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### **Enhancing ICT Skills of faculty members from Higher Education**

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#### **Abstract**

There are 1.2 million teachers in the higher education (HE) system in India who are expected to help the 21<sup>st</sup> Century learners to develop appropriate digital skills. The Education 4.0 expects the teachers to have mastery over the ICT skills so that these 21<sup>st</sup> century learners will use these skills for learning. Do the teachers from HE have required mastery over ICT skills? Are they integrating ICT tools into their teaching-learning-assessment processes? Could they be guided to integrate ICT into their day-to-day teaching? This paper is based on data collected from the participants of a workshop on Flipped Learning. The participants were expected to use appropriate ICT tools and also train at least 50 faculty members each within next year. The data was collected before the workshop started and after one year.

The questionnaire had 8 questions related to use of ICT in Teaching Learning Process (e.g. Use of Blog, Google Drive, Slideshare, Presentations, LMS, Mobile etc.) Maximum score 17 and minimum 0. The average score for the whole sample (60) was 7.37. The data showed meagre use of ICT skills.

After the workshop, next one-year, Local Community of Practices through Handholding (LCOPH) was created and used through whatsapp platform, emails, phone calls. The results are very encouraging. Data received from 70% participants showed integration of ICT Skills into day to day teaching to a great extent. The paper also discusses relationship between ICT use and Extent of reach (number of faculty members trained) and also between the Social presence on LCOPH and the reach. It could be concluded that LCOPH created after the workshop (though not direct intervention) enhances the use of ICT tools among the faculty members of higher education.

#### **Introduction**

Teacher training in Higher Education sector in India is not yet institutionally established. There is no required teacher education qualification for an entry into Higher education as a teacher. (It is essential for a school teacher to have a Bachelor degree in Education or a 2-year Diploma in Education.) There are programmes of in-service teacher professional development, organised for the teachers in higher education. There are nearly 1.3 million teachers working in higher education in India. How to orient them about teaching learning process, to integrate ICT into teaching, to evaluate the learners on the basis of learning outcomes is a challenge which is being addressed at various levels.

In order to address this challenge, the authors of this paper conduct workshops for Teacher Professional Development (TPD) especially in the area of "Flipped Learning". These range from 2 to 5-day duration using face to face, online as well as blended modes.

Though the authors have been conducting training for TPD across the country for a long, their participation in TPD workshop may not necessarily result in professional skill development and its application in faculty. It is many a times observed that the faculty may not continue exploration and use of ICT tools after the end of TPD workshops. Continuation of interactions among faculty participants and resource persons for handholding was then managed. This helped in developing confidence among the faculty. The interactions among the participants

and resource persons on WhatsApp platform are referred here as “Local Community of Practices for Handholding (LCOPH)”

The paper is based on experience gained during one such TPD workshop on ‘Flipped Learning’ conducted in April 2018. The 6-day TPD workshop consisted of 4-day training in face to face and 2-day training in online mode. Local Community of Practices for Handholding (LCOPH) was provided through WhatsApp platform for one full year.

It was necessary to study effectiveness of the LCOPH. The need could be further established from the reviews of related studies in the area of TPD and LCOPH.

### **Review of literature**

Teacher Professional Development (TPD) across the world is a major area of concern and therefore of research. TPD is a long term process and need continuous efforts. Many models are tried out, many modes like face to face, online, blended are explored. The pedagogy used for TPD needs to be interactive, experiential and providing ample scope for reflections. Therefore, handholding through learning communities needs to be explored as an important aspect of TPD. There is ample research available on Global Professional Learning Communities (PLC), but not much interest is created in local community of practices, community of participants of the training programme/course/workshop along with their resource persons.

Cochrane and Narayan (2013) explored impact of Community of Practices (COP) and mobile web 2.0 tools for continuous learning of the lecturers. The course they developed ‘demonstrated the transformative impact of a COP model of lecturer professional development’.

The present study used Mobile technology to reduce isolation among the teachers after training. The WhatsApp group created for the participants aimed primarily at creating a feeling of support, co-creation of knowledge as well as handholding. Cochrane and Antonczak (2014) explored a ‘model of implementing a mobile social media framework for creative pedagogies’. They hope that the ‘mobile social media will play a role of catalyst and bring a pedagogical shift the teacher directed pedagogy from traditional teacher-directed pedagogy towards student-determined heutagogy’.

