

ABOUT THE BOOK

The edited book “Dimensions of Education in Teaching and Learning” is highly useful for Teachers, Academicians, Research Scholar, and students in Higher Education. Education for the current century in various Dimension of Education. Dimensions include knowledge, skills, character, and metacognition. In the knowledge domain, he speaks about the need for young people to become both specialists and generalists, learning a field of study in-depth and yet also appreciating and understanding how their specialty connects to other disciplines. Also, he argues that we must introduce students to interdisciplinary knowledge critical to tackling many of the challenges facing society today.

ABOUT THE EDITOR



Ramesh Kumar Awasthi's Educational Qualifications is M.A.(Economics & History), M.Com. M.Ed., M.Phil. (Education), UGC-NET in Education, & Ph.D. in Education to be award shortly. He is serving as a Teacher Educator since 2006 in various reputed universities. Presently serving as a Teacher Educator in Bajaj College of Management and Technology, Gadarpur, Udham Singh Nagar, affiliated to Kumaun University, Nainital, Uttarakhand. He has presented 40 research papers/articles in various national and international seminars/conferences, published 10 research papers in national and international reputed journals, and write various chapters in edited books. He has conducted various national seminars/workshops/conferences as an organizer. He is a member of national and international reputed educational organizations, Indian Association for TeacherEducators IATE, Globus Education& Research Association GERA, and Institute of Scholars InSc.



AKHAND PUBLISHING HOUSE
Publisher, Distributor, Exporter having an Online Bookstore

E-mail : akhandpublishinghouse@gmail.com
akhandpublishing@yahoo.com
Website : www.akhandbooks.com

ISBN 978-93-90870-31-8



9 789390 870318

₹1200 | \$92

www.akhandbooks.com

DIMENSIONS OF
EDUCATION IN TEACHING AND LEARNING

Edited by
Ramesh Kumar Awasthi



DIMENSIONS OF EDUCATION IN TEACHING AND LEARNING



Edited by
Ramesh Kumar Awasthi

DIMENSIONS OF EDUCATION IN TEACHING AND LEARNING

DIMENSIONS OF EDUCATION IN TEACHING AND LEARNING

Edited by
Ramesh Kumar Awasthi



**AKHAND PUBLISHING HOUSE
DELHI (INDIA)**

Published by



AKHAND PUBLISHING HOUSE

Publisher, Distributor, Exporter having an Online Bookstore

Head Office : L-9A, First Floor, Street No. 42,
Sadatpur Extension, Delhi-110094 (INDIA)

Phone No.: 9968628081, 9555149955 & 9013387535

E-mail : akhandpublishinghouse@gmail.com,
akhandpublishing@yahoo.com

Website : www.akhandbooks.com

DIMENSIONS OF EDUCATION IN TEACHING AND LEARNING

© Editor

Ist Edition 2021

ISBN 978-93-90870-31-8

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, transmitted or utilized in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright owner Author/Editors. Application for such permission should be addressed to the Publisher and Author/Editors. Please do not participate in or do not encourage piracy of copyrighted materials in violation of the author's rights. Purchase only authorized editions.

The responsibility for facts stated, opinion expressed or conclusions reached and plagiarism, if any, in this book is entirely that of the author. Neither the publishers nor the editors will be responsible for them whatsoever.

Printed in India

Published by Jhapsu Yadav for Akhand Publishing House. Cover Designed and Laser Typesetting at VM Graphic and Printed at Aarna Enterprises, Delhi.

This book is dedicated to
“my respected mother, father’s, family members”
and all my respected Teachers.

मातृ देवो भव, पितृ देवो भव।
आचार्य देवो भव, अतिथि देवो भव॥

Treat thy mother as a God; as a God treat thou thy father; as
a God shalt thou treat thy teacher; thy guests as Gods shalt
thou treat.

