

# Integration of ICT in Teacher Education Programme

## REVIEW AND RENEWAL OF TEACHER EDUCATION SYLLABUS (D.EL.ED.AND B.ED.) FOR ICT INTEGRATION

A Report



Date: 3rd & 4th October, 2018  
Venue: Hotel Fortune Park Shishmo, BBSR



Government of Odisha  
School and Mass Education Department



DIRECTORATE OF TE & SCERT  
ODISHA, BHUBANESWAR

unicef  
for every child

“

*Technology will not have a significant impact on student learning until teachers change the way they teach.*

– Larry Cuban, 1986

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## 1.1 Context

Recent decades have witnessed revolutionary developments in the field of technology, more particularly in information and communication technology (ICT). The potential of ICT has extensively been used in business and corporate sectors. Even though technological innovation continues to accelerate in society, the education sector, as a whole, has not been very responsive to the significant strides in the field of ICT. ICT has enormous potential to transform how teaching and learning occur in classrooms. The significance of Educational Technology (ET) as a site for curriculum planning has been widely recognised, but detailed guidelines and strategies for its educationally optimum use have not yet been worked out (NCF 2005 : 92). There exists a gap between network use and the curriculum. With shift of focus from simplistic linear expansion to qualitative transformation, and from schooling to learning, there is a need on the part of teachers to make appropriate use of ICT in classrooms in a variety of contexts. In this context, ICT needs to be viewed as a means to an end; not as an end in itself, the end being enhancing the efficiency and effectiveness of the system.

Teacher education programmes are designed and executed to empower teachers, both prospective and in-service, to adopt an extensive repertoire of skills and competencies to enhance the quality of their professional practices. Again, recent National Achievement Survey (2017) with its focus on student performance against a set of learning outcomes has posed challenges to teachers for their performance as professional. The recent NCTE Guidelines (2014 and 2015), propped up by NCF 2005 and NCFTE 2009, have laid priority on integration of ICT in the Teacher Education programme at all levels. All these developments have necessitated conscious and concerted efforts for integration of ICT in Teacher Education in its pre-service and in-service components, which are inseparably linked. In recognition of the importance of ICT as a powerful tool for transforming the teachers' professional practices and the classroom processes, it was felt a reasonably demanding to have critically reflection on the existing D.El.Ed. and B.Ed. syllabus in the conspectus of ICT. Keeping this mandate in view, a two-day consultative meeting was held on October 03-04, 2018 at the Hotel Fortune Park Sishmo, Bhubaneswar.







## 2.1 Objectives of the Programme

The programme was organised with five-fold objectives, which include :

- 2.1.1 To critically scan the existing D.El.Ed. and B.Ed. syllabus with sharper focus on inclusion of relevant ICT related content in core papers as well as in pedagogy papers in terms of their appropriateness, adequacy (breadth and depth of coverage) and intended effects on student-teachers.

- 2.1.2 To examine the Papers on ICT of different universities such as:

- SNDT Women's University, Mumbai
- University of Mumbai, Mumbai
- Central University of Haryana.

To consider:

- The feedback from Prof. Vasudha Kamat, Formerly Vice Chancellor, SNDT Women's University, Mumbai on the existing D.El.Ed. and B.Ed. syllabys.
- Draft ICT Curriculum developed by Prof. Sitansu S. Jena, Dean, School of Vocational Studies, Ambedkar University, Delhi.

- 2.1.3 To integrate ICT contents, both in core papers and pedagogy papers, in the syllabus to prepare teachers for their professional development as well as improving the quality of classroom processes employing various ICT tools and devices.

- 2.1.4 To explore the possibilities of using ICT for educational management, assessment and training management system.





2.1.5 To develop a Plan of Action for ICT integration in teacher education programme, prioritising actions on short term, medium term and long term framework.

### 3.1 Participants

The participants included an appropriate mix of Resource Persons, policy makers, and stakeholders associated with the D.El.Ed. and B.Ed. programmes. The entire process was led by Prof. Vasudha Kamat, Dr. Angel Ratnabai, CIET, NCERT, Dr. M.M. Mohanty, Formerly Director, SIEMAT, Odisha and Prof. Sitanshu Sekhar Jena. The stakeholders comprised teacher educators drawn from DIETs and Colleges of Teacher Education who have been associated with the framing and implementation of the D.El.Ed. and B.Ed. syllabi. Dr. Pratap Indra Dash, Director, TE and SCERT, Odisha, Dr. Snigdha Mishra, Deputy Director (TE), TE & SCERT, Odisha, Dr. Nibedita Nayak, Deputy Director (Admn.), TE and SCERT, Odisha, Ms. Lalita Pattnaik, OIC and Education Specialist, Unicef, Odisha and Professor S.L. Jena, Lead Coordinator, Think Tank-TE participated in this process. Various aspects of ICT, multiple uses of ICT tools and devices, areas of utilisation, modalities for incorporation etc. were discussed threadbare (List of Participants in Annexure I).

