Introduction

The Inter-Disciplinary Programme in Educational Technology (IDP-ET) started in the Institute in the Autumn semester of the academic year 2010-11. The IDP-ET has core faculty members, adjunct faculty members, visiting faculty members, as well as faculty members from various departments of the Institute. The IDP-ET conducts research in areas of pedagogies and tools for technology-enhanced learning. In addition to Institute courses at a Ph.D. level, the IDP-ET organizes short-term intensive courses on effective teaching-learning and educational research methodologies through QIP, CEP and the Teach 10000 Teachers project. Faculty members and Ph.D. research scholars of the IDP-ET play a significant role in the organization of IEEE conference on Technology for Education (T4E), carry out sponsored projects for the National Mission on Education through ICT (NMEICT) and provide consultancy to educational technology industries.

Academic Programme

The IDP in Educational Technology (IDP-ET) offers a Ph.D. programme in Educational Technology. Currently, 22 students are enrolled in the Ph.D programme, and 3 more have been admitted as of May 2015. These Ph.D. students include engineering college teachers from colleges in and around Mumbai. The IDP-ET continues to offer core courses and electives in educational technology content and methods. These courses have had enrollment from B.Tech, M.Tech and Ph.D students in other academic programmes within the Institute.

R & D Activities

The main areas of focus of the R&D activities of the IDP-ET are:
- Technology-enhanced learning environments for thinking skills, which are pan-domain cognitive skills such as, engineering design, problem-posing, estimation, algorithmic thinking, modeling, data representation & analysis.
- Frameworks for teacher use of educational technology tools and strategies.
- Development of AI & ICT based tools for teaching-learning goals such as automated content generation and assessment.

Areas of development focus for the IDP-ET are:
- Educational products and tools – scientific visualizations, spoken-tutorials, virtual labs, tutoring systems, and assessment instruments.
- Creation of online courses and multimedia textbooks
- Guidelines for teachers - on classroom practice, effective strategies, large classes, incorporation of ICT tools, teaching in new situations such as online education and flipped classrooms
**Sponsored Projects**

**Completed**

“OSCAR++ (Open Source Courseware Animations Repository) sponsored by Ministry of Human Resource Development

“Developing suitable pedagogical methods for various classes, intellectual calibers and research in e-learning”

**Papers published**

**Journals**

- Patwardhan, M. & Murthy, S. "When does higher degree of interaction lead to higher learning in visualizations? Exploring the role of Interactivity Enriching Features.," *Computers & Education*, Vol.82, 2015, pp.292-305.

**Peer-reviewed conference proceedings**


International Conference on Computers in Education, ICCE 2014.


ACM SIGCSE conference on Innovation and Technology in Computer Science Education, ITiCSE 2014.


IEEE International Conference on Advanced Learning Technologies, ICALT 2014

Conferences/Symposia/Workshops/Seminars (Participated/ Papers presented)

- Sahana Murthy.

- Sridhar Iyer.

- Gargi Banerjee.

- Jayakrishnan Warriem.

- Shitanshu Mishra.
  - Participated: ACM India Annual Event on Special Interest Group in Computer Science Education (SIGCSE), Goa, India, Feb. 7, 2015.

- Abhinav Anand.

- Anura Kenkre.

- Rekha Ramesh.

- Kapil Kadam.
Conferences and Workshops (Co-ordinated)

- Enhancing Computer Graphics skills for MCA students using Blender 3D tool. 2-day workshop, March 2015 at Department of Computer Science & Technology, Goa University. Kapil Kadam.
- Pedagogy for effective use of educational technology in engineering education (ET4ET). 2-week equivalent workshop under Teach 10000 Teachers (T10KT) project, January 5-31, 2015. (4700 participants). Co-ordinated and co-taught by Sahana Murthy, Sridhar Iyer, Jayakrishnan, M.
- Pedagogy for effective use of educational technology in engineering education. 2-week equivalent workshop under Quality Enhancement in Engineering Education (QEEE) June-July 2014. (3400 participants). Co-ordinated and co-taught by Sahana Murthy, Sridhar Iyer, Jayakrishnan, M.
- From teaching to research on teaching: The process of Action Research. Workshop in e-Seminar on Steps to Research, Amal Jyothi College of Engineering. Conducted by Sahana Murthy.
- Introduction to data structures using Question Posing based active learning strategy. 3-day workshop, 4th-6th July, 2014 at IIT Bombay, conducted by Shitanshu Mishra.
- Enhancing Engineering Drawing skills for engineering students using Blender 3D tool. 4-day workshop, October 2014 at KIT’s College of Engg. Kolhapur, Co-ordinated by Kapil Kadam.

Conferences chaired


Invited Talks

Honorary Work

- Executive Committee Member, Asia Pacific Society of Computers in Education (APSCE). Sahana Murthy, Sridhar Iyer.
- Steering Committee Member International Conference on Technology for Education (T4E). Kannan Moudgalya, Sridhar Iyer, Sahana Murthy.
- Reviewer: various journals such as Educational Technology Research & Development, Educational Technology & Society, IEEE Transactions on Education etc. Various faculty members and PhD research scholars.
- Conference PC Member Various conferences such as ICALT, SIGCSE, ITiCSE, ICCE, ICSLE.

Visitors to the IDP

- Dr. Michael Hewner, Department of Computer Science & Software Engineering, Rose-Hulman Institute of Technology June-August 2014. Gave a series of 8 lectures on qualitative research in education.
- Dr. Neena Thota, Faculty of Creative Industries, University of Saint Joseph, Macau, July 2014. Gave a series of 6 lectures on research methods in educational technology.