilitators or guides, who help their students with acquiring knowledge independently.
4. Teachers could become members on social networking sites and connect with their students.
5. Teachers could also post assignments, videos, study notes, etc. for their students on the social networking sites.
6. Teachers could also use social networking sites to conduct their lessons in the classroom, as well.
7. Teachers could very well use social networking sites to stay in touch with the guardians of their students and inform them about the performance and progress of their wards.
8. Since, social networking sites are a great way to conduct distance and online courses, it becomes essential that educational institutions have their own page on these sites.
9. Being present on social networking sites will help educational institutions to disseminate academic information to students. Not only that, it will also help in making available books/e-books, accessing libraries and any kind of academic updates to the students.

Conclusion
The study points out to the fact that students, irrespective of their faculty, are using social networking sites to the same extent. This is a clear indication that it is high time that teachers and academic institutions consider using social networking sites for educational purposes.

References
Academic work. Retrieved September 22, 2013 from thesaurus.com/browse/academic%20work


Technology and the Teacher

Ms. Neelu Verma
Assistant Professor, Bombay Teachers’ Training College

Abstract: The current focus on ICT makes it necessary for all teachers to develop high levels of competency in its effective use. The use of ICT resources has been considered as the prerequisite of being a good teacher. ICT has become a central tool of every endeavor for improving the teaching learning scenario. Teachers often find themselves spending extra time and investing their precious efforts into learning about how to be ‘different’ and ‘innovative’ by using ICT. The positive outcomes of using ICT in the classroom have been confirmed time and again by various researchers. However, the researcher felt the need to shift the focus from the interest of the student to the efforts put in by the teacher. This paper is an attempt to explore the implications of the use of ICT for the teacher. The researcher studied the changes caused by the introduction of ICT into learning environments. However, these are not without some potential problems that must be considered by administrators and policy framers.

Introduction

The use of information and communication technology (ICT) has caused many changes in society. Facilities such as Internet applications, video technology, and various computer attachments and software programs have made technical as well as structural changes. Most of the major institutions of our society have changed, and how we live our daily lives has been affected. However, the impact on education is comparatively new as teachers integrate this new technology into their teaching. As ICT is being used extensively in teaching, teachers shared their experiences which provided some clues as to what possibilities and problems may be presented with this new technology.

Classroom resources are dramatically expanded by the use of ICT, which makes many resources, including original source materials from all over the world, available to students, teachers, and school administrators. For example, the Internet brings information, data, images, and even computer software into the classroom from places otherwise impossible to reach, and it does this almost instantly. Access to these resources can facilitate individual and group projects, collaboration, sharing ideas, and can make available curriculum material not found in schools without Internet access.
The focus of this paper is a preliminary analysis of how the roles of teachers in different classroom settings are altered as a result of use of ICT-based resources. The research brings to light how the capabilities of ICT-based resources can enable and constrain innovative pedagogical practices amongst teachers.

**Rationale**

- Teachers are generally convinced of the usefulness of ICT in education and so make extensive use of it as demanded by the teaching learning activities at school.
- Teachers engage in innovative practices related to the use of ICT but are faced with problems that are difficult to handle.

Use of technology in the classroom and its effects on the teacher can be seen from two viewpoints. The two ends in this situation have been discussed here. On one hand integration of technology into teaching is being done with all good reasons for student development. On the other hand, the reaction of the teacher to this changing scenario of teaching and learning through technology is also being considered.

**Purpose and Research Questions**

The purpose of the paper is to provide a better understanding of the change in attitudes of the teachers who make use of ICT in the classroom. It also explores how the use of ICT is affecting the work of teachers. The research questions that have been considered are:

(a) How is the work of the teachers affected by the use of ICT in the classroom?

(b) What are the changes that the teachers experience in their work schedule when they incorporate ICT in transacting the required curriculum?

(c) When ICT resources are used to teach in a classroom, what are the potential problems and difficulties faced by the teachers?

**Review of the literature**

Rawlins (1992) related the changes brought about by the Internet and information technology to what happened as a result of the invention of the printing press. He envisaged all schools, colleges, universities, researchers, and industry well connected with each other.

Means and Olson (1997) have studied many of the innovative schools that used technology to support project-based or inquiry-based learning. Project-based learning was a predominant feature of the innovations in these schools.
Noble (1998) presented a critical examination of what was happening with the use of ICT in educational environments. He thought the trend toward the increasing use of technology robs teachers of their knowledge and skills, eventually leading to a loss of control of their working lives. Robertson (1998) also made the case that the increased use of technology would lead to a loss of control by teachers as our education system becomes more commercialized.

Drucker (1999), noted academic and management guru, made some comparisons between the industrial revolution and the changes that were happening because of the introduction of ICT. The real changes, he said, would come as a result of changes to our "mental geography" (p. 50) as we begin to realize the full potential of the new technology.

Roschelle, J. M., et al. (2000) conducted a study on how and what children learn in school with computer-based technologies and found that computer technology can help support learning, and that it is especially useful in developing the higher-order skills of critical thinking, analysis, and scientific inquiry. They suggested various ways computer technology can be used to improve how and what children learn in the classroom. Several examples of computer-based applications are highlighted to illustrate ways technology can enhance how and what children learn by helping them to understand core concepts in different subjects.

Shaver (2001) noted some of the weaknesses of the Web as an educational tool, pointing out that much of the information posted was unreliable and that many search engines were "closer to slot machines than library catalogues" (p. 18). He also noted several other shortcomings that could limit the effectiveness of ICT in schools: the low number of computers available for students, lack of high-speed Internet access, inadequate software, unprepared teachers, and a lack of support for teachers' use of technology.

Bhattacharya, B. (2008) in the article ‘Engineering education in India–the role of ICT’ suggests how Information and Communication Technologies are adopted for extending the outreach of education. The paper focuses on some technology-enhanced initiatives that have already been taken up by the government of India, as well as by some of the leading institutions in the country in this regard.

A Report on Nature and Extent of use of ICT in classrooms under Sarva Shikshana Abhiyan conducted by R.V. Educational Consortium Rashtreeya Sikshana Samithi Trust in March,
2010 suggested some of the ways in which content delivered through ICT could help children construct knowledge. This can be done by including instructions and giving opportunities for children to discuss/reflect/think/reason out through use of computers. The study focuses on how children learn collaboratively by networking opportunity provided by computers. Teachers, subject experts, pedagogues and content developers can evolve strategies to use ICT in the curriculum.

This review of the literature illustrates the variety of opinions on the use and value of ICT in educational environments. However, the apprehension in the minds of the teachers about the use of ICT in schools and the fact that ICT use is on a rise in educational environments, makes it useful to examine what is being done in one school.

**Methods**

A qualitative case study research method was chosen because it would provide thick and rich descriptions of how these changes are being experienced by teachers. An open ended research method was used as it allows unexpected findings to emerge that might otherwise be missed. The school selected for the study has 43 teachers and offers classes 1 - 12 to more than 1000 students. With the permission of the Principal, a request to conduct interviews was made directly to all teachers at the school. Thirteen teachers, from various subject areas, responded to the request and interviews were conducted in person at the school at a time suitable to the participants. The interviews were semi-structured and lasted from 30 minutes to 45 minutes. All interviews were transcribed; coding was done into categories and then analyzed. The major themes which emerged after data analysis are described in the findings.

**Findings**

The following themes and sub-themes emerged after the analysis of interview transcripts.

*Diversifying the Teaching and Learning Spectrum:*

Teachers gave many diverse and detailed examples of how technology had changed their work. A number of tasks were being done with the use of computers and Internet. The teachers gave notes to students and kept in touch with their parents through email, as also assigned research based tasks to them for Constructivist learning. A teacher shared how a poster making competition was organized in school and all the posters were uploaded on the internet.
Learning Enhancement as a result of using ICT Resources:
Several teachers mentioned that they used Power Point and other computer programs to improve their presentation of material to class. Teachers explained that technology enabled teachers to deliver more material to students and it also eliminated several basic problems such as; poor hand writing, poor artistic skill, contrast, lighting, and visibility. Another teacher made extensive use of software programs to help teach physics. The students go into the laboratory and collect their data using the computer. Relevant videos and matter is seen and read, thereafter the topic is discussed in class for its applications in real life.

Another teacher made the point that the use of technology is part of an instructional shift toward project-based, constructivist approaches to teaching and learning in order to bring about student improvement or reform. It was also indicated that resource-based teaching or resource-based learning is almost becoming "seamless, almost natural" in everything that teachers do because information is becoming easier to access.

Role-reversal in the Relationship:
Teachers reported that they had seen role-reversal in case of the relationship between teacher and learner with regards to information and communication technology. Many teachers mentioned that their students showed them how to use technology when they were finding it difficult. A teacher commented that when students helped teachers, it gave them a big confidence boost. It heightened the relationship between teacher and student.

Excessive use leading to isolation/socialization:
Teachers also thought that technology was isolating and realized that since students spent a lot of time with the computer, it might lead to seclusion. However, they agreed that classroom and other activities had to be arranged in a way that reduced the likelihood of isolation. The flip side to this was also noted by few teachers. The use of new technology may increase socialization in some cases. People may be able to find someone who has interests similar to their own to converse with, through the Internet.

Expanding Professional Networks:
The teachers reported that the use of ICT in education had changed school functioning in several ways. One teacher explained that when she started teaching six years ago, it was not expected that teachers know how to type their own test. Now teachers are expected to know
how to type their tests papers in a proper format. Teachers are expected to check their e-mail, and a lot of things that used to be done at a staff meeting are now done via e-mail and mobile phones. Also, e-mail is becoming an important tool of communication between parents and teachers. In addition most of the teachers use e-mail and other apps in their mobile phones to keep in touch with other teachers and friends.

**Apprehensions faced by teachers about the use of Technology**

Teachers considered that the use of ICT was beneficial to the educational process and should be continued. However, they recognized that there were some concerns and problems with integrating the use of information and communication technology. A number of concerns emerged from the interviews.

*Digital Divide:* A frequently mentioned problem was the disparities between students who have access to computers at home and those who do not.

*Maintenance:* The problem most often noted by teachers was the maintenance of the equipment needed to function in a technologically enhanced school. The teachers found themselves at a loss whenever they wanted to use any new application and if the expert was not available. This would lead to unnecessary delays in tasks.

*Training requirements:* Teachers considered that professional development in integrating information technology into classroom teaching was important. The school should organize frequent programmes and workshops that highlight the application of the available ICT resources.

*Information Overload:* Teachers recognized that sometimes students are overwhelmed with the amount of information available and with the task of filtering through the information. This happens when students are given research based home assignments as well as the use of computers and internet for completing their projects.

*Technological Innovation and Stress:* Teachers have a hard time keeping up with the pace of change in technological innovations. The field of Information and communication technology is speeding up and it is seemingly becoming difficult to stay even with the rapid change. Teachers have experienced the parents and students being stressed alike.
Plagiarism: Teachers have raised the problem of increased plagiarism because technology has made it easy to reproduce and revise someone else's work. It was noted that a lot of copying and pasting was going on without giving due credits to the original creator of the work. Also came to forth the issue of copyright violation.

Teachers' Time: This aspect was most often re-iterated by teachers. Teachers stated that ICT was placing more demands on their time. Teachers noted that extra time was needed to learn new software and also to create new things for teaching because greater expectations were being placed on them. They were expected to make use of technology whether or not they had the knowledge and capability to use the ICT tools.

Discussion
The use of ICT is changing teaching in several ways. With ICT, teachers are able to create their own material and thus have more control over the material used in the classroom than they have had in the past. It seems that technology is requiring teachers to be more creative in customizing their own material. Also, the use of internet to enhance an activity in the classroom demonstrates that technology can be used to complement other aspects of good teaching rather than replace them. It is evident that involving students in the creation of useful material as a part of a learning exercise is a way to make school more meaningful for students. While the uses of Power Point presentations have been criticized by some, teachers at this school provide examples of how it helps them with their teaching. The use of computers to help with different subjects in a variety of ways shows how ICT can be used to aid the learning process and help students focus on higher level concepts rather than less meaningful tasks.

However, the flip side to this is what the teachers pointed out as the process of ‘creative destruction’ since the technology that emerged for their help was actually ‘deskilling’ them. Self audit by the teacher indicates that there are some potential problems which must be considered to get better results. The changes caused by the introduction of ICT into learning environments, have forced school teachers and principals to do some fundamental rethinking of the education processes. This will also put pressure on the education system to restructure the way education is organized. Future analyses of all the data will examine additional cases that will help to explain, identify, and describe additional role changes and derive implications for policy and improved practice.
References


Concept Map of Fraction: An Instructional Tool in Mathematics

Dr. Ashwini Karwande
Assistant Professor, Department of Education, University of Mumbai

Abstract: A concept map is used to visually represent and depict the relationships between facts, terms and or ideas within a learning task. The author’s experience as a Mathematics teacher and as a teacher educator, gave her opportunity to have a closer look at the various problems which school students face. Students have difficulties with fractions because they memorize formulas or algorithms instead of understanding them. Hence an attempt has made to prepare a concept map of fraction to provide an entire web of ideas. This concept map of fraction presents the meaning of fraction and its relationships with other strategic concepts like decimals, percents, ratios and proportions. The author has also given the guidelines to use it along with its advantages.

Introduction
A concept map is an instructional tool used to visually represent and depict the relationships between facts, terms and or ideas within a learning task. Concept mapping integrates the visual and the verbal understanding which enhances understanding for concepts whether they are verbal, nonverbal, concrete or abstract (Sousa, 1995). Concept maps have their origin in the learning movement called constructivism. The technique of concept mapping was developed by Joseph D. Novak and his research team at Cornell University in the 1970s as a means of representing the emerging science knowledge of students. Novak's work is based on the cognitive theories of David Ausubel assimilation theory, who stressed the importance of prior knowledge in being able to learn new concepts.

Ausubel introduced the concept of meaningful learning, which constitutes an important part of constructivist learning. Ausubel’s theory primarily explains cognitive learning – with the central idea being that learning occurs through the assimilation of new concepts into existing concept frameworks held by the learner (Joyce and Weil, 2000). Mind arranges and stores information in an orderly fashion (Ausbel, 1968).

This knowledge structure held by a learner is also referred to as the individual’s cognitive structure. Out of the necessity to find a better way to represent children’s conceptual
understanding emerged the idea in the form of ‘concept map’. A cognitive map is a "kind of visual road map showing some of the pathways we may take to connect meanings of concepts." Meaningful learning underlies the constructive integration of thinking, feeling and acting leading to empowerment for commitment and responsibility (Novak, 2010).

