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TEACHER EDUCATION

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Vol. 47 **No. 2** **October 2013**

DESIGNING TEACHER EDUCATION IN A FRAMEWORK OF MULTIPLE INTELLIGENCE FOR ICT BASED CONSTRUCTIVIST LEARNING ENVIRONMENT

Dr.H.K.Senapaty *

Abstract

The main focus of education is to nurture multiple intelligences, but in the current scenario it is mostly delimited to logical and mathematical intelligence. This very approach to education disables a large number of students because students with differential intelligence are unable to cope with the demands of the kind of education offered in school; on the other hand, school does not contribute and nurture the differential intelligence that children bring with them. The future school must be designed to nurture multiple intelligence like linguistic or verbal intelligence, logical-mathematical intelligence, spatial intelligence, bodily-kinesthetic or sports intelligence, musical intelligence, inter-personal intelligence, intra-personal intelligence and naturalist or environmental intelligence. We can achieve this if teacher education is designed with a multiple intelligence framework which will help a young person with musical ability to emerge as a musician; one with bodily and kinesthetic intelligence to emerge as a sportsperson, as much as the person with linguistic intelligence to unfold himself or herself as an orator, a writer, etc. Equally important is nurturing the logical-mathematical intelligence that can produce a scholar in mathematics and science and other such scholastic subjects. In absence of education designed to facilitate multiple intelligence, children with intelligence other than mathematical-logical intelligence are dubbed as non intelligent or less intelligent. This not only makes them underachievers but also demolishes their self-concept and self esteem. In essence, the teacher education programme must adequately equip the teacher trainee who can offer adequate opportunity for exercising all varieties of intelligence and unfolding the full potential in each student in ICT based constructivist learning environment. In view of this here in this paper an attempt has been made to design teacher education in a framework of multiple intelligence for ICT based constructivist learning environment.

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Instructional processes provide the sufficient condition for quality education. Contemporary instructional processes and practices are characterized largely by lectures where students are passive listeners. Such instructional processes contribute at best to lower order cognition, memorization and fragile learning; together, they make a grand nexus for large-scale failing in examination. Students lack problem-solving ability, higher order thinking and cognition, and creativity. If the school education sets its targets for students to be able to think critically, solve problems individually and collectively, be creative, instructional processes must undergo a paradigm shift. Instructional processes must bring students at the centre of stage where they primarily learn to learn through peer interaction, problem-solving, experiential learning, etc. In this new instructional scenario, teachers will be facilitators of learning. Research as a tool for learning is quite common all over the world; introduced even at the pre-primary stage. Indeed, by the time students are in the 9th and 10th standards they should become researchers to be able to crack problems, contemplate solutions, explore and experiment alternative and creative ways of problem-solving. In other words, instructional processes must be constructivist in its approach. Through constructivism, students will learn to construct their learning according to their own worldview that unfolds over the years of schooling. It is this learning to construct learning that will hold them instead into the adult life at work and later.

Contemporary school education concentrates primarily on learning a few subjects challenging the 'cognitive intelligence', that too largely the lower order cognition. This very approach to education disables a large number of students because students with differential intelligence are unable to cope with the demands of the kind of education offered in school; on the other hand, school does not contribute and nurture the differential intelligence that children bring with them. For example, a talented sports genius is ridiculed for low scores in mathematics or science. The future school must be designed to nurture multiple intelligence like linguistic or verbal intelligence, logical-mathematical intelligence, spatial intelligence, bodily-kinesthetic or sports intelligence, musical intelligence, inter-personal intelligence, intra-personal intelligence and naturalist or environmental intelligence.

The primary intention of designing teacher education with a multiple intelligence framework is to ensure that a young person with musical ability can emerge as a musician; one with bodily and kinesthetic intelligence is able to emerge as a

sportsperson, as much as the person with linguistic intelligence can unfold himself or herself as an orator, a writer, etc. Equally important is nurturing the logical-mathematical intelligence that can produce a scholar in mathematics and science and other such scholastic subjects. In absence of education designed to facilitate multiple intelligence, children with intelligence other than mathematical-logical intelligence are dubbed as non intelligent or less intelligent. This not only makes them underachievers but also demolishes their self-concept and self esteem. In essence, the teacher education programme must adequately equip the teacher trainee who can offer adequate opportunity for exercising all varieties of intelligence and unfolding the full potential in each student.

The movie TAARE ZAMEEN PAR released on 21 December 2007 highlights the importance of multiple intelligences. It is one film that makes us peep into a child's mind and how some parents, in their pursuit to make them 'stronger' academically, forget that there's hitherto untapped talent that needs to be nourished and encouraged. 'Taare Zameen Par' drives home a strong message, making you empathize with the kid, compelling you to draw parallels with your life, making one realize that some of the renowned geniuses were once scoffed at, but the world had to bow down to their intellect later. In a nutshell, 'Taare Zameen Par' serves as a wake up call for every teacher, parent or parent-to-be.

Ishaan Awasthi is an eight-year-old whose world is filled with wonders that no one else seems to appreciate; colors, fish, dogs and kites are just not important in the world of adults, who are much more interested in things like homework, marks and neatness. And Ishaan just cannot seem to get anything right in class. When he gets into far more trouble than his parents can handle, he is packed off to a boarding school to 'be disciplined'. Things are no different at his new school and Ishaan has to contend with the added trauma of separation from his family.

One day a new art teacher bursts onto the scene, Ram Shankar Nikumbh [Aamir Khan], who infects the students with joy and optimism. He breaks all the rules of 'how things are done' by asking them to think, dream and imagine, and all the children respond with enthusiasm, all except Ishaan. Nikumbh soon realizes that Ishaan is very unhappy and he sets out to discover why. With time, patience and care, he ultimately helps Ishaan find himself.

On face-value,'Taare Zameen Par' looks like a kiddies film, but as the story peeps into the mind and heart of a kid, his interests, his hobbies, his strengths and

weaknesses. In view of the above, there is an urgent need of designing our teacher education programme on a multiple intelligence framework.

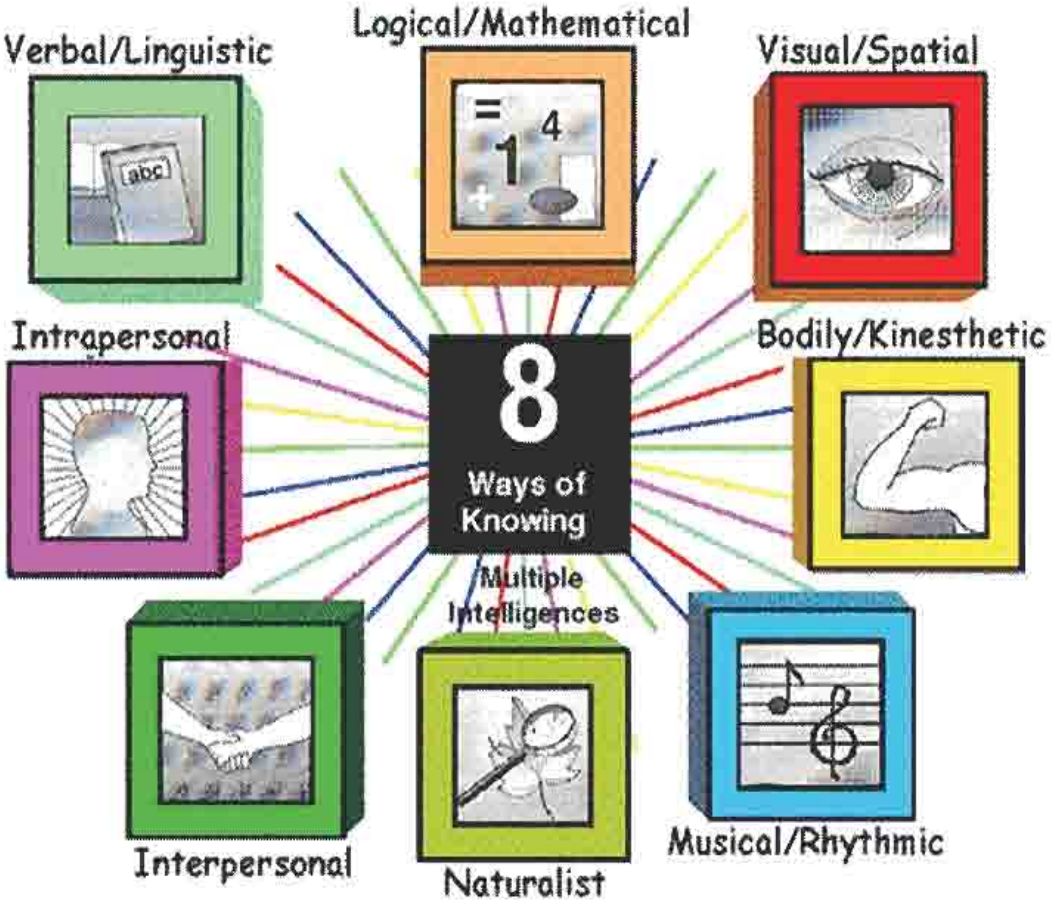
Multiple Intelligences

In the 1980s, Howard Gardner formulated his theory of multiple intelligences (1983; 1993), in which he stated that people use one or more of at least seven (more recently eight and even nine) relatively autonomous, intellectual capacities to approach problems and create products. Gardner's seven intelligences are:

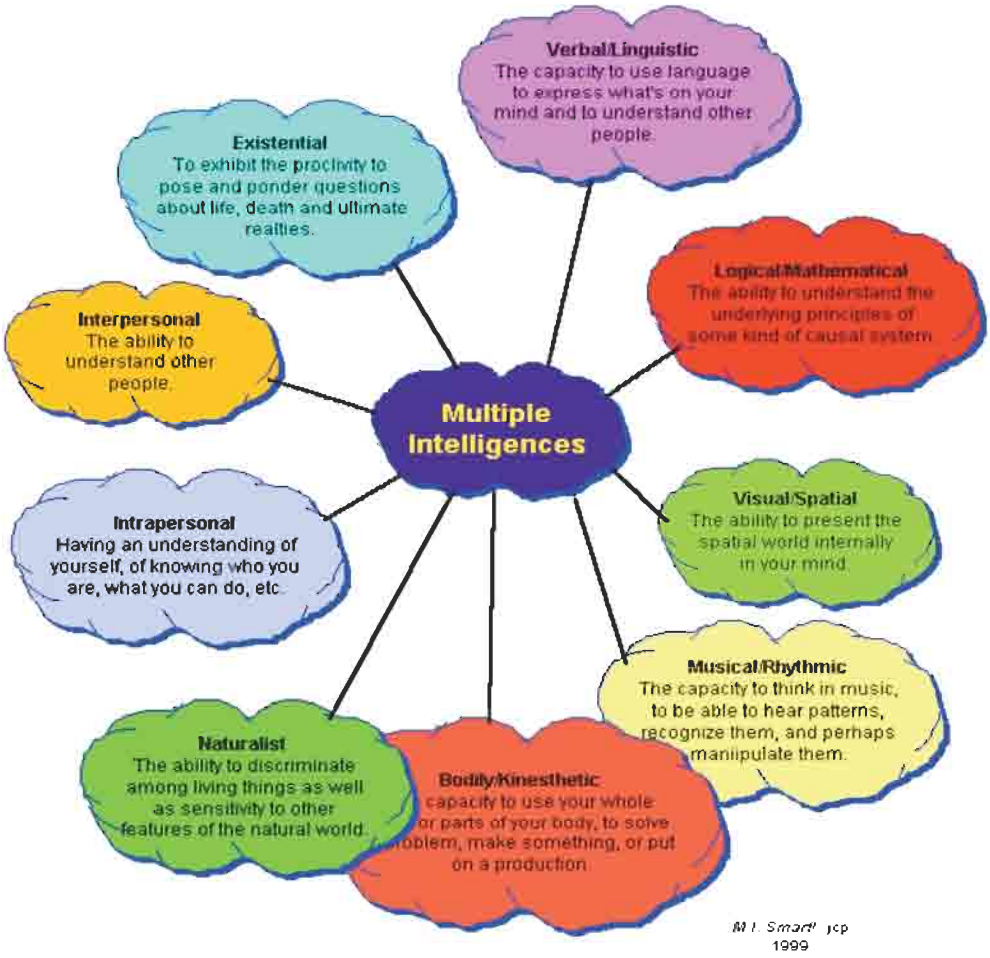
- Linguistic intelligence (as in a poet);
- Logical-mathematical intelligence (as in a scientist);
- Musical intelligence (as in a composer);
- Spatial intelligence (as in a sculptor or flight pilot);
- Bodily kinesthetic intelligence (as in an athlete or dancer);
- Interpersonal intelligence (as in a salesman or teacher);
- Intrapersonal intelligence (exhibited by individuals with accurate views of themselves).

What is important to the present discussion is Gardner's stress on the fact that a particular intelligence cannot be conceptualized independently of the particular context in which an individual happens to live, work and play, and the opportunities and values provided by that milieu. For example, Sachin Tendulkar might have had the potential to be a great cricketer, but if he had lived in a culture without cricket, that potential would never have been manifested.

As educators, how can we most effectively incorporate Multiple Intelligence Theory and Technology into the curriculum to create an optimal learning experience?



Roger Hampton(2006)



According to Gardner:

1. All human beings possess all intelligences in varying amounts.
2. Each person has a different intellectual composition.
3. We can improve education by addressing the multiple intelligences of our students.
4. These intelligences are located in different areas of the brain and can either work independently or together.

5. These intelligences may define the human species.

Roger Hampton(2006) has developed the strategy for integration of ICT into each areas of multiple intelligences. His ideas on multiple intelligence and integration of technology for the for the development of multiple intelligences are presented below.

Linguistic-verbal intelligence is that ability to use words effectively either orally or in writing, that is, the ability to exhibit language development in its fullest form, in short, the overall structure of language. This way of knowing and comprehending the real world is the ability to use language to achieve a goal and enhance understanding. A core component of this traditional IQ-type intelligence is sensitivity to the meanings, rhythms, and sounds of words ... in short, sensitivity to the different functions of language.

"Word Smart" children may enjoy:

- Writing letters, poems, stories, descriptions
- Leading an oral discussion or debate
- Creating audio tapes
- Giving an oral presentation
- Writing or giving a news report
- Developing questions for, and conducting an interview
- Presenting a radio drama
- Creating a slogan
- Writing their own story problems
- Keeping a journal or diary
- Writing a verbal defense
- Creating a word game to go along with your present topic
- Doing Storytelling or writing all types of Humor/Jokes

Learning Situations: These "word smart" children learn best through language including speaking, writing, reading, and listening. They are able to verbally or in writing explain, convince, and express themselves. They enjoy writing and creating with words. They would also enjoy e-books, interactive books on CD-ROM, and other text - based software.

