PROCEEDINGS

NAAC SPONSORED NATIONAL SEMINAR

17 – 18, May 2013

ICT ENHANCED TEACHER EDUCATION AMONG DISADVANTAGED SECTIONS: ISSUES AND CHALLENGES FOR TEACHER EDUCATORS

Organised by

Internal Quality Assurance Cell

AVILA COLLEGE OF EDUCATION

(Accredited by NAAC with 'B' Grade)

Aquinas Grounds, Edacochin, Cochin – 682010, S. India

NAAC SPONSORED NATIONAL SEMINAR ON

ICT Enhanced Teacher Education among Disadvantaged Sections: Issues and Challenges for Teacher Educators

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Published by
AVILA COLLEGE OF EDUCATION
Aquinas Grounds, Edacochin, Cochin – 682010

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MESSAGE

Avila College of Education is proud of publishing the proceedings of NAAC sponsored national seminar on 'ICT Enhanced Teacher Education among Disadvantaged Sections: Issues and Challenges for Teacher Educators' conducted on 17-18 May 2013. ICT primarily focuses on communication technologies. When the educators are trained and become successful in applying ICT in the enhancement of learning then the students will get the maximum advantages of educational technology to face the current global scenario. Management is grateful to NAAC, Principal, IQAC coordinator, Seminar convener and the team who worked for the success of the above task.

With best wishes

Fr. Johnson Chirammel

Manager

PREFACE

The world is changing fast due to the technological developments. Application of technologies is seen in almost all aspects of education. The wider changes taking place in the society are providing a context for instructional development. Over the years there is a shift from oral to written, formal to non-formal, teacher centered to student centered and rigid to flexible forms of instruction.

In India most of the educational institutions are still in the traditional set-up. Technological developments have not been effectively utilized for educational needs. The resources are meager and institutions are not in a position to update technology. Our available technological resources are either underutilized or not utilized. The process of teaching-learning has become gradually mechanical through the use of teaching machines, radio, television, tape recorder, video tape, projectors, computers, etc. The mechanization is being introduced in the preservation, transmission, and transformation of human knowledge. In its modern view information and communication technology incorporates both hardware and software approaches. According to this view education should be considered as a system in which man, machine, method, material and media are integrated and parts are organized in such a way as they work together for the fulfillment of specific educational objectives.

In this technologically advanced era, the teachers have a challenging role to play. Today's learner has a treasure of information with him/her and the role of the teacher is not merely imparting knowledge. In the changed educational scenario, the role of the teacher is to assist the learner to investigate the vast resources of knowledge. Today's teacher has to ensure whether the learners move in the direction of true knowledge, whether the interpretation of knowledge is accurate and whether the required knowledge is received and assimilated properly. As the teachers have to play diverse roles they should be updated with the changing technology in the field of education. They need to understand the latest trends in Information and Communication technology (ICT) and should have the ability to incorporate them for a better outcome. The NAAC sponsored seminar on "ICT Enhanced Teacher Education among Disadvantaged Sections: Issues and Challenges for Teacher Educators" held on

17th and 18th of May 2013 addresses those issues and discusses ways to tackle the problems in an effective manner.

Let me take this opportunity to express my deep sense of gratitude to all dignitaries who graced the occasion with their esteemed presence, contributions and suggestions. I am grateful to Shri. Paul Antony IAS, the Honorable Chairman, Cochin Port Trust, the former Principal Secretary, SC&ST Development Department and Director, Kerala State Civil Supplies Corporation who inaugurated the seminar and delivered the key note address and Rev. Fr. Johnson Chirammel, the Manager of the college who presided over the inaugural function.

I gratefully remember our esteemed resource persons; Prof. B. S. Ponmudiraj, Assistant Advisor, NAAC, Bangalore, who was with us in all the sessions, Dr. Rajan Varghese, Principal, Mar Thoma College of Management and Technology Perumbavoor, Dr. Tessy Anthony, Associate Professor, St. Teresa's College, Ernakulam, Dr. C. Praveen, Assistant Professor, Government College of Teacher Education, Trivandrum, Dr. Jessy Mathews, Principal, Maha Jubilee Training College, Thrissur, Mr. Praveen Issac Creative Director, Digital TWBC, Marcom, Cochin and Dr. V. S. Antony, Academic Director, Avila College of Education, Edacochin. I also express my sincere thanks to all the paper presenters, and participants from all over India for their active participation in the seminar.

We are greatly indebted to NAAC for granting financial assistance to the seminar. Dedication, hard work and commitment of all the staff and students of Avila family are greatly appreciated. Their support and cooperation made this venture a great success. With immense pleasure we present the seminar proceedings and hope this will enrich the readers' quest for ICT related queries.

Dr. Benny Varghese
Principal

ACKNOWLEDGEMENT

The Internal Quality Assurance Cell of Avila College of Education expresses heartfelt gratitude to the NAAC for sponsoring the two day National Seminar on the topic 'ICT Enhanced Teacher Education among Disadvantaged Sections: Issues and Challenges for Teacher Educators' organized by the IQAC of Avila College of Education, Edacochin, Kerala.

IQAC is greatly indebted to Rev. Father Johnson Chirammel, Manager, Avila College of Education for the whole hearted support and prayers for conducting this Seminar. IQAC expresses sincere thanks to Dr Benny Varghese, Principal, Avila College of Education for the steady support and suggestions which has helped a lot to conduct this Seminar. IQAC is equally thankful to Dr V.S. Antony, Academic Director, Avila college of Education for the valuable advice at each and every step.

IQAC is very much grateful to Shri. Paul Antony IAS, Honorable Chairman, Cochin Port Trust for the valuable address during the inaugural session of the seminar. IQAC is extremely thankful to Dr B.S. Ponmudiraj, Asst. Adviser to NAAC for the participation, advice and suggestions. IQAC wish to thank Dr Tessy Antony, Dr C. Praveen, Dr Rajan Varghese and Mr. Praveen Issac, the resource persons of various sections who had accepted our invitation and contributed immensely to make this seminar meaningful and productive. Special thanks to Dr Jessy Mathews and Dr Lima Antony for chairing the paper presentation sections. IQAC thanks all the participants for their co operation. IQAC appreciates the efforts of Dr Josen George, Seminar Convener. IQAC takes this opportunity to acknowledge the co operation of various Committee Members of the Seminar, Teaching and Non teaching staff members of Avila College of Education, B.Ed and M.Ed students, Technicians, Chefs and all others who had extended their help and worked hard for the success of this Seminar.

Dr. Usha Parvathy

IQAC Coordinator

SEMINAR PROGRAMME

FRIDAY, 17th MAY 2013

09.30 hrs - 10.00 hrs	**Registration**
10.00 hrs - 10.50 hrs	**Inaugural Session**
	Prayer
Welcome Speech	**Dr. Benny Varghese**
	Principal, Avila College of Education
Inauguration	**Sri. Paul Antony IAS,**
	Chairman, Cochin Port Trust
Presidential Address	**Rev. Fr. Johnson Chirammel**
	Manager, Avila College of Education
Felicitations	**Dr. V. S. Antony**
	Academic Director, Avila College of Education
	Dr. Usha Parvathy
	Associate Professor, Avila College of Education
Vote of Thanks	**Dr. Josen George**
	Asst. Professor, Avila College of Education
10.50 hrs - 11.00 hrs	Tea Break
11.00 hrs – 12.00 hrs	**SESSION I**
Presentation	**Dr. Tessy Anthony,** Associate Professor,
	St. Teresa's College, Ernakulam
Theme	**ICT - Bridging the Distances for the Disadvantaged**
Interaction	
12.00 hrs – 13.00 hrs	**SESSION II**
Presentation	**Dr. C. Praveen,** Asst. Professor
	Govt. College of Teacher Education, Trivandrum
Theme	**When instructional designs vary, are we employing emerging designs?**
Interaction	
13.00 hrs - 14.00 hrs	Lunch
14.00 hrs – 15.00 hrs	**SESSION III**
Presentation	**Prof. B. S. Ponmudiraj**
	Asst. Advisor, NAAC
Theme	**ICT Enhanced Teacher Education**
Interaction	
15.00 hrs – 16.30 hrs	**SESSION IV**
	Presentation of Papers and Discussion
Chair	**Dr. Jessy Mathews**
	Principal, Maha Jubilee Trg. College, Thrissur
16.30 hrs - 16.45 hrs	Tea

SATURDAY, 18th MAY 2013

09.30 hrs – 10.15 hrs	**SESSION V**
Presentation	**Dr. Rajan Varghese,** Principal, Mar Thoma College of Management and Technology, Perumbavoor
Theme	**Use of ICT for Digital Natives**
Interaction	
10.15 hrs - 11.00 hrs	**Presentation of Papers and Discussion**
Chair	**Dr. Usha Parvathy** Associate Professor, Avila College of Education, Edacochin
11.00 hrs – 11.10 hrs	Tea Break
11.10 hrs - 12.00 hrs	**SESSION VI**
Presentation	**Mr. Praveen Issac** Creative Director, Digital TWBC, Marcom, Cochin
Theme	**Online resources for Teacher Education**
12.00 hrs - 13.00 hrs	**Presentation of Papers and Discussion**
Chair	**Dr. Lima Antony** Asst. Professor, St. Xavier's College, Aluva
13.00 hrs – 14.00 hrs	Lunch
14.00 hrs – 15.00 hrs	**CONCLUDING SESSION**
Chair	**Dr. V. S. Antony,** Academic Director, Avila College of Education, Edacochin
Presentation by Rapportteurs	
Open Forum: Reflections and suggestions by participants	
15.00 hrs - 16.00 hrs	**VALEDICTORY FUNCTION**
Welcome Address	**Dr. Sijimol S.** Associate Professor, Avila College of Education
Presidential Address	**Rev. Fr. Johnson Chirammel** Manager, Avila College of Education
Valedictory Address	**Prof. B. S. Ponmudiraj** Asst. Advisor, NAAC
Principal's Address	**Dr. Benny Varghese** Principal, Avila College of Education
Felicitation	**Mr. Francis Xavier,** Student Union Representative
Concluding Remarks	**Dr. V. S. Antony** Academic Director, Avila College of Education
Vote of Thanks	**Dr. Josen George,** Seminar Convener
National Anthem	
16.00 hrs - 16.15 hrs	Tea

THEME PRESENTATIONS: ABSTRACTS AND PAPERS

WHEN INSTRUCTIONAL DESIGNS VARY, ARE WE EMPLOYING EMERGING DESIGNS?

Dr. C. Praveen
Asst. Professor, Govt. College for Teacher Education, Thiruvananthapuram

Abstract

Four very popular instructional designs explored until recently include Bloom's Taxonomy, Multiple Intelligence, 'Models of Teaching' and Inter-disciplinary study. The technological revolution, coupled with the birth of the 'Digital Native', has ushered in instructional practices focusing on a Multimodal Design. This presentation attempts a brief review of current instructional practices prompting teachers to critique one's own instructional practices. It also affirms the need to insist on the production of digital materials as Course Work to ensure that teacher trainees are receptive to the emerging concept of Multimodal Design.

Key words*: Taxonomy, Instructional Designs, Multimodal Design, Teacher Education*

Introduction

Discussions related to curricular reforms invariably focus on taxonomies of educational objectives. For almost two decades, Benjamin Bloom's Taxonomy of Educational Objectives had been the basis of instructional practices in classrooms in Kerala. But over the years there has been a growing sense of concern among educationists with regard to the use of Bloom's Taxonomy. While some pointed out that Bloom's Taxonomy fails to meet the needs of today's classroom, others insisted that there is an urgent need to give a face lift to existing taxonomies. During the last two decades institutions of learning in many countries explored the possibility of nurturing Multiple Intelligences. At the same time, both language teachers and subject teachers experimented with the different 'Models of Teaching' compiled by Bruce Joyce and Marsha Weil with a fair degree of success. Closely on the heels of such explorations came the introduction of Inter-disciplinary study. While some institutions of higher learning in India did occasionally attempt to introduce all such changes in their classrooms, such practices never became a norm for educational practices.

Kerala has always found an envious position in the educational map of India. One recent instance is the evolution of instructional practices drawing on the philosophy of Paulo Freire, which swept through curricular practices in school education in Kerala. Within years of its inception, as if to fall in line with a sociological phenomenon -what affects one, affects another- curricular reforms now in progress at the Under Graduate (UG) level began to reflect traces of the school curricular practices! When the time was ripe for a complete overhaul of instructional designs, UG curricular practices blindly adopted Constructivist practices, with an avarice to gorge up 'issues', giving the impression that it is the highest form of education possible, as it activates 'mental processes' which was hither to neglected. Around the same time, the birth of the technological revolution brought about drastic changes in instructional practices in classrooms in many developed nations. This coupled with the birth of the 'Digital Native', necessitated the introduction of instructional practices focusing on a Multimodal Design. What follows is a brief review of different instructional designs culminating in the author's firm belief that, teacher educators and trainees need to be sensitized to this emerging design. The presentation will conclude with an affirmation of the need to insist on the production of digital materials as Course Work to ensure that teacher trainees are receptive to the emerging concept of Multimodal Design.

The objectives of education vis-à-vis instructional designs

General lecture sessions on the philosophy of education for BEd trainees, often commences with Vedic Education and the kind of teaching imparted in Gurukulas. By the time the lecture area progresses to British Education, trainees grasp the importance of nururing the 3 R-s i.e. Reading, Writing and Arithmetic. Discussions on education in India always make mention of the different Commissions which more or less affirmed the six basic qualities which some Educationists call the development of the six Hs- Head, Heart, Health, Humanity, Humility and Harmony. The view expressed by the great minds with regard to the objectives of education invariably finds a place in the BEd Curriculum. At some point of time in the BEd programme, trainees are introduced to the objectives of education listed below:

- "Education is natural, harmonious and progressive development of man's innate powers." – Pestalozzi
- "That alone will be a true and living education which helps to bring out to full advantage, makes ready for the full purpose and scope of human life all that is

in the individual man, and which at the same time helps him to enter into his right relation with the life, mind and soul of the people to which he belongs and with that great total life, mind and soul of humanity of which he himself is a unit and his people or nation a living, a separate yet inseparable member." - Sri Aurobindo

- "By education I mean an all-round drawing out of the best in the child and man-body, mind and spirit." -Gandhiji

Benjamin Bloom's Taxonomy which was revised in 2001 focused on an hierarchy with 'Create' at the top and 'Remember' at the base as: CREATE, EVALUATE, ANALYZE, APPLY, UNDERSTAND, and REMEMBER .

The revised version of Gardner's Multiple Intelligence focused on nine intelligences which included:

1. Verbal/Linguistic Intelligence
2. Logical/Mathematical Intelligence
3. Spatial Intelligence
4. Bodily/Kinesthetic Intelligence
5. Musical/Rhythmic Intelligence
6. Interpersonal Intelligence
7. Intrapersonal Intelligence
8. Naturalistic Intelligence
9. Existentialist Intelligence

Bruce Joyce and Marsha Weil compiled different 'Models of Teaching' under the following four families:

1. Personal family
2. Social family
3. Behaviour modification family
4. Information Processing family

Inter-disciplinary study attempted in institutions prompted learners to recognize bias, think critically, tolerate ambiguity and acknowledge and appreciate ethical concerns. A critique of the different instructional designs will reveal that no single design fully addresses ways of drawing out the "best in body, mind and spirit". Further, teachers who employ such designs seldom have a definite plan or strategy for making

up for the deficiency in individual designs to focus on all the three- body, mind and spirit.

On Multimodal design

Multimodal refers to the integration of different modes of text to create meaning and to convey messages. These include:

1. Audio design
2. Visual design
3. Linguistic design
4. Gestural design
5. Spatial design

It is a fact that the present generation of learners practices multimodal literacies naturally and spontaneously. They easily combine and move between art, drama, speech, text, sound, physical movement, animation, gaming etc. A recent study undertaken by the author found that BEd trainees are familiar with: Emerging Multimodal Designs and Different semiotic codes

But, an advanced level ability to rationalize/explain selective, adaptive use of resources or the ability to employ such knowledge for digital material production is quite rare. Hence there is an urgent need to develop instructional practices that actively work with multimodality to enhance students' learning. An insistence on the production of digital materials as Course Work is one possible way of making teacher trainees receptive to the emerging concept of Multimodal Design.

ICT- BRIDGING DISTANCES FOR THE DISADVANTAGED
(Abstract)

Dr. Tessy Antony
Associate Professor, St. Teresa's College, Ernakulam

The presentation started with the quote 'A candle will not lose anything by lighting another candle.' The important points discussed were:

1. The need to know the learners since they are different physically, emotionally and socially.
2. Challenges in teaching –
   a) use of right materials
   b) preparation of the subject
   c) evaluation of students
   d) creating interaction
   e) maintaining discipline
   f) extension activities
   g) reference materials
   h) Preparing students for the extra mile, etc.
3. Methods of teaching – discovery learning, programmed learning, gaming, simulation etc.
4. Pre-requisites for the use of technology
   a) Articulation of ICT
   b) Creating a learning environment
   c) Partnership and collaboration culture
   d) Co-operation between researchers and practitioners
   e) Contribute to shared knowledge development
5. ICT – a compulsory alternative

   Teacher must be an innovator and a revolutionary

   The tools for innovation are:
   a) Audio visuals
   b) Smart classroom
   c) Online and Internet
   d) Social networking sites

e) Community radio and
f) Video

6. Meeting on common place

   Through ICT, we can help absentees, dropouts, dyslexic, mentally challenged and slow learners.

