

**Community of Practice  
for  
Maths-Science Teacher Educators**



**Workshop on  
“ICT Mediation in Education”  
paper in the “Diploma in Education” revised curriculum**

**at District Institute of Education and Training (DIET),**

**Bangalore Rural District, January 20<sup>th</sup> - 24<sup>th</sup> 2015**

**Report from IT for Change**

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## **1 Background**

Within the overarching objectives of learning for development, CEMCA seeks to promote the adoption of a blended approach to ICT integration in continuing professional development of teacher educators, focusing on the capacity building of teacher educators, in its three year plan (2012-15). In order to support the capacity building efforts and develop a self-supporting and sustainable community of practice of teacher educators in Karnataka, CEMCA and IT for Change (ITfC) are partnering in a programme for enabling teacher educators to integrate ICTs into their professional development through a “**Community of Practice**” (COP) approach.

As a part of this programme, during 2012-13 and 2013-14, ITfC conducted capacity building workshops for DIET faculty across Karnataka, for them to learn a variety of digital methods and become familiar with the processes of collaboratively accessing and creating open educational resources. Through these workshops and an online forum, ITfC helped create and develop the virtual COP for teacher educators. The technical components of the COP include a [Drupal web platform](#), a [Wiki resource portal](#) and a [mailing list](#). The DIET faculty shared ideas, experiences and resources on the mailing lists, got oriented on the Mediawiki software which has been developed to support collaborative creation and curation of digital resources and exposed to the Drupal web platform. *In both years, the training was customised to meet the requirements and priorities of the teacher educators; that being the development of supplementary open educational resources for mathematics, science and social sciences.*

## **2 Programme aims**

During 2014-15 to strengthen the COP, the needs and priorities of the teacher educators were identified, to develop the curriculum for the training. DSERT is implementing the new curriculum for the second year of the DEd. Programme, which has been revised in line with NCF 2005<sup>1</sup> principles, this includes a paper on *ICT Mediation in teaching-learning*<sup>2</sup>. DSERT wanted to train DIET faculty to transact this paper in the revised DEd course from 2014-15. Our interactions with

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1 National Curriculum Framework 2005 is a pioneering document from NCERT, which outlines new approaches to learning

2 ITfC team has written the teacher hand-book and also the student source book for this course. Gurumurthy, IT for Change, is the convenor for the ICT Mediation paper, in the DEd curriculum revision team

teacher educators revealed that they wanted to discuss and share ideas on this revised pre-service curriculum, which was quite different from the previous curriculum, and wanted a forum for the same. The DSERT also wanted to train a core group of resource persons who would train their peers across the state in transacting '*ICT Mediation in teaching-learning*'. Based on this assessment, ITfC proposed to CEMCA that the DIET COP should in 2014-15 focus on the capacity building of DIET faculty to transact this paper and bring these teacher-educators into the COP, where they could discuss their requirements, issues/challenges relating to the revised DEd curriculum and also support one another. This would also be is an excellent opportunity to integrate ICTs into pre-service teacher education, and supporting TE institutions to fulfil such a core responsibility would be a valuable opportunity to strengthen the COP .

ITfC designed and conducted two workshops for DIET faculty to help them understand ICT mediation in the D.Ed. Course. The first workshop was for mathematics and science teacher educators. **This document is a report on the first workshop and documents the aims, processes, experiences, learning outcomes and possible ways to take the COP forward in the subsequent years.** *Important insights and learnings have been indicated in italicised blue colour font for easy reading and reference, in the relevant places in the report.*

### 3 Workshop aims

The aims of the workshop included:

1. Building and strengthening teacher educators' capacities to integrate ICTs into teacher-education, focusing on their professional development, leveraging the COP platform
2. Helping the DIET faculty develop an understanding of the '*ICT Mediation in teaching-learning*' course - syllabus, objectives and transacting methodologies
3. Building skills of collaborating in virtual professional learning communities
4. Learning about open digital libraries / OERs
5. Developing critical perspectives on technologies, moving beyond seeing it only as a tool and understanding its larger pedagogic, economic, technological implications

The participating faculty were trained to become 'Master Resource Persons' (MRPs), since they had

the responsibility of training their colleagues across the entire state. The participants became members of the COP, to continue their sharing and learning.

## **4 Workshop sessions**

The workshop was planned for five days and the agenda was framed in consultations with DSERT and CEMCA. Along with the brief narrative of what happened, the learnings are also provided, in the report. As mentioned earlier, critical learnings are coloured in *blue italicised font* for easy reference.

### **4.1 Inauguration session**

The workshop was hosted by the Bangalore Rural DIET in its ICT lab. Mr. Rangadhamappa SADPI<sup>3</sup>, DSERT commenced the proceedings with an introduction to workshop objectives and the role of ICT Mediation in the D.Ed.<sup>4</sup> course. Dr. Manas Ranjan Panigrahi from CEMCA spoke and introduced CEMCA and its work to the participants. The participants were then divided into four teams, based on the division they came from<sup>5</sup>, so that during the workshop, each team could discuss and plan how to conduct the divisional cascade workshops.



*Inauguration of the workshop by Mr. Rangadhamappa SADPI, DSERT*

### **4.2 Capturing participant profile**

Participants filled the participants information form, created using google docs. Google docs was used to enable participants to enter the information easily as well as make it accessible to all<sup>6</sup>. *The key to a successful COP is its participatory nature. Capturing participant expectations and experiences is a useful way to refine the training processes thus strengthening the community. Over*

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3 Senior Assistant Director of Public Instruction, he was the nodal officer for the programme

4 Diploma in Education, this is a 2 year programme

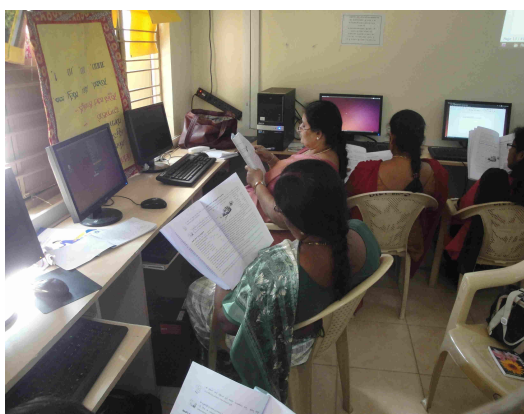
5 Karnataka state has four divisions – Bengaluru, Mysuru, Belgavi and Kalburgi and the participants were carefully selected to ensure equal participation from all four divisions. This is necessary to ensure that the divisional cascade workshops have adequate resource persons in all four divisions

6 Annexure C has the participant information form details

*a period of time this will also serve as a baseline to assess participant learning over a period of time and provide inputs for programme design. Having the information accessible to all, also allows participants to know one another better.*

Since an important aim of the workshop was to enable participants to continue their interactions and learning beyond the workshop, all faculty members were added to the [teacher educator](#) mailing lists and the [mathematics and science subject mailing lists](#). For those who did not have email addresses, email addresses were created and they were trained in the use of emails and mailing lists.