In consideration of the complexity of syllabus development, integrating ICT in Teacher Education programme, the consultative meeting exclusively focussed on syllabus development.



## 4.1 Expected Outcomes

The Syllabus on ICT for the D.El.Ed. and the B.Ed. programme shall be developed through collaborative reflection processes, with inclusion of following tasks :

- 4.1.1 Relevant, appropriate and updated ICT related ideas shall be called out through a process of sifting ICT syllabi of other universities, and other relevant materials.
- 4.1.2 Feedback and comments on the existing ICT Paper (B.Ed. : Critical Understanding of ICT and Unit –4 : Integration of ICT in Curricular Transaction under Foundation Course of the D.El.Ed. Programme shall be examined for supplementation.
- 4.1.3 The areas of concern in ICT in Education shall be identified and corresponding course content shall be developed for appropriate incorporation.
- 4.1.4 Based on collaborative reflection among the participants, a Core Paper, common to D.El.Ed. and B.Ed., shall be developed with space for differential tasks and assignments, and integration of ICT in Pedagogy Papers.
- 4.1.5 An ICT Plan of Action shall, if possible, be developed for Teacher Education programme of the State.





## 5.1 Decisions Taken

On the basis of extensive and intensive discussion on various aspects of integration of ICT in Teacher Education programme, following decisions were unanimously taken:

- 5.1.1 In consideration of the almost outdated content and insufficient coverage of ICT (D.El.Ed and B.Ed. Syllabus) on one hand and the digital infiltration of accelerated ICT on the other, it was decided to have a Core Paper on ICT carrying 50 marks, being common for the D.El.Ed. and the B.Ed. programme.
- 5.1.2 In addition to the Core Paper on ICT, appropriate employment of ICT tools and devices shall be integrated into the Pedagogy Papers.
- 5.1.3 Appropriate Assignments and Tasks to be included in the syllabus.
- 5.1.4 Student teachers and teacher educators of TEIs to take advantage of a wide range of online courses for their continuing professional development.
- 5.1.5 The Syllabus thus developed shall be reviewed by the experts, and with inclusion of their inputs the same shall be circulated among the stakeholders for feedback.

The ICT Plan of Action, integration of ICT in pedagogy papers shall be separately taken up in consideration of the magnitude and the complexity of the present consultative meeting.





## 6.1 Outcome

The detailed Core Paper was developed on the basis of inputs from the participant members. As the next step the syllabus shall be finalised with inputs from experts and feedback from stakeholders. This exercise is to be taken up immediately after this consultative meeting. The Draft Syllabus is in Annexure II.





## 7.1 Next Steps

- The next consultative meeting of ICT Experts shall be organised in November 2018.
- The specific tasks need to be addressed : integration of ICT in Pedagogy Papers and development of Tasks and Assignments separately for D.El.Ed. and B.Ed. programmes.
- Development of ICT Plan of Action for the Teacher Education programme of the State.





## LIST OF PARTICIPANTS

- Prof. Vasudha Kamat, Formerly VC, SNDT Women's University, Mumbai
- Dr. Sitanshu Jena, Professor and Dean, School of Vocational Studies, Ambedkar University, Delhi
- Dr. M.M. Mohanty, Formerly Director, SIEMAT, Odisha, Bhubaneswar
- Dr. Pratap Indra Dash, Director, TE and SCERT, Odisha, Bhubaneswar
- Ms. Lalita Pattnaik, OIC and Education Specialist, Unicef, Odisha
- Ms. Manjari Shah, Programme Officer, Unicef, Odisha
- Prof. S.L. Jena, Lead Coordinator, Think Tank-TE
- Dr. Snigdha Mishra, Deputy Director (TE), TE and SCERT, Odisha
- Dr. Nibedita Nayak, Deputy Director (Admn.) TE and SCERT, Odisha
- Dr. Sabita Sahoo, Assistant Director and Officer-in-Charge of Curriculum Development, TE and SCERT, Odisha
- Dr. Kaliprasanna Mishra, Associate Professor, NDWCTE, Bhubaneswar
- Dr. Sarat Kumar Kantha, Associate Professor, NDWCTE, Bhubaneswar
- Dr. Sarojini Barai, Associate Professor, CTE, Bhanjanagar, Ganjam
- Ms. Lipika Sahoo, Senior TE, DIET, Khordha
- Shri Ramakrushna Das, TE, DIET, Rayagada
- Shri Prafulla Kumar Gochhayat, TE, DIET, Baripada



## **ICT IN EDUCATION**

### **Rationale**

Preparing student teachers to use ICT in classroom is an important step for ICT enabled education. ICT integration is meant for integrating ICT in educational processes and is NOT meant as a course on or about ICT. This course is activity oriented and provides adequate opportunity for hands-on learning and open-ended exploration of ICT applications in teaching and learning. This course will explore ICTs along broad strands : Planning, instructional design, teaching learning and assessment.