7. Advantages of ICT
   a) Creates high order thinking
   b) Reduces teacher's workload
   c) Reduces bureaucracy
   d) Can be used to Support other types of learning
8. ICT – best practices
   a) For governances and leadership
   b) Curricular aspects
   c) Extension and research
   d) Infrastructure and learning resources
9. Use of ICT – for disadvantaged
   a) Peer group learning method
   b) Use of SPSS & EXCEL
   c) Notes for students who came from open schools
   d) Mentoring programme to solve personal problems
   e) Using Head mouse
10. Use of ICT – wisely
    a) Make the classes a roaring success
    b) Create reusable learning objects (RLO)
    c) Achieve your objectives

ICT ENHANCED TEACHER EDUCATION
(Abstract)

Prof. B. S. Ponmudiraj

Asst. Advisor, Academic Wing, NAAC

The lecture threw light into the different facets of modern teacher education. ICT should facilitate character formation through all three domains mentioned in Bloom's taxonomy. A normal classroom situation should be entwined with differential pedagogy and differential instruction. The focus of the presentation was the research based performance of a teacher with a special stress on the individual difference among students. Additional focus was given for the process of teaching, learning and evaluation. Three bodies of research being mentioned are (i) brain-based research, (ii) learning styles and multiple intelligence, (iii) authentic assessment. Further, collective wisdom accompanied with ICT provides maximum achievement expected from good instruction. Insightful inferences regarding intellectual curiosity and advanced operational research was elucidated. The talk was concluded by quoting Kurt Levin, "If you want to truly understand something, try to change it."

USE OF ICT FOR DIGITAL NATIVES
(Abstract)

Dr. Rajan Varghese

Principal, MCMAT, Perumbavoor, Ernakulam

The new generation students who have a wide exposure to the digital world from an early age were referred to as 'Digital Natives'. Today, even small kids use modern gadgets with ease. So the teacher should be competent enough to meet the challenges of the digital world. Conventional methods and materials of teaching are insufficient to meet the needs of the present education system. Hence, new methods and approaches should be adopted to catch the attention of the digital natives. Graphs showing internet usage by people from diverse geographical regions of the world was shown. The difference in internet usage between the people belonging to developed and under-developed regions was highlighted. Also, the increasing trend of internet usage was pointed out.

The main areas of focus in the presentation are highlighted below:

1) Mitigating the problems in the use of ICT
    a. Reduce differences in the ICT exposure of teachers and students
    b. Reforming conventional delivery systems
    c. Sustaining lifelong learning
    d. Improving institutional management
    e. Interactive computer simulations
    f. Digital and open educational resources
    g. Use of old and new technologies
    h. Student centred learning
    i. Data gathering and analysis using ICT
2) Reasons for digital divide:
    a. Lack of accessibility to hardware and connectivity
    b. Lack of accessibility to application software
    c. Unavailability of content
    d. Students from different background with different levels of exposure to ICT
3) Initiatives at the State and Central Government levels
    a. Supply of hardware including Akash I and Akash II

   b. Content development with the help of educationalists and teachers

4) Virtual environment
   a. Blackboard (a family of software)
   b. e-classes, e-learning, e-tutoring
   c. Web CT
   d. MOOC (Massive Online Open Courses)
   e. Crowd Sourcing
5) Role of education in Administration in implementing ICT in education
   a. Quality initiatives
   b. Faculty attitude
   c. Faculty preparedness
   d. Faculty orientation

USE OF ONLINE RESOURCES FOR TEACHER EDUCATION

(Abstract)

Praveen Issac
Creative Director, Digital TWBC, Marcom, Kochi

The main points discussed were:

1. Difference between New Media and Traditional Media
2. Traditional media – typewriter, radio, television etc.
3. New media – digitalized computer, on-demand access to real time content production
4. Digital identity
5. Social platforms where social media are used for varied purposes – blogging, RSS, widgets, chatroom, video sharing, wikis
6. Media sharing – photo sharing, website, video sharing website
7. Photo sharing – flicker, Picasso
8. Video sharing – YouTube, Vimeo
9. Blogs – web blogs, regularly updated blogs, diary journal etc., blogger, wordpress
10. Social networks – for personal profile, messages, email and for posting events. Example – face book, MySpace, Twitter etc.
11. Webcasts and webinars
12. Wikis – WebPages with edit button, (eg. Wikipedia, wikimapia) allows collaborating online, it can be public or password protected.
13. Widgets – small applications embedded in websites. Examples –Clearspring and Gigya
14. Podcasts – delivery of audio or video files
15. RSS – Real Simple Syndication (eg. All websites, blog entries, news headlines, Google readers, netvibes, bloglines)
16. Search engines – Google, Yahoo, Bing etc.
17. Online resources – Videos, podcasts of lectures, syllabi, textbooks, MIT, open courseware
18. Open courses – provides open culture, Vdacity (which give a lot of study material and various open course details)
19. Apps, books, Google books

PAPER PRESENTATIONS

ICT ENABLED MULTIMEDIA PACKAGE FOR MINIMIZING SPECIFIC LEARNING DISABILITIES

Dr. Anilakumari M. C.,
Assistant Professor,
Institute of Advanced Studies in Education, Thrissur
Jyothi Gopal
Lecturer, Adi Sankara College of Education, Kalady

Abstract

In the educational scenario, we speak of education for all, but in really a majority of students remain academically backward. Children are expected to achieve high scores in school. In every class, at least 15 % of children get poor marks and they are considered as under achievers/scholastically backward. Low marks in examinations indicate that children suffer from learning problems but they are labeled as underachievers. These children must be given all the benefits of multi-sensory approach by a moderate intervention and experience. This study is focused to enhance academic performance by minimizing learning disabilities with ICT enabled multimedia package among primary school students who are underachievers. The study was survey-cum experimental in nature. For the purpose one group pre–test post-test design was adopted. The tools used are intervention, inventories, performance test and intelligence test. The intervention based on multimedia package is effective on the performance of underachievers. There is significant difference in the performance of children at initial and final phase of implementation of the package. To develop the interest in learning, for meaningful development in study habits and to inculcate self confidence in students, the usage of multimedia package based classroom intervention is appropriate.

Introduction

It is said that there are no problem children; but there are children with problems. Estimates from surveys in schools show 50% of schools going children are under achievers. About 10% of school children are estimated to have learning difficulties and Special Education Needs. Some underachievers have emotional or behavioural problems and may not be keen to make an effort to get good marks. Some others are unable to achieve good results because of their physical or intellectual handicaps. But the majority of children who show scholastic backwardness are actually

bright, yet cannot get good marks in spite of effort, due to their inborn learning difficulties. Thus each under achiever in school has a different reason for below average school performance and the causes may lie in the child himself or in the environment. Each child with poor scholastic performance has a unique diagnosable entity; hence it is essential to diagnose the specific causes of low achievement in children, to enable appropriate intervention.

It is very essential that the early identification and diagnosis of learning difficulty and slow learning disorders which may lead the learner to become underachiever or scholastically backward. Without recognition and help, students become increasingly frustrated and distressed by persistent failure. Ignorance about the disability is prevalent and does a lot of harm by delaying intervention. A sensitive teacher can suggest appropriate intervention, thus can save valuable time. So the teachers have major role to play in helping to detect if a child is underachiever, scholastically backward, or need special education intervention.

The intricacy of the psychomotor process involved in handwriting has long been recognized. Learning to write is not a mechanical, lower-level reflex response, but a thinking process, entailing activity of the cortical nerve areas. Smooth motor co-ordination of eye and hand, control of arm, hand, and finger muscles are acquired in the process of learning to write. Learning to write also requires maturity adequate for accurate perception of the symbol patterns. Writing from memory demands the retention of visual and kinesthetic images of forms, not present to the senses, for future recall..... the capacity for graphic representation depends on the motor function of the hand and its coordination with eye movements (Hildreth, 1947). Writing is required in all subjects of curriculum, not only when written language is the focus of instruction. The instructional concept of ‘writing across the curriculum’ has become a persuasive force in the teaching of writing. Multimedia will change the way of communication in the virtual and real class rooms. The speed at which technology is altering classroom communication is overwhelming.

Multimedia programmes help to improve students’ learning skills in an interactive media based environment. These are typically categorized as visual, auditory and kinesthetic. Traditional classroom settings primarily facilitate the visual learner. The strength of multimedia is that it stimulates all learning modalities simultaneously to integrate and organize vast quantities of auditory and visual data.

This happens in a gradual sequential and progressive manner. Reading demands a lot of personal time, ready or not, the e-age is upon us. The focus on technology is a driving force in education in the new millennium.

Children must master visual skills before they can even begin to develop verbal skills. Visual skills are a necessary foundation for later speech and reading skills. Teaching visual literacy helps children with learning difficulty to interpret art and visual media.Visual literacy allows a deeper interaction with focus of all kinds, introduces the process of analytical thinking about representation and memory.

Integrating visual and auditory instruction in the classroom curriculum not only prepare children to recognize and decode subversive advertising messages, but they will also be prepared to communicate with a level of visual sophistication that will carry them through the multimedia dependent environment of education. Multimedia instruction will better prepare students with reading/ writing difficulty for the dynamic and constantly changing online world through which they will inevitably communicate.

Through ICT based instruction, students with learning difficulty can understand the fundamental concepts more effectively. The recent advancement in teaching and learning principles have to be adopted by instructors in order to bring out better results of teaching and learning. Multimedia is a very effective means of presentation. At present the role of teachers in educating the students with learning difficulties has gained paramount importance. The classes should be motivating by the use of multimedia packages in classrooms and this will also enhances learning in a fast rate. To develop the interest in learning, for meaningful developments in study habits and for the better adaptation of self confidence in students, the usage of multimedia along with classroom intervention is essential. Today classes need incorporation of ICT to improve students' knowledge and capacity. ICT based multimedia learning package can meet the learning requirements for students to minimize dysgraphia in the learner centered learning environment. In this context the present study is focused to develop a remedial package based on multimedia instructional design for underachievers with dysgraphia.

Objectives of the Study

1. To identify students belongs to underachievers among primary school students with dysgraphia.

2. To develop and implement multimedia package among underachievers with dysgraphia.
3. To find out the effectiveness of multimedia package on minimizing learning difficulties among underachievers with dysgraphia.

Methodology

The Investigator intended to identify the students belongs to underachievers, develop and implement the multimedia package, and measure the effectiveness of the package on academic performance by minimizing specific learning difficulties among primary school students belongs to underachievers with dysgraphia.

For the present study, the investigator selected survey cum experimental method to collect data from primary school students. One group pre-test post-test design was selected for the study. The sample comprised of 39 students aged 8-10 years with dysgraphia. The investigator adopted purposive sampling procedure to select subjects in view of the specific nature of the study. The tools used were intervention, inventories, performance test and intelligence test.

Analysis and interpretation of Data

1. Dysgraphia Characteristics level before and after the implementation of Multimedia Package among underachievers with Dysgraphia

To find out the level of dysgraphia characteristics before and after the implementation of multimedia package among underachievers with dysgraphia under different aspects of dysgraphia, the mean and standard deviation were found out. The paired t's were also found out and shown in the table 1.

Table No. 1

Results of test of significance of Dysgraphia Characteristics level before and after the implementation of Multimedia Package for the total sample

Aspects	Pre test			Post test			Mean Diff.	Paired 't'
	Mean	SD	N	Mean	SD	N		
Difficulty with Alphabet symbols	4.0	0.7	39	2.9	0.5	39	1.1	10.15**
Confusion with directionality	3.9	0.6	39	2.8	0.5	39	1.0	11.92**
Tendency to perseverates	3.8	0.7	39	2.9	0.4	39	0.9	8.24**
Sentence structure	4.1	0.8	39	3.0	0.6	39	1.1	11.6**
Difficulty in copying shapes	3.9	0.6	39	2.9	0.5	39	1.0	10.2**
Tendency to telescope	3.6	0.8	39	2.4	0.5	39	1.2	9.4**
Identification of alphabets	2.6	0.6	39	4.0	0.6	39	1.4	10.47**
Identification of words with/without blends	2.5	0.6	39	3.5	0.6	39	0.9	6.03**
Identification or words with diphthongs & Blends	3.1	0.6	39	4.0	0.6	39	0.9	6.27**
Identification of digraphs and consonants	3.1	0.5	39	2.3	0.5	39	0.8	8.96**
Sentence with more than three words	2.8	0.8	39	3.9	0.6	39	1.1	7.64**
Reading and retelling a story	3.0	0.7	39	3.2	0.5	39	0.3	1.82
Reading a content	3.5	0.8	39	2.4	0.5	39	1.1	6.75**
Underachievement	4.0	0.7	39	3.0	0.6	39	1.1	6.95**
Memory difficulties	4.2	0.7	39	3.2	0.5	39	0.9	7.18**
Speech, Phonological and Language difficulty	3.5	0.7	39	2.4	0.5	39	1.1	7.88**
Speech and Written Language difficulty	4.2	0.6	39	3.0	0.6	39	1.2	10.28**
Visual Motor difficulties	4.1	0.7	39	2.4	0.5	39	1.6	12.16**
Lack of Concentration	3.1	0.6	39	2.3	0.5	39	0.8	6.47**
Social Interaction	3.1	0.6	39	2.3	0.5	39	0.7	6.49**

**: - Significant at .01 level *: - Significant at .05 level

The table shows the mean scores of pre-test and post- test, which the scores before and after the implementation of Integrated Phase of Multimedia Package. The paired 't' values of all aspects such as 'Difficulty with Alphabet symbols'(10.15), 'Confusion with Directionality' (11.92), 'Tendency to Perseverate' (8.24), 'Sentence Structure' (11.6), 'Difficulty in Copying Shapes' (10.2), 'Tendency to Telescope' (9.4), Identification of Alphabets' (10.47), 'Identification of words with / without Blends'

(6.03), ‘Identification of Diphthongs and Blends’ (6.27), ‘Identification of Digraphs and Consonants’ (8.96), ‘Sentence with more than three words’ (7.64), ‘Reading and Retelling a Story’ (1.82), ‘Reading a Content’ (6.75), ‘Under achievement’ (6.95), ‘Memory Difficulties’(7.18),’ Speech , Phonological and Language difficulty’ (7.88), ‘Speech and Written Language difficulty’ (10.28), ‘Visual Motor difficulties’ (12.16), ‘Lack of Concentration’ (6.47), ‘Social Interaction’ (6.49), showed all the aspects except ’Reading and Retelling a Story,’ are greater than the table value (2.58) for 0.01 level of significance, so it is inferred that the level of Dysgraphia Characteristics decreased after the implementation of Multimedia Package.

Findings of the Study

Multimedia Package is effective in significantly minimizing Dysgraphia characteristics in its various aspects except ‘Reading and Retelling a Story’ among the underachievers with Dysgraphia for total sample. The multisensory approach used in the package created intrinsic motivation and this motivation level will stay high in the student, as he / she have the learning preferences.

The prepared Multimedia Package helped the students to learn at his/her own pace. The learning style preference such as Visual, Auditory and Kinesthetic is worth while spending time with the learner so that he/she will be aware of their own learning preferences. It helped them to work independently and in a group. The Multimedia Package is equally effective for all children irrespective of Gender- boys/ girls, scheme of study –State/ CBSE in minimizing Dysgraphia in its all aspects among underachievers. Multimedia Package is very effective in enhancing the performance in various aspects of learning among students.

Implications of the study

The findings of the study showed that Multimedia Package is effective in minimizing learning difficulties of the students belonging to underachievers with Dysgraphia. This finding has much importance in the individual learning of students with Special Educational Needs, and it will help to reduce the number of underachievers. This finding of the study implies that the multisensory approach is effective for learners irrespective of their individual abilities.

ICT enabled Multimedia Package offers students enough freedom to choose activities and materials of varying forms and help in planning learning activities according to the needs and interest of students.

Conclusion

To develop the interest in learning, for meaningful development in study habits and the better adaptation of self confidence in students, the usage of multimedia along with classroom intervention is essential. A single model of education programme for children with learning difficulties is not suitable for all children: any model that provides right intervention through right strategies with right material and technology in the right time and in the right place, makes the education of the children with learning difficulties as gainful as that of children had high scores. It will fulfill the 'zero rejection' policy so that no child is left out of the education system.

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RECENT TRENDS IN ICT: APPLICATIONS FOR STUDENTS WITH SPECIAL NEEDS

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Abstract

Information technology becomes more and more accessible in daily life. It changes our society by bringing a new cultural environment where information is present in every field in the form of various methods of studying, in accessing skills and knowledge and in interacting with other people etc. ICT application is very important as it plays an essential role in providing high quality education for students with disabilities. It has been introduced into the teaching learning process in order to improve quality, support curricular changes and for new learning experiences. In this way it is possible to meet the specific learning needs of different learner groups including students with disabilities. It is the need of the hour to explore and put into practice the potentials of ICT to support independent living and learning by persons with special needs. This can lead to equality in the life of the disabled.