### 4.3 Basic Computer Literacy and text editing



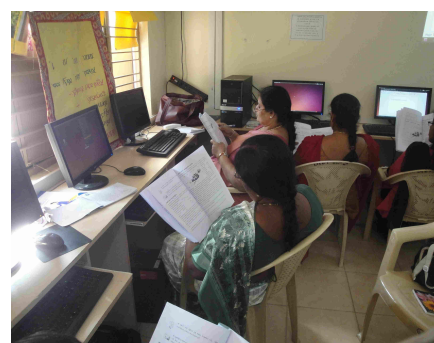
*Parallel ICT basics session for participants not familiar with ICTs*

Mr. Rakesh started the session with an introduction to basic hardware and various computer devices. Participants spent time getting comfortable with [Ubuntu](#) and email. Participants were introduced to see the Internet as a learning resource and learn methods of accessing resources from the web. It took time, however, for them to learn to navigate a website. However, this skill is crucial to accessing the right curricular resources and hence was focused on during the first day itself.

Mr. Venkatesh took a session on text editor (LibreOffice Writer) and covered functions like inserting pictures, screen shots, mind-maps in a text document. He also explained the basic features of spreadsheet application (using [LibreOffice](#)).

### 4.4 Emphasis on collaborative reading

'ICT Mediation in teaching-learning' source book was introduced in this workshop to participants. All sessions in this workshops started with a reading from the book in their respective divisional groups. This process helped participants to connect their hands-on learning to the underlying concepts explained in the source book. It also brought an emphasis on reading as a critical academic skill. The team that read a topic, also spoke on it, in the relevant session in which it was transacted.



*Source Book reading by participants*

### 4.5 Collaboration through peer review

One of the important principles of Open Educational Resources is 'revise'. Usually curricular materials prepared by teachers or teacher educators remain static and there are no formal processes for regular revision. In order to help teacher-educators think about the need for regular revision of materials, for improving the quality and effectiveness, the three units of the source book were allotted to the four teams, the longer unit 1 to Bengaluru and Mysuru teams, units 2 and 3



to the Belgavi and Kalburgi teams respectively. Each team allotted specific topics from the allotted unit to the team members and the team members read their allotted topics and made brief presentations when those topics were discussed in the workshop.

The participants were taught how to use text editing software (LibreOffice writer) to provide review comments as 'recorded changes'. The 'record changes' feature of text editor is very useful for providing feedback, since the additions / comments are provided in a distinct font colour along with the initial text itself. Multiple revisions can be done by many people on the same document and shared back with the author. The author can see the comments and decide whether to accept or

#### ಎಡುಬುಂಟು ಆಪರೇಟಿಂಗ್ ಸಿಸ್ಟಂ Edubuntu operating system

DSERT ಯಿಂದ ನೀವು ಪಡೆದುಕೊಳ್ಳುವ ಎಡುಬುಂಟು ತಂತ್ರಾಂಶವು ಸಾವಿರಾರು ಪ್ರೋಗ್ರಾಮ್‌ಗಳನ್ನು ಹಾಗೂ ಹಲವು ಅಪ್ಲಿಕೇಶನ್‌ಗಳನ್ನು ಹೊಂದಿರುತ್ತದೆ. ಎಡುಬುಂಟು ಮೇಯಿನ್ ಮೆನುವಿನಲ್ಲಿನ "ಅಪ್ಲಿಕೇಶನ್" ಕ್ಲಿಕ್ ಮಾಡುವ ಮೂಲಕ ಹಲವಾರು ಅನ್ವಯಕಗಳ ಪಟ್ಟಿಯನ್ನು ನೀವು ಕಾಣಬಹುದು. ಹೆಚ್ಚು ಅನ್ವಯಕಗಳನ್ನು ನೀವು ಕಲಿತಂತೆ ನೀವು ಇನ್ನೂ ಹೆಚ್ಚು ಕಂಪ್ಯೂಟರ್ ಪರಿಣಿತರಾಗಬಹುದು. ಯಾವಾಗ ಹೊಸ ತಂತ್ರಾಂಶವನ್ನು ನೀವು ಕಾಣುತ್ತೀರೋ ಅಗಲೇ ಅದನ್ನು ಕಲಿಯಲು ನೀವು ಸ್ವತಃ ಪ್ರಯತ್ನಿಸಿ ತರಬೇತಿಗಾಗಿ ಕಾಯಬೇಡಿ ಹಲವು ತಂತ್ರಾಂಶಗಳು ಎಲ್ಲಾ ಬಳಕೆದಾರರು ಸುಲಭವಾಗಿ ಬಳಸಬಹುದಾಗಿರುತ್ತವೆ ಹಾಗೂ ಗುಣ F1 function key ಬಳಕೆಯ ಮೂಲಕ ಬಳಕೆ ಮಾಡುವ ವಿಧಾನದ ಮಾರ್ಗದರ್ಶನ ಮಾಹಿತಿಯನ್ನು ಪಡೆಯಬಹುದಾಗಿದೆ.