Software Ideas:

- Word processing programs (Word)
- Typing tutors (Mavis Beacon)
- Desktop publishing (Microsoft Publisher)
- Electronic libraries (World Library)

- Word games (Missing Links)
- Story Writing Programs (Imagination Express; The Amazing Writing Machine; Storybook Weaver)
- Crossword games (Crossword Companion)
- Language Translators

Software Applications:

- AppleWorks
- Bailey's Book House
- Clicker
- Co: Writer
- Destination Reading
- Edmark Reading Program
- Microsoft Publisher
- Microsoft Word
- Reader Rabbit
- WaveLab
- Write: Out Loud

Logical mathematical intelligence is all about using numbers effectively, improving inductive and deductive reasoning skills, and being able to appreciate, recognize, and use abstract patterns in problem solving situations. Many mainstream psychologists continue to consider this intelligence, in conjunction with Gardner's linguistic-verbal intelligence, as the only form of smarts. This (Jean) Piagetian-type ability that intellectual quotient (IQ) tests purport to measure, deals with inductive and deductive thinking, numbers, and patterns.

"Number smart" children may enjoy:

- Listing or organizing facts
- Using deductive reasoning skills
- Using abstract symbols and formulas
- Solving logic and/or story problems
- Doing brainteasers
- Analyzing data
- Using graphic organizers
- Working with number sequences
- Computing or Calculating
- Deciphering codes
- Forcing relationships/Syllogisms

- Creating or finding patterns
- Hypothesizing/Conducting an experiment

Learning Situations: These "number smart" children learn best through numbers, reasoning, and problem solving. They are able to create and manipulate visuals and create mental pictures from many perspectives. T hey like to weigh, measure, calculate, and organize data. Give students opportunities to create or manipulate data they find on the Internet. Provide them with a video camera to record their scientific experiment. Get them to use other intelligences in their sharing of data such as making an analogy or debating an issue.

Software Ideas:

- Math skills tutorials (Math Blaster; Treasure Math Storm; Math Rock!; Cosmic Geometry; Astro Algebra; Math for the Real World)
- Computer programming tutors (LOGO)
- Logic games (King's Quest)
- Strategy games (Strategy Series)
- Science programs (Science Tool Kits; DK Multimedia)
- Critical thinking programs (H.O.T.S)
- Science Programs (DK Multimedia: "The Way Things Work")
- The Learning Company: "Gizmos and Gadgets"
- Problem Solving (Oregon Trail; Africa Trail, etc.)

Software Applications:

- Algebra World
- Destination Math
- Fizz & Martina's Math Adventures
- Geometry World
- Graph Club
- Graphing Workshop
- Math Missions
- Math Mysteries
- Microsoft Excel
- MicroWorld
- Mighty Math
- Millie's Math House
- Pre-Algebra World
- Prime Time Math
- StageCast

- The Trig Explorer

Musical intelligence is that special ability to recognize tonal patterns, rhythm and beat. In other words, it is the ability to understand and express well numerous musical forms. Such learners are most sensitive to environmental sounds, the human voice and musical instruments. In short, they possess a strong ear for music. Unlike the average person, rhythms, musical patterns, tones, and various sounds often have a more visible effect on them, in that you can easily detect a change in their facial expressions, emotional responses, and/or specific body movements. As a music teacher once said to me, they have music constantly 'swimming' in their heads. They are sensitive to rhythm, pitch and melody, including sounds in the environment such as rain on a roof, various traffic patterns, even the chirp of a cricket.

"Music smart" children may enjoy:

- Writing or singing a curriculum song in the content area
- Developing and/or using rhythmic patterns as learning aids
- Composing a melody
- Changing the words to a song
- Finding song titles that help explain content
- Creating a musical game or collage
- Identifying music that helps students study
- Using musical vocabulary as metaphors
- Creating, designing, and building a musical instrument
- Incorporating environmental sounds into a project or presentation
- Using percussion vibrations
- Showing or explaining tonal patterns

Learning Situations: These "music smart" children learn best through sounds including listening and making sounds such as songs, rhythms, patterns, and other types of auditory expression. They are able to use inductive and deductive reasoning and identify relationships in data. Provide students with audio and video recorders to capture their musical expressions. Ask them to choose appropriate music to go with a slide show, artwork, or poem. Create and record hand-made instruments. Add other intelligences such as drawing patterns of music or writing about music and sound.

Software Ideas:

- Music literature tutors (Exploratorium)

- Singing software (Transforms voice input into synthesizer sounds)
- Tone recognition and melody enhances (Arnold; SimTunes)
- Musical instrument digital interfaces (Midi systems; Vocalizer)
- Musical Problem Solving (Making Music; Music Ace; Dr. Brain)

Software Applications:

- Cubase
- Finale
- Introduction to Patterns
- Music Ace
- Sibelius
- Thinkin' Things

Visual spatial intelligence makes it possible for us to perceive visual and spatial data, to transform such data, as well as being able to recreate visual images from memory. In other words, it is an ability to form a cerebral model of a spatial world by relying on the sense of sight. This way of understanding the world includes the ability to create mental images and to use ones imagination.

"Picture Smart" children may enjoy:

- Creating charts, posters, graphs, or diagrams
- Creating a Web page or PowerPoint project
- Making a videotape or film
- Creating pie charts, bar graphs, etc.
- Making a photo album
- Creating a collage
- Making a mobile or sculpture
- Designing a mindmap
- Making a map
- Using color and shape
- Developing or using Guided Imagery
- Understanding Color Schemes
- Pretending to be someone else, or something else.

Learning Situations: These "picture smart" people learn best visually and tend to organize their thinking spatially. They like to think and create pictures. They are also drawn to information that is presented in a visual form. Encourage students to combine visual elements such as editing photographs or enhancing line drawings. Encourage them to add other intelligences such as written or oral descriptions or

discussions. Ask them to make visual metaphors and stories.
Software Ideas:

- Animation programs (Art/Film Director; KidPix)
- Clip-Art programs (Print Shop)
- Draw & Paint programs (Print Artist)
- Electronic chess games (ChessMaster)
- Spatial problem solving games (Dr. Brain; Thinking Things; Tetris)
- Electronic puzzle kits (Living Jigsaws)
- Geometry programs (Sensei's Geometry; TesselMania)
- Digital Imagery/Graphics Programs (Adobe)
- Web Page Design Software programs (Multimedia Lab)

Software Applications:

- Community Construction Kit
- Diorama Designer
- Flash
- Golly Gee Blocks
- GraphMaster
- HyperStudio
- iMovie
- KidPix
- Microsoft PowerPoint
- NIH Image
- Nuendo
- Photoshop
- Rainforest Designer
- Tessellation Explorer

Bodily kinesthetic intelligence is related to physical movement and the knowledge of the body and how it functions; it includes the ability to use many parts of the body to express emotion, to play a game, and to interpret and invoke effective "body" language. Those "at promise" in this domain enjoy and learn best from activities that use the body and involve movement, such as dance, crafts, mime, sports, acting and using manipulatives.

"Body Smart" children may enjoy:

- Creating a dance or movement sequence
- Role Playing

- Using physical gestures to communicate an idea
- Performing a skit or play
- Making manipulatives
- Building a model
- Performing Martial Arts
- Making a board or floor game
- Putting together a puzzle
- Creating and/or participating in a scavenger hunt
- Performing a pantomime
- Demonstrating sports games

Learning Situations: These "body smart" children learn best through physical activity such as dance, hands-on tasks, constructing models, and any kind of movement. They are able to manipulate and control objects, as well as express their ideas through movement. Give these students a video camera and let them record their movement such as a wood working activity or a skit. Add other intelligences such as taking still pictures and writing about the steps in the process.

Software Ideas:

- Hands-on construction kits that interface with computers (LEGO DACTA Technic)
- Motion simulation games (Flight simulator)
- Virtual reality system software (Dactyl Nightmare)
- Eye-Hand coordination games (Shufflepuck Café)
- Tools that plug into computers (Science Tool Kit)
- Snappy (video camera-microscope)

Software Applications:

- Blocks in Motion
- CyberStretch
- EyeThink: Probeware
- IntelliTools
- Lego
- Living Books
- Mavis Beacon

Interpersonal intelligence is the capacity to value, understand, and respond appropriately to the motivations, moods, and feelings of others. Or more simply put, these people learn best through person-to-person interaction. They usually

have many friends, show a considerable degree of empathy and are able to understand viewpoints of others. They appreciate differences in their neighborhoods and around the world and hey recognize and make distinctions among others' feelings and intentions very easily.

"Social Smart" children may enjoy:

- Giving feedback to the teacher or to classmates
- Intuiting other's feelings
- Empathy practices
- Establishing a Division of Labor
- Person-to-person communication
- Cooperative learning strategies
- Collaborative skills
- Receiving feedback
- Sensing other's motives
- Group projects
- Teaching someone else something new
- Learning from someone outside of school
- Other points of view
- Creating group rules
- Acting in a play or simulation
- Conducting an interview
- Creating "phone buddies" for homework

Learning Situations: These "social smart" children learn best through interaction with other people through discussions, cooperative work, or social activities. They are able to create synergy in a room by being aware of the feelings and motives of others. They are good at rallying the group together and getting discussions going. They are good at teaching other members of the group and coordinating activities. In a group project, they are good at peer editing

Software Ideas:

- Electronic bulletin boards (Kidsnet)
- Simulation games (Sim City)
- Email programs and Shared Interests-Based Listservs

Software Applications:

- CUseeMe
- Dreamweaver
- ICQ

- If the World Were A Village
- Instant Messenger
- Net Meeting

Intrapersonal intelligence deals with the development and understanding of the self and using this knowledge to live well; it includes personal goals, feelings, anxieties and strengths and subsequently drawing from that awareness to guide personal behavior. These people often enjoy working alone, sometimes even shying away from others and off quietly by themselves. They are often strong willed, self-confident, and possess definite, well-thought-out opinions on various issues.

"Self Smart" children may enjoy;

- Keeping a journal or diary
- Setting short/long-term goals
- Learning why and how the content under study is important in real life
- Describing his/her feelings about a subject
- Evaluating his/her own work
- Describing his/her personal strengths
- Carrying out an independent project
- Writing or drawing a personal history of his/her work
- Creating his/her own schedule and environment for completing classwork
- Having silent reflection time
- Being allowed to emotionally process information
- Using metacognition techniques
- Using Focusing and/or Concentration skills
- Using higher-order reasoning skills
- Complex guided imagery
- "Centering" practices
- Thinking strategies

Learning Situations: These "self smart" children learn best through meta-cognitive practices such as getting in touch with their feelings and self motivation. They are able to concentrate and be mindful. Provide tools to help students "think about their thinking" through writing, diagramming, or recording ideas. They are good at setting and pursuing goals and assessing work. They are good at working independently toward a group goal.

Software Ideas:

- Personal choice software (Decisions, Decisions)

- Career counseling software (The Perfect Career)
- Any self-paced program (Foreign Languages; Personal finances)

Software Applications:

- Choices, Choices
- Decisions, Decisions
- Feelings
- Forrest Center Stage

Naturalist intelligence is the ability to recognize and classify elements of the natural world. That is, this intelligence enables us to classify, understand, and explain the elements of nature. Those "at promise" in this domain have an understanding of the environment; they learn well through outdoor activities, including those that involve interacting with natural and environmental materials and concepts.

"Nature Smart" children may enjoy:

- Categorizing species of plants and animals
- Developing an outdoor classroom
- Collecting objects from nature
- Making celestial observations
- Using scientific equipment for observing nature
- Initiating projects on the Food chain, Water Cycle, or environmental issues
- Predicting problems in nature related to human habitation
- Joining an environmental/wildlife protection group
- Finding/Reporting/Researching local/global environmental concerns
- Building and labeling collections of natural objects from a variety of sources

Learning Situations: These "nature smart" children learn best through the interactions with the environment including outdoor activities, field trips, and involvement with plants and animals. They see the subtle meanings and patterns in nature and the world around them. They are able to adapt. They could enjoy field trips that involve observation and recording the world around them.

Software Ideas:

- Scientific plug-ins
- Nature sound files
- Classification of Flora/Fauna software (DK Encyclopedia of Nature)
- Animal sounds identification programs
- Earth Science programs

- Life Science programs (The Learn About Collection - Stars; Animals; Insects; Human body; Plants, etc.)

Software Applications:

- Field Trip to the Rainforest Deluxe
- FileMaker Pro
- IHMC Concept Map Software
- Inspiration
- Kidspiration
- Rainforest Researchers
- Sammy's Science House
- Sidewalk Science
- TimeLiner

Impications

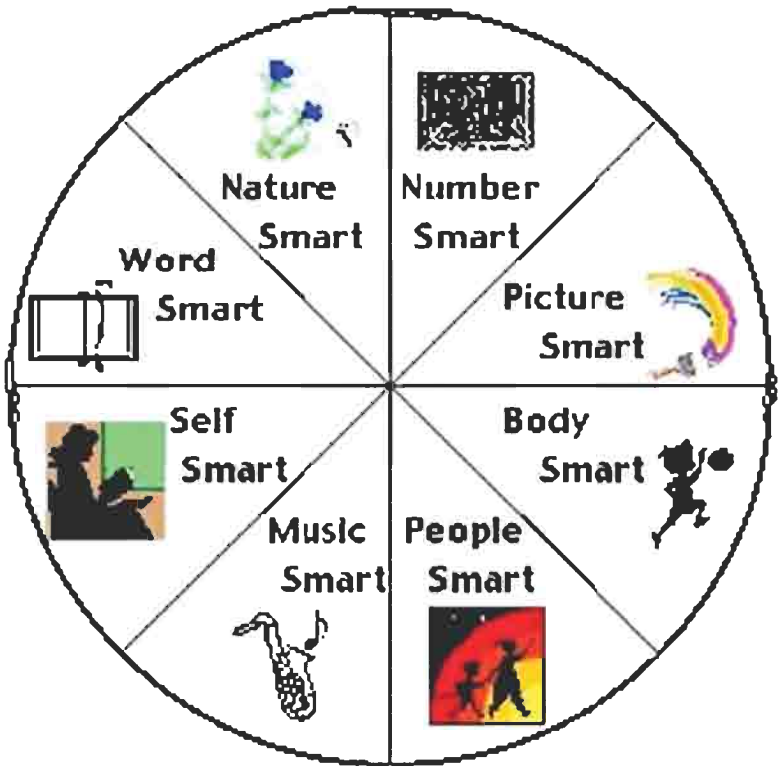
Traditional view of "Intelligence" emphasizes that people are born with a fixed amount of intelligence. Intelligence level does not change over a lifetime. Intelligence consists of ability in logic and language. In traditional practice, teachers teach the same material to everyone. The traditional teacher LECTURES while standing at the front of the classroom, WRITES on the blackboard, ASKS students questions about the assigned reading or handouts, and WAITS while students finish their written work

"Multiple Intelligences" emphasizes that human beings have all of the intelligences, but each person has a unique combination, or profile. We can all improve each of the intelligences, though some people will improve more readily in one intelligence area than in others. There are many more types of intelligence which reflect different ways of interacting with the world. Multiple Intelligence pedagogy implies that teachers teach and assess differently based on individual intellectual strengths and weaknesses. The modern teacher in a multiple intelligence framework structure learning activities around an issue or question and connect subjects. Teachers develop strategies that allow for students to demonstrate multiple ways of understanding and value their uniqueness. The modern teacher in a multiple intelligence framework lectures and writes on the whiteboard at the front of the room, but also shifts methods of presentation from linguistic to spatial to musical and so on, often combining intelligences in creative ways such as:

- Drawing pictures on the whiteboard
- Showing a videotape to illustrate and idea
- Playing music at some time during the day
- Providing hands-on experiences
- Having students interacting with each other in different ways

It's not how smart you are,
it's how you are smart!