Keywords: *ICT, Social networks, mobile learning, open educational resources, natural user interface.*

Introduction

Technology has drastically evolved over the years. Education is no longer centered in text books and blackboards but is focused on digital readers and interactive boards. The pace of change is accelerating over the years. In the recent past the overhead projectors were the miracle device for presentations and we used to sit in the dark room to view the slides or the 16mm film shows. Interactive white board, podcast, pico projection, cloud storage, webinars, wearable computers, natural user interface etc. conquered the present day education system. ICT starts viewing students as designers, interactors and constructors of information themselves not just absorbers of information. This is because ICTs,

- enhance active and collaborative learning
- are learning and teaching tools
- help to access and use internet as a research tool
- can create web based teaching resources

- Allow for understanding of the diversity of students' learning

Recent Developments

Open source: Open source software is the software that is distributed at no cost to the acquirer with the acquirer having the right to modify the source code. It offers one approach to addressing the technical problems in providing optimal delivery of online learning. A number of open source softwares are available in the market which can be customized to fulfill specific educational needs. Advantages of open source software are,

- Absence of a license fee (open source licenses are free)
- The ability to modify source code to add new features that the acquirer want, not those on the priority list developed by the marketing department of the software vendor.
- The software can be used for any purpose including direct use, distribution with software you write and also for profit making activities.
- Flexibility- Due to the fact that the source code for open source software can be easily acquired, it may be easier to interface different open source packages with each other and the acquirer does not have to dependent on the software vendor to provide this service.
- Continuous improvement- Extensive collaboration ensures that software products keep improving.

Tele-learning: Tele-learning is a form of education where the student and the teacher is not situated in same geographical location and communicates through digital forms such as email, telecommunications, audio and video streaming. It can also be referred to as 'online education', 'e-learning', 'virtual learning'. It uses telecommunications to deliver the learning material to the students. Advantages of tele-learning are,

- Access and motivation
- Online socialization
- Information exchange
- Personal development
- Knowledge conferencing

Mobile learning: Mobile learning tools are the result of two digital converging technologies: mobile phones and computers. From an economic perspective mobile

learning reduces costs of infrastructure since it does not require the facilities and physical materials that traditional classroom learning requires. Mobile learning tools are expected to make a significant impact on education and learning and to provide interactive content in previously unreachable and remote locations. Learners are able to learn when and where they are, utilizing the time more efficiently. The accessibility of M-learning can give people greater awareness of new communication technology and prepare them for change.

Social Networks: A Social network is an online service for communities of people who share an interest with one another to collaborate. It provides a casual place of learning, encourages students to express their own thoughts, provides effective collaboration and communication, enhances students' learning experiences, builds an online learning community and offers immersion in a foreign language environment. In addition educational social networking sites allow students to find and share educational resources, allow one to create study groups, encourages learner centered activities, provide collaborative learning opportunities and give a sense of belonging. There is increasing interest in the use of social networking in education. Students welcome the opportunity to experience and explore the use of social network in teaching and learning.

There are some more encouraging developments with regard to access of ICTs in teaching learning process. Till recently ICT's were beyond the reach of common man both in terms of user friendliness and affordability. However these are becoming things of the past.

- Hardware is becoming more sophisticated but the price is dropping. This is evident from the decreasing price of mobile phones and tablet PCs.
- All the technologies and tools are getting converged into single devices like a smart phone having the features of a computer, camera, scanner, projector, phone, music player, storage device etc.
- Softwares are more user friendly along with natural user interface (NUI) and converging different capabilities into single platform.
- The world of software looks to be very exciting now due to the developments in the area of Free and Open Source Software (FOSS).

ICT in Special Education

Information technology becomes more and more accessible in daily life. It changes our society bringing a new cultural environment where information is present in every field in the form of various methods of studying, in accessing skills and knowledge and in interacting with other people etc. Technology rapidly becomes obsolete, requiring new skills and knowledge to be mastered frequently. Adaption is possible only when based on a sound understanding of ICT concepts. New approaches to teaching and learning are called for with a corresponding change in the roles of all parties to the educational process. Easier access to global communication, including the internet, the World Wide Web, consequently wide spread use of computers and interactive multimedia, means that:

- Teaching and learning are becoming more independent from specific physical locations.
- The number of resources available to students outside the classroom has increased drastically.
- The locus of control to initiate educational encounters has now passed to the learner. The learner begins the process on ‘any time- any place’ basis.

Developments in the information age bring possibilities and dangers to people with special needs. Whilst it can be very empowering, providing for a chance to be involved in the society otherwise inaccessible to the disabled, it can also create new threatening barriers excluding them even more. If the technology is inaccessible to the disabled or the principal information is processed in such a way that some groups of people with special needs are excluded from its access, information society will finally turn out to be a threat for such people.

ICT application is very important as it plays an essential role in providing high quality education for students with disabilities. It has been introduced into the teaching learning process in order to improve quality, support curricular changes and new learning experiences. In this way it is possible to meet the specific learning needs of different learner groups including students with disabilities. The key ways in which ICTs can support educational opportunities for people with special needs are as follows,

- Identifying the preliminary level of personal development (experiences and skills).

- Assisting in personal development by shaping new skills or updating existing ones.
- Improving the access to information
- Overcoming geographical or social isolation via communication support and networks.

It is a fact that people with disabilities have the right to expect the same standard of service and access as every other member of the society. Disabled people must overcome additional obstacles before they enjoy the information, services, entertainment and social interaction offered by the ICTs to the full: blind people need appropriate hard and software to be created, for example, a text as an alternative to images. The text can be translated into an audible format by specially designed screen – reading devices or made accessible by the means of printed Braille text; people with low vision may use technology with the help of large-format text and effective color contrast. People who are dyslexic or have cognitive impairments may benefit from the use of simpler language or alternative text formats and people with manual dexterity impairments may navigate easier with a keyboard rather than with a mouse.

Conclusion

Information has become a social necessity and a fundamental aspect of human rights and we cannot allow any group to be excluded from it. Therefore it is necessary to find ways to integrate these people into the current information and technological space. It is the need of the hour to explore and put into practice the potentials of ICT to support independent living and learning by persons with special needs. This can lead to very important consequences for the equality of life of the disabled. It is also important to recognize that with ICT alone cannot solve all problems. The second step requires the willingness of educators to develop innovative teaching methods or to change and adopt the existing approaches to accommodate new concepts of special need education and modern technologies.

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TAMING ENGLISH USING ICT- NEW PROSPECTS IN LANGUAGE TEACHING

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Introduction

Importance of English cannot be adequately described in words because it is an international language. We need to learn English for higher education. It is the store house of knowledge. Much of Information Media knowledge is written in English. Today, more than 80% of all the information is available in Information Media in English itself, so one cannot ignore English easily, for achieving better goals in life. We will fail to keep pace with the progressive force of the world, if we don't know English. English now has been established as a language of global communication and language of opportunities. A fairly high degree of proficiency in English and excellent communication skill enhances learners' competency.

ICT is also very important in the 21st century like English. ICTs can empower teachers and learners, promote change and foster the development of 21st century skills. ICT in education enables learners and teachers to use and train the international language effectively. The National Curriculum Framework, 2005 has also highlighted the importance of ICT in school education. The Board of Studies in its cross-curriculum content requirement has embedded ICT into English syllabus, as ICT content in English enables students to develop and apply skills, knowledge and understanding of ICT in composing, responding and presenting, and also as a part of imaginative and critical thinking they undertake in English. But, in order to use technology, teacher educators must train the future teachers. They should have a thorough knowledge of ICT. Technology should be used to enhance learning. English language teaching programs support teacher educators, teachers, and students to learn the language effectively.

Significance of the Study

The study mainly focuses on how ICT is useful to teacher educators and teachers to teach the English language effectively and make the teaching-learning process easy, effective and entertaining. The 21st century language teachers have lots of facilities to impart learning effectively but if they do not know how to use them, it will

be a tragic situation and the students will suffer because of the teacher. So the study tries to analyze the use of ICT in the English language learning.

Objectives of the Study

1. To analyze the various uses of ICT to a prospective teacher in the English language.
2. To study the use of ICT in developing grammar skills among teacher educators.
3. To study the use of ICT in developing speaking skills in English in teacher educators for fluency in expressions.
4. To study the importance of ICT in developing skills in reading and writing English proficiently.
5. To make the teacher educators aware of unlimited possibilities of ICT for developing teaching skills in English.

Methodology used

Since the study is based on the analysis of the primary and secondary documents developed all over the world, document analysis was followed in this study. The investigator collected data from various publications on ICT in the English learning and teacher assistance technology for developing teaching skills of teacher educators and teachers of 21st century.

Analysis of the Materials

Use of language is based on the skills of the individual who applies it properly. Grammar is the system of a language. To develop proper grammar skills in English, several sites related to module teaching are available. Interactive grammar lessons help a teacher educator or teacher to develop a fairly high degree of proficiency in English. The site 'English Grammar Tense/ edurite.com/' allows the learner to get proficiency. One can learn grammar and vocabulary in the 'English Language Audio Dictionaries'. The audio dictionaries provide a teacher to teach grammar item, its variants, word, its pronunciation, its lexical meaning, synonyms, antonyms, contextual usages etc. Sites like http://dictionary.reference.com/, http://merriam-webster.com are some of the audio dictionaries which give proficiency. Using FLAX language learning module the teachers can develop multiple skills in their students. Proper grammar skill development gives confidence to second language learner to use the international language.

Development of communication skill is very essential to use any language. Teaching English language by managing large classrooms is a great challenge to English teachers. But a teacher who is efficient and skilled in using smart class, language lab, or ICT can create a real life experience in the class room. Traditional techniques are now less in use and they have to be. 'ICT4LT' (Information and Communication Technology for Language Teachers) help language teacher in many ways. Bad pronunciation always degrades the person and his knowledge. ICT contains various pronunciation development programs. Native speakers' English help the second language learner to correct his pronunciation. The highlight of these sites is that many native English speaking countries have their own sites which allow learners to understand, that particular country's pronunciation. For e.g. 'English language learners/ Professional learning modules/Professional development/National standards/ KiaOra - Newzland Curriculum' meet the needs of the English language learners. They aim at beginners and higher level students also. The professional development modules support teachers. Teachers who want to use this site for teaching English are supported by 'Reflective Questions for Teachers'. Different modules in the site help teachers of all kind and all level, who are eager to improve their language for their students. Teachers should be life-long students and by all means they should try to improve quality and pronunciation.

Reading and writing are very important skills, which should be developed in the beginner level itself. Good reading is essential for effective writing. Reading and writing lessons are available in ICT. Module based teaching helps the language teacher for systematic teaching and evaluation. 'FLOTE- Facilitating the learning of language modules' ,' English module 1-4- ICT4LT', 'FLAX language learning modules' etc are some of the popular multimedia language learning softwares. The programs motivate students and provide stimulus to undertake tasks that students may otherwise avoid. Repetitive tasks are interesting to learners, especially the beginners.

Searching for information on the internet, chatting, and game playing (often in English) are obvious parts of lives of many young people in the 21st century. The opportunities that digital media provide are enormous. It brings the world into classroom and the students can use authentic materials and participate in real communicative context. But unfortunately many teachers are still afraid of computers and internet and their use in the classrooms. Teachers should be well supported to use

ICT for better teaching. 'Foreign Language Teaching Forum' is an integrated service for language teachers, dedicated to encouraging communication, sharing and collaboration at all levels. 'FLTEACH' resource assists language teachers via distance delivery. It enables teachers to practice new modes in teaching. Teachers of 21st century must be well equipped to meet the needs of the new generation students. Teacher educators and teachers should update their knowledge and skill according to the need of the students.

Language Lab is another facility which allows the teacher to provide enough practice in listening and speaking to his students. Virtual class also gives enormous chance to the teacher educator to give maximum training in language skills. E-learning is the use of electronic media and information & communication technologies in education. E-learning broadly means all sorts of technologies in learning- Multimedia learning, Technology-enhanced learning (TEL), Computer-based instruction (CBI), Computer-based Training (CBT), Computer-assisted Instruction (CAI), Internet-based Training (IBT), Web-based Training (WBT), Online Education, Virtual Education etc. which give opportunities to the teacher educators and teachers to become highly proficient in using the global language. M-learning/Mobile learning is possible through MP3players, notebooks, mobile phones and tablets. Education has become easily available to anybody, at anytime, and at anywhere. Smart class assists a teacher in teaching, but the teacher should be well trained to use smart class. Online learning programs by many famous institutes like British council provide unlimited opportunities to English teacher to familiarize the language to his students. E-journals link the electronic sites of major journals around the world, co-operating with World Wide Web and Virtual Library help the learners to tame the international language.

Conclusion

From the study it is evident that teaching of English has become easy, effective and entertaining using ICT. English language skills like grammar, listening, speaking, reading, writing, vocabulary and reference can be taught and learned easily using ICT. A non-native speaker can conquer the British language very easily and utilize the vast treasure of knowledge as well as wide range of opportunities for his prospects. Teacher educators must learn how to utilize the possibilities of ICT effectively to train the future teachers to make them smart, proficient, and confident to tame the global language easily.

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REFURBISH THE STUDENTS WITH MORALITY TO ACQUAINT WITH TECHNO CULTURE

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Abstract

India holds a culture purely based on traditional values. Morality plays an important role in the life of every person here. India can be proud that she had many ancient Rishis who were morally matured and perfect. They were not born with these qualities, but they acquired it. But today those values are deteriorating. Most of the people are not bothered about values or morality. The introduction of technology and the intrusion of western culture can be a cause for the decline of morality. A morally matured person is always matured in his or her behavior towards himself and also to the society. The responsible behavior of a morally matured person enables him to be true to himself and to others. Technology has an inevitable role in our contemporary world. We use computer, audio and video devices for entertainment or for other purpose. Due to the development of technology everyone can enjoy the global information resource. On the other hand technology has many negative effects. Young generation is addicted to modern entertainments like video games, web sites and internet. Studies show that they spend their life with these technologies and are aloof from the society. In order to cope with this technological world everyone should be morally matured. Otherwise there is a chance for immoral behavior. The research quest of this paper is how to develop morality in children who are brought up in techno culture.

Introduction

Every society holds its own culture and identity. A modern society can never be devoid of some kind of technology. The most evident fact is that one can never decide that he will not benefit from technology. Modern society is characterized by its technological advancement which is the result of the greatest achievement of mankind. But the studies prove that there is a gradual deterioration of morality due to the advancement in technology. Modern men are mere robots in the hands of technology. Technological advancement, in many ways has proved to be good for the humanity.

But it is a truth that ‘men have become the tools of their tools’ as Thoreau commented. Technology is the result of man’s search for a smooth and easy life. Over use of machines harm the welfare of the environment that we live in, and often human beings suffer due to many kinds of existing and emerging illnesses and diseases. But technology, of course, makes the life of human beings smooth and easy as he expected when he designed it.

Tsai (2010) investigated on the gender differences in Junior High School Students’ internet self efficacy and their use of the Internet. The results revealed that the gender gap may no longer exist in young students’ confidence in using the Internet. However, boys and girls used Internet for significantly different purposes suggesting that the Internet played different roles for boys and girls in Taiwan.

Mark Robinson and Steve Robertson (2010) examined the use of newer, interactive information and communication technologies (ICTs) in young men’s health promotion (HP). The focus is on highlighting an agenda for research in terms of emerging issues. Given concerns about young men’s engagement with health services, innovative ICT formats, particularly using the Internet, have been tried. However, issues persist around surfing ‘addiction’, quality control and equal access. From the study it was suggested that we need to engage young men as themselves and not try to change their culture where values may be denigrated by social engineers.

The findings of the study of Demiralay (2010) revealed that most of the elementary student teachers use ICT frequently at least at intermediate level and they access ICT from multiple locations. Furthermore elementary student teacher’s computer experience, skills and frequency of computer and internet use, access and opportunities to use computer and Internet has significant effect on their perceived information literacy and self efficacy. Chintalapuri and Anaparti (2003) conducted a study on entertainment on internet. The findings of the study revealed that entertainment internet users appear to show signs of poor mental health.

Technological culture

When we take into consideration the words ‘technology’ and ‘culture’ separately, both of them seem totally different. But both of them are closely related when we see that there is great impact of technology on culture and culture in turn shapes technology. Another difference lies when we see culture as a context in which technology is to be inserted. Culture is so wide in its meaning that it includes all that is

there in a tradition which are adopted and adapted by us. In some other aspect culture can be brought as a process of selecting, challenging, and arranging. Here tradition is reconfigured. In the modern culture, technology is of utmost importance and the two are inseparable. Thus culture and technology together constitute technological culture.

Techno Stress

Techno stress is a modern disease of adaptation caused by the inability to cope with the new Computer world technologies and media in a healthy manner. The causes of techno stress are: Excess use of technology, unfair use (Misuse and Abuse) and alienation to technology.

Morality

Moral development involves changes that are brought in the areas of thoughts, feelings and behaviors regarding the standards of right or wrong. Moral development has two dimensions like interpersonal dimension and intrapersonal dimension. Intrapersonal dimension regulates a person's activities when he/she is away from a social interaction. The interpersonal dimension regulates the person's activities when he/she is in a social situation.

Domains of moral development

The domains of moral development include four domains such as moral thought, moral behavior, moral feeling and moral personality. These four domains are interrelated.

1. **Moral thought:** Moral thought refers to the capacity of individuals (children and the adults) to think about what is right and wrong.
2. **Moral Behavior:** People understand moral concepts from different situations. But all the understood moral concepts need not be translated into moral behavior. Moral behavior depends on basic processes like the punishment, reinforcement and imitation. Punishment often helps in eliminating immoral behavior, reinforcement and presentation of a suitable model, etc encourage in developing a moral behavior. Moral behavior of one person mainly depends upon the situation. The stability of moral behavior depends upon the resistance of the person to temptation and self control.
3. **Moral Feeling:** This domain deals with the effect and role of emotions on morality. When an individual goes wrong, he feels guilty.
4. **Moral Personality:** There are three aspects of moral personality viz, moral identity, moral character, and moral exemplars. For building up a moral identity, the

person needs to have a will power, integrity and a moral desire. Will power includes the skills and strategies for analyzing the problems, setting goals, focusing attention, etc. integrity includes a sense of responsibility to one's own actions. Moral desire is the motivation and intention to pursue a moral life. Moral character involves commitment to act, strength of conviction, persistence and overcoming of distractions. Moral exemplars have a moral personality, identity, character, and a set of virtues that reflect moral excellence and commitment.