Three basic requirements for meaningful learning include: a learner’s relevant prior knowledge, meaningful material (often selected by the teacher) and learner choice (to use meaningful learning instead of rote learning). An important advantage of meaningful learning is that it can be applied in a wide variety of new problems or contexts. This power of transferability is necessary for creative thinking.

**Concept of Fraction:**

The concept of fraction and its related aspects are one of the most important concepts as it offers learners a solid foundation for learning other strategic concepts like decimals, percent, ratios and proportions to solve real life problems. Learners’ apparent lack of ability in this area is a cause to be concerned. Learners seem to be learning many mathematical skills at the level of rote memorization and do not understand underlying concepts. School learners everywhere find fractions a difficult topic. (Subramanian K, 2005)

It has been observed that learners cannot think of a fraction as one number. They use rules without thinking and don’t check how sensible their answer is (e.g. \( \frac{1}{2} + \frac{1}{2} = \frac{2}{4} \)). Sometimes learners think that \( \frac{30}{80} \) is larger than \( \frac{3}{8} \) (as multiplied by 10). They don’t see a fraction as a result of division and are unable to co-ordinate the number of parts (numerator) with the size of the parts (indicated by denominator). Hence learners need to develop an understanding about fraction. Using a variety of visual and numerical representations one can support learners to build up experiences with the different areas of fractions. Various meanings of fraction which are relevant to students of standard VII are mentioned below.

1. Part-whole relationship (also known as the part of the whole meaning)
2. Part of a group or set meaning
3. Partitioning and dividing (Indicated division meaning)
4. Comparing: Equivalent/Proper/Improper/Mixed Fractions (Ratio meaning)
5. Number line (The measure meaning)
6. Fractions as Operators
While teaching Mathematics in schools the researcher observed that students have difficulties with fractions because they memorize formulas or algorithms instead of understanding them. When Mathematics is learned relationally (with understanding) the connected information, or the network of connected ideas, is likely to be retained over time than disconnected information. Retrieval of information becomes much easier. Connected information provides an entire web of ideas (or network of ideas). Retrieving disconnected information or disorganized information is more like finding a needle in haystack. (Sapire, I. Mays, T. 2008).

**Concept Map of Fraction: Integration of Visual and Verbal Understanding of Fraction**

Fractions can take different constructs. The subsequent concepts tend to rely upon learners having some understanding of the previous concepts. Vygotsky emphasized that learning connections and relationships among concepts requires extraordinary efforts. An alternative practice is to construct one large visual diagram of the concepts in the subject as curriculum progresses.

It has been observed that the topics in Mathematics are taught in isolation by Mathematics teachers. The researcher’s experience, as a student, as a Mathematics teacher and as a teacher educator, gave her the opportunity to have a closer look at the various problems which school students face, especially students of 12-13 years age group. Therefore researcher prepared the concept map for her understanding before actual starting the treatment. Though this concept map of fraction was not used during treatment for the students yet it helped the researcher herself to design her lesson plans. Researcher identified the path and tried to cover the concepts by keeping this large visual presentation in mind. As a concept map presents the relationships among a set of connected information and ideas the researcher identified the terms in the content that are to be learned (Gredler and Shields, 2008). In the research “Effectiveness of Constructivist Approach in Developing Interest and Achievement in Mathematics among Secondary School Students” the researcher Karwande, A., 2010 has made an attempt to prepare a concept map that could contribute to the understanding of the concept of ‘fraction’.

According to Novak concept maps should be hierarchical the more general, more inclusive concepts should be at the top of the map, and the more specific, less inclusive concepts at the bottom of the map. A concept map in figure 1 presents the relationships among a set of connected information and ideas.
Purpose of Concept Map of Fraction

- To represent the visual diagram of the concept of fraction and its interrelations with other concepts
- To communicate complex ideas related to fraction
- To aid learning by explicitly integrating new and old knowledge
- To assess understanding related to the concept
- To diagnose learners’ misconceptions
- To develop metacognitive knowledge

What is A Concept Map of Fraction?

- An organized visual diagram of components of fraction and concepts are related or interconnected to it
- A diagrammed series of "nodes" consisting of linked topics (core concepts) and subtopics (which include examples and evidence for the topics).
- Connections are labeled by relationships and inter-relationships
- Nodes represent concepts and links represent the relations between concepts.
- Concepts and links are labeled.
- Links are non-, uni- or bi-directional.
Figure 1 Concept Map of Fraction

Why to use this map?

- This fraction map has highlighted the part of the whole meaning, set meaning, division meaning, Ratio meaning, the measure meaning on number line of fraction.
- This map represents abstract and implicit information in a more concrete form.
- This Mapping of fraction has broken down component parts to see how things are put together.
- This can help a learner to see gaps in knowledge and areas of oversimplification, contradiction or misinterpretation.

What can it be used for?

- Reviewing for examinations.
- Relate new information to the prior knowledge.
- Conceptualizing processes, systems and relationships between fractions and related concepts.
• Brainstorming, organizing concepts
• Identifying mistakes and areas of confusion.
• Store and retrieve information and assess student thinking and learning

Who can use it?

• Teachers as well as learners: As concept mapping is an effective learning tool learners from age group 12-13 years across any board.
• Certain modifications and deletions by the learners or teachers are permissible.
• Concept maps can be done independently or collaboratively in the classrooms.
• Teachers also can use it as a metacognitive teaching strategy.
• Teachers also can use it as an evaluation tool, thus encouraging students to use meaningful-mode learning patterns

Thus, the technique of concept mapping has served numerous and diverse functions in education. Employed as a learning activity, concept mapping has been claimed to be effective in two ways: As a cognitive strategy to stimulate learners to make cognitive progress in organizing and understanding new information (Novak, Gowin and Johnasen, 1983), and as a metacognitive strategy to empower learners to monitor and control cognitive progress (Jegede, Alaiymola and Okebukola, 1990; Trowbridge and Wandersee, 1994).

Conclusion:

Success in teaching depends mainly on two factors, one on mastery over the subject and two on skill in teaching. Faulty ways of teaching and teaching topics in isolation may cause disinterest in studying of Mathematics. Therefore, it is needed that as far as possible efficient and capable teachers should be persuaded to teach Mathematics with adequate and practical methods. One of them is concept mapping. Concept maps can be applied in a wide variety of new problems or contexts for meaningful learning. This power of transferability is necessary for creative thinking.
References


Mobile Learning

Ms. Smita Swami
Asst. Professor, Padamshree Dr. D.Y. Patil University

Abstract: Mobile learning is emerging as one of the solutions to the challenges faced by education. With a variety of tools and resources always available, mobile learning provides increased options for the personalization of learning. Mobile learning in classrooms often has students working interdependently, in groups, or individually to solve problems, to work on projects, to meet individual needs, and to allow for student voice and choice. With access to so much content anytime and anywhere, there are plenty of opportunities for formal and informal learning, both inside and outside the classroom. Study showed that notebooks, mobile Tablets, iPod touch, and iPads are very popular devices for mobile learning because of their cost and availability of apps. They are used for collecting students’ responses reading electronic books and websites, recording reflections, documenting field trips, collecting and analyzing data, and much more.

Key Words: M Learning, Education, PDA

Introduction:

Mobile learning is any kind of learning that takes place via a portable, hand-held electronic device. Though the term immediately evokes images of smart phones, it in fact also refers to learning via other kinds of mobile devices, such as tablet computers, netbooks, and digital readers.

Any activity that allows individuals to be more productive when consuming, interacting with, or creating information, mediated through a compact digital portable device that the individual carries on a regular basis, has reliable connectivity, and fits in a pocket or purse.

Mobile learning is when the learning experience that you are trying to design happens to be out and about in the world. Learning that arises in the course of person to person mobile communication.

Definition:

"Mobile learning", has different meanings for different communities, covering a range of use scenarios including e-learning, educational technology and distance education, that focuses
on learning with mobile devices. Mobile learning is defined as "learning across multiple contexts, through social and content interactions, using personal electronic devices" In other words, with the use of mobile devices, learners can learn anywhere and at any time.

**Concept of mobile learning:**

Through Mobile Learning technology concept development, UNESCO aims to identify specific mobile technologies to support the achievement of Education for All, in order to understand what works and why. Mobile technologies are an attractive and easy means to maintain literacy skills and gain constant access to information. They are affordable, can be easily distributed and thus hold great potential for reaching marginalized groups and providing them with access to further learning and development. Mobile technologies facilitate distance learning in situations where access to education is difficult or interrupted because of geographical location or due to post-conflict or post-disaster situation.

A mobile phone is a phone that can make and receive telephone calls over a radio link while moving around a wide geographic area. It does so by connecting to a cellular network provided by a mobile phone operator, allowing access to the public telephone network. By contrast, a cordless telephone is used only within the short range of a single, private base station.
In addition to telephony, modern mobile phones also support a wide variety of other services such as text messaging, MMS, email, Internet access, short-range wireless communications (infrared, Bluetooth), business applications, gaming and photography. Mobile phones that offer these and more general computing capabilities are referred to as Smartphone.

A smartphone is a mobile phone with more advanced computing capability and connectivity than basic feature phones.

Early smartphones typically combined the features of a mobile phone with those of another popular consumer device, such as a personal digital assistant (PDA), a media player, a digital camera, or a GPS navigation unit. Modern smartphones include all of those features plus the features of a touch screen computer, including web, Wi-Fi, and 3rd-party apps and accessories. The most popular smartphones today are powered by Google's Android and Apple's OS mobile operating systems.

New mobile platforms, connected seamlessly to the Internet via wireless access, become increasingly more powerful as each day passes. Smartphones and tablet computers, as well as other ultraportable devices, have already gained enough critical mass to be considered mainstream devices, being present in the daily lives of millions of higher education students. Whole firms, devoted solely to developing high-quality and high engagement content for these devices, have emerged, populating an application market of thousands of teaching applications (apps) focused on diverse higher education topics, from physics and calculus to anatomy and law. Many universities throughout the world have already adopted or are planning to adopt mobile technologies in many of their courses as a better way to connect students with the subjects they are studying. These new mobile platforms allow students to access content anywhere/anytime to immerse themselves into that content.

**Role of mobile learning in education**

Technology-rich activities can sustain high level of student engagement and peer collaboration compared to less technology-focused activities. Now a days educators need to figure out, how to harness mobile platforms for instructional purposes and employ them to boost educational learning. A majority of students in grades 6-12 believe that having access in tablet computer is an essential component of their ultimate school.
As a country we need to educate the next generation of scientists, inventors, engineers and entrepreneurs. Educating a work force that is effective in global context and adaptive as new jobs and roles evolve will help to support our economic growth.

Mobile learning makes it possible to extend education beyond the physical confines of the classroom and beyond the fixed time periods of the school. It also allows the student to access content from home, communicate with teachers and work with others online.

The value of mobile device is that they allow students to connect, communicate collaborate and create using rich digital resources. Students basically love mobile technology and use it regularly in their personal lives. It is therefore no surprise that young people want to employ mobile device to make education more engaging and personalise it for their particular needs.

So let us go through some advantages as well as disadvantages of mobile learning in Education.

**Advantages of mobile learning:**

1. **Convenient and Flexible:**
   Mobile learning is very convenient as it helps in learning at the exact moment when the learning is required. It is also very flexible as it gives the learner what they need it. They can easily get any information quickly and easily with the device they have right in front of them.

2. **Management:**
   No two students are the same. Each has their own way of absorbing information. Through mobile learning students are able to learn in their own way. Students can also manage their dead time with mobile learning. Dead time like travelling, waiting in Queues, Waiting at Signals etc.

3. **Special Education:**
   Mobile Technology can also benefit those with special needs. we can say that learning challenged students have the chance to be equal to who are normal. It also fits different learning styles like:
   a) Reading
   b) Video
   c) Listening
4. **Wider Access**:
   
   a) Students have access to industry experts.

   b) Students can read reviews and blogs by field experts.

   c) They can also follow conferences online.

   d) They also have the chance to interact with professionals even from their homes of class rooms.

5. **Interaction-communication**: 

   Mobile learning also encourages shy students to communicate more openly when they are in class. Teachers can also use mobile devices to interact with students that they require special attention.

6. **Educational Support**:

   Using smartphones, students have easy access to knowledge. They use their devices as supportive educational tools. They have access to diagrams, articles, essays, and other academic information which can improve student performance in the classroom.

7. **Collaborative**:

   Several students at different locations can work in the same document at the same time. Mobile devices make the process of learning easier by interacting in more and varied ways.

   It is also amazing to find how much information a mobile device can carry despite its lightweight.

8. **Increased mobility**

   Learning is not restricted to fixed locations any more. Mobile devices allow learners to access learning content and learning interactions anywhere, such as factories, museums, hospitals, shopping malls, cafes, and outdoor areas.

9. **Time-saving**

   People can now study when they are commuting and travelling.
10. Environmental-friendly

It is amazing to find out how much information a mobile device can carry despite its light weight. Less printing is required.

11. Interactive

Mobile technology enables students to closely link with their peers, teachers, distant partners, and even interest groups worldwide.

Disadvantages of mobile learning:

1. Cost:

To participate in mobile learning one must have a mobile device. To take advantages of all that technology has to offer, one has to upgrade the mobile device frequently. Additionally there are typically monthly data charges with the mobile providers and so if there is requirement of downloading large files, it takes a long time and its monthly charges could be quite high.

2. Size of the Device:

The size of the gadget is also a disadvantage. It is so small that it can be lost or stolen easily. Moreover the screen is just too small which can strain the eyes of those who use it for a long period of time. Also on a screen is so small only small information can be displayed.

3. Battery Life:

Most gadgets only have about 2 to 4 hours of productivity. Once the battery runs out, the student will have to plug it in for recharging. Mobile Learning is then no longer Mobile.

4. Technology:

Although technology is still progressing what we have now is still limited. Most gadgets have limited storage for storing large and many files. A student has to spend more in order to have bigger storage space and that goes back to the first disadvantage of mobile learning. Moreover there are various operating systems or platforms and content inside is not in equal.
5. **Usability:**

Mobile devices are difficult to use because of the small buttons. They can be tricky to use even for students.

