

# ICT and Teachers

**Jammu University**

**2 Year B.Ed.**

**Paper 202/3**

**Sem: II**



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# New ICT skills required

- Operate computers and use basic software for word processing, spreadsheets, email, etc.
- Evaluate and use computers and related ICT tools for instruction
- Apply current instructional principles, research, and appropriate assessment practices to the use of ICTs
- Evaluate educational software
- Create effective computer-based presentations
- Search the Internet for resources

- Integrate ICT tools into student activities across the curriculum
- Create multimedia content to support instruction
- Create hypertext documents to support instruction
- Demonstrate knowledge of ethics and equity issues related to technology
- Keep up-to-date as far as educational technology is concerned

# Training requirements

- **Pedagogy** - Teachers need new pedagogical skills so they can take full advantage of the potential of technology to enhance the learning process.
- **Curriculum development** - Teachers must be able to develop appropriate, effective curricula that enable students to construct meaning, integrate new knowledge into their world views, and communicate understanding.
- **Full integration into curriculum** – Strategies are necessary to meaningfully integrate technology into the curriculum. Technology must be considered as a learning tool, not merely treated as a subject area in itself. In particular, teachers need the skills to develop long-term strategies for using technology to support their curricula, student outcomes, and learning goals.

- **Staff development** - Activities that simply provide skills in using particular software applications, for instance, have shown little impact on students' classroom learning. Ultimately, students' success depends on teachers using technology to support sophisticated, hands-on/minds-on, multidisciplinary learning projects. These projects must be tightly linked to overall strategic goals and to content standards.
- **Support system** - Teachers must have systems of support at various levels - regional, district, and school - for integrating technology and overcoming isolation as they grapple with new and unfamiliar approaches to teaching and tools for learning. They also need real-time technical support in resolving problems related to hardware, software, and networks; problems that can often interfere with or completely derail the learning of both teachers and students.

- **Teachers remain central to the learning process**
- A shift in the role of a teacher utilizing ICTs to that of a facilitator does not obviate the need for teachers to serve as leaders in the classroom; traditional teacher leadership skills and practices are still important (especially those related to lesson planning, preparation and follow-up).
- **Lesson planning is crucial when using ICTs**
- Teacher lesson planning is vital when using ICTs; where little planning has occurred, research shows that student work is often unfocused and can result in lower attainment.
- **Introducing technology alone will not change the teaching and learning process**
- The existence of ICTs does not transform teacher practices in and of itself. However, ICTs can enable teachers to transform their teacher practices, given a set of enabling conditions. Teachers' pedagogical practices and reasoning influence their uses of ICT, and the nature of teacher ICT use impacts student achievement.

- **ICTs seen as tools to help teachers create more 'learner-centric' learning environments**
- In OECD countries, research consensus holds that the most effective uses of ICT are those in which the teacher, aided by ICTs, can challenge pupils' understanding and thinking, either through whole-class discussions and individual/small group work using ICTs. ICTs are seen as important tools to enable and support the move from traditional 'teacher-centric' teaching styles to more 'learner-centric' methods.
- **ICTs can be used to support change and to support/extend existing teaching practices**
- Pedagogical practices of teachers using ICT can range from only small enhancements of teaching practices using what are essentially traditional methods, to more fundamental changes in their approach to teaching. ICTs can be used to reinforce existing pedagogical practices as well as to change the way teachers and students interact.

- **Using ICTs as tools for information presentation is of mixed effectiveness**
- The use of ICTs as presentation tools (through overhead and LCD projectors, television, electronic whiteboards, guided "web-tours", where students simultaneously view the same resources on computer screens) is seen to be of mixed effectiveness. While it may promote class understanding of and discussion about difficult concepts (especially through the display of simulations), such uses of ICTs can re-enforce traditional pedagogical practices and divert focus from the content of what is being discussed or displayed to the tool being utilized.



- Teacher technical abilities and knowledge of ICTs
- Preparing teachers to benefit from ICT use is about more than just technical skills
- 'One-off training' is not sufficient
- Few teachers have broad 'expertise' in using ICTs in their teaching
- Students are more sophisticated in their use of technology than teachers

# Teacher usage of ICTs

- Teachers most commonly use ICTs for administrative tasks
- More knowledgeable teachers rely less on "computer assisted instruction"
- How teachers use ICTs is dependent on their general teaching styles
- Teaching with ICTs takes more time

# Teacher confidence and motivation

- Few teachers are confident users of ICTs
- Fear prevents many teachers from using ICTs
- ICTs motivate (some) teachers, at least at the start
- Incentives must be developed to promote effective teacher participation in continuing professional development
- Access to ICTs is the most significant factor in whether teachers use them

# Subject knowledge

- Teachers' subject knowledge influences how ICTs are used
- Teacher content mastery and understanding of student comprehension make ICT use more effective
- Exposure to new/additional information via ICTs is not enough
- ICTs can aid teacher self-learning in subject matter

# Teacher professional development

- On-going teacher training and support is critical to the successful utilization of ICTs in education
- Teacher professional development is a process, not an event
- Introducing ICTs expands the needs for on-going professional development of teachers
- Successful teacher professional development models can be divided into three phases
- Effective teacher professional development should model effective teaching practices
- Training in assessment methods is important
- Effective professional development requires substantial planning
- On-going, regular support for teachers is crucial

# Enabling factors

- A variety of changes must be implemented to optimize teacher use of ICTs
- Functioning technical infrastructure is (obviously) crucial
- Introducing ICTs takes time
- Support from school administration and the community can be important
- Communities of practice can be important tools to support teacher professional development
- Lessons learned from introducing ICTs in education need to be shared

# ICT and Curriculum

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- **Active:** Activities determined by learners, Small groups, Many different activities, Pace determined by learners
- **Collaborative:** Working in teams, Heterogeneous groups, Supporting each other
- **Creative:** Productive learning, Find new solutions to problems
- **Integrative:** Integrating theory and practice, Relations between subjects, Thematic based, Teams of teachers
- **Evaluative:** Student – directed, Diagnostic



- Efficiently and effectively access digital information to assist with investigating issues, solving problems and decision making
- Produce creative solutions to support learning and develop new understandings in areas of learning
- Communicate, share and work collaboratively in local and global environment understand the legal, ethical and health and safety implications of using ICT and their responsibilities as users and developers
- Develop new thinking and learning skills to support learning

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- Changes in the curriculum related to-
    - Content
    - Goals
    - Organization
    - Time

## ○ Alternative assessment procedures

- Impacts on teachers in terms of New pedagogical skills
- ICT skills
- Collaborative skills
- Positive attitudes

- Impacts on students in terms of Subject matter knowledge -
  - ICT skills
  - Communication skills
  - Problem solving skills
  - Information handling skills
  - Team-/ collaborative skills
  - Positive attitudes