Factors affecting Morality

Morality is the result of constant interaction with the environment. Morality is different from person to person as it is an automatic development of people in relation to their natural environment. There are many factors that influence a person's moral development.

Technological culture and morality

An existing culture always should have a scale enough to have discrimination between the right and wrong. The technological aspects like industrialization and globalization have affected the rural culture which was better than the present which often makes people completely sick. The introduction of technology in various fields was considered as a great blessing by the modern men. They often seem to be blind to the reality. Inculcating technological culture makes life smoother. But many a time it seems to pollute both the environment and minds of human beings. It is not that everything about technology is bad. When the rural culture was followed, there was much interaction among the people. In technological culture one man doesn't know who lives in the next door and they don't care about others. Nature is completely neglected and man has developed a certain kind of cruelty towards both the living and nonliving things. The morality of the people depends on the culture in which they develop their morality naturally.

Modern man seems to be pleasure seeking than before. But the technological culture has left nothing for him to enjoy naturally. Now there are only a few beautiful places which are naturally blessed. Men find pleasure in drinking, gambling, and 'getting and spending' as Wordsworth told. They do not have leisure time as they are busy with their work. After their work, they often are tired and nobody gets time for even to talk to their family members. Indian culture is also changing very fast. Here

also people are very busy as technology advances and they move away from the traditional morality and ways of life.

People who live in technological culture always strive for self sufficiency and they lean too much on mechanization which leads them to absolute monotony and boredom which leads to tensions and other mental problems. The people who live in mountains and natural places seem to be healthier than the people who live in technologically facilitated world. The former's mind is so calm and pleasant as they listen closely to the singing of birds, growth and flowering of trees in fresh and green nature. Their tensions are swept away by the cool breeze and the twinkling stars at night. Morality is created thus in their minds very naturally.

In a world where there were no technological facilities, men survived. As internet facilities logged into our society, online crimes are increasing and man spends much time in front of internet and becomes addicted to it. Modern technologies like cell phone, emails, etc. have deprived mankind of the warmth of personal contact. Nowadays human intellect is replaced by robotic intelligence and computer. Man loses confidence in using his own intellect. Machines replace human beings in many fields. This increases serious issues like crime and unemployment. All these have declined modern man's morality and they live merely as living things which act as per the demands of technology.

Over exposure to technology is harming, even though it makes life smooth and easy. We need to have a corrective mind. We have to keep our mind open for receiving the good and rejecting the bad. Care should be taken not to disturb others. Technological culture is good when technology is used in a limited manner. As human beings, we need to revive the lost values and morals and live a true life. Use technology after considering the positives and negatives think how it can harm us and then decide how to use it effectively without affecting our life and thoughts, take effort to preserve the values and moralities, which our ancestors have passed over to us.

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ICT IMPLEMENTATION IN TEACHER EDUCATION: ESSENTIAL COMPONENTS AND BARRIERS

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Abstract

This paper discusses the different components which are essential for successfully implementing ICT in teacher education and the hindrances in implementing the same. While incorporating ICTs in teacher education programmes a holistic approach is necessary considering the supportive themes viz. context and culture, leadership and vision, lifelong learning, and planning and management of change. Such a holistic framework encompasses content and pedagogy, collaboration and networking, technical issues, and social issues. Based on this holistic perspective, various components were identified. They are: shared vision, access, skilled educators, professional development, technical assistance, content standards and curriculum resources, student centered teaching, assessment, community support, support policies, and benchmark and self assessment tools for ICTs in teacher education. Impairment in any of these components will be detrimental to the success of ICT incorporation in teacher education.

Introduction

Today the need for ICT integrated teacher training is widely acknowledged. As the school curriculum undergoes periodical changes incorporating new ICT practices, the process of teacher education should revamp so that it can provide competent professionals. Incorporating ICT competencies in teacher education is not a new concept. The Society for Information Technology and Teacher Education (SITE, 2002) has previously recommended three principles for the improvement of ICT and teacher education:

1. Technology should be infused into the entire teacher education program;
2. Technology should be introduced in context; and
3. Students should experience innovative technology-supported learning environments in their teacher education program.

Teacher educators can no longer view ICT integration as an option or something new and not relevant to their courses. To adequately prepare teachers to work in the classrooms of tomorrow, teacher preparation programs need to develop programs that

infuse ICTs into the entire program using authentic and pedagogically appropriate approaches. As educational entities have implemented ICTs in teacher education, researchers and evaluators have identified barriers that prevent or restrict successful technology infusion (UNESCO, 2002).

Essential Components

Experience has shown that a number of essential conditions must be met to successfully integrate ICTs into teacher education programmes. When planning for implementation of ICTs in teacher education, care should be taken to consider each essential condition and note whether, and to what extent, it is present. The effectiveness of ICT integration is impacted by the teachers' motivation to integrate, personal knowledge and experience with ICTs, confidence in ICT use, access to ICT resources and training, teacher preparedness and technical and pedagogical support (Cabanatan, 2002). The context, culture, and extent of collaboration among stakeholders should be considered. It should be decided that what types of strategies provide support if the essential conditions are not currently present. Each of these essential conditions (UNESCO, 2002) is discussed below.

1. Shared Vision

Shared vision is a common understanding which leads to a collaborative endeavor from all the parties concerned. From the administration to the ground personnel, there is an understanding of, commitment to, and sense of advocacy for the implementation of technology. When the implementation of a technology initiative becomes problematic, a major reason often cited is a breakdown in the common understanding of the institution's goals among those who hold the decision-making power. These situations can occur over something as simple as unlocking the door to a lab, or as complex as modifying existing operational budgets to provide allocations for technology funding. Facilitating the integration of technology sometimes require a change in policy or rules, and the decision-makers have to be willing to look at the situation, create compromises when necessary, and ensure communication among all parties. The collaborative environment necessary for creating a shared vision is also needed to sustain the vision.

2. Access

The fact that educators need access to current technologies, software, and telecommunications networks seems simple. However, this access must be consistent

across all the environments that are part of the preparation of teachers. The access to funding and other resources may vary greatly among these partners, yet ideally, access should be adequate and consistent throughout the educational experience of students in the process of becoming teachers. There needs to be access to technology appropriate to the subject areas being studied, such as word processing programs and Internet access in English, or computer labs and microscopes for science labs. Access must be in classrooms as well as lab settings, and provisions must be made for special populations. The technology should be accessible immediately when it is the best route to the information or tools needed by pre-service teachers, teachers, and students.

However, lack of appropriate software/materials (Bullock, 2004; Mumtaz, 2000; Nantz & Lundgren, 1998; Williams, Wilson, Richardson, Tuson, & Coles, 1998) and lack of hardware (Beggs, 2000; Brush, Glazewski, Rutowski, Berg, Stromfors, Van-Nest, Stock & Sutton, 2003; Mehlinger & Powers, 2002; Moursund & Bielefeldt, 1999; Schoep, 2004) are the major extrinsic barriers for the access of ICT. The teacher candidates need to see and experience models that demonstrate the kind of access desired in the classroom. In addition to ICT access in their coursework, pre-service teachers must have technology access in their student teaching environments and in their classrooms in the induction year and beyond. Otherwise, opportunities to use technology tools for teaching students or communication tools for mentoring or staying connected with parents will be limited.

3. Skilled Educators

The teacher educators must be skilled in the use of technology for learning. They must be able to apply technology in the presentation and administration of their coursework and facilitate the appropriate use of technology by their teacher candidates. From the first course taken by a freshman, through collaborative work at the school site, pre-service teachers should participate with and observe their mentors using technology effectively. Lack of necessary competencies and skills of teacher educators as a barrier to integrate ICT in teacher education were identified in many studies across the world (Pelgrum, 2001; Newhouse, 2002; Albirini, 2006). The teacher educator should model and teach techniques for managing technology in the classroom and for communicating outside the classroom through electronic means (UNESCO, 2002).

4. Professional Development

As the technology constantly changes, it is imperative to provide consistent access to professional development. Professional development is not a one-time event and it should be focused on the needs of the faculty member, teacher, or administrator and sustained through coaching and periodic updates. The venues and delivery mechanisms should take into consideration issues of time, location, distance, credit options, and so on. Various intrinsic barriers that is, second order barriers that related to personal experience and awareness, including attitudes, beliefs, practices and resistance make hindrances to professional development of educators (Ertmer, 1999).

5. Technical Assistance

Educators need technical assistance to use and maintain technology. The focus of the faculty member, teacher, and pre-service teacher should be on teaching and learning, not on maintaining and repairing the technology beyond basic troubleshooting procedures. When the technology does not function well, a learning opportunity is lost and faculty frustration grows. Timely technical assistance is crucial for faculty and candidates to feel confident that they can use technology in their teaching and learning. There are many ways technical assistance can be obtained, including asking community members or student assistants to maintain a help desk. It is a critical factor for success in implementing ICTs. Lack of technical assistance and support in teacher education institutions is a serious impediment for infusing ICTs (Bullock, 2004; Mehlinger & Powers, 2002; Mumtaz, 2000; Nantz & Lundgren, 1998; Schoep, 2004).

6. Content Standards and Curriculum Resources

Teacher educators must be knowledgeable in the content, standards, and teaching methodologies of their disciplines. Teacher candidates must learn to use technology in powerful and meaningful ways in the context of teaching content. Technology brings relevant resources from the real world to subject area content, provides tools for analyzing and synthesizing data, and conveys content through a variety of media and formats. The unsatisfying implementation of ICT-supported learning and teaching could probably be ascribed to the lack of technological pedagogical content knowledge to design and deliver effective pedagogies in technology enhanced learning environments (Angeli & Valanides, 2009). Moursund and Bielefeldt (1999) and Williams et al. (1998) identified lack of knowledge/skills for ICT integration as a barrier for incorporation of ICTs in teacher education. Pre-service

teachers should learn to use technology in ways that meet the content standards and the technology standards for students and teachers.

7. Student-Centered Teaching

Teaching in all settings should encompass student-centred approaches to learning. Technology should not be used only as a tool for demonstration, as an electronic overhead projector or blackboard; rather the use of technology by students should be an integral part of instruction. In student-centered approaches to learning, students become the source for problems investigated. Students and teacher candidates must have opportunities to identify problems, collect and analyze data, draw conclusions, and convey results using electronic tools to accomplish these tasks. Faculty should model the use of ICTs to demonstrate their usefulness and appropriateness for collaboration, acquisition of resources, analysis and synthesis, presentation, and publication. As the teacher educators continue to use lecture method to a great extent for curriculum transaction, it is impossible to incorporate ICTs effectively.

8. Assessment

In addition to assessing teaching and student outcomes, institutions should continuously assess the effectiveness of technology for learning throughout the entire teacher preparation environment. This requires great effort from the part of teacher educators.

9. Community Support

The visioning process includes the community and school partners who provide expertise, support, and resources for technology implementation. The community must see that technology is a valuable tool for prospective teachers and their students, and must be willing to support it.

10. Support Policies

Policies can either support or hinder the implementation of technology. As decision makers develop new policies, they must consider how the policies affect acquisition of and access to technology. Some major barriers to the use of technology relate to faculty expectations about incentives and reward structures. Policies related to technical assistance should also support the use of technology rather than obstruct it.

11. Benchmarks and Self-Assessment Tools for ICTs in Teacher Education

In planning the integration of ICTs into teacher education, it is important for teacher education institutions to understand the knowledge and skills necessary for teachers to effectively use ICTs in their instruction. They must also understand the institution's level of readiness to integrate technology into the teacher education curriculum. To accomplish these goals requires that the teacher education institution understand the benchmarks, standards, and guidelines for ICTs in teacher education. It is also important that they have access to tools that help them assess their level of readiness and progress in infusing ICTs into the teacher education programmes.

Conclusion

It is important to recognize that a number of essential components have been identified which encourage and enable all of the stakeholders to integrate ICTs in teacher education. Appropriate measures are to be taken to minimize the barriers to these essential components so as to facilitate integration of ICT in the teacher education programmes.

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EMPOWERING TEACHER EDUCATION THROUGH OPEN EDUCATIONAL RESOURCES

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Abstract

In the present globalised era the concept of "knowledge society" is gaining mass popularity and importance. Digitization of learning materials has of course helped to a great extent in this regard. However the freedom to use it at one's own will is curbed. Today one of the major problems faced by online users is that they cannot copy, reuse or add information to the resources available online. In this context, the origin and emergence of Open Educational Resources (OER) is considered as a major movement in education and teacher education is no exception. These resources are available as freeware or with varied degrees of freedom of use and distribution of copyrighted under the Creative Commons Public License drafted based on the Berne Convention for the Protection of Literary and Artistic Works as amended in 1979, the Rome Convention of 1961, the World Intellectual Property Organization (WIPO) copyright treaty of 1996, the WIPO Performances and Phonograms treaty of 1996 and the Universal Copy Right Convention (as revised in 1971). OER are free and are open to all and it gives full freedom to use, reuse, create and add information legally as per the user's needs and situation. Even though OER is gaining wide popularity in many countries such as India, attempts to create and share multimedia learning resources in the web has not considered all degrees of freedom possible with OER under the creative commons copyright. The present paper reports a study on OER and how they can be designed mainly from the point of view of use, share, reuse and edit using the creative commons copyright criteria.

Key Terms: *Open Educational Resources, Creative Commons Copyright*

Introduction

Globalization has made a striking impact on all sectors of society and teacher education is no exception. It has led to the development of the information society and the widespread dissemination of information technology thereby gives rise to new opportunities for learning. The global transformation gives rise to various challenges to education and to the established views and practices regarding how teaching and

learning should be organized and carried out. To meet the emerging challenges and issues towards globalization of education, we need instructional systems and supporting technologies which will give consideration to learner characteristics, dynamics of interactions and pedagogical principles for effective learning in a global context. Around the world, there is growing consensus that teaching and learning must change to help the students to develop the skills they will need to succeed in the 21st century. While specific goals for change vary, common themes include developing problem-solving and teamwork skills, and using technology to support more powerful learning. For this, higher educational institutions especially teacher education institutions have been using the Internet and other digital technologies to develop and distribute educational resources for several years. The Internet and digital technologies provide us with a vast potential to access and build information and knowledge networks. Yet people are not able to reap maximum benefits from digital learning materials because of the main issue of copyrights. Copyright law does not allow one to reproduce, edit, reuse or transmit copyright materials without the permission of the copyright owner. Though the technology has the capacity, the legal restrictions on the reuse of copyright material, hinders its negotiability in the digital environment. In this context Open Educational Resources (OER) are gaining wide popularity throughout the world. The open educational resource movement aims to break down such barriers and to encourage and enable freely sharing content.

Open Educational Resources (OER)

The phrase 'open educational resources' was first coined in 2002 at UNESCO's Forum on the Impact of Open Courseware for Higher Education in Developing Countries. During a follow up online discussion, also hosted by UNESCO, the initial concept was further developed as follows: Open Educational Resources are defined as 'technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for noncommercial purposes.' They are typically made freely available over the Web or the Internet. Their principle use is by teachers and educational institutions to support course development, but they can also be used directly by students (Butcher, 2010). OER include learning objects such as lecture material, references and readings, simulations, experiments and demonstrations, as well as syllabuses, curricula, and teachers' guides. These resources are available as freeware or with varied degrees of freedom of use and distribution

copyrighted under the CREATIVE COMMONS PUBLIC LICENSE draft based on the Berne Convention for the Protection of Literary and Artistic Works as amended in 1979, the Rome Convention of 1961, the World Intellectual Property Organization (WIPO) copyright treaty of 1996, the WIPO Performances and Phonograms treaty of 1996 and the Universal Copy Right Convention as revised in 1971. Today OER, with its user friendly attitude, is gaining wide popularity all over the world and has started creating its imprints in India too. As per the National Knowledge Commission (2007) our success in the knowledge economy hinges to a large extent on upgrading the quality of, and enhancing the access to, education. One of the most effective ways of achieving this would be to stimulate the development and dissemination of quality Open Access (OA) materials and Open Educational Resources through broadband Internet connectivity. But what has to be looked into is whether the OER in our country are actually designed and functioning as they are supposed to. According to Butcher (2010), openness refers to the free availability of materials for use by educators and learners, without an accompanying need to pay royalties or license fees. A broad spectrum of frameworks is emerging to govern how OERs are licensed for use, some of which simply allow copying and others that make provision for users to adapt the resources that they use. The most well known of these are the Creative Commons licenses, which provide legal mechanisms to ensure that people can retain acknowledgement for their work while allowing it to be shared, seek to restrict commercial activity if they so wish, and aim to prevent people adapting work if appropriate. Thus while designing OER it is important to make sure that they follow the norms of these creative commons copyright licenses and also check that the OER developed are as per its characteristics.

Criteria for evaluation of resources

The evaluation of OER could be carried out based on the following criteria which were developed taking into consideration the characteristics of OER given by Wikiversity (2011) and the criteria given by the Higher Education Academy (2011) to evaluate OER:

1. Openness

OER has to be open to all. It should be accessible at any time from any location. There should be no barriers and even the differently-abled should be able to access it as per their convenience.

2. Cost

OER should be of low cost or free to the users. The users should be able to easily access and download the materials free of cost from the websites. Usually the universities or institutions that maintain the websites bear the cost but that is also a minimal one.