**Challenges of m-learning:**

Technical challenges for M-Learning include:

1. Connectivity and battery life
2. Screen size and key size
3. Meeting required for nonstop/fast streaming
4. Number of file/asset formats supported by a specific device
5. Content security or copyright issue from authoring group
6. Multiple standards, multiple screen sizes, multiple operating systems
7. Reworking existing E-Learning materials for mobile platforms
8. Limited memory
9. Risk of sudden obsolescence

**Social and educational challenges for M-Learning include:**

1. How to assess learning outside the classroom
2. How to support learning across many contexts
3. Content's security or pirating issues
4. Frequent changes in device models/technologies/functionality etc.
5. Developing an appropriate theory of learning for the mobile age
6. Conceptual differences between E-Learning and M-Learning
7. Design of technology to support a lifetime of learning
8. Tracking of results and proper use of this information
9. No restriction on learning timetable

10. Personal and private information and content

11. No demographic boundary

12. Disruption of students' personal and academic lives

13. Access to and use of the technology in developing countries

14. Risk of distraction

In addition to these challenges, there are some barriers to mobile learning include the high costs associated with equipment, connectivity, maintenance, technical support and teacher training; Health-related issues; a lack of policy support and governmental investment; and/or a lack of interest and awareness on the part of policymakers and the public; and negative social attitudes that see mobile phones as disruptive devices that students use primarily to play games, chat with friends and potentially engage in inappropriate behaviours such as cheating and cyber-bullying.

We need baseline requirements for mobile technologies that support learning outside of school settings. These technologies should be:

1) **Highly portable:** The technology is available whenever the user needs to learn.

2) **Individual:** The technology can be personalized to suit the individual learner's abilities, knowledge and learning style, and is designed to support personal learning rather than general office work.

3) **Unobtrusive:** The learner can capture situations and retrieve knowledge without the technology becoming overly noticeable or imposing on the situation.

4) **Available:** The learner can use the technology anywhere, to enable communication with teachers, experts and peers.

5) **Adaptable:** The technology can be adapted to the context for learning and the learner's evolving skills and knowledge.
6) **Persistent:** The learner can use the technology to manage learning throughout a lifetime, so that the learner's personal accumulation of resources and knowledge will be immediately accessible despite changes in technology.

7) **Useful:** The technology is suited to everyday needs for communication, reference, work and learning.

8) **Easy to use:** The technology is easily comprehended and navigated by people with no previous experience using it.

Mobile technologies can improve professional development and teacher training in several areas:

I) **Communication:** Mobile devices can be used in conjunction with wireless broadband and video-call services like Skype to facilitate communication between teachers and mentors.

II) **Self-assessment:** Video cameras can be used to record lessons, allowing teachers to reflect on their teaching practice and identify specific areas for improvement.

III) **Innovation:** Mobile technologies can be used in teacher education programs to challenge teachers to think creatively about mobile learning and develop the confidence to try new ideas.

**Conclusion**

One of the causes of acceptance mobile learning is that it uses devices: which citizens are used to carrying everywhere with them, which they regard as friendly and personal devices, which are cheap and easy to use, which they use constantly in all walks of life and in a variety of different settings, except education. But, the future of mobile learning depends largely on the level of social acceptance it receives. On the other hand, Users in developing countries have the same need for M-Learning to be mobile, accessible and affordable, as those in developed countries do. The very significance of M-Learning is its ability to make learning mobile, away from the classroom or workplace. These Wireless and mobile technologies enable learning opportunities to learners who do not have direct access to learning in these places. Many learners in developing countries have trouble accessing the internet, or experience difficulty in affording technology that enables learning in an E-Learning environment. Mobile devices are a cheaper alternative compared to traditional E-Learning equipment such as PC’s and Laptops.
All students enrolled in higher and further education institutions today have frequent needs for information from their institutions about timetable changes, assessment deadlines, feedback from tutors and other urgent administrative details. The use of mobile telephony is a much more efficient and quicker means of communication than postal contact or email. Once this has been achieved the use of mobile learning for academic contact in colleges and universities can be added. Mobile learning academic summaries comprising 4 to 5 screen summaries of content, examination hints, assessment questions for course revision, guidelines for particularly difficult parts of a course or counselling provision for students in need will be of great benefit to all students, and can be developed for and sent out to either all students or students in a particular year or class grouping. A final tier of the strategy for the incorporation of mobile learning in mainstream education and training is represented by the development and offering to students of full modules by mobile learning. With the arrival of 3G technologies viable course modules can be developed. Offering these modules, with assignment submission, tutor contact, examination and assessment provision will provide further evidence of the validity of mobile learning as an attractive provider of revenue streams to mobile operators.

References


Reverse Mentoring

Dr. Vini Sebastian
Asst. Prof. SXIE, Mumbai

Abstract: Reverse mentoring puts aside the traditional mentoring paradigm and switches on an upside down approach, or the flip side approach of older employees being paired up with younger employees. Normally we would think that older employees with lot of experience would train and mould the younger ones, but now the situation is such that younger employees also have expertise in varied fields which could be of utmost importance to the institutions. Reverse mentor can be a good sounding board for the mentee to develop ideas and new skills.

Introduction
In the changing world today, everyone is getting more and more competitive. Each day there are new challenges for us and each day we are striving to be better than others, so that we can be ahead of our competitors. Yes, we can say in a healthy competition, we are required to learn something new and different. We are forced to produce something innovative, something different for our institutions. Students are tired of the routine teaching methods we adopt, principals are tired of the way we conduct our programs and accreditors are also recording that almost all institutions are doing almost the same kind of work and calling it innovative. What should we do to make the change happen???

We need guidance and we need direction. But how will we get this? The answer of today is ‘Reverse Mentoring’. For years we have thought that the seniors are the more experienced of the lot and they could mentor the juniors, the latter permanent learners. Therefore in any mentoring program we have the senior and the more experienced employee training the junior employee be it in the induction program or be it after the juniors have become permanent. The seniors do consider themselves rich in experience which they think the juniors are fortunate enough to receive. There is no training given to older employees in most cases of how to mentor the juniors but it seems as a God’s gift to them and for generations to generations this tradition has been going on at least in most educational institutions. Now we have come upon this idea of ‘Reverse Mentoring’, which assumes that everyone is equally capable, we all have something special which we can share with others. The belief behind reverse mentoring is that no one is big or small in the learning process. Everyone needs to
give what they have in full measure for organizational success. If this giving stops then, the 
flow of ideas stops, then the life of the organization is at stake. The top-down approach may 
not always be the best idea but the bottoms up approach also can be adopted for an enriched 
interaction. What can I learn from my junior or less experienced person who may be 
experienced is some other area unknown to me? This should be the question which everyone 
must ask, and not what I can teach my junior?

**Reverse mentoring** is a process of learning from the juniors or the less experienced. All 
mentoring processes need to be upside down. We all have our talents and abilities that we 
want to share with others. Ideally, if we are juniors, but highly talented, then we become a 
threat for the seniors and the boss might question saying that ‘You think you know more than 
the boss’. It is high time that we learn to learn from our subordinates. With high exposure to 
different fields we have highly talented and able people coming into the profession. For eg: 
teaching profession we have people from different levels of teaching getting into institutions, 
but after they get in they feel lost and directionless. They cannot give vent to their abilities 
and somewhere they get a feeling that ‘this place is not meant for me’ or ‘I am a misfit here’. 
Although the salary and perks are high it is the acceptance that matters. Someone has said 
that ‘Have you added experience to your years or years to your experience’ the latter however 
doesn’t matter; it is the former that is important.

In most of our educational institutions, “INDUCTION” is not a common practice. A properly 
planed induction program if practiced would mean that the younger employees are placed 
under the care of the very able older employees. The older employees will orient them of the 
trends in the organization and train them in certain skills needed to function well according to 
the job specifications given to him. The older employee also orients them with the mission 
and vision of the organization. Reverse mentoring can start from the induction stage. 
Younger employees come from different kinds of organizations, and with newer skills which 
could be applied to the job situation. For e.g.: New entrants in educational institutions could 
come in with a Ph.D. which could be in recent trend, and also experience of working in other 
institutions. The attitude of most institutions is to tell the new entrants to start from scratch, 
that means unlearn first and then learn the traits of the new organization. It is a sin even to 
talk of the old institution where you worked. This attitude is prohibited in ‘Reverse 
Mentoring’. It is learning from the person junior to you, less experienced than you. Reverse 
mentoring can develop a win-win approach in organizations and in all of us.
Reverse mentoring is not everyone’s cup of tea. Not all employees can develop this category of being ‘reverse mentors’. Reverse mentoring could be an official program of the institution. Initially there could be a talent search for talented employees. An official declaration of knowledge and skills could be displayed and the quality of the skills possessed could be ascertained. A committee of experts for consultation could be constituted to endorse that the skill must be transmitted to other employees in the organization like good communication skills, technological skills, research skills, marketing skills etc. All employees need to respect the person’s knowledge, experience, and not consider the main criteria as the person’s working years in the institution. Traditional mentoring seems unidirectional but reverse mentoring seems bi directional in nature.

Reverse mentoring can get a pool of ideas, which can later get convergence of ideas. This state then can lead to consensus. The state of consensus is very difficult to achieve, and this can lead to conflict. Reverse mentoring can tackle conflicts effectively. A strange professional excitement is generated which is contagious. This can lead to synergy, which is definitely required in a group. In the absence of synergy, the individual energy can cause damage as it may not be channelized in the correct direction. The organization then achieves a condition of acceptance and foresight. The mission and vision now becomes clearer and the comfort zones are broken. Each individual gives off the best and feels wanted in the organization. This is what I say is the purpose of being in an organization “Being Wanted” and “Being able to contribute”. Reverse mentoring leads to a healthy and meaningful form of communication patterns. Open discussions are provided and growth is inevitable.

In teacher training we have our own student teachers, who are not all raw in experience. This situation therefore is right for reverse mentoring. In other degree colleges, students are all young and they do not have the experience in the course they are doing. B.Ed. students may have teaching experience. We all know that teaching is still a last option, which means students have experience in other fields before they have come into teaching. Tuitions are common, in our set up, it does not require any special qualifications. Most students have already given tuitions and are still giving tuitions while in B.Ed., and there are so many who have already taught in schools and colleges. Why do we need this category of students? These are the students who will help us get a picture of the reality of teaching. The B.Ed. course as we all know is divorced from the reality in educational institutions. These learners
can become reverse mentors for the institution and may be the board of studies for modification of the curriculum or the proper implementation of the curriculum to match the reality. Every program if the institution could be validated with these learners taking their input at every stage. Yes they must be involved very carefully keeping in mind the internal assessment. Their expertise is in a particular field, teacher educators can cash upon that and not involve them to such an extent that they interfere in the internal assessment program of the college. However they may be experienced, they cannot be above the staff of the institution who has been involved in the work for so many years and those who are very much aware of the objectives of the program. Learner validity is not equal to reverse mentoring. Reverse mentoring is a long-term process and includes developmental changes in the system. Learner validity may be a one-time affair with learners included to give their feedback and inputs for one program. It could be a small aspect of the reverse mentoring program.

We have another big group that is our practice teaching schools. The resource available at these schools can offer us lot of reverse mentors. The teachers from these schools are almost neglected by all colleges of education. We need them only to give units to our students. Many teachers despise the fact that they have to spend their teaching periods either observing or sitting in the staff room while the B.Ed. trainee engages their class. Most feel that their job ends with the giving of the units. In the class of teachers in the practice teaching schools, there are most of them who want to be involved in the development of the teacher trainees. It is with great joy that they attend the practice teaching classes, involve in classroom management and offer constructive feedback to our students, disregarding the fact that they are putting extra time or even that they are taking up additional load on them voluntarily. These are the teachers who could be reverse mentors for our students. A B.Ed. teacher spends a lot of energy orienting the student-teachers with the methodology of teaching, its syntax and also gives practice sessions for the B.Ed. trainees to master the skill but it is hardly possible that the teacher educators would know “what to use when” as we are not so much into school teaching and we hardly have any connection with schools once our practice teaching program is over. Even when the teacher educators are in schools their main objective is to finish their evaluation and get back, the rapport required of teacher educators and schoolteachers is not created by them.

The teachers in the school are much eligible for reverse mentorship as they know the context as best of best knowledge and skill does not work if we do not put it in a context. We have to
admit that teacher educators are unable to gage the context to the fullest. Now micro teaching for example is outdated in the west, it is so unrealistic but we still carry on. School teachers can appropriately orient students with the context of teaching be it in terms of teaching methodology or classroom management skills, how to ask questions, what evaluation strategies to use, context is very important. We remove the context from the best teaching methodology or the best evaluation technique it will all become totally meaningless. This the B.Ed. trainees do not understand even if they go through a whole year of the B.Ed. course. Moreover as the institution changes the context changes, so it is wiser to have more than one practice teaching schools for the B.Ed. trainees so that they get a taste of the context. The teacher educators must be a liaison between the school teachers and the B.Ed. trainees. The NCF has proposed the idea of cognitive apprenticeship which means that each B.Ed. trainee has to be put under one teacher. Here it is reverse mentoring as the teachers in the schools are less experienced in terms of qualifications and knowledge of teaching skills, they actually look up to teacher educators for all this information like current research trends etc. so they can be viewed as reverse mentors for B.Ed. teacher trainees. Reverse mentoring with school teachers can be done in stages, every teacher trainee as well as teacher educators must be linked to the school teachers. Teacher educators and trainees could be linked up to more than one school teacher as there could be more practice teaching schools. This school teacher then forms a link to the teacher educator and teacher trainee. All teacher trainees are asked to write lesson plans before their practice teaching lessons. These lesson plans can be scrutinized by the schoolteacher, and the list of resources required by the teacher trainees could be verified. All the changes suggested by the teachers must be included in the lesson plans. A final version of the lesson plan must be approved by the teacher educator as well as the school teacher in consensus with the trainee. In this way the school teachers will not find giving classes to the B.Ed. trainees a waste but their involvement can create much difference in the morale and effectiveness of the trainee. In this way we can achieve a lot from B.Ed. trainees and form a realistic curriculum with lesser gap between what we teach and what our students are expected to give when they get into the teaching profession. This is how we can get the school teachers involved in a positive way.

The other big group, which comes to my mind, is our illustrious alumni. We can get our alumni to be reverse mentors for us. It is our duty to involve our stakeholders for the task of reverse mentoring. Our alumni are now in different positions. Their commitment to the institution can help in getting ideas for the welfare of the trainees under our care. The alumni
can very well relate to the institution as they have been a part of the mission and vision of the institute during their time of training. Now it is their time to give back to the institution. The alumni will be employed in different institutions. They will now be aware of the contexts in all these institutions. Some institutions could have provided them special training also which they can report back to the college. What are the current needs of schools? What are the changing trends in the field of education? What are the new research areas? What needs to be done by B.Ed. colleges to improve the situation? All these questions are difficult to answer just by being in the colleges of education and reviewing research studies. Much needs to be done at the grass root level. Each teacher educator can be linked up to 2 -3 alumni who are willing to contribute some time to the growth of the institution. This teacher educator now who is in constant collaboration with the alumni could then develop certain programs for current B.Ed. teachers which could be called the honors program or capacity building programs. By this initiative student teachers are better prepared for future teaching job. The progressive involvement of our alumni can do a lot of service to us as well as our students. The teaching that happens in B.Ed. colleges is devoid of context. The alumni can bring life to the otherwise distorted curriculum and teaching methods.