ಬಳಕೆದಾರರ ಮಾರ್ಗದರ್ಶನ ಕೈಪಿಡಿಯಲ್ಲಿ ಪ್ರತ್ಯೇಕ ಸರ್ಚ್ ಆಪ್ಷನ್ ಸಹ ದೊರೆಯುತ್ತದೆ ಇಲ್ಲಿ ನಿಮಗೆ ಅವಶ್ಯಕವಿರುವ ಮಾಹಿತಿಗಳನ್ನು ಪಡೆಯಬಹುದು.

reject them. Though this is a standard feature of text editors, it is almost never used by teacher educators, who make corrections on print copies. Participants learnt that digital text editing significantly facilitates

Source book with revisions as 'record changes'

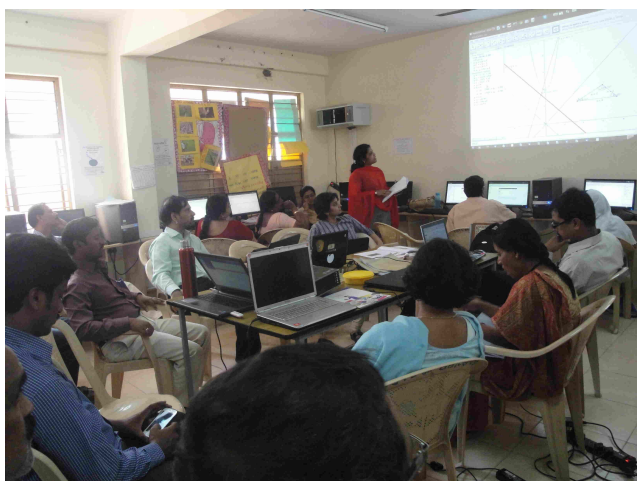
*the 'revision' principle of OER and can hence encourage collaboration.*

#### 4.6 Semantic mapping

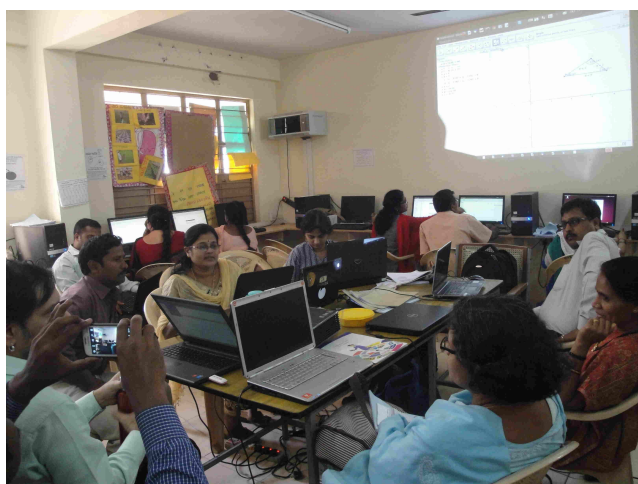
The next session was on Mind mapping or concept mapping; this session covered understand the meaning of concept mapping, creating and using concept maps. Participants identified key words related to identified topics and listed all the words that that come into their mind when they thought of that the word, using a software application called [Freemind](#). Since Freemind is a generic tool for building thinking skills, it is popular across the teacher and teacher-educator community, cutting across disciplines. *The concept mapping session helped to stimulate lateral thinking and generative thinking amongst the participants, through the processes of creating words and associations digitally.*

#### 4.7 Educational software applications

The participants then learnt about educational applications related to Mathematics and Science including [Geogebra](#) and [PhET](#). Demonstration of these applications was done by Ms. Ranjani. The participants enjoyed working on these tools to study different concepts in these subjects. The idea that the computer can be used for personal and professional enrichment as well as to improve functional efficiency greatly enthused the faculty.



*Geogebra presentation by a participant*



*Geogebra demonstration by ITfC resource person*

#### 4.8 Web based educational applications

Web based Google applications including Youtube (video resources), Picasa (creating and sharing



digital albums), digital maps, translation, search etc. were covered and the pedagogical possibilities of each discussed. Digital albums are repositories of image resources, which can be collected and used as needed. Translation enables understanding across languages and maps are useful in learning topics in both science and geography.

*Participants felt happy at accessing a cornucopia of web tools that could help them in developing their knowledge and skills in different ways. They learnt to access the Internet for resources on an identified topic and store the materials in folders in their computers, in an designed manner, to create personal digital libraries (PDLs)*

#### 4.9 Image editing

'A picture can say more than a thousand words. Participants learnt image editing through the GIMP image editor. GIMP is a very powerful tool with features that are comparable to the proprietary software “Photoshop” from Adobe. GIMP can be used for simple processes like cropping, combining images, adding text/annotations etc, these can help in creation of rich digital resources, including photo essays and digital stories. *The power of the digital is in multiplicity of expressions, combining a variety of formats.* Participants worked on the images they had downloaded on their topics to create text-image collage resources and understood that digital technologies need not be restricted to text editing alone.

#### 4.10 Audio and video editing

The next session covered other educational tools like [Audacity](#) for audio recording and editing and [Record My Desktop](#) for screen based video recording. In many ICT integration capacity building workshops, audio and video editing are not covered, since proprietary applications for these are extremely expensive. Even if these are covered, the challenge is that the learners cannot continue learning these tools beyond the workshops, since they cannot afford the software, or need to pirate software for doing so. In this workshop, since the software applications taught are free and open, users were free to download these tools and use them<sup>7</sup>.

#### 4.11 Community of Practitioners (COP)

The Community of Practitioners (COP) platform seeks to connect teacher educators. Since this

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<sup>7</sup> All participants were given a copy of the 'Kalpavriksha' custom EdUbuntu distribution created by ITfC.

batch of teacher educators were from Karnataka they connected with other teacher educators from Karnataka over the [mailing list](#) for Karnataka teacher educators, this is accessible from the [COP platform](#). They also were taught to access the [OER portal](#), this is also accessible from the [COP platform](#). Participants interacted with one another through emails and will continue doing so post the workshop. Participants also formed a mobile-based community on which they exchanged notes on the training and divisional workshops.

#### 4.12 Introduction to OER

The aim of [Karnataka Open Educational Resources](#) (KOER) is to support collaborative OER creation and curation by teacher educators and teachers and make the process of resource creation dynamic.

Mr. Gurumurthy took a session demonstrating different websites which covered a range of categories such as educational games, e-commerce, travel, news and Open Educational Resources.



*KOER demonstration session*

The participants were asked to analyse websites based on various criteria such as content, type of access (free/ paid), types of resources and the terms of license.