Dr. S.N. PANDEY
Pro Chancellor



The Global Open University
Nagaland

Dimapur- 797115
Nagaland



Foreword

It is a pleasure to write this foreword to the edited book of the highly successful “Dimensions of Education in Teaching and Learning” in Higher Education. While its contributors are mainly Indian and there are places where it necessarily addresses a specifically Indian context, this is a collection that has genuine international appeal and relevance. For, across much of the globe, the world of teaching and learning in higher education is being shaped by similar phenomena: a larger, more demanding, and more diverse student body, a pervasive language of quality and accountability, rapidly changing technological possibilities yet uneven levels of student familiarity with them, more demanding arrangements with governments, and expectations by students and employers that graduates will be equipped for rapidly changing and globalizing workplaces.

In 1840, the essayist Thomas Carlyle wrote that “the true University of these days is a collection of books”. On this evidence alone, it’s safe to say that Carlyle may not recognize the universities of today. Decades of significant developments in pedagogy, research methods, and journal publishing, enabled by expansion, globalization, research assessment, and the impact and knowledge

exchange agendas have transformed our understanding of what a university can be, for the better.

Universal Declaration of Human Rights declares, “Everyone has the right to education”. Education is a fundamental tool for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to economic growth, social justice and equality, scientific advancement, national integration, and cultural preservation. India will have the highest youth population in the world over a couple of years, and the ability to provide high-quality educational opportunities will help them to shape the future of our country.

In the 21st century, universities must be at the forefront of embracing the opportunities brought about by new technologies as well as understanding and overcoming their limitations. For these reasons, I warmly welcome this new publication on edited books in education, which sheds much-needed light on the significant opportunities for edited books to transform and improve the learning experience for students. Throughout this publication the inventiveness and perspicacity shown by academics and librarians to deliver improvements to education by embracing the opportunities of edited books are striking. The future of edited books in higher education is in safe hands.

Today is the global situation of the world has worsened due to the COVID-19 pandemic, as teachers we work hard to provide learning experiences that ensure that every day in every classroom, every student is achieving. Critically, in designing any learning, we seek to understand the readiness of all learners and set challenging but achievable learning goals. We know that improving levels of student achievement depends on all of us working together and striving for continual improvement.

I congratulate Mr. Ramesh Kumar Awasthi for the efficient editing of this book as well as research scholars, academicians, and

(ix)

faculty members, whose supports have made this book concept in concrete form.

With greetings and best wishes to Editor and Contributors.

11 March 2021

Mahashivratri

A handwritten signature in blue ink, appearing to be 'S.N. Pandey', written over a date stamp '11/3/21'.

Professor S.N. Pandey

Pro-Chancellor

The Global Open University Nagaland

Preface

Improvements in the quality and, to some extent, the efficiency and equity of education depend on the nexus of teaching and learning. Schooling, the formal teaching-learning environment, can be influenced by resources and ideas from many sources. However, to a degree, it is a self-contained system, and different schools (or even classrooms) may respond to a given set of inputs in different ways. This condition implies that the characteristics, meaning, and effects of the interaction of teachers and students may be influenced through national policies.

Education is a positive construct that empowers people to make use of its potentialities in the best ways to achieve excellence. Research in this endeavor tries to resolve various problems related to education, the educational process, and educational advancements. Thereby, keeping education updated and advanced in turn preparing updated positive and constructive citizens of the society. Today an educated person is expected to be equipped with the most advanced knowledge, skills, humane values, and digitalization, including evaluation of existing policies and bringing out components & variables to be covered by forthcoming policies. Thus, research is positively correlated with human and material development, ensuring a humane and developed society. The strength of an institution is reflected by the researches undertaken by the members over there.

The world is undergoing rapid changes in the knowledge landscape. With the rise of big data, machine learning, and artificial intelligence, many unskilled jobs worldwide may be taken over by machines, while the need for skilled labor, particularly involving mathematics, computer science, and data science, in conjunction

with multi-disciplinary abilities across the sciences, social sciences and humanities, will be in rapidly increasing demand.