—Howard Gardner Interview, "Common Miracles" ABC 1993



When this multiple intelligence is integrated with ICT in a constructivist learning environment

- Students find topics more interesting when information is presented in a variety of ways.
- Students feel more comfortable and motivated when they know that their learning styles will be addressed.
- Students believe their learning has more meaning when the way in which they learn and present new information is acknowledged.
- Students are more challenged, engaged, and independent.
- Students have more control over what and how they learn (self pacing).
- Students gain a greater sense of responsibility for their work.
- Students remain on task for longer periods of time.
- Students produce higher quality work that reflects the increased depth and breadth of their knowledge and talents.
- Students become better at critical thinking, organizing & evaluating information, and presenting their new knowledge in creative ways.

Conclusion

We can achieve this if teacher education is designed in a framework of multiple intelligences in ICT based constructivist learning environment. National Curriculum Framework 2005 is the first national initiative in this direction. NCERT has oriented our teachers through face to face and distance mode and redesigned the text books keeping in view NCF 2005. Constructivist pedagogy is very popular in India. The new generation is very familiar with ICT. Children have started using computer as a tool for learning. Online collaboration and sharing of ideas are going to be very popular. It seems we are going to integrate constructivist pedagogy with ICT for the learners of 21st century. It will be more meaningful if we integrate constructivist pedagogy with ICT in a framework of multiple intelligences. Our teachers can be oriented with this approach, if teacher education is designed in a framework of multiple intelligences. This is the high time and we need to design the teacher education programme at different level in a framework of multiple intelligence.

References

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Gardner, H. (1991). *The unschooled mind*: *How children think and how schools should teach*. New York: Basic Books.

Gardner, H. (1993). *Multiple intelligences: The theory in practice.* New York: Basic Books.

Hampton, Roger (2006) Cyber camp, Multiple intelligence and technology
http://lth3.k12.il.us/rhampton/mi/resources.htm
j. carlson-pickering 1997, *M.I. Smart!* Program

http://www.chariho.k12.ri.us/curriculum/MISmart/peopnjoy.html

http://www.thirteen.org/edonline/concept2class/mi/index.html

http://www.personal.psu.edu/staff/b/x/bxb11/MI/MITest.htm

http://learnweb.harvard.edu/alps/

http://www.ed.psu.edu/educ/in-sys

ThinkQuest
http://www.thinkquest.org

Multiple Intelligences: New Horizons for Learning
http://www.newhorizons.org/strategies/mi/front_mi.htm

MI Project Ideas
http://www.chariho.k12.ri.us/curriculum/MISmart/projects.html

Multiple Intelligences Revealed!!!
http://www.multi-intell.com/MI_chart.html

Jonassen, D. H. (1996). *Computers in the classroom*: Mindtools for critical thinking. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

MHRD, (2005). Report of the CABE Committee, *Universalisation of Secondary Education,* MHRD, Govt. of India, New Delhi

EFFECTS OF COMPUTER-GAMING ON CHILDREN WITH INTELLECTUAL DEVELOPMENT DISORDERS

Dr. Yash Pal Singh*
Dr. Anju Agarwal*

Abstract

How Information and Communication Technology (ICT) can be used in the most effective ways for education of people with disabilities is currently high on the political agendas of all countries, particularly those who have ratified the United Nations Convention on the Rights of Person with Disabilities (UNCRPD, 2006). UNESCO Institute for Information Technologies in Education (IITE), in line with UNESCO`s shared vision, aims to promote equal access to education and inclusion of the most vulnerable segments of society by means of Information and Communication Technologies (ICTs). Computer and video games are a fast-growing industry and it has caught the attention of scholars across a variety of disciplines. When educators have discussed games, they have focused on the social consequences of game play, ignoring important educational potentials of gaming. However, some educators have started contemplating potential advantages and disadvantages for children who play video/computer games in regard to learning, cognitive development, and social and behavioral issues. We found positive results while studying impact of computer games on children with intellectual development disorders. However, for using categorically these games for children with intellectual development disorders, answers to some questions are essential. The present paper tries to point out emerging questions and possible solutions in the area.

UNESCO (2011) says that "how information and communication technology (ICT) can be used in the most effective ways for education of people with disabilities is currently high on the political agendas of all countries, particularly those who have ratified the United Nations Convention on the Rights of Person with Disabilities (CRPD, 2006)". The key statement within the CRPD (2006) relevant for ICT and people with disabilities is within Article 9: *To enable persons with disabilities to live independently and participate fully in all aspects of life, States Parties shall take appropriate measures to ensure to persons with disabilities access, on equal basis with others, to the physical environment, to transportation, to information*

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and communications, including information and communications technologies and systems, and other facilities and services open or provided to the public, both in urban and rural areas.

Computer and video games are a fast-growing industry and it has caught the attention of scholars across a variety of disciplines. Takahashi (2010) says that[1] the worldwide video game industry is poised to reach $70.1 billion by 2015, thanks to the combined growth of console, portable PC, and online video games. Does this information have some significance to educationists, particularly those dealing with education and rehabilitation of children with intellectual disabilities? When educators have discussed games, they have focused on the social consequences of game play, ignoring important educational potentials of gaming. However, some educators have started contemplating potential advantages and disadvantages for children who play video games in regard to learning, cognitive development, and social and behavioural issues.

The use of multimedia in education and training has significantly changed educators' perception of learning processes. Results from a number of research studies indicate that appropriate multimedia instruction enhances students' learning performance in science, mathematics, and literacy (Gee, 2003). Studies indicate that computer-assisted instruction (CAI) programs have important factors that can motivate, challenge, increase curiosity and control, and promote fantasy in children (Tzeng, 1999). Despite the fact that computer and video games have the same multimedia capability as CAI programs, their potential learning impact is often discounted by parents and educators. Recently, computer-based video games' presence and popularity have been ever-growing, and game developers and researchers have started to investigate video games' impact on students' cognitive learning (Begg *et al.,* 2005; Squire, 2003; Vaupel, 2002).

A recent study (Saffarian & Gorjian, 2012) investigated the role of computer-based video games on facilitating children's cognitive learning. The study investigated the effect of the varied types of instructional delivery strategies on children's learning achievement and found that computer games exchanges can play a facilitative role in teaching and learning second language. In another study,

Abdullah *et al.* (2011) described a research project in its early stage of implementation in Malaysia. It used computer-based video game to enhance learning of multiplication facts (tables) in the Mathematics subject which focus on the impact to their key learning outcomes. The purpose of this study was to investigate whether computer-based video games facilitate children's cognitive learning of Mathematics, specifically in the retention of multiplication facts and application of the facts in multiplication. Their findings revealed that video games as a supplementary activity to classroom learning brings significant and positive effect on students' retention and mastery of multiplication tables as compared to students who rely only upon formal classroom instructions (Abdullah *et al,*2012).

Studies within one research group (Brown *et al.*, 2013) have shown that Digital Games Based Learning (DGBL) can have a positive effect on some of the core development needs of people with intellectual disabilities and associated sensory impairments. Of current interest is the expansion of DGBL activities on mobile platforms. The RECALL Project describes the development and evaluation of a novel route learning system for people with disabilities using location based services (on the Android OS). Research has shown that route guidance systems suppress cognitive map development, and for a target audience described as having 'poor spatial skills', systems that develop route learning rather than guidance are required. Two studies were reported there. The first demonstrated that there were less navigational errors made, and less help required, in the more independent usage of the system, than in the earlier training stages. The second focused on more qualitative evaluation of soft skills and personal development via the use of the system, and of the gamified version of the software. It looked specifically at how a playful approach can aid the understanding of map based representations.

Recent news says that a computer game is being developed which is expected to improve sight of visually impaired persons (Science Daily, 2013).

Our Experiences with Gaming

In our first attempt of studying effectiveness of games/simulations (Agarwal, 2000), we studied their effect on remediation of learning disability. The CAI (Games/Simulations) method of teaching was found to be significantly

effective in remediation of overall learning -disability among fifth-grade learning-disabled children belonging to the age -group of 9 to 11 years.

In one experimental study (Singh, Agarwal & Singh, 2012); we investigated whether computer aided instruction helps in remediating self-help skill deficits among children with mental retardation and whether this help is same for both boys and girls with mental retardation. The quasi-experimental pre-test & post-test design was used for the study. The results obtained through ANCOVA were in favour of CAI and equally for both boys and girls.

In one study by us (Agarwal & Singh, 2012), based on case study method, the results indicated strong support for believing that practicing computer games increases attention and memory of children with mental retardation. These results support/reinforce the use of computer games in rehabilitation of children with mental retardation.

In one other research (Rajput, Agarwal & Singh, 2012), we studied effect of practicing video-games on the attention deficit disorder (ADD) of learning disabled children. The following conclusions were drawn from the study:

1. The effect of the practicing video games was significant in remediation of attention-deficit-disorder of all learning disabled children of the age group 9 to 11 years studying in 3rd grade.
2. It was found that there was significant gain in attention span of attention deficit learning disabled boys in selected age group.
3. The effect of the practicing video games was significant in bringing the improvement in attention span of the LD girls with ADD in selected age group.
4. Effectiveness of practicing video-games was consistent and equal on remediation of ADD of all the learning disabled children regardless of their prior attention span.
5. It was found that the video-games' practice was equally effective in remediation of ADD of boys and girls with learning disability.

In another experimental study (Singh & Agarwal, 2013), we investigated whether computer games help in teaching Mathematics to children with mental retardation

and whether computer games help equally both boys and girls. The quasi-experimental two-group pre-test & post-test design was used for the study. The results obtained through ANCOVA were in favour of computer games for both boys and girls. However, boys seemed to benefit more from computer-games.

Inferences

On grounds of our and other research, we have drawn following inferences:

1. Computer and video games (simulations) are educationally effective for children with mild mental retardation, with ADHD, and with learning disability. Their learning pace is increased, retention is increased and attention-span is increased.
2. Children do transfer skills learnt at games into real life activities.
3. Computer games are helpful for both boys and girls.
4. Computer games are very helpful in acquiring self-help skills.

Challenges Ahead

However, for using categorically these games for children with intellectual disabilities, answers to some questions are essential. Some of them may be as follows:

1. Do these computer-games really help?
2. Do they help all children with all kinds of and with varying degrees of disability?
3. Which games help & which do not?
4. What capacity-building is needed?
5. What are the areas where these help?
6. The studies indicate that there is ample scope for research to make user friendly technology adaptable for the PIDs (Bardhan, 2009). Who is going to do that?

7. How research will be implemented in classrooms?

Summing Up

Authors strongly believe that joint researches, setting norms, concerted efforts for implementation and coordination of efforts at global level are needed to fully utilize the promises and potential of computer gaming for education and rehabilitation of children with intellectual development disorders.

References

Abdullah, M. R., Tony, L., Abu Bakar, Z., Ali, R. M., Faye, I., Hassan, M. H., bin Amar, A. Z., Yaacob, R., & Ahmad, I. R. (2011). Video games in children's learning of mathematics. *International Journal of Basic & Applied Sciences,* 11(2), 14.

Abdullah, M. R. T. L., Tony, L., Abu Bakar, Z., Ali, R. M., Faye, I., & Hassan, H. (2012). The impact of video games in children's learning of mathematics. *World Academy of Science Engineering and Technology*, 64. Available online at http://www.waset.org/journals/waset/v64/v64-185.pdf

Agarwal, A. (2000). Remediation of learning disabilities through CAI (Games/Simulations) and traditional Method. Unpublished Ph. D. thesis. MJP Rohilkhand University, Bareilly

Agarwal, A. & Singh, Y. P. (2012). Computer gaming for children with mental retardation. *Spectrum: A Journal of Multidisciplinary Research* (SAJMR), 1(8), 31-36

Bardhan, L. (2009). Technology use by students with intellectual disabilities: challenges and need for development of a universal technology design. National Conference on Augmentative Communication and Assistive Technologies by ASSISTECH. March 14-15, 2009. Available online at http://www.cse.iitd.ernet.in/~assistech/Proceedings/P15.pdf

Begg, M., Dewhurst, D., & Macleod, H. (2005). *Game-informed learning: Applying computer game processes to higher education*. Available online at http://www.innovateonline.info/pdf/vol1_issue6/gameinformed_learning-__applying_computer_game_processes_to_higher_education.pdf

Brown, D., Standen P., Saridaki M., Shopland N., Roinioti E., Evett L., Grantham S., & Smith, P. (2013). Engaging students with intellectual disabilities through games based learning and related technologies. In *Universal access in human-computer interaction. applications and services for quality of life.* Constantine Stephanidis, C. & Antona, M. (Eds). Springer: Berlin, Heidelberg Part V, 573-582.

Gee, J. P. (2003). *What video games have to teach us about learning and literacy* (1st Ed.), New York: Palgrave Macmillan.

Rajput, S. S., Agarwal, A. & Singh, Y. P. (2012). Effect of practicing video-games on the attention deficit disorder (ADD) of learning disabled children". *International Journal of Social Sciences & Interdisciplinary Research,* 1(4), 42-50.

Saffarian, R. & Gorjian, B. (2012). Effect of computer-based video games for vocabulary acquisition among young children: An experimental study. *Journal of Comparative Literature and Culture (JCLC)*, 1(3), 44-48. http://worldsciencepublisher.org/journals/index.php/JCLC/article/view/745

Science Daily (2013). *Computer game could improve sight of visually impaired children.* http://www.sciencedaily.com/releases/2013/04/130424081333.htm Retrieved on Sept. 20, 2013

Singh, A., Agarwal, A. & Singh, Y. P. (2012). Remediating self-help skill deficits of mentally retarded children through computer aided instruction. *BRICS Journal of Educational Research*, 2(2 & 3), 120-127.