Gurumurthy introduced the Karnataka Open Educational Resources wiki page for the participants to access and contribute resources. He also discussed about the history and importance of the Internet, OERs and their importance and global and Indian efforts in OERs. After this session, the faculty explored the KOER website for subject wise resources.

*Participants also lived the spirit of OER by discussing, collaboratively reviewing and revising the source book itself.*

#### 4.13 Interaction with student teachers

These workshop participants had a video conference with the Bachelor of Education (B. Ed.) students from the Vijaya Teachers college, Bengaluru. The B. Ed. students who are on the verge of completing their course, had many questions regarding pedagogy, class room teaching process, ICT integration and sought responses, clarifications from the teacher educators. Some of these questions

were quite difficult to answer, such as the lack of time to implement the constructivist teaching approaches recommended, the non-availability of ICT infrastructure in schools etc., and teacher educators often struggled to give meaningful replies!

The aim of this video conference was to help DIET faculty get an awareness as well as experience of responding to the professional needs of teachers and student teachers through virtual methods. Traditional methods are face-to-face and require higher investment of time and finances, while virtual support methods can have a significant saving of travel time and costs and hence can complement and supplement face-to-face interactions.



*Video conference with student teachers*

*With this real experience of virtual support (video-conference session with student teachers), participants understood that blending face-to-face and virtual methods is the future of teacher-education and they need to develop their capabilities for doing this as a normal teacher support process. This experience will also enable them to see an online COP as a part of their core responsibility in teacher education.*

In the same workshop, the D. Ed. Students from Bangalore Rural DIET also came to workshop and shared a demonstration of their projects. Some of these projects were created using ICT resources and the student teachers explained why and how they went about integrating ICT methods in making their projects. *The participants understood that in many cases, their own students will actually be more skilled in using digital technologies and hence they also need to be familiar with the devices to be able to help the student teachers.* Gurusurthy explained the concept of 'digital natives' and 'digital immigrants'<sup>8</sup> and its implications for teacher-education. Unless teacher-educators become familiar with digital devices as well as the socio-cultural, political and economic implications of ICTs (both positive and negative), they would not be able to provide required guidance to student teachers. *The section in the source book dealing with socio-cultural, political and economic implications of ICTs helped participants understand that ICTs are not mere tools that*

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8 Mark Prensky coined these terms, see [http://en.wikipedia.org/wiki/Digital\\_native](http://en.wikipedia.org/wiki/Digital_native)

*we can use, but represent larger structural forces in society which can be harnessed for both positive and negative purposes.*

## **5 Meta processes and learnings**

While the learnings specific to each session have been discussed alongside the session narrative, this section provides some larger learnings from the programme.

### **5.1 Dynamic design of the workshop**

Though the circular from DSERT had asked DIETs to only depute tech-savvy faculty members (since this was a MRP preparation workshop), participants were at different levels of computer literacy. The workshop had been planned assuming that the participants would have medium to high levels of computer literacy; however, there were participants who had low or non-existent computer literacy skills. The heterogeneous profile led to a slight re-arrangement as some topics which were not originally planned were added to the agenda. Since some participants had not worked at all on computers earlier, a parallel session was organised for them on the ICT basics, on the first day. With the parallel session, these participants were able to join the main group from the second day and remain connected to the learning. While the heterogeneous profile led to some changes in the curriculum, the positive aspect is that this has expanded the pool of DIET faculty who are comfortable using ICTs. Often these are strong teachers/ TE faculty, and the workshop helped them see the connection between their work and ICTs.

### **5.2 Spirit of the programme**

The workshop went far beyond being a 'technology tool' training event. Participants developed a strong sense of community and an atmosphere of peer learning. They explored technology at multiple levels, freely discussed with the resource persons and each other, the benefits as well as the challenges from ICTs. *The workshop was a very intense experience for most participants and significantly changed their perceptions of ICTs. The power of ICTs to connect and create community - that they need not be isolated in their work and can build their networks for both more effective working as well as meaningful relationships was an important realization. It was easy to perceive the deep sense of belonging and camaraderie amongst the participants.*

### 5.3 Ownership of the education department over programme

DSERT is the apex state level inst under its fold. DSERT is very kee teacher educator institutions (DIE’ Jayakumar also participated in the their professional development ne how personally he is adapting ICT explained how he made use of his as well as communicate easily wit



*DSERT Director and senior officials in discussion with participants*

*The DSERT Director is very aware of the power of ICTs to support individual and institutional capacity building of teacher-education and has clear ideas on how the COP can be further strengthened and taken forward. He subsequently organised a meeting of his department officers with Dr. Manas Ranjan to discuss possibilities of CEMCA collaboration to further teacher-education in Karnataka.* The discussion highlights are being shared separately in a concept note for Karnataka COP for 2015-2018.

Mr. Manjunath SADPI, DSERT, responsible for teacher-education institutions, and Mr. Lalith Prasad, State programme head of TESS India also visited the workshop and interacted with participants. Mr Rangadhamappa, the nodal officer in charge of this programme, was a serious participant on all days of the workshop. He continuously encouraged the participants and tried to resolve any difficulties or challenges they faced.

*The deep commitment of the education department to the cause of ICT integration to improve teacher education came across clearly during the workshop.*

### 5.4 Main-streaming the COP for sustainability

The design of the programme deliberately aimed to make it an intrinsic component of the teacher education system. The training was conducted by DSERT itself, facilitated by the SADPI responsible for the DEd revised curriculum roll-out, and the participant costs were covered from the DSERT's budget for this programme. The training was conducted in an ICT lab, which belongs to the (Bengaluru Rural) DIET. Conducting the workshops in DIET ICT labs makes the programme

sustainable, since such easy organising of capacity building programs is possible only due to the lab facilities being available within the teacher education institutions. It is also true that the regular use of the ICT Lab for training DIET faculty is also an important cause for its being well maintained.

*Integrating the programme into the DSERT's own activities, means that such processes can continue in subsequent years using the regular budgetary outlays of the education department, which makes the programme sustainable.*

DSERT is keen to continue strengthening the COP over the next few years so that DIETs and other teacher-education institutions can play their mandated role. Based on the priorities of DSERT, the plan for the next 3-6 year has been discussed later in this note.