In the digital world, it is a must that a student immediately feels the benefit of the content you are teaching. So, never start with a typical 'Welcome' or 'Here's what we're going to learn today. Instead, begin your content with headlines and with hooks. Students only pay attention in classrooms if they see how your content is beneficial for them and should also feel the pain of missing this benefit of the lecture. Students want something super powerful, 100% attention grabber gold in the form of teaching, and that too right now.

Education for the 21st century in various Dimension of Education. Dimensions include knowledge, skills, character, and metacognition. In the knowledge domain, he speaks about the need for young people to become both specialists and generalists, learning a field of study in-depth and yet also appreciating and understanding how their specialty connects to other disciplines. Also, he argues that we must introduce students to interdisciplinary knowledge critical to tackling many of the challenges facing society today. In the sphere of skills, he underscores the significance of four skill categories: critical thinking, creativity, communication, and collaboration. He also notes the importance of supporting students to utilize these skills to apply their knowledge to new problems, that knowledge and skills are not sufficient in today's world. We must support students' character development to ensure that they develop the qualities necessary to contribute to shaping a better world. These include mindfulness, curiosity, courage, resilience, ethics, and leadership.

I am grateful for the efficient editing of this book as well as teachers, academicians, research scholars, students, and faculty members, whose supports have made this book concept in concrete form.

With greetings and best wishes to the Contributors.

Ramesh Kumar Awasthi

Contributor's List

1. **Mr. Ramesh Kumar Awasthi**, Teacher Educator, Bajaj College of Management & Technology, Gadarpur, U.S. Nagar, Uttarakhand.
2. **Dr. Neeraj kumar Shukla**, Head of Department B.Ed., Government PG College, Kashipur, U.S Nagar, Uttarakhand.
3. **Dr. Rizwana Siddiqui**, Assistant Professor, Faculty of Education, S.S.J. University, Almora.
4. **Saroj Joshi**, Research Scholar, S.S.J. University, Almora.
5. **Dr. Pradeep Kumar**, Department of Zoology, S.G.N. Govt. P.G. College, Muhammadabad, Gohna, Mau. (U.P.)
6. **Dr. Sabahat Rafiq Qazi**, Higher Education, Srinagar, Jammu & Kashmir.
7. **Dr. Ram Pravesh**, Associate Professor of Commerce, Vanijya Mahavidyalaya, Patna University, Patna.
8. **Mr. Piyush Ranjan Sahay**, Research Scholar, Department of Applied Economics and Commerce Patna University, Patna.
9. **Mr. Subhabrata Ghosh**, Assistant Professor, Department of B.Ed., Al Hera College of Education, Basirhat, North 24 Parganas, West Bengal, India.
10. **Ms. Banya Kasturi Dutta**, Assistant Professor, Department of Education, Don Bosco College, Golaghat, Assam.
11. **Dr. S. Abdul Jabbar**, Assistant Professor, Department of Education and Training, Maulana Azad National Urdu University, Hyderabad.