3. Reusability

Users should be able to use it as per their needs. Materials should be designed in such a way that it is applicable and useful to learners all over. Resource should not be having contents related to a specific institution, university or place thereby making it difficult for users from other places to use it.

4. Relevance

Materials should be relevant to the topics concerned and should be of genuine help to users. They should be able to get the apt information needed from these resources just like if they would have referred from books and other sources.

5. Simple and easy to use

They should be developed in a simple and easily comprehensible form. It should be able to meet the needs of all kinds of learners and not just the bright ones. The materials should also be easy to download and take printouts.

6. Copyright licensing

This is the most important of all. OER are available as freeware or with varied degrees of freedom of use and distribution copyrighted under the Creative Commons public license. Creative Commons is a nonprofit organization that develops, supports, and stewards legal and technical infrastructure that maximizes digital creativity, sharing, and innovation. They provide copyright licenses and tools that help the institutions, universities, companies and individual creators to give copyright permissions for their work in a very simple and standardized way (Creative Commons, 2011). The content so licensed can be thus easily copied, distributed, edited, remixed and built upon.CC was founded in 2001 and is led by a Board of Directors comprised of thought leaders, education experts, technologists, legal scholars, investors, entrepreneurs and philanthropists. In December 2002, Creative Commons released its first set of copyright licenses for free to the public. In order to see what type of a license a particular OER has, it is important that people first become aware of the different types

of licenses given by CC. The different types of licenses developed by creative commons are as follows (as in Creative Commons website, 2011):

Creative Commons- Types of Licenses

1)  **Attribution CC BY**

This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered. This license is recommended for maximum dissemination and use of licensed materials.

2)  **Attribution-NoDerivs CC BY-ND**

This license allows for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to you.

3)  **Attribution-Noncommercial-Share Alike CC BY-NC-SA**

This license lets others remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.

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This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This license is often compared to "copy left" free and open source software licenses. All new works based on yours will carry the same license, so any derivatives will also allow commercial use. This is the license used by Wikipedia, and is recommended for materials that would benefit from incorporating content from Wikipedia and similarly licensed projects.

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This license lets others remix, tweak, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don't have to license their derivative works on the same terms.

6)  **Attribution-Noncommercial-NoDerivs CC BY-NC-ND**

This license is the most restrictive of the six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can't change them in any way or use them commercially.

Licensing OER using CC copyright licenses

Universities and institutions while developing digital repositories should make sure that learners are able to use them for their maximum benefits. Apart from focusing on the quality, cost, relevance, reusability and user friendliness it should equally focus on the copyright laws. Unless people can use, modify, reuse and distribute without terms and conditions enforced by the nature of copyright the potential of these digital resources can never be utilized as desired. The following are a few recommendations on how different digital resources can be licensed by universities and institutions using CC copyright licensing so that users can share, reuse, copy and remix the contents available online as per their needs.

- **Online learning materials**: The learning materials for various courses offered online by institutions or universities can be licensed under the **CC attribution Non Commercial- NoDerivs one**. It will allow users to download the works and share them with others as long as they credit the creators, but they can't change them in any way or use them commercially. Since these materials are course materials and lesson plans as per syllabus, allowing then to be remixed and build upon might cause problems if information remixed and added is not proper. It might affect the entire community of learners.
- **Wiki platforms**: Institutions and universities can start wiki platforms where teachers, students, researchers and all those involved in the field of education can contribute and share their ideas and views. This wiki platform can be licensed under the **CC Attribution Share Alike** thereby letting others remix, tweak, and build upon the work even for commercial purposes, as long as they credit the creators and license their new creations under the identical terms.
- **Educational channels**: Some universities and educational institutions offer educational programmes which allow users to view them free of cost as well as share it with others. Such channels and programmes should be promoted more. Collaboration with foreign universities for the same will also help learners get

access to the international educational programmes being broadcast. But as long as the programmes do not permit the users to reuse, remix or edit them as per their needs and demands the maximum benefits from these educational programmes cannot be harnessed. The **CC Attribution-NoDerivs** license can be used for the above links thereby allowing for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to the creator. This would help in maximum sharing and transaction of knowledge.

- **Online courses**: Various online courses are offered by open universities and institutions. These courses help a lot of people who cannot make it to the formal system of education. These online links provide boards and forums for discussion where users can chat and share their views with others but reusing and redistribution of the same is not allowed because of the copyrights law. Such links could be licensed under **CC Attribution license** thereby letting others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation.
- **Online journals**: Online journals are of great help to learners all around the world but here again the strict copyright law makes it difficult for learners to use them according to their learning needs. Since this is a journal the **CC Attribution-Noncommercial- NoDerivs** license would be considered the apt one for it. This license allows others to download works and share them with others as long as they credit the creators, but they can't change them in any way or use them commercially. However if authors are willing to share their works and allow it for redistribution and remixing, then those articles can be licensed under the other CC copyright licenses according to the authors' choice.

Conclusion

The continuous development of information and communications technologies (ICT) is one of the drivers of the knowledge economy. While provision of ICT tools is widespread there is an urgent need to provide training on how such tools could be instrumental in fostering creative learning and innovative teaching. OER will help teachers change their overall pedagogy for teaching and help in promoting quality education in a cost effective and need-based manner. Lack of technical know-how among faculty for producing and using OER is one of the major reasons of teachers not using OER. Therefore it is essential to give more hands-on training to teachers which

will allow them to put their knowledge into practice once they are in the classroom.If designed and developed properly OER can serve as a major educational tool to effectively address the issues of quality, equity and access in teacher education, not only in our country but also in the global context.

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DIFFICULTIES FACED BY SPECIAL EDUCATORS IN IMPLEMENTING ICT BASED EDUCATION FOR THE HARD OF HEARING STUDENTS

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Abstract

The present study analyses the difficulties faced by special educators in implementing ICT based education for the hard of hearing students. Normative survey method was adopted for the conduct of the study. 100 special educators from three revenue districts of Kerala were chosen as sample by using random sampling technique and the tool used was a Questionnaire. The analysis of data was carried out by employing appropriate statistical techniques such as mean, standard deviation and Simple Percentage. The study revealed that Special educators experience more difficulty in mode of transaction and maintaining acoustic environment than preparing teaching materials and Organizing Lessons.

Introduction

Education can be considered as a system of instruction established to impart knowledge, develop skills and inculcate values in individuals especially in young people through varied practices. Realizing the importance of education in the progress of citizens and in the development of the country, 'education for all' is taken as one of the cherished goals of the nation. It has become a fundamental right of citizens. Thus it is the responsibility of the society to provide opportunities to all for formal education. According to Census 2001, there are 2.19 crore persons with disability in India, who constitute 2.13 % of the total population (Cited in Gulati, 2009). This includes, persons with visual, hearing, speech, loco-motor, and mental disabilities. Studies assessing the academic achievement of students with hearing loss have routinely found that they lag behind their peers with normal hearing capacity. National surveys conducted by the Centre for Assessment and Demographic Studies reported that students with severe and profound hearing loss were reading at about a fourth-grade level or lower; and their mathematics performance was around the fifth-grade level. Growth in reading achievement was between 0.2 and 0.3 grade levels per year of schooling, for the oldest group of students (16 to 18 years). Most children who are hard of hearing have normal intellectual capacity, and it has been demonstrated that their scores in nonverbal

intelligence test are approximately the same as those of the general population. Hearing loss imposes no limitations on the cognitive capabilities of individuals (Moores, 1996). The problems that students who are hard of hearing often experience in education and classroom adjustment are largely attributable to a bad fit between their perceptual abilities and the demands of spoken and written language. Many special methods and materials have been developed for and are used for hearing impaired children. Regardless of instructional approach or method, the primary objective and focus of teachers of children with hearing loss is helping children to develop and use language and communication skills. Academic achievements are affected due to delayed speech and language development, delayed reading development, difficulty in maintaining attention and not having the skills to ask questions. Many drop out early because they cannot cope with normal class room resulting in a poor education and this means fewer job opportunities. Today ICT is being used as a tool for improving the quality of life by improved efficiency and enhanced effectiveness. Different types of ICT tools assist the people with disabilities by providing them with learning opportunities, capabilities and also increase potential of the disabled in different walks of life. ICT makes them capable by providing the ability to access knowledge with the help of suitable digital media. ICT is playing very important role in communicating with peers, thereby promoting collaborative and social learning environment.

Need and Significance of the Study

In the modern information and communication society, daily life would be unthinkable without technology. Information and Communications Technology (ICT) is also very useful for people with special needs. How Information and Communication Technology (ICT) can be used in the most effective ways for the 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). A number of the general principles included in the CRPD are directly linked to UNESCO's mandate. As the United Nations' leading agency for education, UNESCO is at the forefront of activities aimed at promoting quality education and lifelong learning for all society members, including disabled persons. The educational needs of people with disabilities are extremely diverse. As with all other members of society, people with disabilities must acquire the knowledge and skills required for the community in which they live. However, they face additional

demands (often referred to as special educational needs) caused by functional limitations that impact in different ways upon their ability as learners to access standard educational methods of instruction. These limitations often prevent educational progress and achievement.

In this context, the application of ICT is very important as it plays an essential role in supporting high quality education for learners with disabilities. The advantages of ICT usage in the teaching and learning process are based on the possibilities it offers for alternative means of communication, providing access to educational resources in a more convenient way and for enhancing learning motivation. By overcoming obstacles of time and space, supplementing vital human functioning and supporting the development of crucial skills, these technologies contribute to the increased effectiveness of educational processes by enabling people with disabilities to actively participate in meaningful learning experiences. As the acoustic channel is barred to the deaf, all acoustic data have to be presented in visual form, ideally in sign language. This study presents an overview of the difficulties faced by special educators regarding the use of ICT for hard of hearing students using current technologies. The focus is on mode of transaction, preparation of teaching materials, organization of lessons and acoustic environment.

Statement of the Problem

The major aim of the present study is to assess the difficulties of special teachers regarding the ICT based education for hard of hearing students Hence the study is entitled as **'DIFFICULTIES FACED BY SPECIAL EDUCATORS IN IMPLEMENTING ICT BASED EDUCATION FOR THE HARD OF HEARING STUDENTS'.**

Definition of Key Terms

Special Educators: The teachers who are teaching special children in special schools. In the present study 'Special educators refers to the teachers teaching in the Special schools of Hearing Impaired children.

ICT: The ICT stands for Information and Communication Technologies and is defined as a Diverse set of Technological tools and resources used to communicate, and to create, disseminate, store and manage information.

Hard of Hearing: A person who is hard of hearing generally, with the use of a hearing aid has residual hearing sufficient to enable successful processing of linguistic information through audition. (Cited in Hallahan & Kauffman, 1997)

Objectives

1. To study the extent of difficulties faced by special educators in implementing ICT based education for the hard of hearing students.
2. To study the extent of difficulties faced by special educators in implementing ICT based education for the hard of hearing students in the following aspects such as,
    1 Organization of lessons
    2. Preparation of teaching materials
    3. Mode of transaction
    4. Acoustic environment

Methodology in Brief

The present investigation is meant to assess the difficulties faced by special educators in implementing ICT based education for the hard of hearing students. Survey method was adopted for the conduct of the study. Stratified random sampling technique was adopted for the selection of the sample. The sample consisted of 100 special educators selected from four revenue districts of Kerala, viz – Thiruvananthapuram, Kollam, Kottayam, and Ernakulam. The sample was selected using random sampling technique. To collect the data required for the study, a questionnaire prepared and validated by the investigators was used. To study the difficulties faced by special educators in implementing ICT based education for the hard of hearing students, the investigators administered a questionnaire to a sample of 100 special educators teaching hearing impaired students randomly selected from seven special schools in Kerala. The questionnaire consisted of 24 items related to four dimensions such as Organization lessons, Preparation of teaching materials, Mode of transaction, and Acoustic environment. Each section consists of six questions. The closed form questionnaire includes the responses, Yes/No. The analysis of data was carried out employing appropriate statistical techniques such as mean, standard deviation and percentage analysis.

Analysis

The special educators in the total sample is divided into three difficulty groups such as high, moderate and low using the formula M± σ. The details of the analysis are given in table no.1 and 2 respectively.

Table No. 1

Percentage of Special Educators in the High, Moderate and Low difficulty Groups in implementing ICT based education for the hard of hearing students

Groups	Percentage
High	17%
Moderate	68%
Low	15%
Total	100

Table No. 2

Percentage of Special Educators in the High, Moderate and Low difficulty Groups in implementing ICT based education for the hard of hearing students with regard to different dimensions

	Organising	**Preparation of**	**Mode of**	**Acoustic**
	%	**%**	**%**	**%**
High	**15**	**14**	**19**	**20**
Moderate	**67**	**69**	**68**	**68**
Low	**18**	**17**	**13**	**12**
Total	**100**	**100**	**100**	**100**

Major Findings of the Study

1. 17% of the special educators in the total sample are included in the high difficulty group with regard to implementing ICT based education for hard of hearing students, 68% are included in the moderate difficulty group and 15% are included in low difficulty group.
2. 15% of special educators in the total sample are included in the high difficulty group, 67% are included in moderate difficulty group and 18% are included in low difficulty group with regard to Organizing lessons teaching material for ICT based education for hard of hearing students.

3. 14% of special educators in the total sample possess high difficulty level in preparation of teaching materials for ICT based education for hard of hearing students,69% possess moderate difficulty level and 17% possess low difficulty level
4. 19% of special educators experience high level of difficulty with regard mode of transaction in ICT based education to hard of hearing students, 68% experiences moderate level of difficulty and 13% experiences low level of difficulty.
5. 20% of special educators experience high difficulty in maintaining acoustic environment in ICT based teaching for hard hearing students, 68% express moderate difficulty and 12% express low level of difficulty.

Recommendations

We strongly believe that some of the recommendations, if taken care of, while suggesting, planning, using, developing tools, applications and infrastructure for people with disability, will have a strong impact in imparting assistive teaching and learning, and there for are given below**:**

1. Improvement of networking facilities to allow more effective co-operation between institutions and telecentres to assist all types of disabled people using online network.
2. Development of user-friendly multiple types of user interfaces for the same devise\application for facilitating different types of disability and to increase their ability to use the services.
3. Making tools to be used by the disabled, to create, check and validate educational content in such a way so that it should be accessible for teachers and system administrators with disabilities.
4. Enabling hearing impaired persons with access to audio output with proper volume control
5. Special educators experience more difficulty in mode of transaction and maintaining acoustic environment than preparing teaching materials and organizing lessons. So special measures should be taken to create conducive acoustic environment for implementing ICT based education for hard of hearing students. In service training should be more focused on modes of transaction and acoustic environment.

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ICT FOR EDUCATION AND LEARNING: A CATALYST FOR EFFECTIVE USE OF INFORMATION

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Abstract

Information and Communication Technologies (ICT) have become commonplace entities in all aspects of life. During the past twenty years the use of ICT has fundamentally changed the practices and procedures of nearly all forms of endeavor within business and governance. Education is a socially oriented activity and quality education has traditionally been associated with good teachers having high degrees of personal contact with learners. The use of ICT in education lends itself to more student-centered learning settings. But with the world moving rapidly into digital media and information, the role of ICT in education is becoming more and more important and it will continue to grow and develop in the 21st century. In this paper, a literature review regarding the use of ICTs in education was provided. Effective use of ICT for Education, along with ICT use in the teaching learning process; ICT among the disadvantaged sections, quality and accessibility of education; learning motivation, learning environment and ICT to enhance scholastic performance are mentioned in this paper.

Introduction

Educational systems around the world are under increasing pressure to use the new Information and Communication Technologies (ICTs). The premise that ICT is important for bringing changes to classroom teaching and learning is the basis for this pressure. These skills include the ability to become lifelong learners within a context of collaborative inquiry and the ability to work and learn from experts and peers in a connected global community.

The information society demands a workforce that can use technology as a tool to increase productivity and creativity. This involves identifying reliable sources of information, effectively accessing these sources of information, synthesizing and communicating that information to colleagues and associates (Alibi, 2004). Information is a key resource for undergraduate teaching, learning, research, and publishing. This brings the need for effective methods of information processing and transmission

ICT is an accepted acronym of the word information communication technology. It is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information (Blurton, 1999). This means that ICT helps in the storage and management of information. Ayo (2001) also defined ICT as the use of computer systems and telecommunications equipments in information processing. ICT as described by Scott (2002) encompasses a range of applications, communications and technologies which aid information retrieval and research communication and administration. These include: Internet access, electronic mail, CD-ROMS, telephone, on line databases, library services and fax machines. It has become a global phenomenon of great importance and concern in all aspects of human endeavor, spanning across education, governance, business, labour, market, shares, productivity, trade, agriculture, commerce and others.

ICT Enhancing Teaching and Learning Process

Information and Communication Technology (ICT) becomes more widely used in classrooms and schools, attention is being focused on how ICT can make teaching and learning more effective. ICT literacy is perceived to be a central feature of work, leisure, community networks and global environments. ICT has significant potential to assist students who are currently disadvantaged by gender, disability, indigenous, ethnic and socio economic background. Teachers and schools are struggling with how that potential can be developed and used to benefit students currently seen to be excluded from, underachieving in, or disaffected by school. The integration of ICT into schools and classrooms is uneven both within and across classrooms, schools and systems. Downes (2006) usefully differentiates between levels of integration of ICT into the classroom:

Level 1: ICT skills are added into school program through a separate ICT subject, while teacher practices in subjects remain unchanged;

Level 2: ICT skills are integrated into daily work of teachers, with some teachers' pedagogical practices and classroom behaviors staying the same, while the practices of others change more radically;

Level 3: ICT is transformative at the classroom level in that it changes content as well as pedagogy (what students learn as well as how they learn); and

Level 4: ICT is transformative at the system level leading to changes in organizational and structural features of schooling. ICT is seen as a catalyst of system, community,

school or classroom reform because it provides opportunities to shift from teacher centered to student centered learning. In turn, ICT could also increase the pedagogical repertoire of teachers. This teacher effect is most likely to improve the outcomes of disadvantaged students because it attends to individual need and provides a variety of curriculum and assessment strategies to promote student capabilities across a range of learning outcomes. In that sense, good pedagogical practice in the use of ICT to enhance the learning of students who are disadvantaged is good pedagogical practice for all students.