In a typical TPD, the interaction of resource persons and the participants ends as the programme ends. Generally, the TPD is carried out in a One shot manner. There is no support after the programme. A ‘one-shot’ training program has been decried for it is not ‘sustained’ and ‘intensive’, which are two critical characteristics of effective TPD (McConnell, Parker, Eberhardt, Koehler, & Lundeberg, 2013).

LCOPH is felt as one of the solutions to overcome this limitation of one-shot TPD. It is, therefore, proposed to study the effect of sustained and intensive TPD through ICT tools and platforms. It was proposed to use LCOPH through WhatsApp social media platform.

### **Research Objectives**

The study, thus, intended to explore the effect of continuous interaction among the faculty participants with resource persons and with other participants on their use of ICT skills and cooperative learning strategies in face-to-face classrooms. The platform used for handholding was WhatsApp on Mobile. The research objectives were stated as follows:

1. to study extent of Use of ICT after TPD followed by LCOPH
2. to study relationship between Social presence in LCOPH and Extent of Reach to other higher education faculty
3. to study relationship between use of ICT and Extent of Reach to other higher education faculty

### **Research Methodology**

A participatory Action research methodology with Survey method was used to study effectiveness of “Local Community of Practices for Handholding (LCOPH)” in teacher professional development in Higher Education. The study was limited to a cohort of faculty participants who joined the ‘Train the Trainer workshop on Flipped Learning’.

## **The Workshop on Flipped Learning**

The researchers organised a Train the Trainers workshop on Flipped Learning (TTTFL) with an aim to train the faculty from higher education to change their teaching learning pedagogies in the classroom. While conducting the workshop it was shared with the participants that they were expected to use the flipped learning approach in their own class. They were also expected to train at least 50 other teachers from higher education institutions in Flipped Learning approach through at least 2 workshops of 2-day duration with 25 participants in each. All the participants had agreed to this expectation.

The 4-day face-to-face TTTFL workshop was fully interactive. The participants were given Out-of-Class ICT-based activities before the workshop started. Cooperative Learning Strategies (CLS) were used during the workshop (for In-Class Activities) so that they get first-hand experience of participating in CLS. About 9 CLSs were used during the workshop, viz. Jigsaw, 6 Thinking Hats, Fishbowl, Four Corners, Round Robin, Team-Pair-Solo, Three Step Interview, Peer Instruction (PI), and Think-Pair-Share (TPS). The names of these strategies were shared at the end of the workshop along with full information on these CLS and discussion on how to conduct the sessions using the CLS. No lectures were used during the workshop.

## **Local Community of Practices for Handholding (LCOPH)**

It was an understanding with the participants that they shall be using Flipped Learning approach in their class as well as during training workshop on Flipped Learning conducted by them. A platform for LCOPH was created on WhatsApp. The WhatsApp Group was created 2 days before the workshop.

It was decided to share training workshop plans with the resource persons after the workshop. A template for designing plan was shared with them on the last day of the workshop. Many of the faculty started sharing the plans, out of which several were for their own classroom sessions.

The feedback was given on their planning document. Wherever necessary, it was discussed on phone as well. Email interaction was used to share the teaching / workshop plans and feedback.

WhatsApp group was used to share general and specific concerns during the practice and implementation of ICT tools, and also sharing experiences of their own implementation of plans. These experiences were shared through classroom photos, textual messages, videos, as well as screenshots, links, pdf etc.

## **Participants**

The “Train The Trainers Workshop on Flipped Learning” (TTTFL) was organised during April 23-26, 2018 in Mumbai, India. There were 60 participants registered for this workshop. All of them were surveyed regarding their entry skills and extent of use of ICT at the beginning the workshop. The participants were surveyed after one year to find their ICT skills and the extent of use of ICT. Forty four participants (73%) responded to the online tool.

### **A. Workshop Participants: Demographic and Qualification**

These 60 participants were from 7 States of India (Maharashtra, Goa, Delhi, Tamil Nadu, Kerala, Haryana and Karnataka) but majority were from Maharashtra (50). They consisted of 19 (32%) males and 41(68%) female college/university teachers. There were 52 (87%) from colleges and 8 (13%) from University departments.

Figure 1 presents status of their qualification.

