## Table of Contents

### Foreword

### Organizing Committee

### Technical Program Committee

### Plenary

- **3D Virtual Worlds in Education and Training**
  - Demetrios G Sampson
  
- **Learning Contracts and Engineering Education**
  - Paul S. Goodman

- **National Programme on Technology Enhanced Learning (NPTEL): The Vision and the Mission**
  - M. S. Ananth

- **On the Design and Use of a Cognitive Tutoring System in the Math Classroom**
  - Ignacio Casas, Paul S. Goodman, and Enrique Pelaez

- **Pedagogic Issues and Technology Assisted Engineering Education**
  - Anup K. Ray

- **Technology and the Innovative Transformation of Education**
  - M. S. Vijay Kumar

- **Transition from e-Learning to u-Learning: Innovations and Personalization Issues**
  - Kinshuk, Maiga Chang, Jon Dron, Sabine Graf, Vive Kumar, Oscar Lin, Qing Tan, Dunwei Wen, and Guangbing Yang

### Full Papers

- **A Critical Study of NPTEL**
  - Jayanti Ravi and Haresh Jayantilal Jani
A Smart Tutoring Aid for the Autistic - Educational Aid for Learners on the Autism Spectrum .................................................................43
  Annie Joyce Vullamparthi, Himadri S. Khargharia, B. S. Bindhumadhava, and Nelaturu Sarat Chandra Babu

A Theme to Unite The Resources of Different Remote Laboratories ...........................................51
  Vishal Kondabathini, Sara Boutamina, and Sai Krishna Dinesh Vinjarapu

An Adaptive e-Learning Environment Using Distributed Spiking Neural P Systems .................................................................56
  Susan Elias, Sarath Chandar A. P., Kamala Krithivasan, and S. V. Raghavan

An Educational Resources Broker System for Collaborative Sharing of Knowledge-Centric Content ...........................................61
  Aparna Lalinekar, Chandrashekhar Ramanathan, and Srinivasan Ramani

An Online Inclusive Examination Framework for India .................................................................69
  Deepa Vivekanandan, Radhika Pal, N. Mohana, R. Indumathi, Menaga Thirumurthi, M. Sheeba Diana, Hema A. Murthy, M. Bhuvaneshwari, Dimple A. Shajahan, and Naliniprava Behera

ASK-LOM-AT 2.0: A Web-Based Tool for Educational Metadata Authoring of Open Educational Resources ............................................................................................................................76
  Demetrios G. Sampson, Panagiotis Zervas, and George Chloros

Auto-Assessor: Computerized Assessment System for Marking Student's Short-Answers Automatically ........................................81
  Laurie Cutrone, Maiga Chang, and Kinshuk

Automated Building of Domain Ontologies from Lecture Notes in Courseware ........................................89
  Neelamadhav Gantayat and Sridhar Iyer

Automated Tagging to Enable Fine-Grained Browsing of Lecture Videos ........................................96
  Vijaya Kumar Kamabathula and Sridhar Iyer

Butterfly Model: An Innovative Way to Deliver and Personalize Content in the "Learning by Doing" Methodology ......................................................................................................................103
  Surya Kiran Reddy Kari and Sandhya Kode

Computer Game-Based Learning and Pedagogical Contexts: Initial Findings from a Field Study .................................................................................................................................109
  Shiffon Chatterjee, Atasi Mohanty, and Bani Bhattacharya

Creating Educational Lecture Videos Compatible with Streaming Server Using Low Cost Resources ..................................................116
  V. B. Dharmadhikari

DISCOVIR: A Framework for Designing Interfaces and Structuring Content for Virtual Labs ..................................................121
  Rohit Ashok Khot and Venkatesh Choppella
Impact of Digital Library and Internet Technology on Learner's Usability and Satisfaction ..........................................................128
    Nakhat Nasreen and Gamal Ahmed Ahmed Abdullah Alawi

Impact of Peer-Related Factors on Student-Related Outcomes in Technology-Mediated Learning: Evidence from Secondary Schools in India ........................................136
    Mayuri Duggirala and Prakash Sai Lokachari

Implementation of Ubiquitous Learning System Using Sensor Technologies ..................................................142
    Kumar Mandula, Srinivasa Rao Meda, Dhanander Kumar Jain, and Radhika Kambham

Investigating the Effectiveness of Non-interactive Video-Based Lectures in e-Learning - Case Study at Master of Science in Information Technology (MSIT) Program ..................................................149
    Shekhar Murthy and Padmaja Naraharisetty

Mobile Gurukul: Turning the Risk (of Not Knowing) to be an Intellectual Springboard .....................................................156
    Mujahidul Islam

Model for Rapid, Large-Scale Development of Learning Objects in Multiple Domains ........................................................................................................163
    Gargi Banerjee and Sahana Murthy

PENPAL - Electronic Pen Aiding Visually Impaired in Reading and Visualizing Textual Contents .................................................................................................171
    Joshi Kumar A. V., Visu A., Mohan Raj S., Madhan Prabhu T., and Kalaiselvi V. K. G.