Singh, Y. P. & Agarwal, A. (2013). Teaching mathematics to children with mental retardation using computer games. *Educationia Confab,* 2(1), 44-58.

Squire, K. (2003). Video games in education. *Journal of Intelligent Simulations and Gaming*. 2(1). Available online at http://website.education.wisc.edu/kdsquire/tenure-files/39-squire-IJIS.pdf.

Tzeng, S.C. (1999). Optimizing challenges and skills in the design of an educational computer game and exploring adolescents' gaming beliefs, Unpublished PhD thesis, University of Georgia, USA. Cited in Chuang, T.-Y., & Chen, W. -F. (2009). Effect of computer-based video games on children: An experimental study. *Educational Technology & Society*, *12* (2), 1–10. Available online at http://ifets.info/journals/12_2/1.pdf

Takahashi, D. (2010). Video game industry to hit $70 billion by 2015, but growth will slow. Retrieved from *http://venturebeat.com/2010/05/25/video-game-industry-to-hit-70-billion-by-2015-but-growth-will-slow/#xdQLdoFqtkHxYJ6w.99*

UN Convention on the Rights of Persons with Disabilities (2006). *www.un.org/disabilities/default.asp?id=259*

United Nation's MDGs (2012). *The Millennium Development Goals Report 2010. http://www.un.org/millenniumgoals/pdf/MDG%20Report%202010%20En%20r15%20-low%20res%2020100615%20-.pdf#page=18* & *http://www.un.org/millenniumgoals/ retrieved on Dec. 31, 2012*

UNESCO (2000). *Dakar Framework for Action.* http://www.unesco.org/education/efa/ed_for_all/dakfram_eng.shtml

UNESCO (2010) Reaching the marginalized. EFA Global Monitoring Report 2010. http://unesdoc.unesco.org/images/0018/001866/186606E.pdf

UNESCO (2011). *ICTs in Education for People with Disabilities: Review of Innovative Practice.* UNESCO Institute for Information Technologies in Education. Available online at http://www.europeanagency.org/publications/ereports/ICTs -in-Education-for-People-With-Disabilities/ICTs-with-cover.pdf

Vaupel, C. A. (2002). The effects of video game playing on academic task performance and brain wave activity, Unpublished PhD thesis, The University of Tennessee, USA. Cited in Chuang, T.-Y., & Chen, W. -F. (2009). Effect of computer-based video games on children: An experimental study. *Educational Technology & Society*, *12* (2), 1–10. Available online at http://ifets.info/journals/12_2/1.pdf

TRADITIONAL KNOWLEDGE AND CULTURE – DR. ANNIE BESANT'S ICONIC ROLE

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Abstract

The life of Dr. Annie Besant was exposed to many trials and tribulations which moulded her mind and personality and encouraged her on all that she did for preservation of Indian ideals in education, so that these when presented before the students, could develop in them a love for their motherland, feelings of patriotism, respect for the rich heritage of their past. She was of the opinion that the philosophy and religion of India's ancient days, while holding the essence of her past, also reflected the glory of her future. This paper deals with those relevant aspects of her life that contribute to her works on education and preservation of cultural heritage of this land, and projects her as an icon for women in the role of promoters and saviours of traditional knowledge and culture. It has proceeded to deal with salient aspects of her works. The focus has been on her pioneering a pivotal role in preservation and perpetuation of the Indian system of education and indeed the Indian philosophy.

The life and works of Dr. Annie Besant is a shinning example of women's pivotal role as promoters and saviours of traditional knowledge and culture. Dr. Annie Besant (1847-1933) propounded a rich philosophy based on Hindu religion and ancient Hindu scriptures and texts, and from it formulated an elaborate educational system which sought to impart education of modern science and technology along with cherished human values as propounded in ancient Hindu scriptures. She proceeded to draw up a detailed blueprint of education which not only aimed at building a strong character and inculcating a national spirit but also accepted all that was good in the western type of education. A critical appreciation of Dr. Annie Besant's role in this sphere requires a glimpse at her chequered life and varied experiences.

Life and Experiences of Dr. Annie Besant

Dr. Annie Besant's life was many faceted. She was a clergyman's wife but in her own right she was also an atheist campaigner, social propagandist, trade union

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agitator, birth control promoter, critic of capitalism and colonialism, and a fighter for women's rights. All these phases lasted till her mid-forties, after which began her Theosophical career and subsequent activities in India.

At a very early age Dr. Annie Besant experienced the differentiation between a male and a female child, prevalent in England in those days. Her mother took great pains to educate her son in deference to the wishes of her late husband, while her own education was considered of secondary importance. However, she received schooling under Miss Marryat's guidance who was responsible in nurturing in her love of knowledge and personal self denial for the good of others. The stormy phase of her life started after her marriage to a clergyman. She took to writing but the sense of having a right over her own income was snatched away from her with the realization that "all a married woman earned by law belonged to her owner, and that she could have nothing that belonged to her of right" (*Annie Besant – An Autobiography*, p. 58). She became a freethinker and engaged herself in social work, joined the National Secular Society, an organization for the promotion of free thought, which had as its motto, "We Search for Truth". From 1874 to 1889, Dr. Annie Besant led a life of tremendous activity. She fought for justice for the industrial workers, became one of the pioneers of the labour movement in England. She delivered lectures in favour of atheism and radical politics. In 1878, she wrote a book titled, *England, India and Afghanistan*. She strongly opposed powerful governments trying to suppress weaker nations. In 1879, she discovered that due to her atheism and so called immoral political activities, the doors of higher education were closed to her in England. She actively embarked on trade union activities and championed the cause of women workers. She joined the Theosophical Society and arrived in India on 16th of November 1893. She considered this date as her new birth and called India her "sacred Motherland" (*A Short Biography of Dr. Annie Besant*, p. 23), as from this Indian soil she had received a wealth of knowledge. She expanded the old philosophies and poured forth that continuous stream of knowledge which amazed the cultured Hindus of the land.

In 1895, after an extensive tour of India, she took up her residence in Benares, the sacred city of India, at her beloved home 'Shanti Kunj'. She devoted the first fifteen years to the promotion of education and advocacy of reform of the social structure of India that had become crystallised in dead customs and habits. During this period she saw and understood from close quarters the Hindu religion in all its vastness as

also some of its shortcomings. She became well versed in Sanskrit and read many classics. Dr. Annie Besant was of the opinion that the philosophy and religion of India's greater days, while holding the essence of her past, also reflected the glory of her future. Just like an individual needs spiritual, moral, intellectual and physical upliftment for all round development, similarly a nation too needs to be developed spiritually, mentally, emotionally, physically and to bring about such an upliftment, she directed her attention towards the following areas – educational, political, social and religious.

Born of strong urge to uplift the Indian nation from the trampled state under British rule and realizing that this was possible through proper education, Dr. Annie Besant who had herself deeply studied ancient Hindu Philosophy and also words of sages through holy books, formulated a pattern of education for India, which was eminently suitable to the ground realities of her times, and which allowed itself to be moulded through the years to conform with the contemporary situation. The forms of education that Dr. Annie Besant advocated were subservient to the situational changes, but the principles that she laid stress on were true for all times. She felt that in the scientific age there was need for the moral conscience to develop before knowledge advanced further. The most important industry was the industry of educating the people in the right way and creating the right individual for the future.

Dr. Annie Besant stressed on Indian ideals to be best for imparting education to the students in India, since according to her, a great law which guides the universe, men are born into the religion which is best suited to mould their lives and character. Hence Hinduism was the religion both taught and lived in the Central Hindu College, set up in 1898. Her work in the Central Hindu College from 1898 to 1913 is beautifully expressed in the speeches, which she delivered, on the anniversary gatherings of the college, contained in the seventh volume of *The Besant Spirit*. As George Arundale wrote : "The Central Hindu College became famous throughout India not only as a seat of Indian learning and culture, not only as an abode of fine physical prowess in all kinds of games, but even more as a home in which every member of the family learned how to become an Indian gentleman and a worshipper of his Motherland.". (*The Besant Spirit*, Vol. 7, p vi) The core teaching of Central Hindu College was religious, that is, giving stress on Hindu religion and morality; but so far as the acquisition of knowledge was

concerned, it rested on Western secular foundation, on Western training. She emphasized on teachers being only those persons who had the love of Hinduism in their hearts, and for whom the primary urge was in love of teaching and not pecuniary benefits. The students and teachers of the Central Hindu College came from different parts of India. Thus it was a national institution and not a local one. Dr. Annie Besant tried to enlist the support of prominent people from all parts of the country in her educational work.

To stress the Indian ideals in education, Dr. Annie Besant emphasized the ancient system of Indian education. She believed that with the attainment of political freedom, India would be able to give the required freedom to Education and Culture and the emphasis on mother tongue in the school and colleges would bring about a feeling of respect for Indian language, literature and civilization. Also the gulf between the English-educated minority and the middle classes versed in the mother tongue would be removed. Moreover, the students would be able to comprehend the subjects in a better way and express what they had learnt in an effective manner. A sense of national unity would be promoted by writing books on Indian lives, to inspire the readers with pride in a common past. The Ashram ideal was stressed, in which there was a close bond between the teachers and students. The teachers regarded their students as their sons, who taught the students due to their love of teaching and not for monetary benefits. Further, the gurukuls with their close affinity with nature helped in permeating a sense of calmness, harmony, order within the hearts of the teacher and students. Her principle of the freedom of education from governmental control is not only useful for a country that is not free, but also true for countries that are absolutely free. She believed that if a government wants to give financial assistance, it is welcome to do so, but no educational institution should ask for governmental assistance, for that would lead to welcoming control and supremacy from person who may be quite ignorant about the workings of such institutions. According to her the growth of educational management has to be from the smallest village level upwards rather than downwards from the government level. To quote her own words :"Indian education can only live when it is again rooted in the very soil of the Indian village. Restore the Village Panchayat or small Republic – that truest of all democracies, give back to the village its land and its power to deal with its own internal problems, and again will there grow up generations of young Indians trained in an education of the hand, the

heart and the head, through which will be expressed the heritage of the Motherland". (*Builder of New India*, p. 39).

The national system of education was first of its kind in the history of India. Dr. Annie Besant felt that for the reawakening of India and for the building of a strong nation, an ideal national system of education was very essential. She believed that it could be only through education that the hidden capacities of the Indians could be aroused and a strong nation based on the foundation of spiritualism, brotherhood, patriotism, nationalism could be established. Dr. Annie Besant through Theosophical Educational Trust set up many schools and colleges which were open to students of every faith, and in which religious instruction was incorporated as an integral part of education. Thus many schools and colleges were established and to bring uniformity in these educational institutions, she chalked out a detailed scheme of national education and drew the attention of prominent men of India.

In the year 1918, after the goal of Home Rule had been accepted by the British government she launched the National Education Movement with the help of Dr. Arundale because she felt that without education on national lines there could be no true national freedom and that in India, democracy should not grow into government by multi headed ignorance. In the Commonwealth of India Bill for the freedom of India, which she drafted in 1925, she wrote down the right of citizens to free elementary education, embodying her view that every child born in the land should be able to enjoy that right; he should not only have the necessary physical care, but also the education needed, to launch him into the stormy waters of life. The Bill contemplated one or more school in every village managed by the village authorities. In accordance with the needs of the child and the laws of nature, the scheme of national education was divided into three stages – from birth to seven years, from seven years to fourteen years, from fourteen to twenty one years.

Dr. Annie Besant based her concept of the student on the lines of the ancient ashram ideals that prevailed in India. She was convinced that the division of human life into four stages, that is, *Brahmacharya, Grihastha, Vanaprastha, Sanyas* was an apt description of ideal human life. Dr. Annie Besant observed:
"The sowing is in the student life wherein the seed of knowledge is planted; the growing to maturity and the ripening is in the life of the householder; the

harvesting is in the Vanaprashta stage, wherein active life is over; the grinding to make bread for human feeding is in the life of the sanyasi, whose work is wholly for others, not for himself." (*The Besant Spirit*, Vol. II, p. 78).

The important ceremony of the "Upanayana", the giving of the sacred thread, opens the doors to the stage of the Brahmacharya and with it begins control and restraint. The triple thread is worn by the student symbolizing control of the mind, speech and action. Students should have the four great virtues – service, study, simplicity, self – control. She mentioned "service" as the most important quality to be developed among the students. This virtue automatically brings about moral, mental, spiritual discipline. She formed *The Sons and Daughters of India*, to train men and women, into noble citizenship, and to instil into the coming generation a deep religious and patriotic spirit. The pledge of the Order had a twofold objective : 1. To promise to treat as brothers, Indians of every religion and every province. 2. To make service the dominant ideal in life. She started the *Indian Scouting Movement* so as to develop a sense of service and world citizenship in the minds of the participants. A cultural centre called *Brahmavidyashrama* was opened in Adyar in 1922. It was to be "a meeting place for the East and the West in its spirit, its scheme of studies and its personnel." (*A Short History of Theosophical Society*, p. 427)

The education of girls was very important, according to Dr. Annie Besant, as it was the girls who would be the future wives and mothers, those on whom the welfare of the family, and therefore to a large extent, the welfare of the nation depended. She cited the example of ancient India and said that at that time the girls were well versed in religion and read the great Indian epics, the Puranas, the vernacular religious literature. She gave the names of certain scholarly women of the Vedic period like Gargi, Maitreyi etc. Girls of such scholarly and spiritual bent of mind would make the Indian homes the centre of spirituality, the strength of the national religious life. India should revive her past ancient glory and so educate her women that they become competent to fulfill the complex duties belonging to an Indian family life. She severely opposed child marriages and laid down free education for girls upto 16 years of age. She felt that men and women should cooperate for the upliftment of India and give each other due respect and status in society. The Indian ideal of womanhood should be conveyed to girls through examples and moral instructions.

Relevance of Dr. Annie Besant's Educational ideas

In many schools role of ideals in education is still encouraged through description of lives of great people in text books of children, observing national functions etc. Her emphasis on culture, art have not lost any relevance. Being a strong believer in Karma and Reincarnation, she maintained that qualities brought forth from previous lives should be encouraged to develop to its fullest extent. The Delors Commission Report(*Report to UNESCO of the International Commission on Education for the 21st century*), while talking of the fourth pillar of education, that is, "Learning to be", has added that no talent in a person must be left untapped and attributes like memory, reasoning power, imagination, physical ability, aesthetic sense, aptitude to communicate, must be identified and allowed to blossom. This reinforces the relevance of Dr. Annie Besant's thoughts. Her ideas of incorporating the best of the west with the best of the east will always remain relevant. This would ensure that a spirit of nationalism would take deep roots in a person and then gradually spread towards making him a world citizen. This would further ensure a respect for cultures and customs of other parts of the world while preserving one's own. The relevance of these thoughts have remained even today and have been mentioned in Delors Commission Report under "Tensions to be overcome" (p. 17). Topics like global vs. local, universal vs. individual, tradition vs. modernity have been talked of in this context. Emphasis has been given on spiritual vs. material and need for moral and religious values which while having faith in one's own religious values would understand those of others.