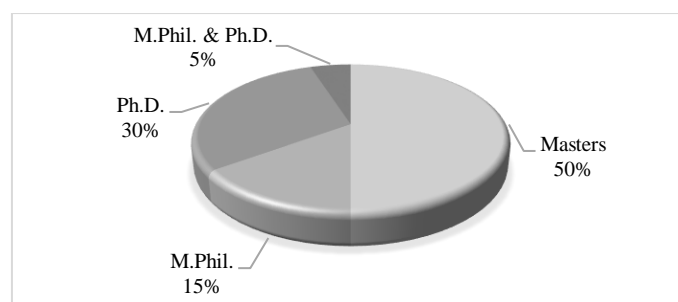


Figure 1: Qualification wise distribution of participants

Thirty (50%) participants who only had a postgraduate degree. Out of remaining 30, 9 (15%) had M.Phil. 18 (30%) had Ph. D. and 3 (5%) had both M.Phil. and Ph. D. Their teaching experience ranged from 1 to 33 years. 24 (40%) had experience less than 10 years, 17 (28%) had experience from 11 to 20 years and 16 (27%) had experience from 21 to 30 years. Only 3 (5%) had more than 30 years of experience.

### B. Sample of the study: participants after 1 year

After one year in April 2019, 44 (73%) participants responded to the online survey. These faculty participants, are therefore, form the sample of the study. The respondents consisted of 31 (70%) females, and 13 (30%) males. There were 20 (45.5%) participants with Ph. D. degree and remaining 24 (54.5%) had a postgraduate degree.

#### Data collection tools

The registration form (in the form of Questionnaire) sent to all participants before the workshop contained 6 questions regarding demographic variables and 8 questions on the use of ICT tools in teaching learning process. These questions had alternatives and each alternative was scored. Total maximum score was 17 and minimum was 0. This questionnaire also included questions on their session planning and use of pedagogy but these questions are not used in this article as it addresses only ICT related use.

The same questions related to ICT use were asked again but with the data about their use during the last one year. This was sent to all participants in the last week of April 2019.

#### Data Analysis

##### Use of ICT before the workshop

##### Responses to ICT related questions

There were 8 questions related to ICT use and the responses were scored.

Table 1: Use of ICT before the workshop

Questions	Yes N/%	No N/%		
1. Use of Blog	5 8.33%	55 91.6%		
2. Have you used Mobile for teaching any course to your students?	30 50%	30 50%		
3. Have you used any Learning Management System (LMS) (e.g. MOODLE) for teaching your course?	19, 31.6%	41, 68.33%		
Questions	Always N/%	Frequently N/%	Sometimes N/%	Never N/%
4. Preparation of presentations (e.g. PowerPoint) for classroom teaching?	16, 26.67%	19, 31.67%	22, 36.67%	3, 5%

5. Do you use Google Drive for sharing files with others?	10, 16.67 %	13, 21.67%,	29, 48.33%,	8, 13.33%
6. Do you use Google Calendar for reminders of events/activities?	7, 11.67%	8, 13.33%	19, 31.67%	26, 43.33%
	<b>Yes, frequently N/%</b>	<b>Yes, sometime on N/%</b>	<b>No, there is no infrastructure N/%</b>	<b>Not used N/%</b>
7. Do you integrate ICT in your teaching-learning process? (other than PowerPoint Presentations)	26, 43.33%,	21, 35.00%,	5, 8.33%,	8, 13.33%

8. Do you have account on 'Slideshare'?

<b>Statements about Slideshare</b>	<b>N/%</b>
I have my Slideshare account and I have uploaded presentations in that	10 / 16.67%
I have my account on Slideshare, but I haven't uploaded any presentation yet	9 / 15%
I do not have account in Slideshare, but I have referred to presentations of others from Slideshare	18 / 30%
I know what 'Slideshare' is, but I have neither uploaded my presentation nor I have used others' presentations from Slideshare	17 / 28.33%
I do not know what 'Slideshare' is	6 / 10%

### Quantification of responses

The responses were scored and the total scores were categorised into three: High use (Score 12-17), Medium use (Score 6-11) and Low use (Score 0-5).

- ❖ The average score for the whole sample (N=60) was 7.37, for males it was 8.05 and female 7.05. This implies **medium use of ICT**.
- ❖ Only 20% of the teachers were in “High Use Category” (Score 12-17), 37% in “Minimum use” (0-5) and 43% were in “Medium use” (6-11) categories. The data showed meagre use of ICT and ICT integration skills by the faculty members before the workshop.

### Use of ICT (Responses after 1 year)

Participants were asked questions on the use of same ICT tools but the questions were not of the same nature. It was more of use or no use of the tool during the year. It can be seen from the Table 2 that the percentage of users using various ICT tools and platforms increased to a great extent.