### 5.5 Up-scaling the programme - Cascade workshops

The workshops were not only to train the participants in ICT integration in teacher-education, but also to develop them as Master Resource Persons (MRPs). As MRPs, they will conduct a similar programme<sup>9</sup> for mathematics and science DIET faculty in all DIETs and other private D.Ed colleges, thus following a cascade approach. This would be the first occasion in the state, where teacher educators will conduct ICT capacity building programmes, as resource persons, as part of the state syllabus.

*While the workshop had 25 participants, these 25 MRPs are expected to train around 374 teacher educators and add them to the COP in the divisional cascade workshops. Having a larger membership can help in providing the traction to strengthen interactions and strengthen discussions amongst the COP members. It significantly leverage's the initial efforts in building the COP.*

The COP was trained this year on transacting the ICT Mediation paper in the revised DEd course, however, participants are discussing other subjects as well while participating in the mailing list. Thus the COP is extending to cover the activities of DIET faculty beyond transacting the ICT Mediation paper.

### 5.6 Adoption of Free and Open digital environment – FOSS and OER

The large scale use of few proprietary software tools restricts the imagination and aspirations of teachers and teacher-educators. Many people believe software to be largely synonymous with

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9 Cascade workshop is already started in district centres and it is expected to be completed early March 2015.

proprietary office suite. Being exposed to a free and open software environment enables teachers to move 'what can I do with the few software tools that I have', to 'what is it that I want to do, and how can I access any tool that can help me do that'. Participants remarked that moving from a proprietary environment to a FOSS environment is a liberating and empowering pedagogical experience.

*The adoption of a free and open environment enhances the possibilities of users installing multiple applications – text, image, audio, video editing, animations, semantic maps, simulations, images, audio, videos, which can support their continued learning.*

Participants were given a copy of a custom distribution of Ubuntu GNU/Linux with 3,000 software packages, called 'Kalpavriksha'<sup>10</sup>, 'specially created for teachers and teacher-educators by IT for Change.

*While OER stands for free and open content environment, FOSS stands for free and open tool environment. Digital tools are what we use to create digital resources. The use of free and open means (FOSS tools) for free and open ends (OER) was discussed with participants, who understood that such alignment promotes integrity in thinking about ICT mediation in education.*



*User Interface of Kalpavriksha - a cornucopia of 3,000 free and open software packages*

<sup>10</sup> A wish-fulfilling divine tree in Hindu mythology, see <http://en.wikipedia.org/wiki/Kalpavriksha>. The name signifies that the custom distribution has hundreds of software tools to meet the needs and aspirations of users.

## 6 Participant Feedback

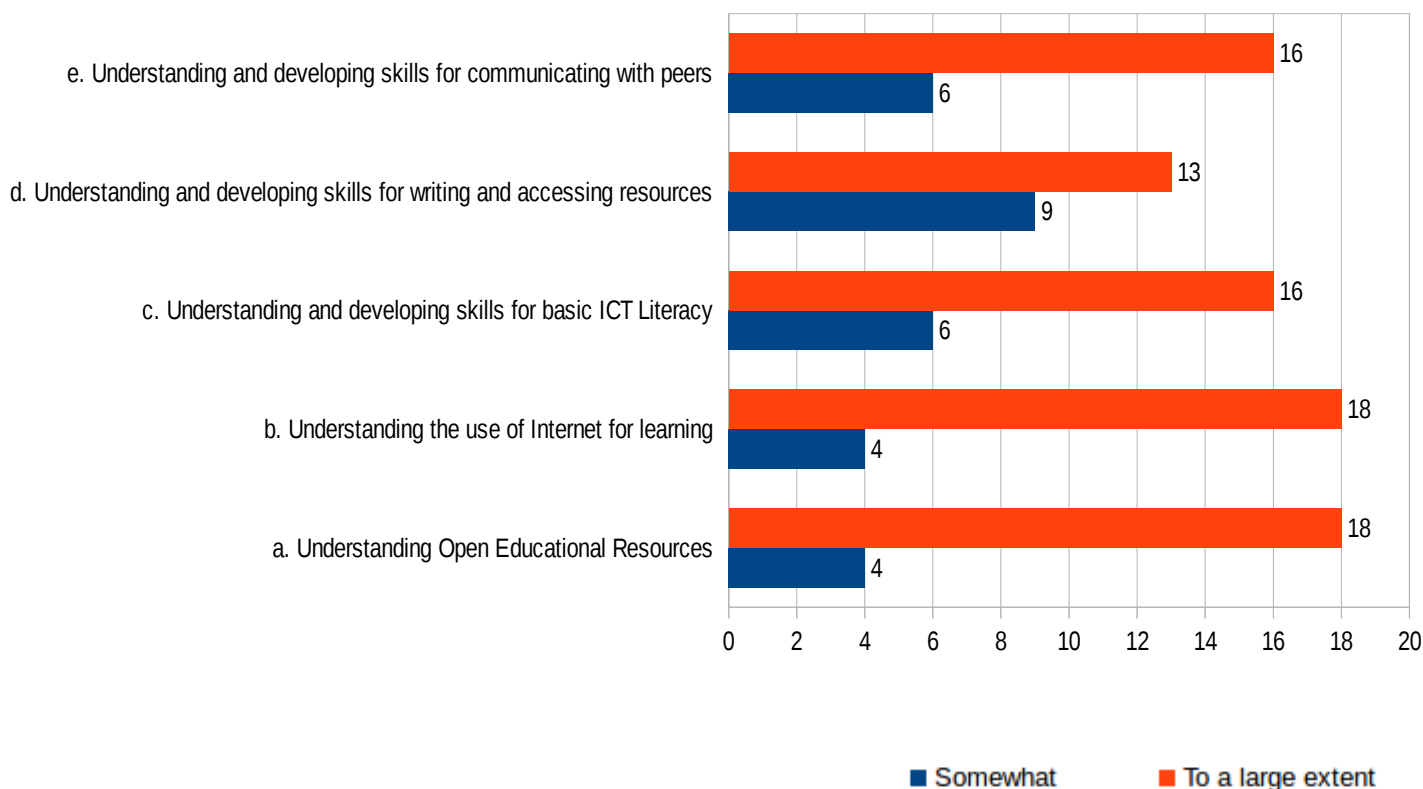
Participant feedback was obtained using google forms. A summary of the feedback is being shared on two areas – the learning areas covered in the workshop, and on the faculty for the workshops. Overall, the feedback was quite positive.