This is primarily a practical oriented paper. the student-teachers shall be exposed to practical activities and hands on in the ICT lab as well as their personal systems.

### **Objectives:**

After completion of the course, student teacher shall:

- Appreciate the multiple use of ICT in education
- Effectively use appropriate ICT tools, software applications and digital resources in educational practices
- Create own digital resources
- Search and find required digital resources, organize and integrate in teaching-learning process.
- Use ICT for making classroom processes more interactive, inclusive to address multiple learning abilities
- Participate in various digital learning space (what are these spaces?) for capacity building
- Practice safe, ethical and legal ways of using ICT

### **Unit 1: Understanding ICT in Education**

- Concept, meaning and nature of Information and Communication Technology: Digital revolution, Digital divide and its impact on education
- Need of Information and Communication Technology in Education
- Scope of ICT in Education: Teaching learning process, assessment, dissemination, communication, research, educational management and capacity building
- Paradigm shifts in education due to ICT based learning process with special reference to curriculum, role of teacher, role of student, methods of teaching, classroom environment( infrastructure and resources) and assessment
- Opportunities and challenges in using ICT in education

### **Unit 2: Use of ICT in teaching learning process**

- ICT for designing instruction – analyzing context (classroom - physical & human resource; student-sociological, psychological, physical perspective and for ICT integration, unit planning & lesson planning
- ICT for identifying and developing e-resources – e resources : Meaning and nature, types; concept of Open Educational Resources; Searching and identification of OERs based on licenses and copyrights; process of developing e resources; use of e resources for effective classroom transaction
- ICT for presentation and participation – Modes of presentation, interactive modes for enhancing students' participation, collaborative mode for enhancing learning process



- ICT for assessment – Innovative assessment strategies and scope of ICT

### Unit 3 : ICT Ecosystem in the school

- Creating ICT Ecosystem in the school for inclusive education– hardware, software - Free and Open Source Software(FOSS), connectivity; Assistive and adaptive technologies
- ICT for planning – Scheduling educational activities, ideating and organizing events
- ICT for documentation and classroom management – Creation, storing, retrieval, manipulation and sharing of digital information; ICT tools/ techniques for classroom management and communication with other stakeholders
- ICT for Continuing professional development: MOOCs, e groups, forums etc for sustainable use of ICT
- Social, ethical and legal issues of ICT: security threats and measures, Cyber privacy and Netiquette; ethical practices in cyber space; cyber laws and child safety

### Suggested Tasks:

Each student-teacher is required to perform all these activities and create their own e portfolio. (The concerned teacher-educators may develop any other tasks/assignments keeping in line with the requirements of this course)

1. Observe ICT classes (There is nothing like ICT Class) in nearby schools/ recorded videos and preparing a report reflecting on the shift in education with special reference to curriculum, role of teacher, role of student, methods of teaching, classroom environment (infrastructure and resources) and assessment
2. Develop a case study showing the influence of ICT in enhancing learning
3. Analyse any two OERs, write the features and characteristics of these OERs and describe how these OERs will help to improve the classroom process
4. create at least five digital resources( concept maps, mind maps flow charts, timelines etc ) using appropriate ICT tools, evaluating and uploading to repositories
5. Develop an educational blog in wiki (why specify wiki or otherwise? Blogging is important) and use for professional development
6. Explore e pathshala and prepare a report on different features and how it will be helpful for enhancing the classroom process
7. Develop technology integrated unit/lesson plans and trying out in schools
8. Create communication with other student teachers through mobile based groups, forums, mail based groups and participate in the discussion.
9. Use an appropriate ICT tool for planning any other curricular activities( observation of national days) in the school
10. Enrol and complete MOOC courses in Swayam Portal

*Assignments for D.El.Ed and B. Ed. Can be different with different levels of difficulty. Students in elementary schools have different needs (for teachers with D.El. Ed.) than those from Secondary schools (taught by B. Ed. Degree holders. While planning assignments this can be kept in mind.*





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