Documented practices by teachers indicate that ICT can assist teachers to address learning difficulties and different learning styles because ICT:

- Has an edit effect in terms of quality of student work and practical examples through visualization;
- Improves poor handwriting and English skills through word processing;
- Equalizes individual differences and particularly has dramatic effects for students with special needs;
- Facilitates self pacing with increased capacities to deal with individual learning styles as students can work at the pace and intensity suitable to their needs;
- Enables collaborative learning with little indication of the isolated learner;
- Encourages use of peer coaching and peer reviews;
- Develops communication skills and awareness of different audiences;
- Impacts on resource–based learning and access to real world information through the Web;
- Increases reliability and currency of information adding to authenticity of learning tasks, with realistic and up-to-date information;
- Increases student motivation through hands on activity, visual representations and improved modes of presentation;
- Encourages independent learning and individual preferences for process, layout, style and format;
- Allows to students to produce high quality multimedia products;
- Changes teacher practices, planning tools and assessment rubrics; and
- Increases opportunities for classes to evolve and for student experiences to shape outcomes.

Collectively, these lead to more individualized learning based on need and are more likely to tap into student's interests. Such effects align with effective teaching and learning theories that focus on literacy in early years, autonomous learning in the middle years and flexibility and self directed learning for post compulsory students.

ICT Enhancing the Quality and Accessibility of Education

ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers ICT also challenges teacher assumptions about ICT, disadvantage and learning. Teachers need to develop skills in their own disciplinary area and across the curriculum in utilizing ICT in ways that are attendant to the operational, the cultural and the critical dimensions of digital literacy and do not just see ICT as another tool. Many teachers lack confidence in using ICT. Other factors are the attitudes, expectations and approaches of teachers. Teachers vary in how they approach ICT as individuals, often resulting from their own experience of learning about and with computers. Much of the literature refers to how teacher attitudes to particular students become embedded in how they use ICT in classrooms, based on particular understandings about the nature of a particular student's difference and how they are 'disadvantaged'. Teachers who have low expectations and believe that students cannot learn unless they know the basics tend to use ICT as another way of developing basic skills in foundational literacy and numeracy. Teachers who perceive students have a literacy or numeracy difficulty tend to work on basic skill levels through drill and practice. This exacerbates difference in achievement amongst students because students already perceived to be 'good students' have their learning enhanced further with the greater use of advanced computer skills.

Teachers who believe that all students benefit from a challenge, that learning is not a linear process from basics to advanced, and that students can learn both basic and advanced skills simultaneously tend to use ICT more creatively for students who are perceived to be disadvantaged. Such teachers are more likely to see ICT as having positive benefits for these students, and schools as playing a critical role in providing the types of ICT experiences students do not receive at home. More innovative teachers do not see ICT as a replacement for traditional teaching approaches, but as part of a repertoire of teaching strategies. ICT can improve learning when teachers are intensively trained to make professional judgments.

ICT Enhancing Learning Environment

ICT presents an entirely new learning environment for students, thus requiring a different skill set to be successful. Most effective use of ICT has occurred when there were whole school policies that were coherent, comprehensive and integrated with other policies, for example, the language policy and equity policies. These have provided a framework in which teacher initiative is encouraged; where there is a strong leadership culture that supports risk taken by teachers around ICT; where the focus is on improving learning of disadvantaged students; and where there are moves to maintain continuity of ICT learning for students across the curriculum and through the grade levels so that individual students are monitored. Increases in pedagogical use of ICT in school classrooms occurs if computers are also available to teachers at home, if there is adequate technical support, and if teachers have access to ongoing professional development.

Home-School

The literature suggests that home computer use significantly impacts on the capacity of ICT to improve the learning outcomes for all students. Home access is a key element as to whether and how students integrate ICT into their learning in school. The socio-cultural contexts of children's domestic computing play an important part in shaping children's interactions with computers. In particular, the technology culture of home impacts on student dispositions. Students learn ICT at home and this makes students experts, changing their relations with teachers. Familiarity is a key aspect to developing 'habits of digital literacy.' Some students are able to develop a wide range of digital literacy skills while others with restricted availability and lower levels of familiarity, reach only basic skill levels. Different use of computers between home and school results in schools controlling but not exploiting home based skills. The playability and exploratory possibilities that could act as a bridge between lower socio-economic students' home literacies and those valued at school. Awareness of these possibilities could inform a more relevant curriculum for those students.

Communities

ICT promises a capacity for schools to be linked to both local and virtual communities. ICT can be a catalyst for community renewal that can address educational inequality. Governments are encouraging schools to establish learning

networks in which students and teachers link more closely to their local neighborhood communities, and also to virtual communities globally.

Indigenous Students

ICT for Indigenous students needs to be located into a broader framework of influential factors that go beyond ICT more generally if ICT is to become an effective learning tool for Indigenous students. Factors influencing learning include school relations, cultural exclusion and the culture of schools. Indigenous students enjoy use of ICT. Successful programs for indigenous are community based, involving parents and elders. ICT provides opportunities for students to edit and review self-correct and produce quality products. Students like to gain creative control over their work. Virtual communication and presentation to different audience means risks can be taken and mistakes made without any "shame" associated. Computers also offer quick feedback, colourful graphics and good visualization, tapping into aural, oral and visual traditions. These all lead to engagement and improved learning. Successes for indigenous students occur when teachers have changed both the culture of their classroom teaching and their teaching styles to accommodate the needs of the students using ICT. The design features of ICT that enhanced learning for students with disabilities were also identified and included the provision of:

- Immediate feedback;
- Learner options to use hypermedia enhancements and speech synthesizers to support understanding; and
- Prior instruction in building declarative knowledge before students engages in fluency building practice.

Technology provides effective instruction when well designed and used under teacher control, and when teachers can effectively modify content in computerized study guides to enable students to learn content at appropriate levels. Technology is important for students with sensory and learning disabilities. Technology assists students with procedural tasks such as recording assignments and note taking and with cognitive tasks such as calculating, spell checking, and synthesizing information. The features regarded as important by teachers and parents of students with disabilities that are equally applicable to many learners from disadvantaged circumstances, are:

- allows students to proceed at their own pace;
- provides a format for individualized instruction;

- provides immediate feedback;
- increases enthusiasm for school in general;
- improves self-concept;
- increases engaged time, time on task;
- helps compensate for communication disorders;
- facilitates student learning about things they otherwise would not be exposed to;
- improves academic performance;
- fosters student participation in mainstream activities;
- provides socialization opportunities;
- provides an increased range of leisure activities;
- enables better discipline.
- facilitates student interaction in creative activities;
- offers a format for playing of games to learn and develop cognitive skills such as cause and effect and remembering; and
- helps students learn life skills that support independent living.

Learning environments that facilitate the effective use of ICT tend to have the following characteristics

System level:

- University–school action research partnerships;
- Targeted programs using ICT as a catalyst for school reform;
- Additional funds from public and private sector; and
- A focus on whole school reform

School level:

- School based ICT policies;
- Strong principal and teacher leadership teams focusing on integration of ICT for improving student learning as a means for changing teaching practice ;
- Significant professional development support for teachers that focuses on how ICT can assist students at risk;
- Full time technology coordinator on site to troubleshoot, plan, develop websites and online curriculum, improve communication channels;
- Dispersed networks of computers equitably distributed across classrooms;

- Student centered classrooms with a focus on independent and self paced learning, problem solving and inquiry based learning, authentic curriculum and assessment tasks;
- A focus on affective, social as well as academic outcomes;
- Gender and culturally inclusive curriculum;
- Cross curriculum / cross classroom focus; and
- Mix of virtual/real classroom interactions.

Home/school/community level:

- Take home computer program;
- Parent ICT literacy program; and
- Community based networks.

Integration of ICT can promote significant changes in the practices of teaching and learning and can have benefits for students who are underachieving in school or are disaffected or excluded by school.

- A shift from teacher centered to student centered learning that leads to a focus on individual difference and need;
- An enhanced, even new, capacity for authentic tasks and problem solving that has more relevance to a wider range of students;
- Changing what we understand as learning outcomes to be more broadly inclusive of cognitive, social and affective outcomes such as improved achievement, motivation, self concept and changed attitudes to school and school work;
- Making the processes of learning inextricable from the product, with multimodal processes and multiple products, that value a range of differences and learning styles and that are about improvement and reflection;
- Capacity for students through word-processing and processes underpinning web development to edit, revise and produce high quality work;
- Capacity of self paced computer based skills development in foundational literacy and numeracy to supplement other teaching strategies, imparting students with a sense of competency;
- Improved motivation and organizational skills for students who have difficulty with basic study practices;

- Development of meta cognitive skills that provide learning scaffolds for learning as students make links e.g. invisible connections between text and images in web page development;
- Reduced anxiety and safer environment for students to take risks with learning through possible anonymity of learning communities;
- Authentic problem solving more likely to engage students with learning difficulties through multimedia dimensions with modeling, design features, data bases;
- Development of multi literacy that incorporate a wider range of human skills and attributes—visual, aesthetic, oral and aural—through the multimedia capacities of ICT;
- Enhancement of student sense of self esteem and confidence resulting from the capacity of ICT to produce quality cultural products to a wide range of audiences;
- Capacity to develop cultural inclusiveness through working with local and global communities both virtually and face to face.

These possibilities have significant implications for a more inclusive curriculum, a pedagogy that addresses individual need, and assessment that recognises a wider range of student interests and capacities.

Benefits of ICT

Research has shown that the appropriate use of ICTs can catalyze the paradigmatic shift in both content and pedagogy that is at the heart of education reform in the 21st century (Bransford, 1999). If designed and implemented properly, ICT-supported education can promote the acquisition of the knowledge and skills that will empower students for lifelong learning. The following are the benefits derived from the use of ICT in education:

1. **Active Learning**: ICT-enhanced learning mobilizes tools for examination, calculation and analysis of information, thus providing a platform for student inquiry, analysis and construction of new information. Learners therefore learn as they do and, whenever appropriate, work on real-life problems in-depth, making learning less abstract and more relevant to the learner's life situation. In this way, and in contrast to memorization-based or rote learning, it promotes

increased learner engagement. ICT-enhanced learning is also "just-in-time" learning in which learners can choose what to learn when they need to learn it.

2. **Collaborative Learning**: ICT-supported learning encourages interaction and cooperation among students, teachers, and experts regardless of where they are. Apart from modeling real-world interactions, ICT-supported learning provides learners the opportunity to work with people from different cultures, thereby helping to enhance learners' teaming and communicative skills as well as their global awareness. It models learning done throughout the learner's lifetime by expanding the learning space to include not just peers but also mentors and experts from different fields.
3. **Creative Learning**: ICT-supported learning promotes the manipulation of existing information and the creation of real-world products rather than the regurgitation of received information.
4. **Integrative Learning**: ICT-enhanced learning promotes a thematic, integrative approach to teaching and learning. This approach eliminates the artificial separation between the different disciplines and between theory and practice that characterizes the traditional classroom approach.
5. **Evaluative Learning**: ICT-enhanced learning is student-directed and diagnostic. Unlike static, text- or print-based educational technologies, ICT-enhanced learning recognizes that there are many different learning pathways and many different articulations of knowledge. ICTs allow learners to explore and discover rather than merely listen and remember.

Conclusion

The adoption and use of ICTs in education have a positive impact on teaching, learning, and research. ICT can affect the delivery of education and enable wider access to the same. In addition, it will increase flexibility so that learners can access the education regardless of time and geographical barriers. It can influence the way students are taught and how they learn. It would provide the rich environment and motivation for teaching learning process which seems to have a profound impact on the process of learning in education by offering new possibilities for learners and teachers. These possibilities can have an impact on student performance and achievement. Similarly wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching and improved

academic achievement of students. The overall literature suggests successful ICT integration in education.

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INNOVATION IN EDUCATION: USE OF YOU TUBE FOR TEACHING AND LEARNING OF PSYCHOLOGICAL BASES OF EDUCATION

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Introduction

We always think that present is more important than future, but most of the time we think more about the future than the present and past. Whatever work we take up, there should be a vision behind it. However, even though we put hard work and interest in our work we find it difficult to cope with situations that occur as a result of ignorance and lack of clear vision. Education is considered as a long term investment in which we cannot accept results like that of trade and commerce. Education has an everlasting impact in the life of individuals. In the modern period we cannot depend only on traditional methods of learning as there is an enormous increase in knowledge. Though we cannot totally neglect or ignore the traditional methods of teaching, we should synchronize these methods with innovations. With the help of technology teaching-learning can be made more effective. Google has provided very good facility i.e. You Tube on which many good videos are available which can be used for educational purpose.

The present study has been undertaken by the researcher to study the effectiveness of you tube videos on the learning of the students. Some concepts from the subject Psychological Bases of Education which are interesting but somewhat complicated to understand have been selected. Experimental method was used by the researcher. Two groups pre-test, post test design was used. Purposive sampling technique was used by the researcher. Videos related to psychological methods and tools, growth and development, stages of human development, emotions, moral values, personality, motivation, language development, exceptional children, counseling skills etc were presented to the experimental group with you tube videos. For the control group regular classes with charts and pictures were used. Post – test results revealed that experimental group has more clarity regarding the concepts than the control group. So, for better understanding you tube videos were more effective. Digital technology can play a very important role in effective teaching and learning of various school subjects. Many complicated concepts can be easily explained in an interesting way to the students with the help of technology. As technology has become very handy and

easily accessible to both students and teachers, use of technology can enhance learning and retention capacity. Technology can bring great changes in the learning.

Significance of the Study

Effective teaching and learning plays a very important role in increasing the knowledge of a student. During college education a student comes across many concepts and clarity of concepts is very important. To clarify the concepts teacher uses various strategies and techniques. Usually teacher uses pictures, charts, power point presentations etc for the illustration and clarification of concepts. All these are good efforts but we should not be satisfied with these teaching aids. We should go beyond it for the better understanding of the students. Lee Shulman has presented the concept of knowledge: 'Representatives, we have to select such example, models, and pictures which can go maximum near to the concepts are those which need pictorial presentation.' So the researcher feels that you tube can be very useful in teaching and learning. This study has been undertaken by the researcher to evaluate the effectiveness of you tube in the learning of Psychological Bases of Education.

Objective of the Study

To study the effectiveness of you tube in the learning of Psychological Bases of Education.

Methodology

Method

The method followed was Experimental method.

Design

Two groups Pre-test Post test design was used.

Sample

For the present study students from Adi Sankara Training College, Kalady, Ernakulam were selected as the sample. There were two batches of B.Ed. Students from both the batches were selected.

Tools

Achievement test

Topics selected for the study

Some concepts from the subject 'Psychological Bases of Education' which are interesting and somewhat complicated to understand were selected. The topics selected are given below:

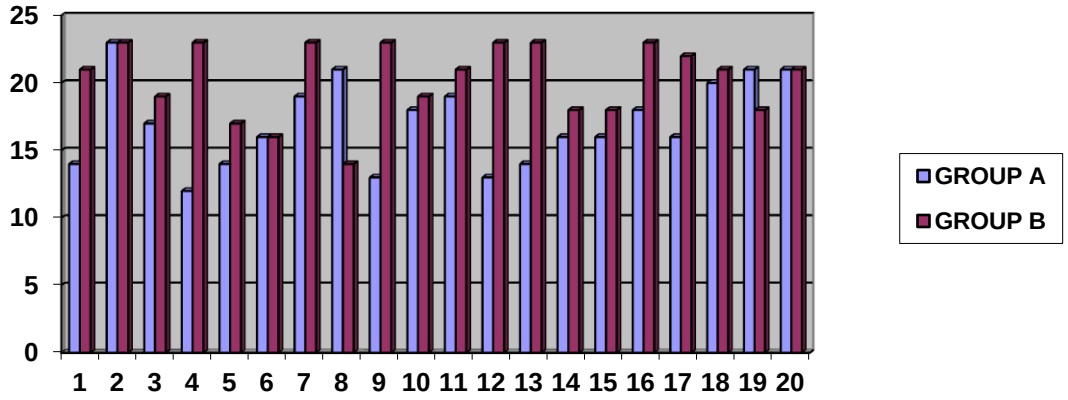
- Psychological Methods and Tools
- Growth and Development
- Stages of Human Development
- Emotions
- Moral values
- Personality
- Motivation
- Language Development
- Exceptional Children
- Counseling skills

Pre-test was conducted on selected topics. The test was an Objective type achievement test. This test was administered on all students of both the B.Ed batches. Students who have scored fewer marks in the test were selected for the research and divided into two groups. Group A was control group and Group B was experimental Group.

Above topics were taught to group A with simple teaching aids and pictures and models. For the group B relevant You Tube videos were used. Concepts were discussed along with Videos. Videos which were online were shown with LCD projector in the class. To check the effectiveness, scores of post-test (Descriptive) of both groups and personal dialogue with each student from experimental group was considered. Data was analyzed quantitatively and qualitatively. As far as post-test was concerned an achievement test for 50 marks was developed by the researcher based on the topics taught for both groups.