12. **Mr. Santu Bera**, Ph.D Research Scholar, Faculty of Education and Psychology, Department Of Education, The Maharaja Sayajirao University Of Baroda (A State University), Pratapgunj, Vadodara,Gujarat, India.
13. **Ms. Shikha Kothari**, Research Scholar, Department of Education, M.B.GOV. P.G.College, Haldwani, Nainital.
14. **Ms. Kavita Badola**, Teacher Educator, GDC Govt. PG College, Dakpathar, Dehradun, Uttarakhand.
15. **Ms. Sunita Kumari**, Assistant Professor, Department of Environmental Education, Postgraduate Govt. College for Girls, Sector-42, Chandigarh.
16. **Mr. Jitendranath Gorai**, Research Scholar, School of Education, Central University of Gujrat.
17. **Mr. Amitabha Mondal**, Research Scholar, Department of Education, Raiganj University, West Bengal.
18. **Ms. Jasveer Kaur**, Student-Teacher, S.C.D.K. Khola College of Education, Dineshpur, U.S.Nagar, Uttarakhand.
19. **Mrs. Neeti Sharma**, Student, Uttarakhand Open University, Haldwani, Nainital.
20. **Dr. Munish Kumar Pandey**, Principal, PDG College, Bazpur, U.S. Nagar, Uttarakhand.
21. **Dr. Santosh Kumar Tripathi**, HOD/Principal, Saraswati Institute of Management and Technology, U.S. Nagar Uttarakhand.
22. **Dr. Sonu Srivastava**, Head of Department, Sanskrit, Chhatrapati Shivaji M.S.D. College, Pali, Lalitpur, Uttar Pradesh.
23. **Mr. Sanjeev Kumar**, Research Scholar, Janardan Ray Nagar Rajasthan Vidyapeeth Deemed University, Udaipur, Rajasthan.
24. **Mr. Manoj Kumar Das**, Teacher, Educator, Keshav Suryamukhi College of Education, Sitarganj, U.S.Nagar, Uttarakhand.

25. **Mr. Khemendra Kumar Sharma**, Research Scholar, JJT University, Rajasthan.
26. **Ms. Rekha Yadav**, Research Scholar, Jyoti Vidyapeeth Women's University, Jaipur, Rajasthan.
27. **Ms. Urmila Yadav**, Research Scholar, Jyoti Vidyapeeth Women's University, Jaipur, Rajasthan.
28. **Ms. Ankita**, Assistant Professor, Department of Education, S.S.J. Campus, Almora, Kumaun University, Nainital.
29. **Mr. Manoj Joshi**, Senior Research Scholar, Department of Education, S.S.J. Campus, Almora, Kumaun University, Nainital.
30. **Ms. Amarpreet Kaur**, Assistant Professor, PDG College, Bazpur, U.S.Nagar, Uttarakhand.
31. **Ms. Tinku Khatri**, Research scholar, Department of Sociology, O.P.J.S. University, Churu, Rajasthan.
32. **Mr. Nitesh Kumar Maurya**, Research Scholar, JRF Education, Govt, Mahila College, Samadi, Ahirola, Azamgarh, Affiliated to Veer Bahadur Singh University, Jaunpur, Uttar Pradesh.
33. **Ms. Jyotsana**, Research Scholar, Department of Education, S.S.J. Campus, Almora, Kumaun University, Nainital.
34. **Vishal Maurya**, Research Scholar, Svu Gajraula, U.P.
35. **Ms. Seema Fulera**, Research Scholar, MJP Rohilkhand University, Bareilly, Uttar Pradesh.

Contents

| | |
|--|-------------|
| <i>Foreword</i> | <i>vii</i> |
| <i>Preface</i> | <i>xi</i> |
| <i>Contributor's List</i> | <i>xiii</i> |
| 1. The 21st Century Teachers and Learners — <i>Ramesh Kumar Awasthi</i> | 1 |
| 2. Role of IGNOU and NIOS in the Expansion of Education — <i>Dr. Neeraj kumar Shukla</i> | 14 |
| 3. Emerging Trends and Innovation in Secondary Education — <i>Dr. Rizwana Siddiqui, Saroj Joshi</i> | 28 |
| 4. Environmental Education — <i>Dr. Pradeep Kumar</i> | 35 |
| 5. Integration of ICT in Teaching-Learning Education — <i>Dr. Sabahat Rafiq Qazi</i> | 43 |
| 6. Work-Life Balance - A study of Employees of Educational Institution in Patna, Bihar — <i>Dr. Ram Pravesh Ram Ram, Mr. Piyush Ranjan Sahay</i> | 49 |
| 7. The Effects of Covid-19 Pandemic on the Teacher Education Institutions in West Bengal — <i>Mr. Subhabrata Ghosh</i> | 63 |