### 6.1 On what they learnt

Q. To what extent the workshop was helpful in the following areas:

- basic computer literacy, use of Internet for learning, understanding the use of writing and accessing OERs, developing skills for communicating with peers.

(The responses for this question were thus either 'Somewhat Effective or 'To a large extent - Effective'. The two other options for this question, which no participant selected were 'Somewhat Not Effective' and 'Not Effective'.)

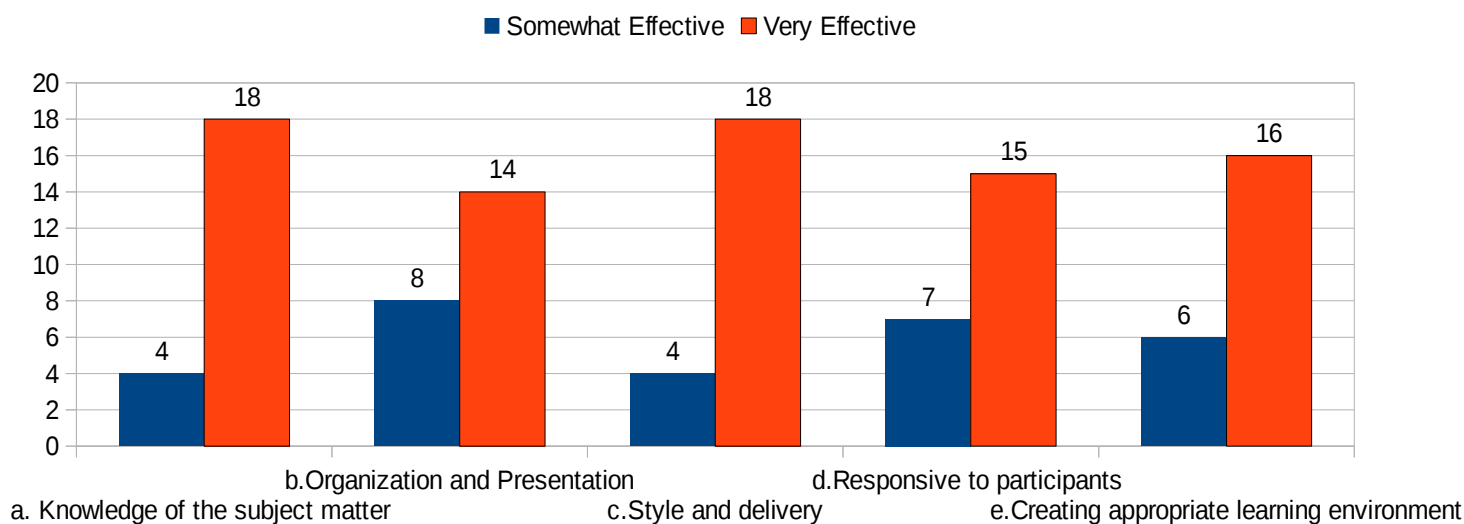


### 6.2 On who they learnt from

Q. Kindly rate in general the effectiveness of the trainers



The responses for this question were thus either 'Somewhat Effective' or 'To a large extent - Effective'. The two other options for this question, which no participant selected were 'Somewhat Not Effective' and 'Not Effective'



### 6.3 Qualitative feedback

Qualitative feedback was also sought from participants.

Q. How can we help the group of teacher educators become part of a 'Professional Learning Community' (PLC)

The responses included the following (the responses that were more frequent are provided earlier, also language editing has been done to make it coherent):

1. By integrated use of ICT with the curriculum, especially with support from the mailing list and also mobile applications
2. By sharing our successes and failures with other teacher educators and implementing the good teaching practices of others in our profession, through digital means
3. By encouraging teacher educators to participate and contribute substantially to the COP
4. By continuing capacity building workshops, especially to use ICT tools
5. By motivating teachers, since confidence building is very important

## 7 Key learnings

The workshop was a very intense and memorable experience for teacher educators. While many ICT training workshops tend to largely focus on technology tools, in this workshop, the focus was primarily on the meaningful integration of digital methods and processes into teacher education. Thus the sessions were not consciously not just on LibreOffice Writer or Freemind, but rather on text resources creation and editing, semantic mapping etc. This choice of language was aimed at making participants look at tools from an educational perspective. Secondly by bringing the socio-cultural, political and economic implications of ICTs into discussion, participants were enabled to take a larger societal and critical perspective on ICTs, instead of looking at ICTs as stand-alone goodies.

*Key learnings have been provided in the document in relevant places in blue italicised font.*

## 8 Way forward

ITfC has been partnering CEMCA over the last 3 (2012-13, 2013-14 and 2014-15) years and has organised two workshops each year. The workshops have been quite effective in creating the COP and strengthening it, both in terms of increasing the number of participants as well as the scope of ideas and content covered.

However, a longer term plan can be quite useful in enabling a more ambitious design that can help in a more formal integration of ICTs into the regular work processes and practices of DIET faculty at an individual level, and also penetrate the DIET as an institution. A longer term plan can also help expand the programme to the other states in South India and build the COP there as well. Based on the learnings from the COP programme as well as the plans and priorities and priorities of DSERT, as shared in the meeting between Dr. Manas Ranjan and the DSERT director and officers, the following is proposed over a 3-5 year time frame:

1. Conducting **capacity building workshops for DIET and CTE faculty on ICT integration in teacher-education**, on the lines of the workshops of the last three years, this will expand the COP to cover all teacher educators in the DIETs and CTEs in the state
2. Conduct workshops for **trans-creating important curriculum and policy documents**, currently available only in English, such as the National Curricular Framework for Teacher

Education (NCFTE), National Curricular Framework 2005 position papers in different areas etc. The Kannada versions of these documents can be created and shared as OERs which will be of great value to the COP. The COP itself can also discuss/review/refine these resources as OERs.