Data Analysis and Interpretation

Following graph show the marks of the students in the achievement test conducted by the researcher.



Mean of both the groups

Group	Mean	Difference in Mean
Group A	17.2	
Group B	20.4	3.2

- Above graph indicates that students in the experimental group have scored more marks than the students in the controlled group.
- This shows that You Tube videos used for the above topics have great impact and effectiveness in the teaching- learning process than traditional charts and models.
- When the researcher discussed with the students of experimental group they communicated that teaching with the videos helped them to understand the concepts clearly and easily.

Recommendations

- For some topics charts and pictures are not sufficient, teachers can use video clips.
- The teacher should select appropriate video relevant to the topic.
- Teacher must give orientation to the students regarding what is to be observed and how to take notes from the videos.

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INTEGRATION OF INFORMATION COMMUNICATION TECHNOLOGY COMPONENT IN EDUCATION: CHALLENGES AND LIMITATIONS

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Abstract

Today, *Information communication technologies (ICT) influence every aspect of human life. They are playing salient roles in work places, business, education, and entertainment. The impact of ICT on each sector of life across the past two-three decades has been enormous. The way it influences us today is different when compared to the past. Moreover, many people recognize ICTs as catalysts for change in working conditions, in handling and exchanging information, in teaching methods, in learning approaches, in scientific research and in accessing information. This article discusses the roles of ICTs, limitations and challenges in integrating it to education systems.*

Key Words: *Information Communication Technology, ICT in education*

Introduction:

Education has a vital role in building the society. Education determines the standard of a society. The quality of education imparted helps to empower the nation in all aspects by providing new thoughts. Quality education is the basic need of a society. There are a number of effective teaching & learning methodologies in practice. Technology is the most effective way to increase students' knowledge. Nowadays ICT (especially internet) plays a prominent role in the process of integrating technology into educational activities. ICTs are making dynamic changes in society. They influence all aspects of life. The influences are felt more and more in schools. ICTs provide both students and teachers more opportunities in adapting learning and teaching to individual needs. Society is forcing schools to respond aptly to this technical innovation. ICTs facilitate the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems, improve policy formulation and execution, and widen the range of opportunities.

ICTs have revolutionized the way people work today and are now transforming education systems. As a result, if schools could not impart new skills and technologies, the education provided may not be relevant and effective in today's world. This is the reason why ICTs have won global recognition and attention. Since ICTs provide greater opportunity for students and teachers to adjust learning and teaching to individual needs, society expect that schools should give appropriate support to integrate technology and education. Even though ICTs play significant role in equalization of education in developing countries, the reality of the digital divide - the gap between those who have access to, and control technology and those who do not, make a huge difference in the use of ICTs. The most challenging aspect of today's education is the introduction of ICTs at different levels and its integration to different courses. Failure to meet the challenges would mean a further widening of the knowledge gap and deepening of existing economic and social inequalities among the developed and the developing countries.

ICT

ICT is an acronym that stands for 'Information Communication Technologies'. Information and communication technology is an umbrella term that includes all technologies used for the communication of information. ICT considers all the uses of digital technology and it helps individuals, and organizations. It is difficult to define ICT because it is difficult to keep up with the changes in the digital technology. ICT is concerned with the storage, retrieval, manipulation, transmission or receipt of digital data.

The Benefits of ICT in Education

ICT has influenced all aspects of the education system. It provides the capacity to store, to retrieve and to process e-content in a fast and accurate way. It can be an effective medium for teaching and learning. This can act as a medium through which teachers and learners can learn. The use of ICT can make substantial changes in education and training mainly in two ways. Firstly, the rich information changes learner's perception and understanding of the content. Secondly, the vast distribution and easy access to information can change relationship between teachers and students. ICT can also provide powerful support for educational innovations.

By using ICT technologies such as Computer, Laptop, Digital Camera, Video, Internet, Websites, CD-ROMs, DVDs, Web Camera, Radio, TV, application of

software such as word-processing, spreadsheet, e-mail, digital libraries, computer mediating conferencing, video-conferencing, LCD and slide projectors, etc, we can overcome all barriers in communication and instruction in higher education institutes of learning. Therefore, the challenge for teachers is to create a new generation of teachers capable of employing a variety of technology and tools in all areas of academic, administrative, research and extension activities. It is challenge to integrate ICTs with universities, into their strategies and educational process. It should be implemented at national & international level. It will be helpful to improve quality and flexibility.

ICTs are instrumental in changing teacher centered learning to competency based learning. Universities are also responsible to make supporting changes for the successful implementation of ICT based teaching and learning.

The Impact of ICT on 'When' & 'Where' to Learn

a. Any place learning:

The use of ICT has extended the scope of offering programs at a distance. The off-campus delivery was an option for students who were unable to attend the campus. Today, many students are able to make this choice through technology – facilitated learning settings. e.g.

1. In many instances traditional classroom learning has given way to learning in work-based settings with students able to access courses and programs from their workplace. The advantages of the application of ICT in education and training are not only convenience but include cost savings associated with travel and time. It also helps in the application of learning activities in relevant and meaningful contexts.
2. The communication capabilities of modern technologies provide opportunities for many learners to enroll in courses offered by external institutions rather than those situated locally. These opportunities provide advantages like extended course offerings and eclectic class cohorts comprised of students of different background and cultures.
3. The freedoms of choice provided by programs that can be accessed at any place are also supporting the delivery of programs with units and courses from a variety of institutions. There are now countless ways for students completing undergraduate degrees for example, to study units for a single degree, through a number of different institutions, an activity that provides considerable diversity and choice for students in the programs they complete.

b. Any time learning:

In case of geographical flexibility, technology facilitated educational programs also remove the temporal constraints. It is a good opportunity for studenst to undertake education anywhere, anytime and anyplace.

1. Through online technologies learning has become an activity that is no longer set within programmed schedules and slots. Learners are free to participate in learning activities when time permits and this freedom have greatly increased the opportunities for many students to participate in formal programs.
2. Wide variety of technologies that support learning are able to provide asynchronous supports for learning so that the need for real-time participation can be avoided while the advantages of communication and collaboration with other learners is retained.
3. As well as learning at anytime, teachers are also finding the capabilities of teaching at any time to be opportunistic and able to be used to advantage. Mobile technologies and seamless communications technologies support 24x7 teaching and learning. Choosing how much time will be used within the 24x7 envelope and what periods of time are challenges that will face the educators of the future

Limitations of ICT Use in Education

ICT as a modern technology that simplifies and facilitates human activities is not only advantageous in many respects, but also has many limitations. Many people from inside and outside the education system think of ICT as "Panacea" or the most important solution to school problems and improvements. However, many conditions can be considered as limitations of ICT use in education. The limitations can be categorized as teacher related, student related, and technology related. All of them potentially limit the benefits of ICT to education.

Teachers' attitude plays an important role in the teaching-learning process that utilizes computers and internet connections. Although teachers' attitude toward the use of these technologies is vital, many observations reveal that teachers do not have clarity about how far technology can be beneficial for the facilitation and enhancement of learning. Of course, some teachers may have positive attitude to the technology, but refrain from using it in teaching due to low self-efficacy, tendency to consider themselves not qualified to teach with technology. Self-efficacy is "individual's opinion of capabilities to organize and perform courses of actions to achieve particular types of performances." Moreover, attitude, motivation, computer anxiety, and

computer self-efficacy are factors affecting teachers' use of computers in their lessons. Teacher resistance and lack of enthusiasm to use ICT in education may also be another limitation.

Furthermore, many teachers may not have the required IT skills and feel uncomfortable, nor do they have trainings needed to use the technology in their teaching. Unless teachers develop some basic skills and willingness to experiment with students, ICT use in education is in a disadvantage.

On the other hand, the limitation of ICT use in education is related to student behaviour. Appropriate use of computer and the internet by students have significant positive effects on students' attitude and their achievement. Nonetheless, it is very common to observe imitations related to student behaviour. Students tend to misuse the technology for leisure time activities and have less time to learn and study. Online gaming, use of face book, chat rooms, and other communication channels as perceived drawbacks of ICT use in education, because, students easily switch on to these sites at the expense of their study. Internet access at home, for instance, may be a distraction because of chat rooms and online games, reducing the time spent in doing assignments and learning. Therefore, the impact of the availability of ICT on student learning strongly depends on its specific uses. If ICT is not properly used, the disadvantage will overweigh the advantage. For example, while students use the internet, it may confuse them by the multiplicity of information to choose from. As a result, the teacher spends much time to control students from websites unrelated to the learning content. Then, for caution, it is important to identify the major limitations of ICT use in education as related to student behaviour. Various literature in the area, identify the following limitations of ICT use in education as related to student behaviour.

- Computers limit students' imaginations,
- Over-reliance on ICT limits students' critical thinking and analytical skills,
- Students often have only a superficial understanding of the information they download,
- Computer-based learning has negative physical side-effects such as vision problem,
- Students may be easily distracted from their learning and may visit unwanted sites,
- Students tend to neglect learning resources other than the computer and internet,

- Students tend to focus on superficial presentations and copying from the internet,
- Students may have less opportunity to use oral skills and hand writing,
- Use of ICT may be difficult for weaker students, because they may have problems with working independently and may need more support from the teacher.

Other limitation of ICT use in education is technology related. High cost of technology and maintenance of the facilities, high cost of spare parts, virus attack of software and the computer, interruptions of internet connections, and poor supply of electric power are among the technology related limitations of ICT use in education.

Key Challenges of ICT Integration in Education

The integration of ICTs in education systems may face various challenges with respect to policy, planning, infrastructure, learning content and language, capacity building and financing. ICT-enhanced education requires clearly stated objectives, mobilization of resources and political commitment of the concerned bodies. Issues such as analysis of current practices and arrangements, identification of potential drives and barriers, curriculum and pedagogy, infrastructure and capacity building etc should be considered in the formulation of policy and planning. In addition, it is wise to specify educational goals at different levels of education and training as well as the different modalities of ICT use that can facilitate in the pursuit of the goals. Policy makers then, need to know the potentials of ICTs in applying different contexts for different purposes. Other challenging points at the level of policy and planning are identification of stakeholders and harmonization of efforts across different interest groups, piloting of the chosen ICT-based model, and specification of existing sources of financing and the development of strategies for generating financial resources to support ICT use over the long term.

The infrastructure challenges that may exist are absence of appropriate buildings and rooms to house the technology, shortage of electric supply and telephone lines, and lack of different types of ICTs. Because of this, one need to deal with infrastructure related challenges before planning the integration of ICTs to education systems. With respect to challenges of capacity building, we have to develop competencies of teachers and school administrators for the successful integration of ICT in the education system. In fact, one impeding factor of ICTs integration in

education systems is the skill gap of people implementing it. For instance, teachers need professional development to gain skills related to particular applications of ICT, integration of ICT into existing curricula, curricular changes related to its use, changes in teacher role, and on underpinning educational theories such as constructivism/or student-centered learning. Because of this, any attempt of ICT integration in education should parallel with teachers' professional development. The school leadership also plays a key role in the integration of ICT in education. Lack of support from the school administration is also a big challenge. Thus, for the effectiveness of ICT integration, administrators must be competent and have a broad understanding of the technical, curricular, administrative, financial, and social dimensions of ICT use in education.

Furthermore, learning content and language also challenge the integration of ICT in education. Content development is a critical area that educators overlook. In integrating ICT in education, we have to care for the relevance of the learning content to the target groups. With respect to language, English is the dominant language in many of educational software, while English language proficiency is not high in many of the developing countries, and this is one barrier in the integration of ICT to education. Another big challenge is financing. ICTs in education programs require large capital investment and developing countries need to predict the benefit of ICT use to balance the cost in relation to the existing alternatives. Potential sources of money and resources for ICT use programs suggested are grants, public subsidies, fund-raising events, in kind support from volunteers, community support, revenues earned from core business, and revenues earned from ancillary activities. Overcoming the mentioned challenges may help education systems benefit the most from this technology.

Conclusion

The role of ICT in the education is recurring and unavoidable. Rapid changes in the technologies are indicating that the role of ICT in future will grow tremendously in the education. ICT also focuses modification of the role of teachers. In addition to classroom teaching, they will have other skills and responsibilities. Teachers will act as virtual guides for students who use electronic media. Ultimately, the use of ICT will enhance the learning experiences of students. Also it helps them to think independently and communicate creatively. It also helps students for building successful careers and lives, in an increasingly technological world. The advantage of technology should be

exploited to the maximum to raise the quality of education and also to give meaning to teaching learning process.

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ENHANCING ICT SKILLS AMONG TEACHER EDUCATORS TO CATER TO THE REQUIREMENTS OF TEACHER EDUCATION AMONG DISADVANTAGED SECTIONS

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Introduction

Today we live in a techno-savvy environment and the touch of technology is felt in each and every aspect of human life, right from the birth to death. We live a technology embedded digitalized life to such an extent that we cannot even think of living without it and man has literally became a slave of technology. The question of the day is not just how we learn but, how we can learn a bit more effectively and efficiently and when it comes to the answers, the buzz words come from Information Communication Technology (ICT) practices. Teachers as well as students share the same view. The effectiveness or ineffectiveness of teaching is closely linked to the teacher who sets the stage. Competent teachers would also create conditions and climates, which are conducive for students. The paper focuses on potential ICT practices that can be embedded to the pedagogical practices by teachers, for enhancing learner effectiveness.

Pedagogical Affordance of Technology

Effectiveness and efficiency in teaching and learning can be achieved by the synergy generated out of a fusion of pedagogical activities and the possibilities offered by technologies through its optimal use. A variety of ICTs – audio, video, computer, wired and unwired networking are available for our use; but how wisely it is made use for setting the stage for teaching and learning and how well teachers and learner get ready to act on it decides the value of their efforts. Engaging the learner is critical from the pedagogical point of view; teachers and learners should share responsibility while using the technology platform for discussing the content. Content transaction becomes meaningful only if both the teachers as well as the learner are capable enough to understand the platform – the medium that helps them come closer and discuss the content. Within the learning contexts, learners are to be put into authentic and meaningful situations where they are required to think for themselves, take actions and draw conclusions, define their actions and decisions, and reflect upon them (Cited in

Cognition and Technology Group at Vanderbilt, 1993 a., & Wilson, 1996). The learners need to understand the way they learn and the process through which they gain clarity regarding the ideas or concepts discussed.

Selection and use of media for teacher education

"Does delivery medium add special value to learning?" is one among the most prominent questions that can turn controversial in this context. The answer to this can be sort out by examining the affordance of various delivery technologies and exploring the possibilities that they might offer in the way in which information is captured and rendered and also how learners are able to interact with that information and the attributes of a medium (cited in Naidu, 2008).

- Information storage and retrieval– provided by the ICT is seamless and cannot in any way be matched with the traditional print media delivery system. ICT integrates texts, audio, video, animations and also provides for data transfer in various forms.
- The communication and collaboration facilities – also is matchless, ICT has no limits; it enables us to reach and explore even the extreme nook and corner of the world. ICTs also provide for both synchronous and asynchronous communication.

The major challenge before us is not making use of technology but making use of technology fruitfully and meaningfully by engaging the learners. Many a time we find that ICT do not suite the conventional campus based learning because of its vividness when compared to the popular and most widely used print media. ICT generally turns multifaceted and invites attention to many aspects; the objectives set for the study lose focus and discussions turns haphazard or may lead to the other extreme of great silence.

Educating the new age student teachers

Learning is an active process where learners engage themselves to create new ideas or build new concepts based on already existing knowledge and experiences. ICTs should turn learning platforms where student teachers can interact with content, peers and teachers and gain novel experiences. ICTs helps learners cross the barriers of geographical disparity and interact with cross cultural experiences and also gain understanding that are beyond the ambit of normal campus centred classrooms. Some potential ICTs that are currently in use and can easily be incorporated to the pedagogy of the modern curriculum are discussed here:

Teleconferencing: helps learners interact in a meaningful manner to share and exchange ideas and experiences. This technique in applicability is developed from audio mode to video mode and now to computer mode. The shift was from audio mode to audiovisual mode and then to audiovisual cum data transfer mode.

Computer Enabled Learning & Web Based Learning

Computer Enabled Learning (CEL) refers to the use of personal computers for teaching and learning as it offers an interactive medium that allows storage and retrieval of learning materials. Whereas Web Based Learning (WBL) provides integrated environment of various technologies via the internet to support diverse needs of the learners. Some of these prominent forms of teaching and learning media that fall under this head are discussed below.

- **Electronic resources**: are mainly documents in electronic format; modern libraries provide access to materials in electronic form like e-books, e-journals and database.
- **Searching the web**: can be done in three ways by using (1) organized directories – catalogues of websites collected and organized by human index and key words (2) search engines – these tools provide a database of web pages (3) meta-search engines – these are search engines of search engines and do not maintain own data base but provides data from various search engines.
- **Educational web sources**: are websites designed by individuals or institutions to provide education related information as well as materials to their stake holders. The materials available may be open to all or may be restricted depending upon the purpose of the website.
- **Electronic mail**: E-mails were primarily text based, but now with the attachment options it has become more acceptable for transfer of audio, video and data files. It is asynchronous in nature and is free from the barriers of geography. It is cost effective and time saving and has created a paperless culture.
- **Mailing lists**: is a many to many communication channel on the internet that works on specialized soft wares and helps to engage in discussions within communities. Server computers maintain a subscriber list and distribution list set by the owner of the list and each subscriber. E-mails received by the address of the list are normally distributed to the subscribers of the list.
- **Internet Relay Chat (IRC)**: is normally a synchronous, multi person, text based communication that is independent of the WWW, but it can also be launched from a

web page. The software operates from a central server and keeps track of people in contact with each other and also displays who all are online. Now there are provisions for text chat, voice chat and video chat, this can be done on a one to one or conference mode.