8. Inclusive Education in India: Concept, Need, and Challenges 72
—*Ms. Banya Kasturi Dutta*
9. New Pedagogical Trends in Contemporary Avenues: Across the discipline 82
—*Dr. S. Abdul Jabbar*
10. Impact of Attitude, Self Confidence, and Competency towards Application of ICT Based Instructional Materials among Trainee Teachers in Four Year Teacher Education Program 90
—*Mr. Santu Bera*
11. Early Childhood Care and Education (ECCE) In National Education Policy 2020 103
—*Ms. Shikha Kothari*
12. Use of ICT in Futuristic Education with Various Perspectives 115
—*Ms. Kavita Badola*
13. Environment Sustainability Vis-a-Vis Development 127
—*Ms. Sunita Kumari*
14. Digital Era: Usage and Impact of ICT in School Education 137
—*Mr. Jitendranath Gorai, Amitabha Mondal*
15. Using E-Learning in Education 145
—*Ms. Jasveer Kaur, Mrs. Neeti Sharma*
16. विश्वव्यापी महामारी कोविड-19 का अधिगम शिक्षण प्रक्रिया पर प्रभाव 154
—*डॉ० मुनीश कुमार पाण्डेय*
17. स्वाधीनता के उपरान्त गठित आयोगों, समितियों एवं शिक्षा नीतियों पर एक दृष्टि 161
—*डॉ० संतोष कुमार त्रिपाठी*

18. "अग्नि पुराणोक्त चातुर्वर्ण्य मर्यादा"
—डॉ० सोनू श्रीवास्तव 169
19. विद्यार्थियों की अधिगम शैलियों का अध्ययन
—संजीव कुमार 175
20. कुमाऊँ के थारू जनजाति छात्र के सांस्कृतिक जीवन
का सृजनात्मक एवं कलात्मक पक्ष का अध्ययन 184
—मनोज कुमार दास
21. भारत में पर्यावरणीय अवधारणाएँ : समस्याएँ और समाधान 193
—खेमेन्द्र कुमार शर्मा
22. जे. कृष्णमूर्ति का जीवन परिचय एवं व्यक्तित्व 204
—रेखा यादव
23. आधुनिकीकरण के प्रति शिक्षकों की अभिवृत्ति का अध्ययन 214
—उर्मिला यादव
24. शैक्षिक तकनीकी एवं शिक्षक 228
—अंकिता
25. आईसीटी एवं मल्टीमीडिया (ICT & Multimedia) 246
—मनोज जोशी
26. समावेशी शिक्षा 260
—अमर प्रीत कौर
27. पाठ्यक्रम विकास 270
—टींकू खत्री
28. क्या है ई.टी., आई.टी., आई.सी.टी. का वर्तमान
स्वरूप? शैक्षिक विकास के संदर्भ में 278
—नितेश कुमार मौर्य

29. पाठ्यचर्या विकास में शिक्षक की भूमिका 290
—ज्योत्सना
30. Secondary Education Curriculum 297
—*Vishal Maurya*
31. शिक्षा के विभिन्न स्तरों पर पर्यावरण अध्ययन की
शिक्षण विधियां 307
—सीमा फुलेरा

Digital Era: Usage and Impact of ICT in School Education

Jitendranath Gorai, Amitabha Mondal

Abstract

The present study summarizes Information and Communication Technology and its usage in education. It has discussed the advantage of ICT in education along with its barriers in case of implementation. It also reviews how the so-called teaching-learning process changes and the quality of teachers, as well as students, get changed. Objectives are followed to study the ICT uses for the teaching profession in school and to study the advantages and limitations of ICT in school. The paper is based on secondary data. The researcher collected data from different sources like websites, journal articles, e-books reports, virtual observation of various organizations and commissions, articles published in local papers, national and international, etc. Digital learning in the teaching profession is a challenging job. Now a day's learners can learn equally through offline mode and online mode. Our great teachers always enhance his or her knowledge, skills, methods, style, etc.

Keywords: ICT, E-learning, tools, synchronous, Asynchronous, Advantage, Barriers.