It is but natural that the organizing of education will alter with times but it cannot be denied that Dr. Annie Besant's concepts about women's education and mass education remains as relevant, if not more today, than they were in her times. Men and women are two wheels of the society and cooperation between the two is, therefore, necessary. She stressed that both men and women should give each other due respect and work together for the upliftment of India, thereby, strengthening the idea of women empowerment, which is such a burning issue today. Her gradation into stages of education in schools and colleges, categorization into commercial, technical and agricultural high schools, accent on vocational, graduate and post graduate taining broadly remain unaltered. The methods of teaching particularly in lower classes, the qualities of a teacher and student that she defined have not altered much over the years. The Delors Commission, while taking cognizance of increasing pressure on curricula, has placed emphasis on a basic

education that teaches pupils how to improve their lives through knowledge, experiment and development of their own personal cultures.

The concept of the gurukul system too is being re-examined and its merits assessed in the conditions of the present day. Further students are being encouraged to get involved in rural upliftment schemes. The Delors Commission referred to earlier also talks of this under "Learning to live together" and "Learning to do".

Initially Dr. Annie Besant's institutions began with these concepts, but as more contemporary ideas took over some of these were gradually relegated to the rear. With the attainment of independence the concept of a nationalistic ideology was altered. Now the aim was no longer to disengage the foreign strong hold, but to integrate the people of the land so that India could be recognized as a nation at the international level. Students would cease to look for greener pastures in other lands and "brain drain" would be stopped. This has a further ramification today when violence and terrorism have raised their ugly heads and fissiparous tendencies need to be checked. The message of Dr. Annie Besant regarding national integration in this sphere still rings loud and clear with all its relevance. Further, her declared love for one's own religion alongwith the concept of integration of the best of all religions, should serve to cement bonds of tolerance and friendship, and end violence.

References

Besant, Annie (1908). *Education - Basis of national life.* Adyar : The Theosophical Publishing House.

Besant, Annie (1932). *Principles of education.* Adyar: The Theosophical Publishing House.

Besant, Annie (1942). *The Besant spirit series.* Adyar: The Theosophical Publishing House.

Besant, Annie (1942). *Builder of new India.* Adyar: The Theosophical Publishing House.

Besant, Annie (1995). *An autobiography.* Adyar : The Theosophical Publishing House.

Learning : The treasure within. (1996). Report to UNESCO of the International Commission on Education for the twenty first century. France : UNESCO Publishing.

Mukerji, J. (2006). *Educational ideas of Dr. Annie Besant and J. Krishnamurti.* Delhi : Adhyayan Publishers & Distributors.

Ransom, Josephine (1938). *A short history of the Theosophical Society* : 1875 to 1938. Adyar: The Theosophical Publishing House.

ALLURING USE OF POWERPOINT IN LECTURES: MORE TECHNOLOGY, LESS LEARNING

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Abstract

PowerPoint (© Microsoft Corp.) is a widely used presentation programme that originated in the world of business but has now become commonplace in the world of educational technology. However, its use is far from controversial in this educational context and opinions as to its use range from highly supportive to significantly negative. One of the major problems is that its current use is frequently limited to an information transmission mode, often with excessive content and distracting animation effects. This paper reviews the advantages, disadvantages and precautions associated with its use in a teaching and learning context and suggest some guidelines and pedagogical strategies that need to be considered where it is to be used. It summarises some of the key principles of presentation that are frequently ignored and suggests some of the approaches that need to be incorporated into good practice.

Technology has become a major part of most classrooms, and curriculum in the past 10 years. "Learning sciences research tells us that students learn much better 'by doing' rather than 'by listening'. Thus, passive learning – the traditional lecture- is being replaced in our classrooms by more active learning activities that emphasize student problem solving, discussion, presentation, and other "authentic learning-by-doing activities" (Day & Groeneweg, 2004, p.1). With the advancements that are being made in software development and the availability of these programs to students, there are many opportunities to learn using non-traditional methods. PowerPoint is one such software program that is being used in the classroom as a tool to incorporate active learning activities into the curriculum. PowerPoint has the potential to be an effective tool for both teachers and students to engage in active learning activities. PowerPoint enables teachers and students to actively create presentations with graphics, charts, diagrams, and pictures in their slideshows to help make often complicated ideas and lessons more manageable and understandable. It is a way for students to actively engage in research, and present information to their peers.

The ability to increase clarity, develop and sustain interest in the subject, show pictures/illustrations/animations as an explanatory device and to reinforce main points of lectures are some of the primary purposes of using visual aids like PowerPoint. Therefore PowerPoint should be used for only these purposes during a lecture (Sagar, 2011). The effectiveness of a particular medium depends not so much upon the medium, but on how it is used. The media do not influence student achievement any more than the 'truck that delivers our groceries' causes changes in our nutrition (Clarke, 1993). Thus, though technology has been recognized as having a great potential to enhance student achievement, this purpose is achieved only if it is used appropriately (Bransford *et al.*, 2000).

Presentation software has become an accepted lecture aid in higher education and is frequently used to visually present the main points of classroom lectures. At present, PowerPoint is the best-known and most popular presentation software. According to Yaworski (2001), PowerPoint helps speakers organize their thoughts and present them in a clear and concise manner while using multi-sensory tactics to hold audience attention. PowerPoint allows a lecturer to take advantage of the educational benefits of using visual aids and technology in lectures in order to improve the effectiveness of teaching and learning. Teaching with PowerPoint does not necessarily involve radical changes to teaching approaches, though it can if the lecturer so wishes. Even as a tool to create better designed black and white or colour transparencies, the default settings of the PowerPoint software require a lecturer to abide by, or at least consider, basic principles of instructional design in the point sizes of text, bullet points, framing and layout of slides (Jackson, 1997). The results of the student survey suggest that lecturers should take particular care in designing their PowerPoint presentations and to ensure that they are not so over-featured as to become distracting.

The PowerPoint presentation program is undoubtedly one of the most controversial pieces of technology to emerge in the last 25 years. Some like it and use it a great deal because of the many advantages like accessibility, ease of use, professional look, etc. Others dislike it and associate its use with the development of a reductionist lousy way of thinking like little depth, oversimplification of information, useless visual distractions, etc. According to Brown (2007), the problem is not with the software, but with its users. It is therefore possible to

improve the situation by helping PowerPoint users to develop better quality presentations.
The traditional lecture has been criticised as encouraging surface rather than deep learning as it may not necessarily stimulate thinking, may promote a view of learning as remembering masses of isolated detail and may encourage students to perceive the lecturer as an unapproachably remote authority concerned with getting information into students' memories. The task that the lecturer is facing, is paradoxically how to make 'lecturing' less like a lecture (passive, rigid, routine knowledge transmission) and more like an active communication between teacher and students.

Any technological teaching aid being used should be carefully integrated into the lecture and its purpose explained to students so that it is perceived to be relevant to the teaching and learning process and not merely a distraction. Lecturers who blindly adopt technology in their teaching will be open to a criticism that they are just using 'gimmicks' which add nothing to their teaching and are purely for entertainment. As McCarthy and Hatcher(2002) have said, "*The dangers for us in all of this, is to allow these potentially helpful tools, the technologies available to us, to divert us from what we are trying to achieve - good communication. We must not allow the technology to drive our communication. It will undoubtedly support and probably even influence and shape some aspects of our communication. But an awareness of just how seductive these new technologies are should act as a brake to keep control of how we use them.*"

There are certain elements unique to lecture presentation appeared to increase interest on the part of students. These elements include the use of colour, the line-by-line or concept-by-concept presentation of information, a well thought-out pre-organization, flexibility for adding graphics, and easy variation of size and type of fonts (Harknett & Cobane, 1997; Holzl, 1997). Aly *et al.* (2004) found that this type of lecture focused attention and reduced distraction, benefiting student learning. According to Szabo and Hastings (2000), the five most appreciated components of the method were variation of fonts, the use of illustrations, a preference for light-coloured background, the use of colours, and the line-by-line projection of lecture concepts.

Winn (2003, p. 113), sees using PowerPoint in the classroom as a way to "temporarily publish embellished teaching notes." Other teachers see it as a way to better organize themselves to lecture more clearly to students while helping them write accurate notes (Reinhardt, 1999). There are, however, many disadvantages to using PowerPoint in this narrow sense. PowerPoint presentations are not always the most effective way of teaching the curriculum. Winn (2003, p. 115) quotes students who refer to their classes taught primarily through PowerPoint as "death by PowerPoint." Any method of teaching gets stale when used exclusively and PowerPoint is no exception. The fact that it uses computers and graphics to present material does not make it less subject to becoming another "boring" lecture delivery system. Students do not necessarily find bulleted slides more stimulating (Reinhardt, 1999).

Tufte (2003), in an article entitled "PowerPoint is Evil," says the slides may help speakers outline their speeches, but suggests there are many properties of PowerPoint that may actually reduce the understandability of the content. First, Tufte suggestst he widespread use of bulleted lists in PowerPoint slides may suppress creative and critical thinking about lecture content since students may led to think in the same order as the order in which major points are listed. He also points out that students may be forced to view bad typography and poor chart layout made by presenters who are poor designers. Further, he maintains that some presenters select poorly-designed templates that distract audiences from the content of lectures. Another problem according to him is that many presenters include too much text on each slide and include distracting animated, point-to-point transitions. He concludes that PowerPoint is more useful for guiding and supporting a presenter than for helping students to understand and retain lecture material.

Despite PowerPoint's popularity in education, there are several issues associated with this presentation tool and how it is used in the classroom. Many argue that PowerPoint has a 'tendency to produce a disembodied and decontextualized learning environment' for students (Pauw, 2002, p. 39) because: 'bullets leave critical relationships unspecified … Thus, unless presenters fill in the gaps, people cannot see the whole picture or understand the important relationships' (Shaw *et at.* 1998, p. 45). Johnson (2005) argued that in the classroom, PowerPoint promotes student inactivity because slides are presented one after another, and

contain little, if any, data or information created by students. Students passively view slides displaying the results of knowledge construction rather than actively participating in their own knowledge construction.

According to Wet (2006), PowerPoint has following features which can make PowerPoint a potentially lethal tool for effective teaching:

1. PowerPoint is wizard-driven and conceptually easy to use. The danger is that teachers may simply dump quantities of information on a series of slides without thinking through what to present and how to present it.

2. The bells and whistles (clipart, animation, transitions, and timing) could be so beguiling that teachers overuse these features and merely distract students with visual overload that has no connection to the information presented. According to Murphy (2004), elaborate, busy PowerPoint presentations result in lower achievement on test scores.

3. Design and layout templates may inhibit teacher creativity and suggest using only bullet points. This abbreviated way of presenting content results in what Tufte (2003) calls "foreshortening of evidence and thought" (p. 4). Using the typical PowerPoint layout suggests to students that this hierarchical single path structure is the model for organizing every type of content. It also breaks up the narrative and the data into slides and small fragments. It leads to rapid sequencing of shallow information, rather than a deep interaction with rich material.

4. Teachers may rely on the PowerPoint presentation to engage students with content. The PowerPoint presentation is a small part of the whole instructional package. A research study by 3M suggests that presenters with visual aids are 43% more effective than those without, but how the presenter looks and speaks accounts for the majority of the audience's opinion of the presentation (Farwell, 2005).

Effectively created PowerPoint slides will improve teaching and foster better interaction in the class, creating more in-depth learning. When creating presentations, teachers need to be sure to create effective slides that are relevant, interesting, and encourage class discussion. Merely placing lecture notes on text-

heavy slides with pretty graphics will not create a more lively and engaged class. Winn (2003) asserts that slides should use thought-provoking images that emphasize the main points of the lecture, not bulleted lists. He states "*imagery forces you to synthesize the textual component of your presentation*" (Winn, 2003, p. 115). Choosing photographs, clip art, simulations, or video-clips as the main component of the presentation will actively involve students in considering the topics of the lecture and engaging them in worthwhile interaction with the teacher and each other. Even less-than-perfect images on a slide will be more effective that text, evoking a response from students (Winn, 2003). The Internet is filled with searchable images that can be downloaded and placed in a presentation to jump-start those discussions.

Although PowerPoint presentations can be an effective teaching tool, teachers should consider more seriously how they use that tool to engage students with the curriculum. Teachers need to use a variety of teaching methods to keep students interested in learning. PowerPoint is only one of those tools. When using it, teachers should consider putting aside the text-heavy slides and using more imagery to make students critically think about the topic of the lesson.
The main benefit of PowerPoint presentations is engaging students not just through words, but also through visuals. Some students learn better by hearing, but other students learn better by seeing. Engaging students through the visual means provides somee xcitement that breaks down the daily routine of lectures. Vik (2004) identified the most common bad habits of PowerPoint users which distract considerably from the quality of their presentations.

1. Too much text on a slide
It is often impossible to read the text, due to the font size. Also, the audience is placed in a position of cognitive overload because they must simultaneously read text and listen to the presenter (Cooper, 2009).

2. Inappropriate background
Templates can be a tempting option, but users must be vigilant. Some are much too colourful or, in some cases, totally inappropriate for the content of the presentation (style that is too fun or too serious).

3. Too much animation or too many useless effects

Some animation can be quite useful in highlighting important ideas or messages, but again, you must be careful. Animation or sound effects that have no strategic purpose become a distraction that can decrease comprehension.

4. Too many slides

Too many slides for the length of the presentation force the presenter into a rhythm that the audience may have difficulty following (too much information coming from the presenter and from the audio-visual aids, all in too little time).

5. Graphics that are too complex

A graphic which contains too many statistics or a juxtaposition of statistics fails to transmit information effectively.

6. Lack of structure

Developing a coherent structure is the most important element of a good PowerPoint presentation. One must devote time to preparing one's message (its relevance, its coherence, its importance, etc.) and especially to reflecting on the most appropriate ways to communicate it (pictures, words, diagrams, etc.).

Lastly, it is important to remember that PowerPoint is just a tool. What is most important about a presentation is the message, not the medium.