Conclusion

With globalization, quality enhancement has become of prime importance. We have to constantly work towards effectiveness and efficiency. Most of our techniques are outdated, syllabus revision are taking place just for the sake of it. We have lost our links with the system to which we are catering to the schools and colleges to whom we provide teachers. In these conditions reverse mentoring is an answer. Reverse mentoring is a big challenge as it requires a change of attitude. It will lead to exchange of ideas from the lower to upper levels. A general feeling of acceptance and change is necessary in our institutions. We must not take the entire responsibility of training our students on our own but also involve the expertise of all groups of people associated with the institution. We must uphold the values of empathy, reflection and sincerity in our work. We can build learning communities that can enhance our commitment to teaching and help us in discharging our responsibility effectively.
References:

Websites:

http://www.slideshare.net/tusharkharate1990/reverse-mentoring-ppt

http://www.bc.edu/content/dam/files/research_sites/agingandwork/pdf/publications/hartford.pdf


http://www.nextavenue.org/blog/why-you-need-reverse-mentor-work


Mobile learning through Constructivist Approach

Ms. Sheetal Zalte
Assistant Prof., Smt. Kapila Khandvala College of Education

Abstract: Mobile technology has become a familiar part of most of the teachers and students. We take it for granted to access information, take pictures, record audios and videos etc. Mobile technologies are becoming more embedded, omnipresent and networked with enhanced capabilities for rich social interactions, context awareness and internet connectivity. Such technologies can have a great impact on learning. The question is no more whether mobile will help us reach the learners but how to fit it into our existing teaching learning system.

This paper discusses the use of mobile learning as content as well as context following constructivist approach. It stresses on creating learning opportunities for the learners so that they can develop their own knowledge while going through the provided learning experiences.

Introduction

M-learning or Mobile learning is an addition to the innovation in ICT in education. It is a sub-set of e-learning, educational technology and distance learning.

M-learning is any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies. Due to this advantage of mobile learning it will prove very helpful for disadvantaged children having social and economical problems such as poor literacy/numeracy, non-participation in conventional education and lack of access to web-enabled computers.

What is M-learning?

Most researchers and educators probably view mobile learning as the immediate descendant of e-learning. Pinkwart, et al. (2003) for example, defines e-learning as ‘learning supported by digital “electronic” tools and media’, and by analogy, mobile learning as ‘e-learning that uses mobile devices and wireless transmission’.
Quinn (2000) defined it earlier, as simply learning that takes place with the help of mobile devices, or the intersection of mobile computing (the application of small, portable, and wireless computing and communication devices) and e-learning (learning facilitated and supported through the use of information and communications technology).

M-Learning is the process of acquisition of knowledge and skills across multiple contexts through conversation and exploration using personal electronic devices

**Characteristics of M-learning**

- Spontaneous sharing or accessing or dissemination of learning information.
- Deals with real situation (context), Students become resources of self-learning
- Personalized and private.
- A3 technology, hence Anyone, Anytime, Anywhere.
- Flexible, accessible, portable.
- Interactive learning, collaboration
- Informal learning with a formal one.
- Focuses on the mobility of the learners.

**Application of M-learning**

- Creation of product: text, audio, video for learning purpose
- Interaction: sharing of work, thought, ideas etc.
- Reference: support learning material.

**Review of related literature**

Various research studies have been conducted on constructivism and teaching strategies following constructivism.


The article reports the findings of a study that assessed the learning of identical course content in two individual group treatments: one group receiving traditional instruction and other receiving student centered constructivist instruction. It is found that the constructivist treated group out-performed the traditionally taught cohort on identical evaluation.
Pfannenstiel and Schattgen (1997; Project Construct, 1998) focus on Project Construct classrooms in Missouri where the state Department of Elementary and Secondary Education since 1986 has adopted constructivist education for statewide implementation (although it is not mandatory).

Findings from this study show that children from constructivist classrooms were significantly more advanced than were children from traditional classrooms on performance tests of classification, writing, reading, and social behavior. They were also significantly higher on standardized tests of mathematics and language.

Sue Gibson and Roberta McKay, in their article titled ‘What Constructivist Theory And Brain Research May Offer Social Studies’ summarize insights from these two areas that should influence social studies for the 21st century. Particular attention has been paid to instructional innovations that are consistent with findings from brain research and application of theories of constructivism. Arguments have been made for a social studies curriculum that is based on the classic reflective inquiry conceptualization of social studies because it stems from a constructivist position and is supported by brain-based views of teaching and learning.

Research studies conducted on using mobile technology in learning report positive results like increased participation, increased interest, increased class quality, high levels of satisfaction with use of mobile technology in learning course content. The studies found a positive correlation between use of the app and perceptions of increased engagement and consequently higher grades in the course. The majority of students reported a heightened ease of and motivation to study due to the increased mobility and convenience. Mobile learning facilitates social constructivism (Vygotsky, 1982) that accepts plurality of meanings and promotes situated learning and the collaborative construction of knowledge. (Brown et al, 1989 and Lave, 1990)

There are growing expectations from educationist to make optimum utilization of mobile technology for educational purpose. Educationists now have moral obligations to strive for learning opportunities and provide conducive environment for all the learners.

Since mobile technology has become more sophisticated and affordable, using it as learning tool became increasingly viable. Mobile technology being easy to use and cost effective will help bridge the ‘digital divide’ and achieve the target of lifelong learning for all the learners.
The success of learning through mobiles will depend on how far the use of mobile fosters culture of learning among students which is need driven and not technology driven.

Teachers who plan to use mobile learning need to consider what kind of design will ensure the use of m-learning for collaborative learning and not just one way information sharing? How can mobile technology be used effectively to communicate with target audiences to raise their awareness of potential learning opportunities? How do we ensure that students have learned? How to get the information about what students have learned? Can we really use mobile technologies to promote autonomous learning and a learning culture in target audiences or will we alienate them by ‘hijacking’ their communication tools?

The question is no more whether mobile will help us reach the remote learners but how to fit it into our existing teaching learning system. We know that learners are more comfortable engaging in personal or private subject areas using a mobile device than doing so using traditional methods. (Attewell 2005)

Mobiles are not to be used as mere communication tools but to be used for creating and collaborating learning. Mobile learning should be looked at as a collection of new tools that can be added to a teacher’s teaching toolbox. These tools should be assembled as required to achieve specific learning objectives. Some of these tools are:

- SMS (text messaging) as a skills check, or for collecting feedback
- audio-based learning (iPod, MP3 players, podcasting)
- Java quizzes to download to color screen phones
- focused learning modules
- media collection using a camera phone
- online publishing or blogging using SMS, MMS (picture and audio messages), cameras, e-mail and the web.

**Benefits of M-learning:**

- Since variety of features available in mobile technology, it helps in encouraging anytime and anywhere learning.
- Due to the low cost and accessibility the mobile technology provides learning opportunities to the remote learners.
• With its power to promote and foster collaboration and communication it improves social interaction among learners leading to effective learning.
• Mobile technology enables personalized learning experience.

Research questions:
• Can constructivist approach be used in mobile learning successfully?
• Can mobile learning through constructivist approach lead to increased interest levels among student teachers?
• Can mobile learning through constructivist approach lead to increased student participation in the learning process?

Mobile learning through constructivism

Constructivist approach – Constructivist approach involves activities in which learners actively construct new ideas or concepts based on both their previous and current knowledge. In the constructivist approach, learning is an active process in which learners construct new ideas or concepts based on both their current and past knowledge. Learners are encouraged to be active constructors of knowledge, with mobile devices now embedding them in a realistic context at the same time as offering access to supporting tools. The most compelling examples of the implementation of constructivist principles with mobile technologies come from a brand of learning experience termed ‘participatory simulations’, where the learners themselves act out key parts in an immersive recreation of a dynamic system. M-learning has been used as a context as well as content in the present study.

Procedure:
M-learning context
1. Engage:
   Mobile film making: The student teachers were given inputs for mobile film making.
   Orientation to mobile film making: The student teachers were introduced to the concept of mobile film making and essentials of it.
   Objectives of mobile film making:
   • To improve the understanding of a topic/ subject.
   • To involve students in content through activity.
   • To give various dimensions to a topic i.e. social, interdisciplinary and core ethics.
   • To develop the creativity of the teacher and student.
Essentials: Mobile phone with camera. Software- Power director version 8 (demo version) can be used edit the videos.

Things to consider:
- Good/bad Lighting
- Selection of appropriate background
- Camera Position
- Script

Resources:
Friends, students and teachers.

Procedure:
- **Step 1 (Homework):** Watch and study some videos captured using mobile phones to finalised the location also see which time of the day offers the best light for your shoot
- **Step 2** Creating a story board
- **Step 3** Mobile settings (airplane mode on wi fi off)
- **Step 4** Orientation of the objects and camera
- **Step 5** Ambiance and lighting
- **Step 6** distance to the object
- **Step 7** deciding characters
- **Step 8** Video recording
- **Step 9** Editing and finalising

The students were given following themes for mobile film making:

1. Ragging / Bullying “Kya be Chirkut!!!”
2. Parent Pressure “Making of an Earthen Pot”
3. Molestation “Mere apne... Mere apne nahi”
4. Peer Pressure “Har ek friend jaroori hota hai”
5. Biography of my Autistic friend
6. My favourite teacher “A Sarcastic Story”
7. Teacher of the future “Man ya Machine”
8. Groupism “Yaari Dosti”
9. Gender Equality “Durga, Laxmi, Saraswati and the Unprivileged girl”
10. Eve teasing “Uff ... Woh ladki”

2. **Explore:**
   
   **Preparation of mobile films:** The students have prepared mobile films on the given themes (M-learning as a Context). In the process they conversed with their group members about different ideas to be implemented for the respective themes. In collaboration with each other they have finalized the product.

3. **Explain:**
   
   **Presentation of the products:** Student teachers have presented their videos to the entire class. They have incorporated the suggestions given to them and made the necessary changes.

4. **Elaborate:**
   
   Student teachers have given examples where mobile films can be used as learning resource for variety of topics. They also discussed the ways in which the current theme could be presented.

5. **Evaluate:**
   
   The products prepared by student teachers i.e. mobile films were evaluated by the experts.

**M-learning content**

1. **Engage:**
   
   While dealing with m-learning as content the whole process of mobile film making mentioned above comes under the first E of constructivism. The student teachers were oriented to the use of constructivist approach in learning. They were asked about their experience during mobile film making and other uses of mobile devices.

2. **Explore:**
   
   Student teachers were provided with reference material and questions based on m-learning. After deliberate group discussion they presented the concept in the form of concept maps and mind maps.
3. **Explain:**
   Student teachers have answered the questions based on the content. During this phase variety of aspects and perspectives related to the chosen issue were discussed.

4. **Elaborate:**
   Groups have enriched discussion on the possibilities of using m-learning in various contexts. They came up with innovative ideas where m-learning can be applied.

5. **Evaluate:**
   Teacher as well as the peers asked questions related to the content of m-learning to evaluate the understanding of the concept.

**Preparation of lesson plans:** The student teachers were told to prepare lesson plans for m-learning as content based on constructivist approach. They have prepared the lesson plans and incorporated all the five principles of constructivist learning process i.e. Engage, Explore, Explain, Elaborate and Evaluate. (5E’s of Constructivist learning) (scanned copies attached)

Thus mobile learning was used as context as well as content through constructivist approach. In the process the student teachers have learnt the concept, features and applications of M-learning (M-learning as content). They have understood the various possibilities of using mobile learning in their day to day teaching.

**Data collection and analysis**
For the present study the data was primarily qualitative collected through observation and analysis of lesson plans.

The student teachers were observed throughout for their participation and interaction in the discussions conducted about the social issues under consideration.

The lesson plans prepared by the student teachers were evaluated keeping in view the steps of constructivism.

**Findings**

The findings of the study are as follows:
- Constructivist approach can be used successfully in case of mobile learning
• The lesson plans prepared by the student teachers included all the steps of constructivism.
• Student teachers showed increased level of interest in learning different issues through mobile film making following constructivist approach.
• There was increased level of student engagement in learning which resulted in thorough understanding of the social issues under consideration.

**Future of Mobile technology in education:**
Mobile technologies are becoming more embedded, omnipresent and networked, with enhanced capabilities for rich social interactions, context awareness and internet connectivity. Such technologies can have a great impact on learning. Learning will move more and more outside of the classroom and into the learner’s environments, both real and virtual, thus becoming more situated, personal, collaborative and lifelong. In a constructivist set up mobile devices give us a unique opportunity to have learners embedded in a realistic context at the same time as having access to supporting tools. Mobile technology can effectively support a wide range of activities for learners of all ages. Mobile technologies provide for each student to have a personal interaction with the technology in an authentic and appropriate context of use. This does not mean, however, that the use of mobile devices is a panacea.

**Conclusion**
Whether they are welcomed right now or not, mobile devices are finding their way into classrooms and in personal life of children. We must ensure that educational practice can include these technologies in productive ways. The success of learning and teaching with mobile technologies will be measured by how effortlessly it transforms learning into a seamless part of daily life to the point where it is not recognized as learning at all.
### Constructivist Lesson Plan Form

**Standards (Performance, Knowledge, and **B**PASS):**

<table>
<thead>
<tr>
<th>B</th>
<th>ed Class</th>
<th>Students will gain knowledge about the concept, need, features, and application of Mobile learning.</th>
</tr>
</thead>
</table>

**What concepts do you want students to understand after completing this lesson?**

- Maslow's Theory of Self Actualization
- Educational Implications of the theory
- Mobile Learning

**Essential Question:**

- What is Mobile Learning?
- Advantages/Disadvantages of Mobile Learning?
- Uses of Mobile in your life?

**Criteria for Success (How will you know students have gained the understanding of the concepts?):**

- Actively participation, Discussion, Activity, Quiz, Game

**Resources (What resources will you and your students use?):**

- Information from Internet and Books
- Articles based on Mobile Learning

**Management (How will students share technology resources? How will you break up the lesson into segments – the number of hours or days?):**

- 2 lectures → 1st day → Activities related to Mobile Learning
- 2 lectures → 2nd day → Quiz & Discussion

**Learner Diversity (What diverse learner needs do you need to consider when selecting resources, grouping students or planning the culminating project? Are there any special considerations such as assistive technologies or second – language learning to take into account?):**

Possible considerations may include the following:

- List alternate resources or content related activities that meet diverse learner needs. For example, list websites that addresses the same content at varied reading levels.
- List additional scaffolds or alternate methods that may help learners in need of further assistance. Alternatively, provide a more complex enrichment activity to meet the needs of high-level learners.
- List options for products that meet different learner needs.
- Identify cultural or linguistic considerations that will be addressed, such as the context of the lesson.
ENGAGE →
- Pupil will form groups of 10 each, no: each participant in the group: from 1 to 10.
- Pupil will list down all the uses of Mobile.
- To calls out a group no: and participant no: and discusses all the uses.
- Other groups also states their uses which are missing out.