3. ITfC has proposed to DSERT that DIETs should be asked to volunteer to prepare **digital OERs in different subjects for different classes and mediums of instruction**, which will supplement the available learning resources as well as create resources in areas where not much materials are available such as music, yoga, physical education, sports, local culture etc. This is also required by the state's own teacher-education institution restructuring plans.

In this programme, each DIET can assess its own strengths, local needs, capabilities of its faculty and offer to create OERs in a relevant area. Such availability of OERs can greatly benefit teachers and learners both in schools and in teacher-education institutions. This is an ambitious project that will spread over 3 - 5 years. ITfC can facilitate this process of OER creation, using the blended approaches (combining face-to-face workshops with virtual interactions), so that such approaches become more familiar to teacher educators. **The creation of OERs can thus become the objective and outcome of professional development of teacher educators and also provide a continuing context for sustaining the COP.**

4. Planning, designing and implementing '**courses**' that are based on blended learning models. This is being proposed on a pilot basis during 2015-16 for 100 mathematics teachers and can be extended to more subjects and cover more teachers in subsequent years.
5. Planning to extend the **COP approach to the other South Indian states** in collaboration with Regional Institute of Education (RIE) Mysore. In the 2013-14 COP workshops, DIET faculty from Tamil Nadu and Andhra Pradesh had participated and evinced interest in a similar programme in their own state. The RIE also conducts e-learning programmes for teacher-educators from the South Indian states and ITfC plans to discuss the COP extension with RIE.

These ideas will be detailed out in a note that ITfC will share with CEMCA.

## 9 Annexures

### 9.1 Annexure A - Participant information form details

The participants filled a google doc and provided the following information

1. Your name - ನಿಮ್ಮ ಹೆಸರು
2. Your subjects of interest/ work
3. Your Sex
4. Your Date of birth
5. Your Institution name
6. District - ಜಿಲ್ಲೆ
7. Your cell phone- ದೂರವಾಣಿ
8. Email- ಇಮೇಲ್
9. Do you use a computer- ಕಂಪ್ಯೂಟರ್ ಬಳಸುತ್ತೀರಾ
10. Do you own a personal computer - ಮೈಯುಕ್ತಿಕ ಕಂಪ್ಯೂಟರ್ ಇದೆಯಾ ?
11. Do you access Internet - ಇಂಟರ್ನೆಟ್ ಬಳಸುತ್ತೀರಾ
12. Have you attended a similar programme before? (ICT integration into education)
13. What are your expectations from this workshop - ಈ ಕಾರ್ಯಾಗಾರದಲ್ಲಿನ ನಿಮ್ಮ ನಿರೀಕ್ಷೆಗಳೇನು

The participant information was collected at the beginning of the workshop and was analysed to revise the agenda and approach of the training during the workshop.

9.2 Annexure B - Workshop Agenda:

S.No	Topic	Time	Method	Objectives/ Outcomes
	<b>Day-1</b>			<b>Introduction, Computer basics, concept mapping</b>
1	Introduction to the programme	1030 - 1130	Presentation and discussions	Participants fill up the participant information form. Objectives/ Outcomes/ approach discussion and common understanding. Since this is a MRP workshop, participants will need to fully understand the course contents, course methodologies and how these can be shared with teacher educators in the cascade workshops. MRPs will be expected to go through the course contents and make presentations in teams, which will be created on day1. Allocate sections from source book to teams of faculty to read and present subsequently.
2	ICT and Society (history and evolution of ICT)	1130-1200	Demo and discussions	Shared understanding of the history and evolution of ICTs
3	Basic Text Processing	12-3.00	Demo and hands-on	Practise text typing. Text editing as a resource creation method. Embedding images and links in text documents. Kannada set-up and Kannada typing using i-Bus. (Basic navigation) Since the MRPs are already expected to be reasonably comfortable in using text editors, this will serve as a refresher/ supplementing with advanced topics in text editing, Each MRP will make their own meta document for this workshop and save it in their own folder in the computer
3a	Operating System	3-330	Demonstration and hands-on	Explain about Computer Hardware. Input Output devices, Ubuntu menu, Applications overview, Creating folder and file and renaming. Creating short cuts, exploring the menu
4	Concept mapping	330-530	Demonstration and hands-on	Using Freemind for creating mind maps in Kannada and English, use of mind maps for explaining concepts for a topic. Insert links, images, images, formatting, seeing concept maps on KOER for different topics
				Create mail id for those not having and add to Karnataka_teachereducators@googlegroups.com and also to subject forums as relevant. Make participants as managers of the TE COP groups and their subject groups
	<b>Day-2 21.01.2015 / 04.02.2015</b>			<b>Educational tools (science, language), email</b>
1	Internet, Web browsing, ICTs and education (teaching-learning processes, collaborative and peer learning)	930-11	Presentation , discussions and hands-on	Morning recap of previous day. reading time. concept, presentation and discussions. Possibilities in integrating ICTs and education KOER browsing (including useful sites)
2	Science teaching integrating ICTs	11 - 3		Phet, science sites, Accessing KOER lessons for the tool (2a in first workshop only)Preparation of a unit plan by each of the 3 teams - Science transaction and assessment (portfolio)
3	Emailing	3 - 430	Presentation and hands-on	E-mail, Sent and receiving the mails each other and Google groups. Attachments, email etiquette, PLCs
4	Exploring different gadgets – laptops, mobile phones, digital cameras	430 - 530	Presentation , discussions and hands-on	using different electronic gadgets comfortably, configure gmail / email on phone. configure whatsapp group (DEdMRP), transferring photos and songs from mobile to computer to pen drive etc.