References

Aly, M., Elen, J., & Willems, G. (2004). Instructional multimedia program versus standard lecture: A comparison of two methods for teaching the undergraduate orthodontic curriculum. *European Journal of Dental Education, 8*, 43–46.

Bransford, J., Brown A.J. & Cocking R.R. (Ed) (2000). *How people learn: Brain, mind, experience & school,* pp. 206, National Academy of Sciences., Washington, D.C.

Brown, V. (2007).The power of PowerPoint: Is it in the user of the program? *Childhood Education, 83*(4), 231-233.

Clarke, R.E. (1993) Reconsidering research on learning from media, *Review of Educational research*, 53, 445-59.

Cooper, E. (2009). Overloading on slides: Cognitive load theory and Microsoft's slide program PowerPoint. *AACEJ, 17*(2), 127-135.

Day, J. & Groeneweg, R. (2004). *Enhancing the classroom learning Experience with Web lectures*. Georgia Tech University.

Farwell, J. (2005). Build a better presentation: Put yourself in the leading role. *PC Today, 3* (5), 46–48.

Harknett, R. J. & Cobane, C. T. (1997). Introducing instructional technology to international relations. *Politics Science & Politics,* 30, 496-500.

Holzl, J. (1997). Twelve tips for effective PowerPoint presentation for the technologically challenged. *Medical Teacher*, 19, 175-179.

Jackson, S.F. (1997) *The use of PowerPoint in teaching comparative politics.* http://horizon.unc.edu/ts/featured/1997-05a.asp.

Johnson, K. (2005). Point/counterpoint: Is PowerPoint crippling our students? Yes. *Learning & Leading with Technology, 32.* Retrieved November 5, 2009, from http://www.iste.org/Content/NavigationMenu/Publications/LL/LLIssues/200510/November13/33306j.pdf

McCarthy, P. & Hatcher, C. (2002) Presentation skills. London; Sage Publications.

Murphy, T. (2004, October). Research based methods for using PowerPoint, animation, and video for instruction. *SIGUCCS'04.* Retrieved November 1, 2008, from http://www.bitbetter.com/

Pauw, A. (2002). Discoveries and dangers of teaching theology with PowerPoint. *Teaching Theology & Religion, 5* (1), 39–41.

Reinhardt, L. (1999). Confessions of a 'Techno-Teacher'. *College Teaching*, 47(2). 48.

Sagar, P. (2011). T he effect of PowerPoint presentations on achievement, retention and achievement-motivation of B.Ed. teacher trainees. Unpublished Ph.D. thesis, MJP Rohilkhand University, Bareilly.

Shaw, G., Brown, R., & Bromiley, P. (1998, May–June). Strategic stories: How 3M is rewriting business planning. *Harvard Business Review,* 41–50.

Szabo, A. & Hastings, N. (2000) Using IT in the undergraduate classroom: Should we replace the blackboard with PowerPoint? *Computers and Education*, **35**, 175 – 187.

Tufte, E.R. (2003). *The cognitive style of PowerPoint.* Cheshire, CT: Graphics Press.

Vik, G.N. (2004). Breaking bad habits: Teaching effective PowerPoint use to working graduate students. *Business Communication Quarterly, 67*, 225-228.

Wet, C.F. (2006). Beyond presentations: Using PowerPoint as an effective instructional tool. *Gifted Child Today*. 29(4).

Winn, J (2003). Avoiding death by PowerPoint. *Journal of Professional Issues in Engineering Education & Practice*, 129(3), 115.

Yaworski, J. (2001, Fall). How to create and use PowerPoint presentations to teach reading skills. *Journal of College Reading and Learning, 32*(1), 15-21.

A STUDY OF EXPLORING NEEDS FOR DEVELOPMENT OF COMMUNITY DEVELOPMENT COMPETENCIES AMONG TEACHER TRAINEES

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Abstract

The NCF 2005 highlights environment friendly community development practices as major focus of teaching learning system. Teacher training programmes must highlight different competencies like communication with community members, conducting group activities like focused group discussion, chaupal, quiz, brain storming etc, organization of community welfare events inside and outside schools, organizing out reach activities, assessment of community development projects. The present study examined the reaction of B.Ed. teacher trainees towards community development project competencies. A sample of 100 students was drawn randomly to represent gender and subject background of students. Data was collected with the help of a Reaction Scale consisting of 20 items. Chi square test was applied to test the hypotheses of significant association between the background variable (subject and gender) and student's reaction towards community development practices.

Introduction

School Education and community development are interrelated with each other. Empowerment of community members for development of school education is an essential input. Different schemes under Sarv Siksha Abhiyan need community participation to an optimum level. Moreover success of universalization of secondary education shall depend on whole hearted support of community members. Teachers' involvement in empowering community members about right to education for children of 6-14 years age group is also a gigantic task. While teachers' role in motivating community members about educational practices is very much essential, sustaining their participation in management of school system is of paramount signification. On the other hand, the responsibility of school

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system in promoting social development practices is also an integral component of school c urriculum. The NCF 2005 highlights environment friendly community development practices as major focus of teaching learning system. Teachers enabling children to be sensitized towards community development and development of various skills of community services need to be highlighted in school activities. In this context, teacher education programme must focus on development of competencies among teachers in successful transaction of community participation oriented programmes at school level. Teacher training programmes must highlight different competencies like communication with community members, conducting group activities like focused group discussion, chaupal, quiz, brain storming etc, organization of community welfare events inside and outside schools, organizing out reach activities, assessment of community development projects. On these lines teacher education inputs must be incorporated at primary and secondary level. This study was conducted with following objectives:

Objectives

- To explore the reaction of B.Ed trainees towards community development project competencies.
- To study the level of association between reaction towards community development and school and subject background of students.
- To study the level of association between reaction towards community development and school and gender background of students.

Hypotheses

- There is no significant association between subject of students and their reaction towards community development.
- There is no significant association between gender of students and their reaction towards community development.

Methods and Procedures:

The population of study covered all the B.Ed trainees enrolled in the constituent colleges of University of Allahabad. A sample of 100 students was drawn randomly to represent gender and subject background of students. Data was

collected with the help of a Reaction Scale Consisting of 20 items .The items highlight significance of school community relationship and training of teachers on community development competencies. Chi square test was applied to test the hypotheses of significant association between the background variable (subject and gender) and student's reaction towards community development practices.

Analysis and Interpretation

Table 1 presented analysis of data concerning association of subject background of B.Ed. trainees and their reaction towards school community relationship. Perusal of Table 1 reveals that in the case of all the 20 items the $\chi 2$ test values were not found significant at .05 level, since the calculated values were found to be lower than those of Table values at 95 percent confidence level. Hence the null hypothesis of no significant association was not rejected. It can be observed from Table 1 that irrespective of subject difference large majority of students from Arts (58% to 92%) and Science (57% to 97%) streams agreed on all the statements concerning school community relationship as follows:

Table 1: $\chi 2$ Test of association between B.Ed. students subject background and their reaction towards school community relationship

Items*	Science				Arts				
	Yes	No	U C	Total	Yes	No	U C	Total	χ^2
1	24	1	1	26	65	5	4	74	3.27(NS)
2	24	1	1	26	72	1	1	74	0.65(NS)
3	24	1	1	26	67	1	6	74	2.40(NS)
4	20	2	4	26	61	3	10	74	1.10(NS)
5	19	1	6	26	60	4	10	74	0.24(NS)
6	19	3	4	26	54	9	11	74	0.72(NS)
7	20	3	3	26	53	13	8	74	1.12(NS)
8	17	5	4	26	44	10	25	74	2.42(NS)
9	24	1	1	26	71	2	1	74	1.25(NS)

10	21	3	2	26	57	13	4	74	2.19(NS)
11	15	3	8	26	47	9	18	74	0.39(NS)
12	21	2	3	26	61	5	8	74	0.36(NS)
13	18	4	4	26	53	11	10	74	0.79(NS)
14	17	2	7	26	55	7	12	74	1.38(NS)
15	18	4	4	26	58	3	13	74	2.37(NS)
16	15	4	7	26	42	7	25	74	0.72(NS)
17	22	2	2	26	65	6	3	74	2.64(NS)
18	19	4	3	26	64	2	9	74	3.85(NS)
19	15	4	7	26	49	8	17	74	0.09(NS)
20	20	3	3	26	65	3	6	74	1.06(NS)

Table 2 presents analysis of data concerning association between gender and students reaction towards school community relationship. Table 2 reveals that significant association between reaction and gender were found at .01 level of significance on following items:

- Different basic areas of community development like education, health and earning for livelihood should be an integral component of school activities.
- Each one teach one method should be adopted by school students to develop social awareness among community members.
- School teachers should be trained on focused group discussion methods for communication with community members.
- Teacher trainees should conduct projects on environment preservation.
- Action research projects should be conducted on community development.

Table 2: $\chi 2$ Test of association between B.Ed. students gender and their reaction towards school community relationship

Items*	Male				Female				
	Yes	No	UC	Total	Yes	No	UC	Total	χ^2
1	43	5	3	51	46	2	1	49	5.85(NS)
2	49	1	1	51	46	2	1	49	.003(NS)
3	47	1	3	51	44	2	3	49	.973(NS)

4	39	1	11	51	41	4	4	49	3.45(NS)
5	35	3	13	51	43	4	2	49	8.83(.05)
6	28	12	11	51	44	3	2	49	14.47(.01)
7	33	13	5	51	40	4	5	49	4.3(NS)
8	24	12	15	51	46	5	8	49	9.72(.01)
9	48	2	1	51	47	1	1	49	1.31(NS)
10	36	11	4	51	41	4	4	49	4.96(NS)
11	27	9	15	51	33	4	13	49	4.88(NS)
12	38	4	9	51	43	3	3	49	5.75(NS)
13	32	11	8	51	39	5	5	49	5.85(NS)
14	30	7	14	51	41	3	5	49	15.74(.01)
15	35	6	10	51	40	2	7	49	6.62(.05)
16	29	9	13	51	26	3	20	49	4.96(NS)
17	40	6	5	51	47	1	1	49	10.64(.01)
18	40	5	6	51	40	2	7	49	2.64(NS)
19	26	10	15	51	37	3	9	49	10.72(.01)
20	42	5	4	51	44	2	3	49	5.02(NS)

*** List of Items**

1. School -Education and community development activities are integrated with each other.
2. Every school student should be aware of different kinds of community development projects.
3. Every school student must participate in different kinds of community development practices.
4. Students can develop awareness among community members effectively.
5. Teachers' representation in community development can motivate people's participation
6. The basic areas of community development like education, health and hygiene and earning for livelyhood should become a component of school education
7. Social work should be an integral component of school curriculum
8. Each one teach one method should be adopted by school students for social awareness.
9. Environment friendly education projects should be encouraged

10. Community leaders should extend co-operation in development of local culture and art among students
11. There m ust be regular interaction sessions for teacher educators and community leaders in teacher education institutions
12. Teacher trainees must get exposures to the field trips of local significant places.
13. Effective communication skills with community members must be developed among teacher trainees.
14. Teacher trainees must be trained on conducting focused group discussion among community members
15. Teacher trainees must develop appropriate communication technology for community members.
16. Teacher trainees must be trained on conducting Brain Storming sessions.
17. Teacher trainees must participate in environment preservation projects.
18. Participant observation skills should be developed among teacher trainees.
19. Teacher trainees must adopt action research projects for community development.
20. Teacher trainees must be acquainted with the skills of monitoring and evaluation of community development projects.

In all the cases gents teachers trainees (76% to 96%) expressed more favourable reaction than their ladies counterparts (48% to 80%).

Significant association was also found at .05 level on two more items viz; Teachers' leadership motivate community members participation in development projects and teacher trainees should concentrate on establishing good communication with community members. In these cases too higher percentage of gents trainees (80% to 86%) expressed more favourable reaction than their ladies counterparts (70%).

In rest of the cases there was no significant difference between gender and reaction level. A l arge majority of gents (66% to 92%) and ladies (58% to 98%) teacher trainees expressed more favourable reaction towards community development areas.

Conclusion:

As a matter of positive fact a large majority of students appreciate the role of school in community development practices. The trainees highlighted the needs for their training on community members, conducting brainstorming exercises, communication skills, leadership behaviour, planning and management of projects, action research competencies on community development, conducting monitoring and evaluation practices of community development. Therefore, it is recommended that the B.Ed. training practices must incorporate action research based projects on community development and training of competencies required for conducting such projects. The educators' attitude must be positive towards such practices.

दूरस्थ माध्यम से अध्यापक शिक्षा कार्यक्रमों में सूचना एवं संप्रेषण तकनीक की भूमिका का अध्ययन

डॉ. अश्वनी*

सारांश

आज भारत में दूरस्थ माध्यम द्वारा व्यापक स्तर पर शिक्षक–शिक्षा दी जा रही है जिसमें मुक्त विश्वविद्यालय प्रमुख है। नियमित विश्वविद्यालयों द्वारा भी दूरस्थ माध्यम से शिक्षक शिक्षा दी जा रही है। तकनीकी संचार व द्विमार्गी संप्रेषण विधियों से दूर शिक्षा माध्यमों में क्रांति आई है। अध्यापक शिक्षा के उद्देश्यों के संदर्भ में शिक्षण अभ्यास, पाठ्यचर्या, प्रायोगिक कार्य, अभ्यासात्मक कार्य, दत्त कार्य को ध्यान में रखकर सूचना एवं संप्रेषण तकनीक का प्रयोग किया जा सकता है। आज पत्राचार पाठ्यक्रम में अभ्यास सामग्री, संपर्क कार्यक्रम तथा अध्यापन अभ्यास में गुणात्मकता की कमी है। प्रवेश तथा संचालन की परिसीमा सही नहीं है। सैद्धांतिक व निजी अभ्यास, कक्षागत अभ्यास, स्कूल सुधार इत्यादि की भी कमी है। ज्यादातर विश्वविद्यालयों में पत्राचार द्वारा अच्छी अधिगम सामग्री उपलब्ध नहीं करवाई जा रही है। उपरोक्त समस्याओं के संदर्भ में दूरस्थ माध्यम से अध्यापक शिक्षा में सूचना एवं संप्रेषण तकनीक का प्रयोग किया जा सकता है। ई–लर्निंग के युग की समस्याएँ भी विद्यमान हैं। प्रस्तुत शोध लेख में दूरस्थ माध्यम से अध्यापक शिक्षा कार्यक्रमों में सूचना एवं संप्रेषण तकनीक की भूमिका का अध्ययन किया गया है ।