EXPLORE →
- Now, teacher gives a material on M-Learning to all groups.
- Students read the material in their groups and discusses.
- Students make a graphical representation in the form of concept map or mind map of the material.
- The questions are presented to the students for which they investigate the answers.

EXPLAIN →
- Students explain the material.
- Students provides answers to the questions.
- Students support their explanation with other examples.

ELABORATE →
- Other groups who want to add more points and elaborate on what has been discussed is done.
- New situations are provided where the students can apply their gained knowledge about M-Learning.

EVALUATE →
- Teacher asks questions based on the concept.
- Peers also ask questions for which students answers.
References

Websites:
http://archive.futurelab.org.uk/resources/documents/lit_reviews/Mobile_Review.pdf


http://enhancinged.wgbh.org/research/eeeeee.html

Books:


Flipped Learning: An Innovative Tool to Provide a Rich Learning Environment

Ms. V. Beena Suresh Kumar
Asst. teacher, K. J. Somaiya Junior College of Science and Commerce, Vidyavihar, Mumbai

Abstract: Educators are developing technologies such as digital simulations, computer assisted instructions, videos etc to enhance learning. However these technologies will have limited effects unless the traditional teaching model is innovated. Classroom instruction should be driven according to the learning needs of the students rather than content coverage. Flipped learning, an alternative model has gained much attention and acclaim in recent times. In this model, some lessons are delivered outside of the classroom learning space using video or other modes of delivery. Class time, is then available for students to engage in hands-on learning, collaborate with their peers, and for teachers to provide one-on-one assistance, guidance and inspiration. Student-centered learning leads to improved academic outcomes and increased student satisfaction.

Key words: learning needs of students, Flipped learning, hands on learning, student centered learning

Introduction

Present Educational Scenario: Over the past six decades, India has made remarkable strides in the field of higher education but the quality of majority of our undergraduate students is abysmal. The students follow a standardized curriculum, take a common test and pass examinations but do not have elementary knowledge or conceptual understanding or problem solving skills in their respective disciplines. A culture of rote learning and lack of application of knowledge have undermined our higher education. Teachers find it to be challenging and un-motivating making them feel like they are "teaching to the test" rather than actually making a difference in students' learning. In spite of the immense pedagogical benefits of using Information and Communication technology in the field of education, the most prevalent and widely used instructional strategy is still the Traditional classroom lecture method.
Lecturing allows you to cover a large curriculum and seemed the only way to cover the content. However the students seem disengaged, some appeared to sleep, a few would be busy texting under their desks and most of them were not even bothering to come to class. Even those students who found the lectures beneficial were struggling with their home assignments. The amount of knowledge they had acquired was minimal and what was retained was even less. The learning environment thus is passive, monotonous and boring.

Change in Learner Character: It has been noticeable over the last several years that there has been a change in the way students interact with technology, the way they interact with each other and with the teachers. Students are engaging in different forms of communication through social media sites like face book, whatsapp, you tube etc. The capabilities of cell phones today exceed what a microcomputer could do 5 to 10 years ago.

It seems that in many ways the educational system is not keeping pace with the changes in learner attitude and learning environment. Even with smart boards or a power point presentation, the teacher is lecturing in front of the classroom and the students are passively sitting in rows, the only difference being that the chalkboards have evolved into more tech savvy smart boards. However no active learning takes place.

**Flipped Learning: An innovative active learning tool:**

In this context, Educators worldwide are increasingly turning to an alternative model of instruction called Flipped Learning Model, where teacher shifts direct learning out of classroom space and moves it to the individual learner space with the help of one of several technologies and focuses on active, face-to-face learning in the classroom. Researchers dub this flipping of what is traditionally done inside and outside the classroom, the “classroom flip “(Baker, 2000).

It is the need of the hour for the teacher to transform from being the sage on stage to being the guide by the side. Educators worldwide are increasingly experimenting and implementing flipped learning, an alternative model of instruction to provide a rich environment for active learning.

In the Flipped learning model, teachers shift direct learning out of classroom space and move it to individual learner’s space with the help of one of several technologies like videos, screen casts, pod casts, You-tube etc. The flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. Short video lectures either
created by the teacher or selected from an online repository are viewed by students at home before the class session, while in-class time is devoted to active learning exercises like quizzes, problem solving, projects or discussions. Flipping the class allows repurposing of class time into an active learning environment where students can inquire about lecture content, test their skills in applying knowledge, and interact with one another in hands-on activities. During class sessions, instructors function as facilitators encouraging students in individual inquiry and collaborative effort.

**Features of the Flipped Classroom:**

**Flipping allows students to pause and rewind their teacher**

Teachers are time bound to complete the syllabus and the students are expected to learn a given body of knowledge. However, even the best lecturers have students who fall behind and don't understand or learn all that is required. When we flip the classroom, we give the students control of the remote and this flexibility of pausing or rewinding allows them with time management.

**Flipping speaks the language of today's student**

Today's students grew up with Internet access, YouTube, Facebook, MySpace, and a host of other digital resources. The cell phones, iPods, and any other digital devices that most students carry in their pockets are powerful computing devices —and we don't allow them to use it. These students understand digital learning and we through flipped classroom we are speaking their language.

**Flipping helps struggling students**

In the traditional classroom it is always the brightest students who tended to get most of our attention but in the flipped model, the teacher can spend most of his class walking around helping the struggling students.

**Flipping increases student–teacher interaction**

Flipping allows teachers to leverage technology to increase interaction with students. It does not advocate the replacement of classrooms and classroom teachers with online instruction. On the other hand, flipping the classroom creates an ideal merger of online and face-to-face instruction.
Flipping creates a rich teaching – learning environment

One of the greatest benefits of flipping is that overall interaction increases, between teacher-to-student, and student-to-student. Because the role of the teacher has changed from presenter of content to learning coach, he can spend time talking to students, answering questions, working with small groups, and guiding the learning of each student individually. Because the role of the teacher has changed to more of a tutor than a deliverer of content, he has the privilege of observing students interact with each other and developing their own collaborative groups. Students are helping each other learn instead of relying on the teacher as the sole disseminator of knowledge.

Review of related literature

A search of the literature revealed several studies related to the flipped classroom. The combination of in-class and out of class activities was examined to determine whether the study actually represented a flipped classroom.

From the studies by Raymond Szparagowski, 2014 it may be concluded that the flipped classroom is a great tool for teachers to add to their tool to meet the needs of diverse learners and the teacher got to work more one on one with students in the flipped classroom than when he was teaching the non-flipped classroom. However, a flipped classroom lesson entails greater preparation from the teachers as it takes 2 to 3 times the time to plan, create videos, prepare supplementary questions, handouts etc. Although the flipped classroom showed increased student-student interaction, student-teacher interaction, student responsibility and teacher guidance (Baker, 2000), apprehensions regarding accountability for students watching the lectures at home, feedback mechanism and teacher preparation were the findings in the study by Kelly Snowden (2012). These studies on the flipped classroom showed that the students were able to enjoy learning as they were more active in class with quizzes, discussions with the instructor as a facilitator. The video lessons which they could watch at home helped them to pace their learning which resulted in increase in mastery learning and decrease in their stress levels (Graham Brent Johnson, 2013). It may be concluded that the flipped class showed positive effects when the students were given the freedom to choose the homework structure that best fit with their learning style and this reflected in how comfortable they were with the classroom activity. However it is important to have a structured classroom to help them in theoretical discussions and explore implications of the concepts they were learning. A less structured classroom would decrease
the comfort level among students resulting in lack of interactivity among them which was the finding in the study of Jeremy F Strayer (2007).

**Conclusion**

- Teachers can create online materials for home study by simply videotaping themselves giving lectures at a whiteboard, or they can use software that combines slides, photographs, video, music, animations, quizzes and other interactive features.
- Instructors can individualize learning for each student more easily in a flipped classroom. Class time is freed up so the teacher can move from student to student while ensuring that concepts are understood.
- In-class activities in flipped classrooms let students learn by doing and support development of academic and social skills.
- Teachers are not replaced in a flipped classroom. They become more important as their interaction with students increases.
- Flipped learning tool can be adopted to teach any subject at any level.

It is a great first step in reframing the role of a teacher in a classroom.

**References**

**Journals:**


**Unpublished Dissertations.**

Kelly E. Snowden, B.A. (2012). Teacher perceptions of the flipped classroom: using video lectures online to replace traditional in-class lectures, Thesis prepared for the degree of Master of Arts, University of North Texas.


Websites:

Flipped learning network. Retrieved from flippedlearning.org/
21st Century Education: Ambassador for Peaceful Tomorrow

Dr. Arpeeta Bhatia,
Asst. Prof., Thakur Shyamanarayan College of Education and Research

Abstract: The 21st century seems quite different from the 20th in the capabilities people need for work, citizenship, and self-actualization. We are in an era of incredible technology advances, strong competition for achievement and material gain, changes in gender roles, etc., which leads us to an ever growing, ever changing society. Now more than ever, education should prepare students for global civility and peace. So what in the world are we waiting for? In response, society's educational systems must transform their objectives, curricula, pedagogies, and assessments to help all students attain the outcomes requisite for a flourishing lifestyle based on effective collaborative contributions in work and citizenship. For this to happen it is vital to enhance the capability of people for building peaceful relationships and this onus lies on education fraternity to nurture it right from childhood. Thus, to know that is it possible to interweave activities to develop Peace Efficacy within the curricula the author conducted an experimental study for English Subject. The sample for the study comprised of eighth standard students studying in SSC Board School of Mumbai. The findings of the study revealed that the intervention program had significant effect in developing Peace Efficacy amongst students. The paper concludes that 21st Century Education needs to be Ambassador for more peaceful world where youth become capable in achieving peaceful constructive societies of tomorrow.

Keywords: 21st Century Education, Peace Efficacy, peaceful tomorrow

Introduction
The 21st century seems distinct from the 20th century in the competences people need for work, citizenship, and self-actualization. The 20th century witnessed the most disparaging wars in human history, but it also saw the most rigorous struggles to limit and even prevent war, to constrain arms proliferation, to advance peaceful means of resolving conflicts, to protect human rights, to prosecute war crimes, and to promote peace.

What does 21st century brings along? Today, we see violence seeped in our society and our global community, and too often, we see this resonated in the actions and behaviors of the youth in our schools. 21st Century is an era of incredible technology advances, strong
competition for achievement and material gain, changes in gender roles, etc., which leads us to an ever growing, ever changing society. When education reformers talk about “21st century skills” and related concepts, they are referring to the essential skills that children need to succeed as citizens and workers in the 21st century. What is our vision of education today? What kind of human being are we aiming to produce? The aims may vary a little from country to country but essentially, everywhere, education is aiming to produce a human being who is smart, well informed, meticulous, competent, disciplined, efficacious and hopefully a forerunner in his field of endeavor. If one may most humbly point out, Adolf Hitler had all these qualities and yet most people regard him as the most evil person of the 20th century. The only thing he lacked was love and compassion towards others. So what is required in our present day 21st Century education to prevent the creation of a Hitler or of little Hitlers for that matter? Now more than ever, education should prepare students for global civility and peace. So what in the world are we waiting for? What values should we try to inculcate? How should we modify our vision of education for the 21st Century?

In response, society’s educational systems must transform their objectives, curricula, pedagogies, and assessments to help all students attain the sophisticated outcomes requisite for a prosperous, attractive lifestyle based on effective collaborative contributions in work and citizenship. For this to happen it is vital to enhance the capability of people for building peaceful relationships and this onus lies on education fraternity to nurture it right from childhood. The liaison of the individual to society is most essential. Selfish, violent, ambitious, greedy, and competitive individuals cannot shape a society that is non-violent, peaceful, co-operative, and harmonious. The fundamental transformation of society will emerge only when the individual is transformed. As the Preamble to the UNESCO Constitution state that, "Since wars begin in the minds of men, it is in the minds of men that the defense of peace must be constructed". Education is therefore the main engine of social transformation, since it determines the kind of individual we are producing. The test of right education today is whether it is creating good planetary citizens. Thus, to move towards a peaceful future of tomorrow, it is essential to develop Peaceful attitude among the youth by educating them for Peace.

**Education for peace** answers the question, "What skills, attitudes, and knowledge do we need to develop to create peace?" According to Reardon (1999, p. 8), education for peace is "education to create some of the preconditions for the achievement of peace." Education for peace involves developing values, skills and attitudes that are conducive to building peace.
Education for peace is equipping individuals with the values, skills, and attitudes they need to be wholesome persons who live in harmony with others and as responsible citizens is the goal of education for peace. Furthermore, the Declaration and Integrated Framework of Education for Peace (1995) suggests that education for peace must be trans-disciplinary and included in all learning spaces. Education for peace should not be seamless and not restrictive to a single classroom or subject but should operate in harmony with all round development of children so that soon a culture of Peace emerges.

Thus, keeping all this in mind, to build a culture of Peace seeped in our roots, in the present study the researcher pursued forward with the context of interweaving the elements of Peace within the curriculum. That is the researcher believes that Education for Peace would be 21st Century vehicle to carve out Peace tomorrow for secondary students. Thus, to know that is it possible to interweave activities to develop Peace Efficacy within the curricula the author conducted an experimental study for English Subject. In this study, the researcher has operationalized Education for Peace and Peace Efficacy as following:

**Education for Peace**: The approach to education for peace at school level is integrative which means values related to Peace are integrated into the curricular content and processes of education.

**Peace Efficacy**: is one's perceptions of one's own personal capabilities to successfully 1) choose to engage in the task of peacemaking, 2) persist in the face of adversity, 3) apply greater effort to the task, and 4) remain focused on a picture of peace and what it takes to get there.

**Objectives of the Study**
A single group experimental design was adopted to develop Peace Efficacy among the secondary students and an intervention program in English subject was designed. To achieve this purpose, following objectives were stated:-

- To ascertain the pre – intervention Peace Efficacy Scores of secondary students.
- To develop an intervention program in English Subject to develop Peace Efficacy among secondary students.
- To ascertain the post – intervention Peace Efficacy Scores of secondary students.
• To compare the pre-test / post-test intervention Peace Efficacy Scores of secondary students.

Sample and Tools of the Study

The sample for the study comprised of 52 students of eighth standard studying in SSC Board School at Western suburbs of Mumbai. The program was designed for 5 days, and 9 samples were laid off during the course of time resulting into 43 students as sample.