<b>Day-3</b>			<b>Educational tools</b>	
1	ICT and Society - (Socio-cultural and economic implications)	930-11	Presentation and discussions	Morning recap of previous day. reading time. concept, presentation and discussions
2a	Maths teaching integrating ICTs	11-3	Presentation and hands-on	Geogebra, Accessing KOER lessons for the tool (2a in first workshop only), transaction and assessment (portfolio)Preparation of a unit plan by each of the 3 teams - Mathematics
3	Presenting lessons	3-430		Participants will demo and share both science and maths
4	Open house	430-6	Presentation and discussions	browsing and discussion on Unit 2 of source book and hand book (in divisional groups)
<b>Day-4</b>				
1	Advanced Internet (basic working/ architecture of the Internet), information access methods	930 - 11	Presentation and discussions	Morning recap of previous day. reading time. Introduction to Internet. Searching resources in internet, search for relevant material and useful websites, Internet safety. Becoming members of the "Teacher Educators Communities of Practice" (COP) and sharing messages in the COP virtual forums - the mailing group and the COP portal
2	Audio, image usage and processing	11 - 130	Presentation and hands-on	Audio, image and Video usage and processing. Creating audio records with mobile phone, video with laptop
3	Understanding digital commons	230 - 330	Presentation , discussions and hands-on	Principles, access, use and adoption of OERs, Internet OERs, Internet safety. Digital commons, the free software and open access movements, demo OERs on maths and science
4	Video recording	330-4	Demo	
5	Open house	4-530		browsing and discussion on Unit 1 of source book and hand book (in divisional groups)
<b>Day-5 24.01.2014</b>			<b>Cascade</b>	
1	Open house	930 - 11	Presentation and discussions	Browsing and discussion on Unit 3 of source book and hand book (in divisional groups)
2	<b>Planning the cascade workshops, readiness to transact course, methodologies</b>	11 - 1230	Presentation and discussions	Review the hand book for methodology. Discussing the 3 day agenda setting ICT Lab, discuss DIET Lab
3	Basic numerical computations using spreadsheets	1230-130	Presentation , discussions and hands-on	
4	Continuing resource sharing on KOER and learning through forum, follow up activities		Presentation and discussions	Assignment to complete (digital resource creation)
	Discuss and develop assignment for self			

**9.3 Annexure C – List of participating teacher educators**

No	Participants Name	Institution name	District	Email Id's
1	M.S.NATARAJU.	DIET TUMKUR	TUMKUR	nataraju.ms@rediffmail.com
2	VINUTHA B.S.	DIET BANGALORE RURAL	BANGALORE	vinuthajvk@gmail.com
3	HUDGE G.K	DIET KAMALAPUR	KALABURGI	hudge1968@gmail.com
4	MANJESH M V	DIET KODAGU	KODAGU	manjesh.dietkodagu@gmail.com
5	Y.B.HOSAMANI	DIET ILKAL	BAGALAKOT	ybhosamani9@gmail.com
6	GEETHA N. SHIRALI	DIET UDUPI	UDUPI	shiraligeetha63@gmail.com
7	S.M. MADHUMATHI	DIET BANGALORE RURAL	BANGALORE RURAL	mm_madhumathi26@yahoo.in
8	S.SURENDANATH	DIET CHIKMAGALORE	CHIKAMAGALORE	surendranathheragatta@gmail.com
9	MRS.RANGANAYAKI.V.	ST.JOSEPH'S TTI BELAGAVI	BELAGAVI	vrangura@gmail.com
10	DEEPTHI APPAIAH T	GOVT- TTI DHARWAD	DHARWAD	<b>dappaiaht1970@gmail.com</b>
11	C. PARVATHAMMA	DIET BELLARY	BELLARY	Dietparvathamma@rediffmail.com
12	PANDURANG BIRADAR	DIET BIDAR	BIDAR	pandurang220761@gmail.com
13	KAMALA C.S	DIET MYSORE	MYSORE	kamalasri73@gmail.com
14	MANJUNATH T MANE	K.S.S TTI BELAGAVI-590017	BELAGAVI	manjunath.mane21@gmail.com
15	RAJANNA.SP	DIET TUMKUR	TUMKUR	rajannamandalor@gmail.com
16	SREENIVASA.H	MY INSTITUTE D.ED. COLLEGE	BANGALORE NORTH	sreenivasa1073@gmail.com
17	LAXMIBAI L LALI	DIET BANGALORE URBAN	BANGALORE	lakshmilalic@gmail.com, diet.bangalore.u@gmail.com
18	BHAGYALAKSHMI N.H	DIET RAMANAGARA	RAMANAGARA	madhuchand1967@gmail.com
19	REKHA NAIK	DIET-KUMTA	UTTARA KANNADA	rekhaniranjanika@gmail.com
20	KARBASAPPA METHRE	DIET KAMALAPUR	KALABURGI	karbasappam@gmail.com
21	SHAMEEM S INAMDAR	URDU TTI VIJAYAPUR	VIJAYAPUR	shameemsInamdar@gmail.com
22	D. RAVIRAM	DIET BELLARY	BELLARY	teacherdraviram@gmail.com
23	MAMATHA CHRISTINA	ST. JOSEPH'S T.T.I.	MANDYA	mamatha131298@gmail.com
24	G.K.NAGARAJ	D.I.E.T.KOLAR	KOLAR	Do not have email id
25	ANASUYA P CHAVAN	GOVT TTI DHARWAD	DHARWAD	ansuyapchavan@gmail.com

## 9.4 Annexure C – Cascade workshops - List of teacher educators to be covered

No	Name of the DIET	Number of teacher educators to be covered through each DIET
1	DIET Bengaluru urban	26
2	DIET Bengaluru rural	4
3	DIET Thumakuru	10
4	DIET Ramangara	4
5	DIET Chikkaballapura	7
6	DIET Kolar	36
7	DIET Chitradurga	9
8	DIET Shivmoga	7
9	DIET Davanagere	3
10	DIET Mysuru	10
11	DIET Kudige	4
12	DIET Chamarajanagara	5
13	DIET Mandya	10
14	DIET Hasana	7
15	DIET Chikkamagaluru	1
16	DIET Mangaluru	8
17	DIET Udupi	5
18	DIET Belagavi	33
19	DIET Daravada	13
20	DIET Bijapura	25
21	DIET Ilakal	11
22	DIET Gadaga	12
23	DIET Haveri	8
24	DIET Uttarakannada	4
25	DIET Kamalapura	33
26	DIET Bidar	39
27	DIET Yaramras	18
28	DIET Yadgiri	7
29	DIET Ballari	9
30	DIET Koppala	6
	<b>Total</b>	<b>374</b>

The 25 DIET faculty who were trained in this workshop will further train 374 colleagues across the entire state and bring them into the COP.