भूमिका – आज दूर शिक्षा प्रणाली एक स्वतंत्र शिक्षा प्रणाली बन चुकी है। सूचना एवं संप्रेषण तकनीक संसाधनों की सुविधा से दूर शिक्षा, शिक्षा का सम्पूरक और शिक्षा की परम्परागत व्यवस्था के विकल्प के रूप में प्रयोग होने लगा है। दूर शिक्षा आज सूचना एवं संप्रेषण तकनीक के माध्यम से समाज की निरंतर बढ़ती हुई आवश्यकताओं और अपेक्षाओं को पूरा कर सकती है। सूचना एवं संप्रेषण तकनीक ने दूर शिक्षा के क्षेत्र को व्यापक बना दिया है जिसे दूर शिक्षा में सुधार आया है ओर शैक्षिक गत्यात्मकता में वृद्धि हुई है। सूचना एवं संप्रेषण तकनीक द्वारा समाज के विभिन्न वर्गों के लोगों को विविध शैक्षिक कार्यक्रम उपलब्ध कराए जा सकते हैं। दूर शिक्षा में पाठ्यक्रम उद्देश्यों को प्रभावी रूप से तथा क्षमतापूर्वक प्राप्त करने के लिए विभिन्न सूचना एवं संप्रेषण तकनीक माध्यमों का प्रयोग किया जाता है इस तरह दूर शिक्षा ने जीवन पर्यन्त शिक्षा

* सहायक प्रोफेसर, शिक्षा, मौलाना आज़ाद नेशनल उर्दू यूनिवर्सिटी, हैदराबाद

की अवधारणा को बढ़ावा दिया है जिसमें सूचना एवं संप्रेषण तकनीक की महत्वपूर्ण भूमिका है ओर आज दूर शिक्षा की सफलता में सूचना एवं संप्रेषण तकनीक माध्यमों का स्थान केंद्रीय होता है।

शिक्षा आयोग *(1964–66)* ने विज्ञान और तकनीकी में पत्राचार पाठ्यक्रम चलाने तथा दूर शिक्षा द्वारा दूर–दराज के क्षेत्रों में अध्यापन व्यवसाय में सुधार करने का सुझाव दिया था। पत्राचार के माध्यम से अध्यापक शिक्षा प्रदान करने का कार्य भारत में सर्वप्रथम दिल्ली विश्वविद्यालय के द्वारा किया गया। सन् 1966 में दिल्ली विश्वविद्यालय के केन्द्रीय शिक्षा संस्थान *(CIE)* ने पत्राचार संपर्क विधि से बी.एड. पाठ्यक्रम प्रारंभ किया। इन कार्यक्रमों का उद्देश्य अप्रशिक्षित माध्यमिक अध्यापकों को प्रशिक्षित करना था। राष्ट्रीय शिक्षा नीति 1968 ने भी इस प्रकार के विचारों को उजागर किया था। विश्वविद्यालय स्तर पर अंशकालिक शिक्षा और पत्राचार पाठ्यक्रम बड़े पैमाने पर विकसित किए जाने चाहिए। इसके अतिरिक्त 1967 में 'विश्वविद्यालय अनुदान आयोग' द्वारा सबसे पहला एक प्रतिनिधिमंडल उस समय के यूएस.एस.आर. को उनके पत्राचार पाठ्यक्रमों का अध्ययन करने को भेजा गया। प्रतिनिधिमंडल ने सिफारिश की कि समिति स्तर पर पत्राचार पाठ्यक्रम अध्यापक प्रशिक्षण के लिए आरंभ किए जाएँ जिनसे सेवारत अप्रशिक्षित अध्यापकों की गुणवत्ता में सुधार लाया जा सके। शिक्षा आयोग की सिफारिशों तथा विश्वविद्यालय अनुदान आयोग की रिपोर्ट के आधार पर विचार विमर्श हुआ। इसके परिणामस्वरूप 1967 में ''राष्ट्रीय शैक्षिक अनुसंधान प्रशिक्षण परिषद'' ने अप्रशिक्षित अध्यापकों को बी.एड. कराने के लिए अपने चार क्षेत्रीय महाविद्यालयों द्वारा पत्राचार पाठ्यक्रम आरंभ किया। ये चारों क्षेत्रीय महाविद्यालय क्रमशः अजमेर, भोपाल, भुवनेश्वर एवं मैसूर में स्थित हैं। इसके पश्चात क्षेत्रीय महाविद्यालयों का दृश्य बदल गया। दूर शिक्षा/पत्राचार पाठ्यक्रम विभिन्न मुक्त विश्वविद्यालयों में बी.एड. करने वालों की भीड़ लग गई। इसके साथ ही परंपरागत विश्वविद्यालयों ने भी पत्राचार पाठ्यक्रम आरंभ कर दिया। इन विश्वविद्यालयों में कश्मीर, कुरूक्षेत्र, महर्षि दयानंद रोहतक, मदुरै कामराज, यशवंत राव चव्हाण, आंध्र, अन्नामलाई, भोपाल, पंजाब चंडीगढ़, काकतिया, मैसूर, उस्मानिया, राजर्षि टंडन खुला विश्वविद्यालय, कोटा मुक्त विश्वविद्यालय शामिल थे। इग्नू ने भी राष्ट्रीय स्तर पर दूर शिक्षा के माध्यम से बी.एड. प्रारंभ कर दिया है। मौलाना आज़ाद राष्ट्रीय उर्दू विश्वविद्यालय ने भी राष्ट्रीय स्तर पर बी.एड. और प्राथमिक शिक्षा का डिप्लोमा कार्यक्रम उर्दू के माध्यम से चलाया है। ''राष्ट्रीय अध्यापक शिक्षा परिषद'' के मार्गदर्शन में अनेक विश्वविद्यालयों में पत्राचार पाठ्यक्रम संस्थाओं/निदेशालयों द्वारा बी.एड. कार्यक्रम प्रारंभ किए गए। शिक्षा की चुनौतीः एक नीतिगत परिदृश्य *(1985)* दस्तावेज़ का अध्ययन भी दर्शाता है कि शिक्षा के क्षेत्र में शिक्षक का प्रदर्शन सर्वाधिक महत्वपूर्ण तत्व है। हम नई तकनीकों के विकास की दहलीज़ पर खड़े हैं, जिनके जरिए कक्षाओं में शिक्षण के क्षेत्र में क्रांतिकारी बदलाव आने की संभावना है। लेकिन दुर्भाग्यवश शिक्षक–शिक्षा के पाठ्यक्रम के सुधार का कार्य मंथर गति से चल रहा है। प्रो. रामलाल पारिख की अध्यक्षता में सन् 1993 में पत्राचार द्वारा बी.एड. के

प्रशिक्षण हेतु निर्देशों में मुख्य अनुशंसाएँ की गयी थी कि पत्राचार बी.एड. पाठ्यक्रम संचालित करने वाले विश्वविद्यालयों को एक साल में 250 से अधिक विद्यार्थियों को प्रवेश नहीं देना चाहिए। पाँच वर्ष का शिक्षण अनुभव व मान्यता प्राप्त विश्वविद्यालयों से स्नातक की उपाधि सेवारत शिक्षकों के लिए जरूरी है। न्यूनतम 30 दिनों का प्रत्यक्ष संपर्क कार्यक्रम विकसित किया जाए जिसमें ट्यूटोरियल रिकार्ड, संरक्षकता शिक्षण अभिलेख, इकाई अध्ययन, पाठ तैयार करना इत्यादि हो। प्रत्येक विद्यार्थी के लिए 60 दिनों का अवैतनिक अनिवार्य सेवा का प्रावधान किया जाए।

दूरस्थ माध्यम में सूचना एवं संप्रेषण तकनीक का प्रयोग

टेलर (1995) ने दूर शिक्षा की चार पीढ़ियाँ बताई है। पहली पीढ़ी में बहुमाध्यम प्रतिमान जो कि मुद्रित स्वरूप के थे। दूसरी पीढ़ी में बहुमाध्यम प्रतिमान जो कि मुद्रित, ऑडियो टेप, वीडियों टेप, कंप्युटर साधित अधिगम ओर अंतः क्रियात्मक वीडियो शामिल है। तीसरी पीढ़ी में श्रव्य दूर वार्तालाप वीडियो वार्तालाप, श्रव्य आलेखिकी द्वारा संवाद, टी. वी. रेडियों प्रसारण, चौथी पीढ़ी में लचीला अधिगम प्रतिमान है इसमें अंतः क्रियात्मक बहुमाध्यम, इंटरनेट आधारित डब्लयू डब्लयू डब्लयू संसाधन तक पहुँच और कंप्युटर मध्यस्थ संवाद है। शोधकर्ता के मत में पाँचवी पीढ़ी में मोबाइल लर्निंग, फेसबुक व टिवट्र, सोशल मीडिया, मुक्त अधिगम स्रोत (OER), मोबाइल इंटरनेट, ग्रुप वार्तालाप साइट को शामिल कर सकते है। दूरस्थ माध्यम से अध्यापक शिक्षा कार्यक्रमों में सूचना एवं संप्रेषण तकनीक (ICT), के निम्न संसाधनों का प्रयोग किया जा सकता है।

श्रवण आधारित संसाधन – दूर शिक्षा में इसका उपयोग ज्यादातर रेडियो के रूप में होता है। आजकल श्रव्य वार्तालाप द्वारा विद्यार्थियों को पढ़ाया जा सकता है। श्रव्य कैसेट भी विद्यार्थियों को शिक्षण सामग्री स्थान, समय और दूरी के अनुसार उपयोग की सुविधा देते है। श्रव्य सम्मेलन व श्रव्य आलेखिकी का भी प्रयोग किया जा सकता है। श्रव्य स्रोतों को ग्रामीण व दूर दराज़ के क्षेत्रों में भी उपयोग कर सकते हैं।

दृश्य आधारित संसाधन – दृश्य आधारित संसाधनों में ज्यादातर टी. वी. का प्रयोग किया जाता है। इसमें वीडियों कैसेट, वीडियो डिस्क, वीडियो सभाएँ, शैक्षिक प्रसार – दूरदर्शन, टी. वी. साधित अधिगम, वीडियो वार्तालाप और सीधा अन्तः क्रियाशील प्रसारण किया जाता है।

कंप्युटर आधारित संसाधन – कंप्युटर वार्तालाप, इंटरनेट, ई–मेल वार्तालाप, कंप्युटर साधित शिक्षण और अधिगम, कंप्युटर आधारित अधिगम, इंटरनेट पर एकमार्गीय तथा द्विमार्गीय वीडियों, वैब पर श्रव्य व वीडियों क्लिप्स, फेसबुक व टिवट्र, सोशल मीडिया, मुक्त अधिगम स्रोत (OER),, ग्रुप वार्तालाप साइट

मोबाइल आधारित संसाधन – मोबाइल इंटरनेट, मोबाइल अधिगम ओर एस. एम. एस. की सुविधा

दूरस्थ माध्यम से अध्यापक शिक्षा कार्यक्रमों में सूचना एवं संप्रेषण तकनीक की भूमिका

मुद्रित सामग्री संबंधी सूचना एवं संप्रेषण तकनीक – अध्यापक शिक्षा कार्यक्रमों के संचालन के लिए अनुदेशात्मक प्रक्रिया के रूप में मुद्रित सामग्री दी जाती है जो कि स्वयं अधिगम सामग्री के स्वरूप पर निर्धारित होती है। सैद्धांतिक एवं प्रायोगिक कार्यों से संबंधित पाठ्यवस्तु विभिन्न यूनिट व इकाइयों के रूप में प्रशिक्षणार्थियों को उपलब्ध कराई जाती है। मुद्रित सामग्री को आज हम मुक्त अधिगम स्रोत में भी शामिल कर सकते है जिसके लिए इंटरनेट की सुविधा जरूरी है। संबंधित दूर शिक्षा संस्थान की वेबसाइट पर भी हम विद्यार्थियों के लिए पंजीकरण के माध्यम से स्वयं अधिगम सामग्री को डाउनलोड करने की सुविधा दे सकते है। इससे डाक के माध्यम से पाठ्यसामग्री देरी से पहुँचने की समस्या का भी हल हो सकता है।

दत्त कार्य संबंधी सूचना एवं संप्रेषण तकनीक – अध्यापक शिक्षा के प्रत्येक कोर्स में दूर शिक्षा के महत्वपूर्ण उद्देश्यों को ध्यान में रखकर दत्त कार्य करना अनिवार्य है। प्रत्येक कोर्स का निर्धारित प्रतिशत मूल्यांकन दत्त कार्य के संदर्भ में किया जाता है। दत्त कार्य को संबंधित दूर शिक्षा संस्थान की वेबसाइट पर डाला जा सकता है जिससे विद्यार्थी समय पर डाउनलोड करके अध्ययन कार्य कर सके। पिछले सालों के दत्त कार्य भी वेबसाइट पर डाले जा सकते है जिससे विद्यार्थी को दत्त कार्य करने में एक समझ मिलेगी। दत्त कार्य संबंधी मूल्यांकन के सुझाव भी विद्यार्थियों को वेबसाइट पर दिये जा सकते है जिससे वे अपने दत्त कार्य में सुधार कर सकते है। विद्यार्थियों के ग्रेड भी समय पर वेबसाइट पर दे सकते है जिससे विद्यार्थी समय पर कार्य करने के लिए अभिप्रेरित होगें।

कॉंउसलिंग सत्र संबंधी सूचना एवं संप्रेषण तकनीक – अध्यापक शिक्षा में अध्ययन केन्द्रों द्वारा प्रत्येक कोर्स के लिए छात्रों के अवकाश को ध्यान में रखकर परामर्श सत्र का आयोजन किया जाता है। ज्यादातर अध्ययन केन्द्रों द्वारा परामर्श सत्रों का आयोजन सप्ताहांत या लम्बे अवकाश में ही किया जाता है। इसमें शिक्षण की तुलना में परामर्श पर ध्यान दिया जाता है ताकि स्वयं अधिगम सामग्री को विद्यार्थी पढ़ कर आयें। ये एक तरह से संपर्क कक्षायें होती है। पूरे परामर्श सत्र की वीडियों रिकॉर्डिंग की जा सकती है जो कि परामर्श सत्र को और बेहतर बनाने के लिए काम आ सकती है। कॉंउसलिंग में भी अध्यापक के द्वारा विषयानुसार सूचना एवं संप्रेषण तकनीक का प्रयोग विद्यार्थियों को उनकी समस्याओं के समाधान के लिए किया जा सकता है। प्रत्येक विषय की इकाई के लिए अध्यापक पॉवर प्वाईंट प्रस्तुतीकरण करके उसके बाद विद्यार्थियों से परामर्श के लिए कह सकता है जिससे कम समय में ज्यादा अध्ययन हो सकता है। प्रत्येक इकाई की वीडियों ओर ऑडियो रिकॉर्डिंग करके छात्र अध्यापकों को दी जा सकती है जिससे वे अपने समयानुसार अध्ययन कर सकते है। कॉंउसलिंग सत्र संबंधी सूचना और अध्ययन सामग्री विद्यार्थियों को ई मेल के द्वारा ओर वेबसाइट के द्वारा उपलब्ध कराई जा सकती