The instrument used in this study to Peace Efficacy comprised of four dimensions viz. General Self Efficacy Scale; Adversity Response Profile; Willing to Choose Peace scale and Conflict Resolution Scale. The Cronbach alpha reliability coefficient of the scale was reported as 0.8. The researcher used the same tool for pretest as well as posttest. The intervention program consisted of 3 modules. Each module consisted of one or two sub topics. Each sub topic was allotted a time slot as per the requirement. Altogether, the program was conducted for 9 hours, which consisted of 3 hours of testing pretest and posttest and the remaining 6 hours of classroom teaching and preparatory work at home. The topic chosen by the researcher was from the VIII Standard English textbook by Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. The topic chosen for the Intervention Program was the Prose: Ask here for Advice; Poem: Race of Flowers and Story Writing.

Fig A: Design of the study

Hypothesis and Findings of the study

The null hypothesis states that there is no significant difference in pre-test and post-test Peace Efficacy scores of secondary students for the English intervention program. The statistical
technique to test this hypothesis is ‘t’ test and $\omega^2$ estimate. The following table shows relevant statistics of the Pretest and Posttest Peace Efficacy scores of students for the English Intervention Program:

<table>
<thead>
<tr>
<th>Intervention Programme</th>
<th>Group</th>
<th>Mean</th>
<th>SD</th>
<th>$t$</th>
<th>L.O.S</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Pretest</td>
<td>239.86</td>
<td>13.64</td>
<td>11.64</td>
<td>S at 0.01 level</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>276.04</td>
<td>15.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The obtained ‘t’ = 11.64 for differences in Pretest and Posttest Peace Efficacy Scores of secondary students for the English Intervention Program. Here, df = total N – 2 = 86 – 2 = 84. From Table D, for df = 84. Tabulated t = 1.99 at 0.05 level. Tabulated t = 2.64 at 0.01 level. The obtained t is greater than 2.64 at 0.01 level of significance; hence, the null hypothesis is rejected for the English Intervention Program. There is a significant difference in the in Pretest and Posttest Peace Efficacy Scores of secondary students for the English Intervention Program. The level of significance is 0.01 and the mean score of Posttest i.e. is greater than the mean score of Pretest. Furthermore to check the degree of association $\omega^2$ estimate is done. The value of 100 $\omega^2$ estimate value obtained is 61%. This shows that there is 0.61 percent of variance in the Peace Efficacy scores of secondary students and its association with training in English intervention program.

**Discussion**

The increase in the Peace Efficacy scores of secondary students for the English intervention program may be credited to the use of experiential learning approach as well as cooperative and collaborative learning experiences in the program. In addition, freedom to express their views, creative learning activities, the use of conflict resolution model to solve disputes peacefully, and the opportunity to relate activities to real life situation may have ascribed the development of Peace Efficacy among secondary students post English Intervention program.

The reason for this difference can also be gauged through a saying that, "You know, if people are not pacifists, it's not their fault. It is because society puts them in that spot. You have to change it. You don't just change a man - you've got to change his environment as you do it."
by Cesar Chavez. The study aimed at developing Peace Efficacy by interweaving elements of Peace with the curriculum for promoting a culture of peace. The findings reflect that bringing the change in their curricular environments can lead to positive steps towards Peace building. This increase may be attributed due to, use of experiential learning based activities to give direct life based experience to the students. As suggested by Pandey S.(2007) that stress from behaviorist approach to learning to constructivist approach will help learner construct knowledge through experience and the role of teacher in this approach has shifted from the transmitter of knowledge to facilitator of correct kind of knowledge. Also, Mishra, L.(2011) in the article, Designing a peace education program for secondary schools discusses that Peace education program in a school is basically a character building intervention based on a human, civic, moral, and spiritual value system with stress on developing peaceful living competencies in children. The Intervention program focused on these aspects which might have led to this positive transformation. Since the Intervention Program was activity oriented and learner centered it pushed learners to participate wholeheartedly so that they can learn to focus the Peace picture in real life scenarios as well. Hakan Karahasan, (2007)illuminated the significance of face-to-face daily interactions for promotion of Peace culture. The Intervention Programs was successful probably because it gave opportunity to children to reflect on social and national issues and they were given Freedom to speak the views on social and national issues without any biases followed by the brainstorming sessions so that inculcation to see things in non-violent light.

The current study had several limitations. To begin with, the sample was a convenience sample and small in size; consequently, the extent to which the findings can be generalized is limited. A second limitation of the current study stems from the limited chapters for the English Intervention program. It can be designed covering more scope of syllabi. Finally, the study is also limited to English medium VIIIth standard curriculum of Maharashtra Secondary School Board.

Pathway to ‘Peaceful Tomorrow’

A small body of determined spirits fired by an unquenchable faith in their mission can alter the course of history.

~ M.K. Gandhi

The concept of ‘educating for peace’ can seem a intimidating and overly simplistic solution to what has become the culture of violence in which we live. As, Reardon B has penned, Peace
does not come with our DNA. To reach peace we need to teach peace. We would contend that educating for peace is our best solution. Education is at the core of fundamental social change in our world. Throughout history, we have witnessed examples of education being used to inculcate hatred, violence, and damaging worldviews. We know the power of education to influence and shape society. What we need to recognize is the potential for our education system to be an influential force in carving a society that values respect for others, social justice, and imparts dignity and treasures rights of every human life - in short, a culture of peace.

For education for peace, a great deal depends on the peace-motivation of teachers, especially in the integrated approach. In a social climate where many teachers feel undervalued and overburdened, it is easy to forget the magnitude of the job that you have. Teachers change lives. The teacher has to be alert to peace opportunities and creative in appropriating them in respect of the curriculum as a whole. Teachers who are either aggressive or indifferent to the culture of peace, and hence see teaching only as the warehousing of information, may remain blind to the exciting scope that every lesson and every experience in the school offers to promote the cause of peace. So, the education fraternity needs to come together and establish basis to progress toward a peaceful tomorrow.

To sum it up, the famous humorist Ogden Nash wrote, “Progress might have been all right once, but it has gone on too long.” On a serious note, to progress to survive to unfurl a peaceful tomorrow, inner transformation should be at the core for human being. 21st Century Education must therefore concern itself not with greater 'progress' but with the inner transformation of the human consciousness. Mastering Peacemaking should be one the key skills of 21st Century Education for a progressive collaborative humane society to emerge. Thus, 21st Century Education needs to be Ambassador for more peaceful world where youth become capable in achieving peaceful constructive societies of tomorrow.

References:


Websites:

www.brainyquote.com/quotes/quotes/m/mahatmagan160841.html
http://www.brainyquote.com/quotes/quotes/o/ogdennash122004.html
Promoting Achievement and Interest in History among Upper Primary Students through ICT enhanced Project Based Learning

Ms. Lovetty N. Ger
Alumnus(M.Ed), K.J. Somaiya Comprehensive College of Education, Training and Research

Abstract: History is an important subject for a number of reasons. History provides a distinctive education by providing a sense of the past, an awareness of the development of differing values, systems and societies and the inculcation of critical yet tolerant personal attitudes. In spite of the importance of this subject it is often viewed as a subject of meager importance besides this the mode of teaching is traditional and is limited to the textual content only. The author of this paper has used ICT enhanced Project Based Learning Strategy to Promoting Achievement and Interest in History among Upper Primary Students. Focus group interviews were conducted with Standard 8th students. The daily reflections and observations of the author were also collected for the study purpose. The paper presents the concluding remarks with reference to the Promoting Achievement and Interest in History as well as development of technological skills, historical enquiry skills and collaboration.

Key words: ICT, Project Based Learning, ICT enhanced Project Based Learning, Achievement, Interest.

Introduction
The heart of historical study is a richly vicarious experience, teaching you to move beyond yourself and envision other worlds. History touches upon all forms of human endeavor from arts and languages to science and economics. In spite of the importance of this subject in the school curriculum the teaching of History remains largely routine and traditional as a result the students are neither interested nor achieve satisfactorily in this subject. It is crucial that the teachers should follow new trends in education. It is the teacher who needs to put into practice new and innovative strategies to make change in traditional mode of teaching of history.
Significance of ICT enhanced Project Based learning in History can be stated as follows:

- It provides pupils and teachers with access to a wide range of historical source material which can be analyzed in detail using readily available ICT tools.
- It helps pupils develop historical enquiry skills, and help pupils realize the importance of these skills in the study of history.
- It promotes collaboration between pupils, which in turn can help to develop historical thinking.
- It can enable teachers to present historical materials in ways most suited to individual and personal needs.
- It helps in teaching pupils to critically evaluate electronic sources of information and make judgments about their reliability.
- It helps in development of technological skills.

Knowing the place of history in school curriculum and the needs of techno savvy generation the researcher has made use of ICT enhanced Project Based Learning strategy in teaching of history.

**Aim of the Study**

The researcher conducted the study keeping the following aims in mind:

1. To develop ICT enhanced project based learning strategy for teaching of History
2. To study its effect on achievement and interest in learning of History among upper primary school students.

**Objectives of the Study**

In order to fulfill the above mentioned aims, the objectives were as follows:

1. To ascertain the pre-test achievement scores of upper primary students in History
2. To ascertain the pre-interest scores of upper primary students in History
3. To design and implement ICT enhanced project based learning strategy of upper primary students in History
4. To ascertain the post-test achievement scores of upper primary students in History
5. To ascertain the post-interest scores of upper primary students in History
6. To compare the pre-test and post-test achievement scores of upper primary students in History
7. To compare the pre-test and post-test interest scores of upper primary students in History

Hypotheses and Research Questions

In pursuit of objectives 6 and 7 following null hypothesis were formulated:

$H_01$: There is no significant difference in the pre-test and post-test Achievement scores of upper primary students in History after using ICT enhanced project-based learning strategy.

$H_02$: There is no significant difference in the pre-interest and post-interest scores of upper primary students in History after using ICT enhanced project-based learning strategy.

In pursuit of objectives 3, the following research questions were raised:

R1: What are the perceptions of the students about the ICT enhanced project-based learning strategy for History?

R2: What are the challenges faced by the researcher? How would the researcher overcome them?

Methodology of the study

For the present study, the researcher has used a Mixed – Method Research Design of Embedded Experimental Type.

Participants

The sample of the present research comprises of 34 students of standard VIII Theresa High School, Ghatkopar.

Tools for Data Collection

The tools used for every phase are described below:

Phase I: Identification Phase:

- Achievement test (pre)
Interest inventory (pre)

**Phase II: Intervention Phase:**
- ICT enhanced PBL instructional module
- Plenary (discussion-summing up and feedback)
- Daily reflection
- Group presentation rubric (PBL)

**Phase III: Evaluation Phase:**
- Achievement test (same as pre-intervention)
- Interest inventory (same as pre-intervention)
- Focus group Interview of the students

**Techniques for Data Analysis**

**Quantitative Analysis:** In the present study, the researcher has adopted two statistical techniques which are as follows:

1) **Descriptive Analysis:**
   - **Measures of Central Tendency:** Mean, Median and Mode.
   - **Measures of Variability:** Standard Deviation
   - **Measures of Divergence from Normality:** Skewness and Kurtosis
   - **Measures of Probability:** Fiduciary Limit

2) **Inferential Analysis:**

   The researcher used t-test to test the hypothesis (to find out the significant difference between the means of the pre and post intervention achievement and interest scores and draw conclusions.

   The following table shows a relevant statistics of pre-intervention and post-intervention achievement scores of class VIII students in History.
The following table shows a relevant statistics of pre-intervention and post-intervention interest scores of class VIII students in History.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Groups</th>
<th>Sample</th>
<th>Mean</th>
<th>S.D</th>
<th>‘t’ value</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Pre-test</td>
<td>34</td>
<td>8.85</td>
<td>2.36</td>
<td>8.22</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Post-test</td>
<td>34</td>
<td>13.82</td>
<td>2.75</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Value of ‘t’ and $\omega^2_{est}$

Qualitative Analysis:

The researcher analyzed the data collected through focus group interview of the students to determine perceived utility of intervention strategy in promoting achievement and interest qualitatively. The qualitative analysis of data helped in conceptualization of the findings in terms of the emerging themes.
Major Findings of the Study

Major findings on the study are given as follows:

1) The null hypothesis (H₀₁) of the study stated that: - There is no significant difference in the pre-test and post-test Achievement scores of upper primary students in History after using ICT enhanced project based learning strategy. The obtained value of ‘t’ for pre-intervention and post-intervention achievement scores of class VIII students is 8.22 which is greater than the table value of 2.72 at 0.01 level of significance which means that null hypothesis is rejected. Thus, there is a significant difference between pre-intervention and post-intervention achievement scores of class VIII students in History after using ICT enhanced project based learning strategy. The value of $\omega^2_{est}$ obtained is 49% which means that there is 49% variance in the achievement scores and its association with ICT enhanced project based learning strategy.

2) The null hypothesis (H₀₂) of the study stated that: - There is no significant difference in the pretest and posttest Interest scores of class VIII students in History after using ICT enhanced project based learning strategy. The obtained value of ‘t’ for pre-intervention and post-intervention interest scores of class VIII students is 3.25 which is greater than the table value of 2.72 at 0.01 level of significance which means that null hypothesis is rejected. Thus, there is a significant difference between pre-intervention and post-intervention interest scores of class VIII students in History after using ICT enhanced project based learning strategy. The value of $\omega^2_{est}$ obtained is 12% which means that there is 12 % variance in the interest scores and its association with ICT enhanced project based learning Strategy.

3) Analysis of data collected through focus group interview of Standard VIII students to determine the perceived effectiveness of intervention strategy based on ICT enhanced project based learning to promote achievement and interest in history revealed that the intervention promoted interest and provided more information, deeper knowledge and understanding.

Conclusion

1) The study aimed at developing and evaluating the intervention strategy based on ICT enhanced Project Based Learning for Promoting Achievement and Interest in History. After implementation of the module, the researcher statistically found that there is a significant difference between the pre-intervention and post intervention achievement and interest scores. This increase may be attributed to:
ICT enhanced Project Based Learning strategy.

A conducive classroom climate.

ICT enhanced group project which enabled the students to work cooperatively with peers.

Use of ICT, group work, discussions, group presentations etc., which motivated students throughout the intervention.

Exposure to wide variety of information through reference books and websites which lead to higher-level reading, better understanding of a topic, deeper learning.

Variety of activities like surfing on internet, downloading images, videos, etc. and making P.P.T made learning of history interesting.

2) The students of standard VIII of Theresa High School found the intervention strategy based on ICT enhanced Project Based Learning effective for Promoting Achievement and Interest in history because it provided them good understanding of the content as well as technology and it made learning of history interesting, enjoyable and more informative than the traditional method which is boring. The positive responses given to the intervention leads the researcher to conclude that it is the need of an hour to bring the changes in the mode of transaction of the history content.