Introduction

Education is of utmost importance to every society, with the change of time the process of imparting education is getting changed day by day. Earlier students used to get an education in the mentor's home. The teachers used to give lessons and the students eagerly heard those. Teacher-centered education is also prevailing now to some extent. But with the advent of Information and communication technology (ICT), there has been a huge change in the education system. The modern education system cannot be imagined without a computer. Computer with an internet connection has opened a new vista. Students are no longer confined to their so-called classrooms. Learning is now learner-centered. The term E-learning has been coined. E-Learning refers to learning via the internet. It provides learners with a flexible and personalized way to learn (Zhang & Nunamaker, 2003). But the introduction of ICT is not all the way smooth. It is challenging also. But it is being adopted in the educational system.

According to NPE 2005 and recent NEP 2020, the teaching-learning process should be learner-centric involving the round development of a child. So teaching profession is going to be the most challenging profession like any other profession. In the changing world ICT skills is most important for professional development. Teachers always modify teaching strategies rapidly according to learners' needs and changing societies.

Objectives of the study

- a. To study the ICT use for the teaching profession in school.
- b. To study the advantages and limitations of ICT in school.

Methodology

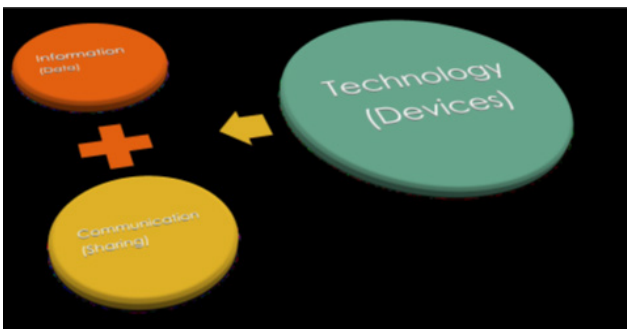
The paper is based on secondary data. The researcher collected data from different sources. These are websites, journal articles, e-books reports, virtual observation of various organizations and commissions, articles published in local papers, national and

international, etc. This paper will give a brief description of the Development of ICT Skills: The emerging Demand of Teaching Professionals in changing worlds.

What Is ICT

Information And Communication Technology is the technology with the help of which information can be created, processed, stored, distributed, advanced, and retrieved to enrich the knowledge. “ICT implies the technology which consists of electronic devices and associative human interactive materials that enable the user to employ them for a wide range of teaching-learning processes in addition to personal use”.

Information Communication Technology includes hardware and software technologies like radio, television as well as new devices like a computer with the internet. At first radio and television were introduced in the school education system. Then came the computer and email. It has caused a change in meaning and methods. The students can now have the experience of real-time happening in class. The introduction has made the world a Global Village. During the Lockdown period due to the pandemic situation created by COVID 19, teachers and students use to have their classes through the ICT.



Tools of ICT

Different ICT tools are used to establish the rapport between the teacher and learners for turning a session into a fruitful one.

There are two types of tools namely synchronous and asynchronous. In synchronous communication, students should be engaged themselves at the prescribed time but in case of asynchronous communication, the participants need not be present at the time of discussion. Chatting and video conference are the example of synchronous communication, whereas email, Online forums, Blogs are examples of asynchronous communication.

Chatting

In this communication, the teachers and students participate among themselves through text-based message. The teachers have a great role to play.

Video Conference

In this type, the teachers and students interact among themselves while seeing each other. It's very interesting and attractive.

Online Forums

It is a discussion forum in which one person passes information to others. Teachers provide information for his or her students about different matters. It is very helpful for the students.

Blogs

It is an online place where one leaves his or her ideas. The readers read this and pass their comments. The teachers post home assignments for students and they respond.

Email

It's like a postal system. The students and teachers pass their information to each other to their respective email addresses. They respond according to his or her suitable time.

The technology used in Classroom

The teacher should use different kinds of ICT tools for learner's attraction in the classroom environment. These are...