कार्यशाला संबंधी सूचना एवं संप्रेषण तकनीक – अध्यापक शिक्षा में अध्ययन केन्द्रों द्वारा प्रत्येक कोर्स के लिए छात्रों के अवकाश को ध्यान में रखकर कार्यशाला का आयोजन किया जाता है। अध्यापक शिक्षा में कार्यशाला का बहुत महत्व है क्योंकि इसमें ही विद्यार्थियों को विभिन्न शिक्षण गतिविधियों का अनुभव दिया जाता है। कार्यशाला की विषयवस्तु के अनुसार अध्ययन केंद्रों को सूचना एवं संप्रेषण तकनीक को रखना चाहिए। प्रत्येक कालांश के अनुसार विषय विशेषज्ञ पहले सी कक्षा गतिविधि को सूचना एवं संप्रेषण तकनीक द्वारा तैयार करके रखे जिससे विद्यार्थियों के समय की भी बचत होगी। कार्यशाला में छात्र अध्यापकों को सूचना एवं संप्रेषण तकनीक संबंधी कार्य भी देना चाहिए जिसे वे अध्यापको की मदद से विषयवस्तु को पढ़ाने और उसके चयन में सक्षम हो सकेगें। कार्यशाला में ज्यादातर शिक्षण कार्य सूचना एवं संप्रेषण तकनीक के माध्यम से होना चाहिए जिससे विद्यार्थियों को एक अनुभवात्मक ज्ञान भी मिल सकेगा। कंप्युटर साधित शिक्षण और अधिगम के द्वारा विद्यार्थियों को कार्यशाला में कार्य करवाया जा सकता है। कार्यशाला की विषयवस्तु संबंधी ऑडियो–वीडियो के द्वारा विद्यार्थियों को अच्छे व्याख्यान सुनाये जा सकते है। इंटरनेट पर एकमार्गीय तथा द्विमार्गीय वीडियों, वैब पर श्रव्य व वीडियों क्लिप्स, फेसबुक व टिवट्र, सोशल मीडिया, मुक्त अधिगम स्रोत (OER),, ग्रुप वार्तालाप साइट इत्यादि पर आधारित कार्य कार्यशाला में कराया जा सकता है जिससे छात्र अध्यापक इन माध्यमों को अपने शिक्षण के दौरान प्रयोग कर सकते है।

शिक्षण अभ्यास का आयोजन संबंधी सूचना एवं संप्रेषण तकनीक – अध्यापक शिक्षा में प्रायोगिक कार्य विद्यालय आधारित, कार्यशाला आधारित एवं शिक्षण अभ्यास से संबंधित होता है। प्रायोगिक कार्य संबंधित परामर्शदाता व अध्यापकों के निर्देशन में विद्यालयों में कराये जाते हैं। छात्र अध्यापकों को शिक्षण अभ्यास की तैयारी विभिन्न विषयों के अनुसार वीडियो रिकॉर्डिंग किये गये मॉडल पाठयोजना द्वारा कराई जा सकती है। सी. डी., डी. वी. डी. इत्यादि रिकॉर्ड करके विद्यार्थियों को दिये जा सकते है। दूर शिक्षा संस्थान अपनी वेबसाइट पर भी मॉडल पाठयोजनाओं की रिकॉर्डिंग विभिन्न विषयों के अनुसार अपलोड कर सकते है जिसे छात्र अध्यापक अपनी सुविधानुसार डाउनलोड करके पढ़ सकते है। छात्र अध्यापकों के शिक्षण अभ्यास की रिकॉर्डिंग की जा सकती है जो कि बाद में उन रिकॉर्डिंग को देख कर पर्यवेक्षक की मदद से अपने शिक्षण में सकारात्मक सुधार कर सकते है। विद्यार्थियों को विभिन्न शिक्षण विधियों जैसे कहानी कथन विधि, नाटक विधि, खेल विधि, कार्य करके सीखना विधि और भ्रमण विधि इत्यादि की रिकॉर्डिंग सी. डी. दी जा सकती है जिसे विद्यार्थी पढ़ समझ कर अपनी पाठ योजना में शामिल कर सकता है। छात्र अध्यापक को ज्यादातर सूचना एवं संप्रेषण तकनीक का प्रयोग शिक्षण अभ्यास के दौरान सीखाना जरूरी है जिससे वे स्कूलों में कक्षा अध्यापन के दौरान प्रयोग कर सके। इसलिए यह बहुत ही जरूरी है कि पर्यवेक्षक ध्यान दें कि पाठयोजनाओं में विषयवस्तु सूचना एवं संप्रेषण तकनीक पर आधारित हो।

श्रव्य–दृश्य व टेलीकॉंफ्रेसिंग कार्यक्रम – अध्यापक शिक्षा कोर्स की विषयवस्तु के संदर्भ में विषय विशेषज्ञों द्वारा वीडियो, ऑडियो पाठ तैयार किये जाने चाहिए जो कि संबंधित चैनलों पर प्रसारित किये जाये। कार्यशालाओं एवं प्रशिक्षण शिविरों में भी इनका उपयोग किया जा सकता है और दूरदर्शन द्वारा पाठ्यवस्तु का प्रसारण संबंधित चैनल पर प्रसारित किया जा सकता है। टेलीकॉंफ्रेसिंग द्वारा एकमार्गी या द्विमार्गी प्रायोगिक कार्यों का आयोजन किया जा सकता है। टेलीकॉंफ्रेसिंग के माध्यम से विद्यार्थियों से सीधे बातचीत की जा सकती है। रेडियों जो कि आजकल मोबाइल पर आसानी से उपलब्ध है। रेडियों के द्वारा छात्र अध्यापकों को ऑडियो पाठ दिये जा सकते है और विद्यार्थियों से बातचीत के द्वारा भी समूह चर्चा कराई जा सकती है।

इंटरनेट – अध्यापक शिक्षा कार्यक्रम के उद्देश्यों के संदर्भ में विभिन्न गतिविधियाँ आयोजित की जाती हैं। इन गतिविधियों की सूचना वेबसाइट माध्यम द्वारा भी दी जानी चाहिए है। इंटरनेट, ई–मेल इत्यादि के द्वारा भी विद्यार्थियों से संपर्क बनाये रखा जाता है। विद्यार्थियों के नामांकन से लेकर परीक्षा परिणाम तक की सूचना सभी वेबसाइट पर उपलब्ध होनी चाहिए और विद्यार्थियों को विभिन्न सूचनाओं का ई मेल भी किया जाना चाहिए। छात्र शिक्षक संपर्क को प्रोत्साहन देने हेतु छात्रों को ई मेल द्वारा प्रोत्साहित किया जा सकता है।

मोबाइल – मोबाइल आज ज्यादातर विद्यार्थियों के पास मिल जाता है। विभिन्न शैक्षिक गतिविधियों जैसे परीक्षा परिणाम, दाखिला की सूचना, दत्त कार्य के ग्रेड, दूरदर्शन और रेडियों पर प्रसारित कार्यक्रमों के समय की सूचना एस. एम. एस. के द्वारा छात्र अध्यापकों को दी जा सकती है। मोबाइल में इंटरनेट होने से विद्यार्थियों को और भी सुविधा हो सकती हैं।

अध्ययन से प्राप्त सुझाव

- दूरस्थ माध्यम से अध्यापक शिक्षा में पाठ्यक्रम की शुरूआत में ही विद्यार्थी को सूचना एवं संप्रेषण तकनीक संबंधी बुनियादी कोर्स कराना चाहिए जिससे वे इन स्रोतों का दूरस्थ माध्यम से शिक्षा प्राप्त करने में प्रयोग कर सके। अध्यापक शिक्षा कार्यक्रमों में ज्यादार सेवारत अध्यापक होते है इसलिए और भी जरूरी हो जाता है कि उनकी सूचना एवं संप्रेषण तकनीक संबंधी जानकारी को अद्यतन बनाया जाए।
- दूरस्थ माध्यम से अध्यापक शिक्षा के पाठ्यक्रमों में उन्नत सूचना एवं संप्रेषण तकनीक का कोर्स शामिल करना चाहिए जो जिससे विद्यार्थी सूचना एवं संप्रेषण तकनीक सबंधी शिक्षणशास्त्रीय कौशल विकसित कर सके।

- सूचना एवं संप्रेषण तकनीक संबंधी घटकों को दूरस्थ माध्यम से अध्यापक शिक्षा के सभी विषयों जैसे गणित, सामाजिक अध्ययन, अंग्रेजी, हिंदी और शिक्षा के बुनियादी विषयों में अंर्तनिहित करना चाहिए। इससे विद्यार्थी सूचना एवं संप्रेषण तकनीक शिक्षण व अधिगम का रोल मॉडल बन जाएगा।
- दूरस्थ माध्यम से अध्यापक शिक्षा में सूचना एवं संप्रेषण तकनीक स्रोतों को इस तरह अंर्तनिहित करना चाहिए कि जिससे विद्यार्थी को अवसर मिले कि वह स्वयं ही इनका प्रयोग करें और इसे दूसरों के साथ भी साझा करें।
- जब दूरस्थ माध्यम से अध्यापक शिक्षा का पाठ्यक्रम तैयार किया जाए तो स्थानीय और वैश्विक क्षेत्र को ध्यान में रखकर शैक्षिक सोच और संस्कृति के मद्देनज़र बनाया जाना चाहिए।
- दूरस्थ माध्यम से अध्यापक शिक्षा में विद्यार्थियों के मूल्यांकन करने में सूचना एवं तकनीकि स्रोतों की महती भूमिका हो सकती है। शिक्षण अभ्यास, कार्यशाला और सूक्ष्म शिक्षण इत्यादि में विद्यार्थी की रिकॉर्डिगं करके मूल्यांकन कर सकते है।
- दूरस्थ माध्यम से अध्यापक शिक्षा में कार्यरत शिक्षकों को भी सूचना एवं संप्रेषण तकनीक का शिक्षा में प्रयोग का संपूर्ण ज्ञान होना चाहिए। समय समय पर दूर शिक्षा में कार्यरत शिक्षकों का रिफ्रेशर कोर्स होना चाहिए जिससे वे अपने को सूचना एवं संप्रेषण तकनीक के संदर्भ में तैयार कर सके।
- अध्यापक शिक्षा के सभी अध्ययन केंद्रों पर सूचना एवं संप्रेषण तकनीक की प्रयोगशाला होनी चाहिए जिससे छात्र अध्यापक अपनी शिक्षण गतिविधियों के कार्यो का अनुभव के माध्यम से सीख सकें। लेकिन यह सच्चाई है कि बहुत ही कम अध्ययन केंद्रों पर सूचना एवं संप्रेषण तकनीक प्रयोगशाला उपलब्ध है।
- दूर शिक्षा एवं मुक्त विश्वविद्यालयों और दूर शिक्षा निदेशालयों को क्षेत्रीय केंद्रों और अध्ययन केंद्रों व अपने विभागों में सूचना एवं संप्रेषण तकनीक संसाधनों की उपलब्धता पर विशेषकर ध्यान देना चाहिए। क्योंकि सूचना एवं संप्रेषण तकनीक की शिक्षा सैद्धांतिक से ज्यादा प्रयोग पर आधारित होती हैं।
- दूरस्थ माध्यम से अध्यापक शिक्षकों को सूचना एवं संप्रेषण तकनीक के प्रयोग के लिए तकनीकि रूप से प्रोफेशनल प्रशिक्षक की मदद लेनी चाहिए जिससे वे अधिगम सामग्री को उचित तरीकें से हॉर्डवेयर व सॉफ्टवेयर की जरूरत के हिसाब से बना सकें।
- ज्ञान में निरन्तर तेजी से वृद्धि हो रही है। नये कौशलों एवं ज्ञान को सीखने हेतु पाठ्यक्रमों में परिवर्तन करने की जरूरत पड़ती है ताकि उन्हें अद्यतन रखा जा सके। भारतीय ग्रामीण व सुदूरवर्ती इलाकों में सूचना तकनीकी की भारी कमी है जो कि इस पूरी व्यवस्था पर सवाल उठाती

है। इसलिए भारतीय सामाजिक और आर्थिक संदर्भ को ध्यान में रखकर ही सूचना एवं संप्रेषण तकनीक का प्रयोग करना चाहिए।

संदर्भ

राष्ट्रीय शिक्षा आयोग, 1964–66, भारत सरकार, नई दिल्ली।

आर.एन. सक्सेना, मिश्रा वी.के., मोहंती आर.के. (1999), अध्यापक शिक्षा, सूर्या पब्लिकेशन, मेरठ।

अध्यापक शिक्षा में नीतिगत परिदृश्य, (2001) राष्ट्रीय अध्यापक शिक्षा परिषद, नई दिल्ली।

इग्नू (2001) ई. एस.–364 दूर शिक्षा, इग्नू 2001, नई दिल्ली।

Vernal, Louis & Paily M U (2004). ICT in teacher: A case study, *University News,* 42(39)September 27-03October2004

U.P. Rajarshi Tandon Open University. (2005). *Quality assurance in distance education.* Allahabad. UPRTOU

Bhatia, Ranjana (2005). ICT enabled teacher, *University News,* 43(22)May30 -June05, 2005

Yadav,SK & Rehan Sumbul (2006). Teacher education in India: Issues and concerns. *University News,* 44(38) September 18-24,2006

Babu, S Sudhakar (2007). Technological advances and role of ICT in teacher training and higher education, *University News,* 45(26) June25 -July01,2007

अश्वनी (2010) अध्यापक शिक्षा का समालोचनात्मक अध्ययन, परिप्रेक्ष्य,वर्ष 17 अंक 2, अगस्त 2010, न्यूपा, नई दिल्ली।

Prema, P (2010). Teacher education via open distance learning: A democratic alternative in India: Issues and concerns. *University News,* 48(22)May31 -June06, 2010

Maheshwari, Amrita (2010). Teacher education via open distance learning: A democratic alternative in India: Issues and concerns. *University News,* 48(22)May31 - June06, 2010

Singh, R.P. (2010). Teacher education and development in cvommunication technology: Innovating for a knowledge society, *University News,* 48(18)May03-09, 2010

अश्वनी (2012) दूर शिक्षा द्वारा अध्यापक शिक्षा कार्यक्रम : बी.एड. (दूर शिक्षा) कार्यक्रम का अध्ययन, शोध मंथन,अंक 3, जनवरी 2012, जर्नल अनु बुक्स, मेरठ।

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