The present study is an earnest attempt by the researcher to shift the focus from traditional mode of teaching history to use of new teaching strategies in history.

References


Websites:
http://www.educ.cam.ac.uk/research/projects/tips/bullock.pdf
www.educ.cam.ac.uk/research/projects/tips/bullock.pdf
dera.ioe.ac.uk/1600/l/becta_2003_attainmentreview_queensprinter.pdf


www.academia.edu/1565337/An_investigation_of_ICT_role_in_ESP

www.ifets.info/journals/11_3/5.pdf

www.educ.cam.ac.uk/research/projects/istl/TiPS0521.pdf

www.researchgate.net/...Project-based...with.../d912f5049c5c36204f.p

www.academia.edu/.../ICT_Support_for_Students_Collaboration_in_Pro.
Site Based Learning:
Study of the Attitude of Student Teachers towards Rural Internship

Ms. Nishi Kumar
Asst. Professor, St. Xavier’s Institute of Education

Abstract: Teacher preparation through the Bachelor of Education programme includes community work. The influence of this community work needs to be assessed in future teachers. A study was conducted at St. Xavier’s Institute of Education, Mumbai, to find out the attitude of student teachers in 4 areas namely, personal outcomes, psychological outcomes, social outcomes, learning outcomes and applicability of rural Internship. The Ex-post facto method was used. A questionnaire was used as a tool to collect information regarding attitude in four areas of study namely, personal outcomes, psychological outcomes, social outcomes, learning outcomes and applicability before and after the Rural Internship. The finding indicates that the student teachers show a significant positive difference in the attitudes of their personal outcomes after the Rural Internship. The student teachers seemed more willing to adjust and accommodate in adverse situations after the Rural Internship. There is also a significant difference seen in the attitude of applicability of Rural Internship among student teachers. After the rural internship student teachers found the experiences very useful in their practical lives. The paper attempts to throw light on the usefulness of community work among the B. Ed students.

Introduction
As part of the Bachelor of Education programme, the St. Xavier’s Institute of Education sends student teachers to rural areas to conduct community outreach activities. The aim is to create in the student teachers a strong sense of compassion and service mindedness. This study was conducted to throw light on the attitude of the student teachers with respect to their personal outcomes, psychological outcomes, social outcomes, learning outcomes and applicability of the programme.
Operational definitions

Attitude:
Thurstone defined “Attitudes denotes the sum total of man’s inclinations, and feelings, prejudice or bias, pre conceived notions, ideas, fears, threats and convictions about any specific topic.”

Attitude is a point of view, substantiated or not, true or false, which holds towards a person, object, task or idea. The point of view may either be positive, negative, hostile or indifferent. An attitude is often defined as a tendency to react favorably or unfavorably toward a designated class of stimuli, such as a national or racial group, a custom or an institution. In this study, attitude means student teachers attitude towards rural internship.

Student Teachers: Students pursuing Bachelor of Education Program in the 2013-2014. Community refers to a usually small, social unit of any size that shares common values. The word "community" is derived from the old French communauté which is derived from the Latin communitas (com, "with/together" + munus, "gift"), a broad term for fellowship or organized society. Some examples of community service are to help in church, tutoring, hospitals, etc. “A community may be thought of as the total organization of social life within a limited area.” Ogburn & Nimkoff. “A community is the smallest territorial group that can embrace all aspects of social life.” K. Davis.

A community is a group of families settled in a village or town and bound together with more or less common practices, ideas, values and culture. Each community is a part of bigger community called the state or the Nation. The community is the most inclusive grouping of man, within which a man might spend his whole life.

Rural Community: The people in a local area who live on dispersed farmstead or in a hamlet or village of less than 2,500 populations that forms the center of their common interests.

Rural Internship: An intern is one who exchanges service for experience between the student teachers and rural community. The community service includes the following activities. The student teachers taught Spoken English, English grammar, Action songs, Soft skills, preparing rural students for board exams, Conducting assembly, Communication skills to the rural students.

Rural Internship in this study means, student teachers who were pursuing Bachelor of Education have gone to tribal or remote areas to teach as a part of community work.
Community service is a donated service or activity that is performed by someone or a group of people for the benefit of the public or its institutions. Performing community service is not the same as volunteering, since it is not always done voluntarily. It may be done for a variety of reasons:

- governments may require it as a part of citizenship requirements, typically in lieu of military service;
- courts may demand it in lieu of, or in addition to, other criminal justice sanctions;
- School/College may mandate it to meet the requirements of a class, such as in the case of service-learning or to meet the requirements of graduation.

In this study it refers to the service provided by student teachers to a particular community in the rural areas of Mumbai and Gujarat.

**Theoretical framework**

Teacher preparation through the Bachelor of Education programme includes community work. The reason why community services are taken up by Bachelor of Education students because a trained teacher has the knowledge, skill and awareness which he/she would like to share with the community so that it develops in return. If a teacher educator will learn to do community work then only she will understand the values and aspirations of the community. So it is important to include community work with the regular curriculum of student teachers pursuing Bachelor of Education. Community work has been prescribed in Course VII and is included in the curriculum for the student teachers to sensitize the student teachers about education in rural areas.

**Objectives of the rural internship**

The objectives of the rural internship were as follows:

- To prepare professional competent teachers to perform their roles effectively as per needs of the society.
- To transform student teachers into competent and committed professions willing to perform the identified tasks.
- To impart teacher training which enables the prospective teachers to see the obtaining world in the new light of universal human values.
- To enable teachers to act as agents of modernization and social change.
- To develop competencies and skills needed for becoming an effective teacher.
- To empower teachers to cultivate rational thinking and scientific temper among students.
- To sensitize teachers and teacher educators about emerging issues, such as environment, ecology, population, gender equality, legal literacy, etc.
- To develop critical awareness about the social realities.

**Objectives of the study**
The aims and objectives of Rural Internship are as follows:

- To find out if there is any significant difference in the attitude of student teachers towards Rural Internship before and after the Rural Internship.

**Hypotheses**
Null hypotheses were framed for the study. They are stated as follows:

- There is no significant difference in the attitude of student teachers towards Rural Internship before and after the Rural Internship.
- There is no significant difference in the attitude of student teachers regarding the personal outcomes before and after the Rural Internship.
- There is no significant difference in the attitude of student teachers regarding the psychological outcomes before and after the Rural Internship.
- There is no significant difference in the attitude of student teachers regarding the social outcomes before and after the Rural Internship.
- There is no significant difference in the attitude of student teachers regarding applicability before and after Rural Internship.
- There is no significant difference in the attitude of student teachers regarding learning outcomes before and after Rural Internship.

**Sample**
The sample chosen for the study were student teachers pursuing Bachelor of Education in the year 2013-2014 from St. Xavier’s Institute of Education. A total of 97 students were selected for the study out of which 90 were females and 7 males.
Tools
The following tools were used to collect data from the students:

Two questionnaires were prepared in order to study the attitude of student teachers towards Rural Internship. The questionnaire was divided into 5 divisions namely Personal outcomes, Psychological Outcomes, Social Outcomes, Applicability and Learning outcomes. Pretest and Posttest Questionnaire had the following number of questions in Personal Outcomes– 12 items, Psychological Outcomes - 9 items, Social Outcomes- 11 items, Applicability- 11 items and Learning Outcomes – 14 items. The items were to be marked on a four point Likert Scale namely Strongly Agree, Agree, Disagree and Strongly Disagree. A pre-test and post-test questionnaire was prepared for the student teachers to study the attitude towards Rural Internship. The pre-test was administered before the student teachers left for the Rural Internship and post-test was administered after the Rural Internship.

Method of the study

The ex post facto method was used in order to conduct the study. Ex post facto research is systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulated. Inferences about relations among variables are made, without direct intervention, from commitment variation of independent and dependent variables. This kind of research is based on a scientific and analytical examination of dependent and independent variables.

Independent variables are studied in retrospect for seeking possible and plausible relations and the likely effects that the changes in independent variables produce on a single or a set of dependent variables. Hence, the pretest tool was given to the student teachers before the rural internship and posttest tool was given to the students after the rural internship. The dependent variable was the rural internship and the independent variable was the pre-test and post-test.

Data collection

The data was collected using the following steps;

- Permission was taken from the principal of the Institution to conduct pretest and post-test.
• On a scheduled day, in one lecture period the tool was administered and the data was collected before the Student Teachers left for the Rural Internship to the rural camps. (Pre-test)
• Student Teachers proceeded for Rural Internship.
• The Institute reopened after the Diwali break and in one lecture period post-test questionnaire with questions on attitude was given to the students to fill up the data required and test was administered and data collected.

Data analysis
Descriptive statistics is used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data. Descriptive statistics are typically distinguished from inferential statistics. With descriptive statistics you are simply describing what is or what the data shows. With inferential statistics, you are trying to reach conclusions that extend beyond the immediate data alone.

Table 1: Relevant statistics for calculation of Mean, Median, Mode and Standard Deviation of the scores of Personal outcomes of Student Teachers

<table>
<thead>
<tr>
<th></th>
<th>Personal Outcomes (Pre-test)</th>
<th>Personal Outcomes (Post-test)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>Mean</td>
<td>36.64</td>
<td>40.77</td>
</tr>
<tr>
<td>Median</td>
<td>37.00</td>
<td>41.00</td>
</tr>
<tr>
<td>Mode</td>
<td>34.00</td>
<td>41.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>5.80</td>
<td>5.63</td>
</tr>
</tbody>
</table>
Figure 1: Bar Graph showing the Mean, Median, Mode and Standard Deviation of the scores of Personal Outcomes of Student Teachers

There is negligible difference in the mean, median and mode of the pretest and posttest for personal factors. Therefore the distribution is normal. The mean value of the post test is higher than the pre-test.

Table 2: Relevant statistics for calculation of Mean, Median, Mode and Standard Deviation of the scores of Psychological Outcomes of Student Teachers

<table>
<thead>
<tr>
<th></th>
<th>Psychological Outcomes pre-test</th>
<th>Psychological Outcomes post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>Mean</td>
<td>32.25</td>
<td>31.68</td>
</tr>
<tr>
<td>Median</td>
<td>33.00</td>
<td>32.00</td>
</tr>
<tr>
<td>Mode</td>
<td>36.00</td>
<td>34.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>3.21</td>
<td>3.31</td>
</tr>
</tbody>
</table>
There is negligible difference in the mean, median and mode of the pre-test and post test for psychological outcomes. Therefore the distribution is normal. The mean value of the pre test is higher than the post-test.

**Table 3:** Relevant statistics for calculation of Mean, Median, Mode and Standard Deviation of the scores of Social outcomes of Student Teachers

<table>
<thead>
<tr>
<th></th>
<th>Social Outcomes pre-test</th>
<th>Social Outcomes post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>36.30</td>
<td>45.1856</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>37.00</td>
<td>45.00</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>37.00</td>
<td>44.00</td>
</tr>
<tr>
<td><strong>Std. Deviation</strong></td>
<td>3.80</td>
<td>4.93358</td>
</tr>
</tbody>
</table>
There is negligible difference in the mean, median and mode of the pre-test and post test for social outcomes. Therefore the distribution is normal. The mean value of the post test is higher than the pre-test.

**Table 4:** Relevant statistics for calculation of Mean, Median, Mode and Standard Deviation of the scores of Applicability of Student Teachers

<table>
<thead>
<tr>
<th></th>
<th>Applicability pre-test</th>
<th>Applicability post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>34.92</td>
<td>36.35</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>35.00</td>
<td>37.00</td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td>33.00</td>
<td>37.00</td>
</tr>
<tr>
<td><strong>Std. Deviation</strong></td>
<td>4.79</td>
<td>3.59</td>
</tr>
</tbody>
</table>
Figure 4 Bar Graph showing the Mean, Median, Mode and Standard Deviation of the scores of Applicability of Student Teachers.

There is negligible difference in the mean, median and mode of the pre-test and post test for applicability. Therefore the distribution is normal. The mean value of the post test is higher than the pre-test.

Table 5: Relevant statistics for calculation of Mean, Median, Mode and Standard Deviation of the scores of Learning Outcomes of Student Teachers

<table>
<thead>
<tr>
<th></th>
<th>Learning Outcomes pre-test</th>
<th>Learning Outcomes post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>Mean</td>
<td>45.12</td>
<td>45.19</td>
</tr>
<tr>
<td>Median</td>
<td>45.00</td>
<td>45.00</td>
</tr>
<tr>
<td>Mode</td>
<td>42.00</td>
<td>44.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>4.24</td>
<td>4.93</td>
</tr>
</tbody>
</table>
Figure 4  Bar Graph showing the Mean, Median, Mode and Standard Deviation of the scores of Learning Outcome factors of Student Teachers.

There is negligible difference in the mean, median and mode of the pre-test and post test for learning outcomes. Therefore the distribution is normal. The mean value of the post test is higher than the pre-test. A t-test was conducted in order to compare the results of pre-test and post test.

Table 6: Relevant statistics to compare means t test

<table>
<thead>
<tr>
<th>Pair</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>Personal Outcomes—pre-test</td>
<td>36.64</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>Personal Outcomes post-test</td>
<td>40.77</td>
<td>97</td>
</tr>
<tr>
<td>Pair 2</td>
<td>Psychological Outcomes pre-test</td>
<td>32.25</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>Psychological Outcomes post-test</td>
<td>31.68</td>
<td>97</td>
</tr>
<tr>
<td>Pair 3</td>
<td>Social Outcomes pre-test</td>
<td>36.30</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>Social Outcomes post-test</td>
<td>36.62</td>
<td>97</td>
</tr>
</tbody>
</table>
Table 7: Paired Samples Test

<table>
<thead>
<tr>
<th>Pair</th>
<th>Paired Differences</th>
<th>Paired Differences</th>
<th>Paired Differences</th>
<th>Paired Differences</th>
<th>Paired Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>t</td>
<td>Sig. (2-tailed)</td>
</tr>
<tr>
<td>Pair 1</td>
<td>Personal Outcomes - pre –test</td>
<td>-4.13</td>
<td>7.25</td>
<td>-5.62</td>
<td>96</td>
</tr>
<tr>
<td>Pair 2</td>
<td>Psychological Outcomes pre – test post- test</td>
<td>.57</td>
<td>3.80</td>
<td>1.47</td>
<td>96</td>
</tr>
<tr>
<td>Pair 3</td>
<td>Social outcomes pre – test post- test</td>
<td>-.32</td>
<td>4.83</td>
<td>-.65</td>
<td>96</td>
</tr>
<tr>
<td>Pair 4</td>
<td>Applicability pre – test post test</td>
<td>-1.43</td>
<td>4.96</td>
<td>-2.84</td>
<td>96</td>
</tr>
<tr>
<td>Pair 5</td>
<td>Learning Outcomes pre-test post-test</td>
<td>-.06</td>
<td>5.07</td>
<td>-.12</td>
<td>96</td>
</tr>
</tbody>
</table>

Findings

The following are the findings for the 5 pairs of pretest and posttest after the t test was calculated for the study.