- **Asynchronous Discussion Forums**: provide a limited and structured online environment with provision for exchange of ideas or for discussion. One of the specialties of this application is that it allows for comments to be posted and viewed on convenience; there is no need to be simultaneously connected. This type of communication allows enough time for reflection and allows in-depth more constructive dialogue.
- **Synchronous conferencing**: are communication techniques that allow users to interact face to face (f2f) at no cost, crossing all barriers of time and distance. These synchronous [real time] communication techniques make the world think of redefining f2f communication.
- **Really Simple Syndication or Rich Site Summary (RSS)**: are XML documents that help to share news headlines and other web pages in an automated manner through a single subscription of RSS readers; it avoids time to time visit to various web pages. RSS Feeds subscribed from various channels from various sources can be read using RSS Readers like Google Reader.
- **Blogs**: these are normally personal diary or log written on the web. Dated entries are displayed in reverse chronological order so that the recent entries get posted first. Blogs are connected to each other and are known as blogosphere. RSS feeds are made use of for aggregating the blogs and getting their summary.
- **Podcasts**: are blogs that play digital audio files. Technically speaking they are MP3 or MP4 files delivered automatically through RSS feeds. The action of creating and distributing podcasts is termed as podcasting.
- **Vodcasts**: or Vlogs are blogs in digitalized audio-video forms such as videos, photos and slide shows that are uploaded and shared with the help of certain websites like YouTube. The act of producing and sharing Vlogs is called Vlogging.
- **Micro-blogging**: is a miniature blogging in terms of size or content of the blog; it is a multimedia blogging that allows users to instantly post brief text updates or micro-media such as photos or audio clips and publish them by way of text messaging,

instant messaging, email, digital audio or web. It can be viewed by anyone or by a restricted group chosen by the user.

- **Social Networking**: refers to networked tools that allow people to meet, interact and share ideas, artifacts and interest with each other.
- **Social Bookmarking**: is a specialized web based services for identifying, organizing, storing, finding, classifying and sharing web resources among browsers, work places and people. These services can be accessed anywhere in the world with the help of an internet account.
- **Webcasting**: is publishing of 'live' or 'recorded' web-content with the aid of internet; it also provides for download after the webcast. The Web 2.0 technology and development of broadband services allows internet users in different parts of the world gather information on real time mode crossing all barriers that separate them.
- **Wiki**: is an applied Web 2.0 technology. Wikis are open, dynamic and free websites that allows users to collaborate, share, generate, review, revise, update, use and search information. It also provides for association of topics with hyperlinks.
- **Web Surveys and Quizzes**: Web surveys are majorly used to get feedback from the learners about the teaching-learning activities and their satisfaction, whereas Quizzes are randomly generated and presented questions of various types that help students have drill and practice and at the same time provide for self assessment and gain knowledge of their achievement.

Conclusion

The ICT revolution has provided teachers and students access to massive resource of information at their finger tips. Adequate access to a broadband internet service, basic knowledge in use of ICT skills and a bit of manipulating skills can help anyone become successful in their walk of life. As we know a system can function well if and only if all the sub-systems perform equally well in congruence with each other; and in education students, teachers, administrators, policy makers... all needs to be groomed well in ICT practices for realizing a better educated world. Better results with the aid of ICT depend on how good we make use of the available resources in our teaching learning processes. We have to instill in our teachers and learners the courage to ponder on ICT skills and encourage them to come out of their inhibitions and start working on their own in an ICT embedded learning environment; for the sake of a better educated world.

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THE CHALLENGES OF IMPLEMENTING ICT IN EDUCATION

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Abstract

Information and communication technology (ICT) is considered as an effective way to improve the life and well-being of the people in the in developing countries. However, the developing world faces some challenges when they adopt ICT in the education sector. These challenges are related to cost, internet access, trained staff and adequate policy. The purpose of this paper is to explore the challenges in adopting information and communication technologies (ICT).

Introduction

Communication technologies have come to play a vibrant role in democratizing education not only in the developed but also in the developing countries. However, in spreading the use of information and communication technology some major difficulties are felt by the policy makers as well as the implementers. These difficulties are felt both at the growth and application stages of communication technology.

There is no doubt in the power and importance of technology in today's world which has no place for technophobes or those who shun this marvelous invention. Technology has revolutionized the way we teach and learn by making inroads in the field of education and assisting teachers and students alike. But there are a number of problems that arise when we integrate technology into the classroom and harness its power to assist the process of learning.

The problem with technology is that it keeps changing with in the blink of an eye; what is relevant today is outdated tomorrow; and by the time we gain speed and try to learn and understand one, we are bombarded with ten more programs or gadgets that are more sophisticated and advanced than the ones we are used to. Using technology in education is a task that needs to be researched and tested for viability before it is implemented. And once put into practice, it cannot be discontinued in order to accommodate a newer version or better program.

Many researchers agree with the idea that ICT's role is to be a reliable tool to improve the quality of life and this reduces the economic gap between developed and

developing countries. Applying ICT to schooling is an urgent task for developing countries.

1. Financial issues

Resources in the developing world are always scarce so that they have to spend much on basic supplies such as food, housing and roads. In a sense, investing in ICT for schooling might be regarded as a long term issue which means adopting ICT in the education system is relatively not an urgent issue considering the serious poverty in many African countries. When it comes to the controversy of priority of investment between basic services and ICT, both might be linked in the case of education. One piece of good news about cost is the cost of hardware is decreasing rapidly. The price of PCs and peripherals is reduced to half of the original price in every two years. Because of this, the salary of the IT professionals who can teach the new technology is the biggest burden in education budgets and it is followed by software related costs.

2. Limited internet access

Access to the internet is highly limited in remote areas, and relatively poor infrastructure in developing nations such as supply of electricity makes this worse (Gulati, 2008). Low infrastructure is the fundamental problem for developing countries to deal with and it might take a long time and huge funding to improve. Low literacy rates also hinder locals in remote areas from accessing information through the internet. Due to the dominance of English on the internet non-English speaking local people are isolated from the benefits of using internet.

To address these limitations, correspondence courses can be applied. Typical correspondence courses mainly use the printed study materials and exchange assignments between students and tutors through the postal service, so that the students living in poor countries do not need the internet service or computers, which is relatively expensive for them. Distance learning through broadcasting on TV might be another alternative for developing countries with limited internet access.

3. Lack of trained staff

Another challenge of developing nations while adopting ICT in education systems is lack of trained teachers. When it comes to practically applying ICT, which is new to traditional teachers, many may not know how to deal with it and sometimes they are reluctant to accept new technologies in their classrooms. Thus, tutors who can

train these teachers in new technology and IT professionals who can technically install and maintain the system are needed.

The demand for ICT learning has been tremendous and the number of teachers who are trained to teach ICT cannot meet the demand. There are more students willing to be taught computing skills than there are teaches to transfer the skills.

To address this issue, distance learning might be a useful alternative which is relatively affordable and does not require hiring of human resources in remote countries. However, due to the limited access to the internet, distance learning can only be based on text books and possibly satellite TV programs. This is not the case for the distance learning programs of many developed countries. For example, China adopted distance learning to cover its broad territory by slowly leveling up the applied technology from the TV-based to the internet-based depending on the region's level of infrastructure development. This step-by-step approach was successful.

4. Lack of policy

Another problem that we face in using technology in education is that many teachers are not in favor of changing their tried and tested methods to accommodate the new technology. Either they are reluctant to learn new things or they are scared to try the technology because they feel they may be inadequate at it. Children are remarkably sharp when it comes to learning how to use technology, so many teachers feel their authority slipping away from them when they are not used to technology but the children are.

Technology can be efficiently used in a classroom when the teachers are given enough training, when the technology is used effectively to enhance learning specific to a subject and improve general education skills, and when it is easily upgradable without the investment of too much time or money.

5. Administrative problems

The perception of some people especially of the older generation is that computers require highly skilled personnel to operate, while this may not be the case, some school administrators also fear that their students will be exposed to adult sites and other undesired sites, through the use of the internet. Some also fear the infection of viruses to their computers leading to data loss. This may be true to some extent and proper education on the safe use of computers help alleviate some of these issues. The teacher may fear being rendered irrelevant by the introduction of computers in his/her

class. The ‘feel’ that the teacher still remains an authority and a ‘know it all’ in class is something that most teachers cherish, and anything that makes them otherwise is deemed an enemy of the classroom.

Solutions to ICT Problems

Some of the solutions that serve as strategies to curb ICT implementation challenges as put forward by research participants include the following:

1. There is need to have on the job training to enhance skills
2. Need to create an electronic library to create accessibility
3. Need to create processing programmes to run the examinations and examination computations rather than manual system
4. Use of good software package that could accommodate all activities especially student registration details so that they enter exam room with attendance slip
5. Acquiring of the compatible hardware and software packages
6. Provision of computers to lecturers and servicing those already purchased
7. More workshops to enable staff to use softcopies, hence, a big save on material resources
8. Availing office space to staff so that an individual computer is not accessed by many people
9. Training in ICDL
10. Recruit ICT specialists to train academic staff, hiring competent staff

Conclusion

The role of ICT in developing countries is significant and critical for their rapid economic success which might lead to closing the gap between the developed and developing world. When implementing the ICT in the education sector, there are considerable challenges such as cost, internet access, training and policy issue. But, each issue has its own way of addressing which is the effective practice around world. However, all these changes for development through applying ICT to the education sector must consider the environment each country faces, because the situation of each nation is totally different from each other. It might be different from region to region within the country and it changes with the passage of time.

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USAGE AND PROBLEMS RELATED TO ICT AMONG STUDENT TEACHERS BELONGING TO DISADVANTAGED SECTIONS

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Introduction

In this technological era we can't think of a world without the use of ICT (Information communication technology). People from all walks of life need ICT for different purpose. Teachers who have to teach and guide the generation next should also keep themselves abreast with the advancements in the technological world as the students sitting in their class rooms are well versed in the usage of ICT gadgets. ICT is required to enhance the effectiveness of teaching-learning process. Teachers need good computer skills and language skills to communicate with the new generation. Teacher educators who teach the prospective teachers also will be isolated if they are not good in ICT skills. Only few teachers and teacher educators have degrees and certificates related to ICT. A good percentage of teachers have acquired computer skills because of self interest or because it is unavoidable in the present educational scenario. Even though ICT is a part of B.Ed and M.Ed syllabus, most of the teacher educators who teach this subject also are not experts in ICT and their knowledge in this field are limited due to various reasons. The problems related to the usage of ICT are much more among teachers and students from disadvantaged sections. UNESCO is giving much emphasis to ICT based education. The need to incorporate ICT in school education and higher education is also stressed by UNESCO.

'The trend towards a knowledge-based economy has emphasized the importance of universities as repositories of valuable human capital to help secure shares in the global market. The accelerating shift to high-technology and information technology economies requires sustained human resource development and training. Driven by globalization and pressures to teach and train knowledgeable, skilled and competitive professionals, universities face a huge challenge to increase access to higher education and improve the quality of higher education against the stark reality of decreasing resources. Fundamental to the creation of qualified human resources is an accessible, effective and efficient higher education system, particularly when governments are counting on university graduates to be competitive in creating wealth for their

respective countries. Universities are compelled to be innovative and lead by example in using cutting edge technology.' (http://www.unescobkk.org/education/ict)

In 2011 the UNESCO Institute for Information Technologies in Education (IITE) launched a new project which is focused on the role of information and communication technologies (ICTs) in primary education. The aim of the IITE project "ICTs in primary education" is to facilitate the policy dialogue and build a foundation for effective primary education through ICT usage.

This study is conducted as a case study by the IQAC (Internal Quality Assurance cell) of Avila College of Education, Edakochi, Kerala. Avila College of Education is situated in a relatively under developed area of the fast developing metro politian city, Kochi. The area is surrounded by islands, hence geographically isolated. More than 80% of the students are from backward communities and more than 90% of the students are women. 50% of the students are from urban area and 50% from rural area. This paper studies the usage and problems related to ICT among student teachers belonging to disadvantaged sections.

Method – Method used in this study was Survey.

Sample – The sample includes 100 student teachers from Avila College of Education, Edacochin

Sampling Technique – Sampling Technique was Random Sampling

Tool –Tools used were Questionnaire and Checklist

Statistics - Percentage

Objectives of the study

1. To study the usage of ICT and ICT gadgets among student teachers belonging to disadvantaged sections.
2. To study the usage of ICT and ICT gadgets among married and unmarried student teachers belonging to disadvantaged sections.
3. To study the problems related to the usage of ICT among student teachers belonging to disadvantaged sections.
4. To study the problems related to the usage of ICT among married and unmarried student teachers belonging to disadvantaged sections.
5. To collect the perception of teacher educators regarding the problems related to the usage of ICT among student teachers belonging to disadvantaged sections.

Findings of the study

Some of the interesting findings of the study are given below.

1. The percentage of student teachers who use different ICT gadgets are Radio (76%), Desktop (93%), Laptop (49%), Palmtop (3%), Tablet (13%), digital note book (13%), Digital personal diary (13%), Pen drive (66%), I Pod (46%), DVD/VCD/CD (86%).
2. The percentage of student teachers who use PC, Internet & e mail are 63%, 93% & 96% respectively and percentage of student teachers who visit internet cafe is 63% and percentage of student teachers who have account in face book and other social networking sites is 59%.
3. The percentage of married student teachers who use different ICT gadgets are Radio (86%), Desktop (93%), Laptop (53%), Palmtop (0%), Tablet (6%), digital note book (13%), Digital personal diary (6%), Pen drive (73%), I Pod (53%), DVD/VCD/CD (100%) and the percentage of unmarried student teachers who use different ICT gadgets are Radio (66%), Desktop (93%), Laptop (46%), Palmtop (6%), Tablet (20%), digital note book (15%), Digital personal diary (20%), Pen drive (60%), I Pod (40%), DVD/VCD/CD (73%).
4. The percentage of married student teachers who use PC, Internet & e mail are 73%, 66% & 100% respectively and percentage of married student teachers who visit internet cafe is 100% and percentage of student teachers who have account in face book and other social networking sites is 66%. The percentage of unmarried student teachers who use PC, Internet & e mail are 53%, 60% & 93% respectively and percentage of married student teachers who visit internet cafe is 86% and percentage of student teachers who have account in face book and other social networking sites is 53%.
5. Reasons for not using PC among student teachers are Economic difficulties (10%), Lack of computer skills (10%), Fear about cyber crimes (10%), Lack of permission from family members (6%), As there is no requirement (3%). Reasons for not using Internet is Lack of permission from family members (6%).Reasons for not using e mail is there is no requirement (6%). Reasons for not having account in face book/other social networking sites are there is no requirement (13%), Lack of interest to disclose your identity (10%), Lack of permission from family members (3%) and Fear about cyber crimes (3%).

6. Reasons for not using PC among married student teachers are Economic difficulties (6%), Lack of computer skills (6%), Fear about cyber crimes (6%), Lack of permission from family members (0%) and as there is no requirement (6%) and the reasons for not using PC among unmarried student teachers are Economic difficulties (13%), Lack of computer skills (13%),%), Lack of permission from family members (13%), fear about cyber crimes (6%) and as there is no requirement (6%).
7. All the married student teachers are using internet and the reason for not using internet among unmarried student teachers is lack of permission from family members (13%).
8. Reasons for not visiting internet cafe among married student teachers are as there is no requirement (20%) and lack of computer skills (13%). Reasons for not visiting internet cafe among unmarried student teachers are lack of computer skills (13%), lack of interest to disclose your identity (6%) and fear about cyber crimes (6%).
9. All the married student teachers are using e mail and the reason for not using e mail among unmarried student teachers is there is no requirement (6%).
10. Reasons for not having account in face book/other social networking sites among married student teachers are lack of interest to disclose your identity (6%), fear about cyber crimes (6%) and As there is no requirement (6%). Reasons for not having account in face book/other social networking sites among unmarried student teachers are Lack of interest to disclose your identity (13%), lack of permission from family members (6%), fear about cyber crimes (6%) and As there is no requirement (20%).

The findings of the study shows the usage of ICT and ICT gadgets among student teachers belonging to disadvantaged sections and the problems related to the usage of ICT among student teachers belonging to disadvantaged sections. The findings of the study also show that married student teachers are better than unmarried student teachers in the use of ICT gadgets. The use of PC, Internet & e- mail are also more among married student teachers and they are more active in face book/other social networking sites and they more frequent visitors to internet cafe when compared to their counter parts.

The government and the authorities should take necessary steps to reduce the problems related to the usage of ICT among student teachers especially from the disadvantaged sections of the society. Proper training should be given to increase the computer skills and to instill confidence. Teacher educators are of the opinion that lack of computer skills, lack of interest, economic difficulties, skepticism are the major problems which hinder the use of ICT among teacher educators and student teachers. Lack of English language skills is also another problem. ICT has become a part of teaching-learning process. The fast changing world has changed the role of teachers drastically. The interest and abilities of the students also influences the teaching methodology. Proper changes can be made in the B.Ed and M.Ed syllabus to integrate ICT more to the teaching-learning process so that the prospective teachers will be more skilled to handle the students who are born and brought in the digital world.

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