The Role of Content Adaptation in Ubiquitous Learning .................................................................................................................177
    Ramu Parupalli, Sarat Chandra Babu Nelaturu, and Dhanander Kumar Jain

Using Cognitive Apprenticeship Framework in Technology Education by Pre-service Teachers ..........................................................183
    Pranita Gopal

Using Moodle to Enhance Student Satisfaction from ICT .................................................................................................191
    Ela Goyal and Seema Purohit

Short Papers
A Lesson Generation Framework to Enable Massively Distributed Content Development .................................................................................................201
    Sanand S. and S. V. Raghavan

A Self Learning VLSI Lab along with Web-Based Platform to Design Schematics and Layouts .................................................................................................205
    Shashank Sharma, Syed Azeemuddin, and Mohd Anwar
A System for Managing SCORM-Compliant Learning Objects .................................................................208
Chandrashekar Ramanathan, Neha Gayal, Mehul Sheth, and Aditya Pendyala

A Virtual Laboratory for Teaching Linux on the Web ..................................................................................212
Krishna Chaitanya Bandi, Aditya Kiran Nori, Venkatesh Choppella, and Sandhya Kode

Athena - A Web Powered Mentoring Solution in the Milieu of Higher Education .......................................216
Adhiraj Alai and Rajkishan Gunasekaran

Design and Development of a Cost-Effective Online Electronic Circuits Laboratory ........................................221
C. K. Maiti, S. Mahata, and Ananda Maiti

Design of Cross-Breeding Diversity Support System for CSCL ..................................................................225
Yoshiko Goda, Masanori Yamada, Koji Shimonishi, and Shuji Wakita

Diagrammatic Reasoning in Computer Programming ..................................................................................229
Ragendhu S. P. and R. S. Milton

Effective Use of CloudComputing Concepts in Engineering Colleges ..........................................................233
R. Soundhara Raja Pandian and K. S. Kasiviswanathan

Maria Rosaria Del Sorbo and Walter Balzano

Gesture Recognition for American Sign Language with Polygon Approximation ........................................241
Geetha M., Rohit Menon, Suranya Jayan, Raju James, and Janardhan G. V. V.

Improving Readability of Dyslexic Learners through Document Summarization ........................................246
K. Nandhini and S. R. Balasundaram

Model and Learner Feedback for a Large Scale Technology Enabled Teacher Training Program .....................250
Kalpana Kannan and K. Narayanan

Modeling and Simulation: The Paradigm Shift for Cohesive Resource Harnessing .....................................254
Shamala Subramaniam

PAL: An Interactive Learning Platform for Primary Education .....................................................................258
S. S. Prabhu, Chandrashekar Ramanathan, Krishna Prakash PVS, and Bhargav Madishetty

Study the Usage of Mobile Learning Engine in Computer Application Course .............................................262
Mahendra Gupta and Ela Goyal

Using a Blended Approach to In-service Teacher Training: A Case Study ..................................................266
Shailaja Sardessai and Venkatesh V. Kamat

Web Based Programming Assistance Tool for Novices .............................................................................270
Anmol More, Jitendra Kumar, and Renumol V. G.
Wikis for Education - Helping Students Communicate and Collaborate ...........................................274
  Clif Kussmaul

Write Tutor ...........................................................................................................................................279
  Chembian Parthiban and Rishikesan Parthiban

Reflection Papers
A Blended Training Model to Improve Learning Outcome of IT Professionals in Scripting Languages .............................................................................................................................285
  Ramesh Rajini, Amit Tiwary, and Ravi Ganapathy

Academagogical Framework for Effective University Education - Promoting Millennial Centric Learning in Global Knowledge Society ....................................................................................289
  Shekhar Murthy

Enhancing Computer Assisted Language Learning via the World Wide Web for English Language Teaching ..........................................................................................................................291
  Varsha Basheer

Process Models for Virtual Lab Development, Deployment and Distribution ........................................293
  Venkatesh Choppella, Vamsi Krishna Brahmajosyula, Medhamsh Vutpala, and Sukant Kole

  Dietrich Albert and Christina M. Steiner

Transformative Learning Theory and WBLEs - Review of Research and Discussion of Implications ..............................................................................................................297
  Laxmi Jaiswal

Using Educational Technologies to Further Critical Thinking, Creative Thinking, and Wisdom ...........................................................................................................................299
  Nikunj P. Dalal

Tutorials
A Tutorial on Enhancing the Level-of-Learning through ICT-Enabled Teaching in Engineering Education ...........................................................................................................................303
  Sujatha J., Rajshri Jobanputra, and R. V. Joshi

Integrating Simulations to Increase Efficacy of the Teaching-Learning Process ....................................305
  Debabrata Bagchi

Media Pedagogy - The Medium is the Message .........................................................................................307
  Syed Sultan Ahmed

Author Index ................................................................................................................................................309