**Pair 1 Personal Outcomes:** The t-value for the comparison of means of the pre-test and post-test Personal Outcomes is significant at 0.01 level.

Interpretation: The mean of the post test for personal outcomes is significantly higher than the mean of the pre-test. Therefore the null hypothesis is rejected.
Conclusion: There is a significant difference in the Personal Outcomes regarding the Rural Internship before and after the program.

**Pair 2 Psychological Outcomes:** The t-value for the comparison of means of the pre-test and post-test psychological factors is not significant.

Interpretation: The mean of the post test for psychological factors is not significantly higher than the mean of the pre-test. Therefore the null hypothesis is accepted.

Conclusion: There is a no significant difference in the psychological outcomes regarding the Rural Internship before and after the program.

**Pair 3 Social outcomes:** The t-value for the comparison of Means of the pre-test and post-test social factors is not significant at 0.01 level.

Interpretation: The mean of the post test for social outcomes is not significantly higher than the mean of the pre-test. Therefore the null hypothesis is accepted.

Conclusion: There is a no significant difference in the social outcomes regarding the Rural Internship before and after the program.

**Pair 4 Applicability:** The t-value for the comparison of Means of the pre-test and post-test Applicability is significant at 0.05 level.

Interpretation: The mean of the post test for Applicability is significantly higher than the mean of the pre-test. Therefore the null hypothesis is rejected.

**Conclusion:** There is a significant difference in the Applicability regarding the Rural Internship before and after the program.

This shows that the student teachers found the Rural Internship very useful and productive. The shows that the student teachers have probably better life skills especially of interpersonal skills and critical and creative thinking.

**Pair 5 Learning Outcomes:** The t-value for the comparison of Means of the pre-test and post-test Learning Outcome factors is not significant at 0.01 level.

Interpretation: The mean of the post test for Learning Outcomes is not significantly higher than the mean of the pre-test. Therefore the null hypothesis is accepted.

Conclusion: There is a no significant difference in the learning outcomes regarding the Rural Internship before and after the program.
Conclusions
From the above study it can be concluded that the perception of the students had changed after their experience of the rural internship as evident from the findings of their personal outcomes. They also felt that the Rural Internship was useful as they learnt to adapt to the rural community life. However, the Rural Internship did not affect the psychological, social and learning outcomes of the student teachers.

References


Marker, D. N, Educational Sociology, Prakash Brothers, Jullunder, pp. 120.


Infusion of Values

Ms. Aanchal Lalla

English Lecturer, K. J. Somaiya Polytechnic, Vidyavihar

Abstract: Technology revolution has brought tremendous changes along with it. Education in the present scenario is focused on information. Spotlight is on how to excel in different areas like science, technology, business and management. The present generation is leading a materialistic life. The main reason for all ills of the present day society is the meaninglessness of education. The need of the hour is not routine education but a meaningful education conforming to the requirements of the contemporary society. The main focus of this paper is on the values required for the present generation and the pedagogical aspects of curriculum of value education.

Key Words: Values, honesty, professional excellence, engineering and technological education

Introduction

Values are not things,

They are standards of beauty, efficiency or worth that a person endorses that he tries to live up to or maintain.

They do not exist in or of themselves but are reflected in certain value judgments or claims that individual makes. When a person claims that a certain idea, individual, object, act, policy or way of behaving good, right, ought to be supported, or should be carried out, such standards are often revealed in the reasons he gives for his claim.

-----Jack. R. Fraenkel

At the outset, I would like to express myself that I do completely agree with the above given thought. Actually, we become valuable only because of our values.

A drastic trend in current flow of thoughts is an alarming recognition of the need of the hour—the importance of values, especially in educational area and business area. Unfortunately, not adequate attention is given regarding value education in engineering and technological education. But with growing demand of employers and the industry, of late, value education
has once again come into limelight. So only, curriculum designers wish to have maximum efforts in the related area. In India, the current emphasis on value education is due to problems like corruption, poverty, exploitation, injustice, inequality and ecological imbalance. These problems give continuous warning signals.

To prepare future generation to cope with the challenges and fast changing realities of today and tomorrow, who can bring about the transformation of the culture of violence, intolerance and greed to one of peace, non-violence and respect for one another, there is no readymade solution but to infuse values. It is well said that even routine things cannot be accomplished unless launched on a war footing. So, time has come to understand why and what distracts schools from nurturing the desired values and to design a new methodology to infuse values in innovative ways in students.

**Correlation of Values with Education**

Values can be defined in many ways. But the definition by Ayn Rand is liked by me. He defines values as a code of conduct or principles ‘to guide man’s choices or actions, the choices and actions that determine the course of his life’ and the main aim of science is ‘discovering and defining such a code’. Value education can be defined as the process of inculcating values in the minds of students through various methods and value based curriculum. The very concept of education states that it is a process of inculcating values and equips the learner lead a life that can make an individual fit for the society. In short education is developing an ‘Integrated Personality’.

In the ancient times, values were embedded in the teaching and India fortunately being culturally rich and diverse country is having a privilege to have multiple values. Teachers of Gurukul system, great saints and sages and the reformers of India always emphasized on the values such as self-discipline, simplicity, honesty, non-violence – all simple but yet revolutionary values to make an individual’s life worth living in the society.

According to UNESCO, “higher education is no longer a luxury; it is essential to national, social and economic development”. To make a student ‘light of the world’ and not the ‘cause of darkness’ his education is of prime importance. Professionals having mere professional knowledge cannot survive happily without following proper values in their lifestyle. The would-be professional in the college should be definitely exposed to the subject value education so that he can understand the ethical issues confronting his profession. This will
help him to become a better professional and lead a better life. When we are ‘value educating’ we are putting the learners in situation that enable them to think, to reason, to question, to reflect, to care, to feel concern, to act.

Values and Contemporary Reality

The setback of decreasing values is because of multiple factors such as globalization, exploitation, privatization, greediness, ecological imbalance, increasing violence and terrorism. On one hand Indians are setting themselves as ‘powerhouses’ of tomorrow’s global economy and on the other hand there is exploitation of many Indians. Eventually, these factors have resulted in self centered attitude, misuse of technology and above all, harmful attitude.

In the current times, value education has once again gained importance. Actually after independence, the National Commission of Secondary Education (1952-53) was a significant milestone in emphasizing character building as the defining goal of education. Small children and their innocent minds unknowingly imbibe many values taught at school level. They learn the theory part of values through their subjects. However, they fail to realize the application part of these values. This becomes a barrier and their actual molding doesn’t take place. Education for values should not be therefore confined to the young minds but should be continued even at higher level. Education for values targets at the molding of the personality which can influence their attitude towards the family, friends and the society. The spotlight should be therefore to provide holistic education where a student can develop emotionally too. So only a student will be ready product for the world of work or professional environment.

So, the entire life/career of an individual depends not only on the academic success but also on his interpersonal skills, hard work, honesty, and discipline, ability to work in teams, sharing responsibility and above all to adapt him to the changing needs of the society.

Values for Better Endurance

The core idea behind value education is to cultivate essential values in the students so that the civilization that teaches us to manage complexities can be sustained and further developed. Value education begins at home, parents being the first teachers and it is continued in schools. Later we learn from society, government, nature, etc. Values are also learnt as we
learn habits in the process of growing up. Values required for better endurance with respect to the above discussed perspectives can be discussed as given under:

a. Respect: Respect is the basic human value. Everyone should learn to respect others, irrespective of their age, status, gender. One should not forget to respect himself. We should also have respect for natural environment and for our work.

b. Responsibility: Responsibility is one of the most desired values in the current times. Students should be taught to be responsible towards self development, work, family and society.

c. Honesty: Honesty with oneself, facing the truth about something, taking the courage to speak the truth is an important virtue. One should never forget the well-said quotation, “Honesty is the best policy.”

d. Self-control: Self control is to control the harmful emotions so as to have harmony with others. Avoiding negative emotions like anger, jealousy, hatred and enmity. Patience, peace and forgiveness come along with self-control.

e. Hard work: “Hard work is the key to success”. One can be successful only with this significant value. Students should be taught with the help of illustrations that without hard work success cannot be achieved.

f. Discipline: Disciplining one’s senses and emotions, developing the habit of contemplation, reflection, self-monitoring, learning from mistakes are chief aspects for personal development. Discipline includes regularity and punctuality.

g. Co-operation: Ability to work with others in a team, sensitivity towards their feelings is important for success in team work. In present scenario there is lot of emphasis on team work where there is an opportunity of pooling of ideas.

h. Communication skills & Healthy interpersonal relationships: Good communication and interpersonal skills are required to excel in not only personal life but also in professional life. It improves our relationship with others.

i. Love, Care & Compassion: Love is an essential value for nurturing dignity. Love, care and compassion are manifested through empathy, caring and sharing.

j. Harmony with nature: Appreciating nature and its beauty and sustaining nature are significant virtues to sustain ecological balance. Nowadays due to threat of global warming, one should be taught the consequences of harm to nature.
k. Equality: Equality implies freedom from exploitation and ensuring to provide opportunities for individual’s development, irrespective of the background, gender, cultural or socio-economic status.

l. Critical & creative thinking: Critical and creative thinking is highly valued as it can help students to think logically, analyze the situations and apply the solutions to the problems.

m. Knowledge & Competence: In this cut throat competitive scenario, a student must have thirst for knowledge and expertise required for survival. Knowledge of your area gives you the ability to go well along with others and provide you the confidence to sustain in the competition.

All the above given values lie in the category of either Human values, Cultural values, Personal values, Social values or Universal values.

**Strategies to Infuse Values in Students**

As institutes plan and implement value education, there should be an implicit curriculum to be followed. It depends upon the teacher’s capability how she correlates the matter and how she communicates with the students to develop the values. A teacher can use innovative strategies in classroom and can motivate students to imbibe many values such as self-discipline, courtesy, teamwork, etc. Value education, when done well, fosters both higher order cognitive skills and deeper intra-personal and emotional intelligence.

Present teachers have to plant the seeds of harmony and integration among students. The teachers have a great role in molding the personality of an individual. Teacher should take sincere and dedicated efforts to inculcate values in the students. As it is rightly said, “*Values are better caught than taught*”. Moreover, values cannot be forced, even if conveyed with good intentions.

Being a language teacher, I always feel that there is lot of scope for language teachers to infuse values among students by adopting different strategies. At the higher education stage values such as patriotism, dependability, scientific temper, endurance, international understanding, brotherhood, and dignity of labor, tolerance, justice, and democratic spirit should be taught.
This can be done in many ways:

- **Story Telling:** Through stories we can inculcate moral values in the students. Stories are the most powerful tool to entertain and instruct children. Treasure house of biographies of legends, Akbar and Birbal stories or moralistic stories by contemporary authors like Sudha Murty can provide miraculous results.

- **Role plays and Dramatization:** Thought of the week, etc. can be done to make permanent impact on the minds of the students.

- **Exhibitions:** Exhibitions of posters, charts, projects can be arranged to emphasize on moral values. Puzzle games, quiz competitions, essay competitions on the various topics focusing on values can be arranged.

- **Group Discussions:** Group Discussions should be arranged to develop value of respecting each other’s opinion and developing sensitivity towards others. This will teach them to develop patience and tolerance.

- **Questioning:** Encourage questioning in the class. Constructive feedback, positive reinforcement, encouraging students to accept mistakes, avoiding evaluative remarks, and increasing motivation can be done to inculcate values in the students.

- **Warm Fuzzies:** Situations can teach students positive attitude towards various situations. Students as well as teachers can write positive remarks on the pin-up boards. For instance, if your friend meets with an unexpected accident and his submission is due today, how will you help him?

- **Prick the conscience method/Brainstorming:** Arranging workshops, seminars, expert talks on stern topics such as corruption, child labor, environment problems.

- **Exposure:** Exposure through certain activities and infusing values in students like leadership, team management by showing them certain videos of leaders or by giving them certain case studies.

- **Special Day:** By arranging a special day with a theme like “Helping Hand Day”. On this day everyone will try to help someone. Theme can be also sometimes “Each one teach one” where students can teach children of nearby locality.

- **Festivals:** Even non formal celebration of festivals like Diwali, Holi, Dasera, Gopalkala, Independence Day and Republic Day can inculcate values in the students.

- **Seminar:** Even a special seminar should be arranged for parents of the students. Specially mothers of the students to make them aware about the importance of values as mother is the first teacher of a child.
• Sometimes team games and social service program can be organized. To motivate participation, some incentives can be introduced. The students feel motivated to participate. Also they can get connected with others through such kind of activities. Community development programs, National Social Service activities are included in the curriculum for developing the virtues in the students.

So value education is not simply the heart of education, but also the education of the heart. Value based education is more teacher based than text books based, it is more awakening than informing. It is life oriented and not exam oriented. A judicious combination of academics and value education can definitely make the desirable change. Integrated approach in education program is required. Thus, integrating values with education gives teachers another vision of their pedagogical work.

**Conclusion**

*We must remember that intelligence is not enough.*

*Intelligence plus character - that is the goal of true education.*

- Martin Luther King Jr.

Wisdom provides immortality. *Education gives “Anna” but value education gives us “Ananda”*. The subject that enables us to understand ‘what is valuable’ for human happiness is called value education. Teachers teaching value education have a great role in the process of transformation. Teachers are social actors of change and have a great role in giving value education to students, so that they can become better citizens, better workers and above all better human beings.

I strongly believe that if these values and strategies are incorporated in Engineering education as well as other professional education, it will lead to the mental, moral, social and spiritual elevation of all the professions as a whole.

As values should not be treated as ideal concepts but as ‘empowering tools’ which are helpful in meeting the challenges of the contemporary social world. Empowering students in the principles of excellence is not an event; it is a process….. a continuous process and excellence is not a fixed point in human life. The journey must continue …….. *Journey towards excellence*...
Invest in teaching this triple truth to all: *a generous heart, kind speech, and a life of service and compassion are the things which renew humanity.*

It is rightly said that

“If you plan for one year, plant rice;
If you plan for ten years, plant trees;
If you plan for 100 years, educate children.”

**References**

**Websites:**

http://www.educationzing.com/india/value-education.html

http://www.indiaedu.com/articles/value-education.html

http://wiki.answers.com/Q/whatistheimportanceofvalueeducation

**Books:**

http://www.academicjournals.org/jpapr


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