Advantages of ICT in Education

- The use of ICT tools in imparting lesson attract the learners. It motivates students to learn. As a result, they realize the deep meaning and greater understanding of the subject matter.
- There are opportunities for collaborative learning. Students from different geographical areas can take part and interact with each other. Different ideas arise as a result. Students acquire new knowledge. The ability of critical thinking and reasoning power develop.
- Earlier the teachers played the main role in the classroom situation. But with the use of ICT in education the students are much more aware of gathering information and ideas from different sources. So students can share their newly acquired ideas with their teachers.
- Interpretation of ICT in the School curriculum has helped to prepare new materials which are very helpful for the learners to learn new things interestingly and fruitfully.
- The capability of teachers also increases. The teachers get acquainted with the aspects of ICT. They meet the challenges and oriented themselves to meet the new situation to help to turn the developed nation.
- It's very helpful for differently-abled students. Screen Reader and Braille printers are very helpful to students with special needs.
- Others...

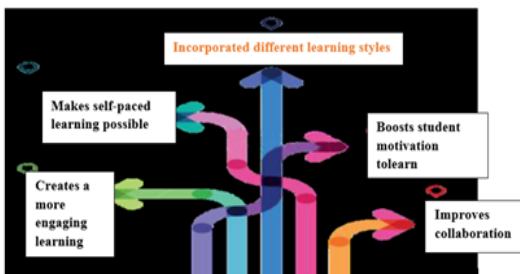


Fig.2. Some advantages, source- Internet

Limitations

- Lack of financial support is one of the limitations in implementing ICT in schools. Most of the schools do not afford the tools.
- There are not enough training opportunities for teachers in the use of ICT in the classroom. (Pilgrim's.2001)
- Without both good technical support in the classroom and whole school resources, teachers cannot be expected to overcome the barriers preventing them from using ICT (Lewis.2003)
- Another barrier that is directly related to teacher confidence is the teacher's competence in integrating ICT into pedagogical practice. (Becta.2004)
- One such barrier that prevents teachers from using ICT in their teaching is a lack of confidence. (Dawes.2001)

Expected Solution

To overcome the barriers in implementing ICT in education the Govt. has to manage enough funds to provide ICT tools in schools. There must be the provision of teacher training regarding ICT implementation. Steps should be taken to boost the confidence of teachers. The Teachers should be given freedom in preparing the curriculum.

Conclusion

The present study paves the way to have the desired improvement in the field of education by implementing ICT. Findings show that there are some barriers but if these barriers are overcome the entire process of teaching-learning will become interesting. The quality of teachers will get enriched. Students will achieve their nourished goals. Some findings from the World Bank state that the use of ICT tools has been increased in great numbers than earlier. The use of ICT in India is increasing day by day. It is the future of Education.

References

1. Aggarwal, J.C. (2007) *Essentials of Educational Technology (Innovations in Teaching- Learning)* Vikas Publishing House Pvt. Ltd.
2. British Educational Communications and Technology Agency (Becta) (2004). A review of the research literature on barriers to the uptake of ICT by teachers. Retrieved August 13, 2008, from <http://www.becta.org.uk>
3. Dawes, L. (2001). What stops teachers from using new technology? In M. Leask (Ed.), *Issues in Teaching using ICT* (pp. 61-79). London: Routledge
4. Lewis, S. (2003). Enhancing teaching and learning of science through the use of ICT: Methods and materials. *School Science Review*, 84(309), 41-51.
5. Pelgrum, W. J. (2001). Obstacles to the integration of ICT in education: results from a worldwide educational assessment. *Computers & Education*, 37, 163-178.
6. Sidhu, K. S. (1984) *Methodology of Research in Education* (Sterling Publishers Private Limited, New Delhi.)
7. Zhang, D, & Nunamaker, J.F. (2003). *Powering E-Learning in the New Millennium: An Overview of E-Learning and Enabling Technology*
8. www.researchgate.net
9. www.google.com