The percentage of users of blogs was increased from 8% to 18%, use of Google Drive from 38% to 84% (there were nearly 92% user of Google Doc reported), users of Google Calendar from 13% users to 52%, Use of 'Slideshare' from nearly 17% to 36%, Use of Mobile for teaching increased from 50% to 95.5% users, Use of LMS increased from 28% users to 59% (6 different LMSs were found in use after the workshop). The tools introduced during the workshops (about 7) were in use by the participants (36% to 70% users of these tools were reported).

**Table 2: Percentage of users of ICT Tools/Platforms (Before and After the workshop)**

<b>ICT Skill</b>	<b>Entry level of performance (Before the workshop)</b>	<b>Content coverage in training workshop</b>	<b>Skill level after one year % of Users</b>	
Use of Blog	Using: 8%	Creation and sharing of Blog	Using: 18%	
Use of Google Drive	Using: 38%	Google Doc Google Slide Google form Google Drawing Google Sheet	Using: 84%	
Use of Google Calendar	13.33%	Google Calendar	Used	:52.3%
Use of 'Slideshare'	16.67%	Slideshare	Use	:36.4%
Use of Mobile for teaching	50%	Mobile for teaching (Whatsapp)	Use	:95.5%
		These ICT tools in teaching-learning-assessment were discussed during the workshop	Padlet Polleverywhere Testmoz Mindmap Concept map Rubrics ePortfolio	:52% :61% :36% :50% :66% :70% :39%
Use of LMS	28%	LMS for teaching courses	Used by ❖ Moodle ❖ Google Classroom ❖ Edmodo ❖ Opera ❖ Icampuz ❖ University LMS	:59.1%
		Use of additional ICT tools in teaching-learning-assessment	YouTube, Edpuzzle, Active Presenter, Hotpotato, H5P, Plickers, Pictochart, Worditout, Recording tools, Editing tools, Trello, RBPT, Prezi, WhatsApp	

**Interaction on WhatsApp (during the year)**

**WhatsApp Interactions**

As a part of handholding process, Resource Persons interacted with the participants on WhatsApp. All 60 participants and 2 Resource persons continued interactions on WhatsApp for one full year. The details are presented in Table 3.

**Table 3: WhatsApp Interactions by Participants and Resource Persons**

	<b>Before the Workshop starts</b>	<b>During the 4 days of workshop (Face to face)</b>	<b>From last day of workshop to end of the year</b>
Number of messages	217 (mostly greetings)	283	2292
Number of Media	1	46	263 Average: 4.3 posts Posted by 37 participants and 3 Resource Persons
Number of persons interacted at least once	62  60 Participants 2 RPs	62  60 Participants 2 RPs	<b>62</b>  <b>Resource Persons: 481 interactions</b> RP1 : 338 RP2 : 143 <b>Participants :1811</b> 1-50 : 47 51-100 : 9 101-150 : 2 201-250 : 2
Average			Participants : 30 Resource Persons: 240

The media exchanged/posted on WhatsApp group included text as well as photos of actual classroom interactions (mostly of student interactions and use of technology). The media also included Videos of the classroom activity as well as pdf files and links to resources.

### **Workshops conducted and Faculty trained by the participants during the year**

It was expected that each participant conducts at least 2 workshops on Flipped Learning for the Faculty from higher Education (either from their own college or other colleges/ university departments). Out of 44 participants (who responded to the questionnaire after 1 year), 21 (47.7%) participants conducted workshops on Flipped learning and trained 1317 faculty members from Colleges/University departments during the year 2018-19. The target set was that of 3000 faculty members to be trained by the 60 participants (which means 2200 to be trained by 44 participants). It therefore shows a 60% achievement. There were 21 participants who conducted workshops. This implies the target of reaching 1050 faculty members, but they reached 1317 faculty members which was an achievement of 125%.

### **Relationship between Social presence in LCOPH and Extent of Reach**

The process of Local Community of Practiced through Handholding (LCOPH) included use of WhatsApp platform where the participants were expected to post about their experience with the use of Flipped learning in their own class (in the college/university) and also their plans for training faculty members of their and other colleges/university departments. They were expected to share with others their experience on WhatsApp. One of the objectives was to find out if there was any relationship between their Social presence on WhatsApp and the reach (number of faculty members trained by the participants).

In order to find out the significance of relationship between these two variables, Pearson Coefficient of Correlation was computed.

The value of Pearson coefficient of Correlation is 0.661 which is significant at 0.01 level. This implies the number of posts on WhatsApp has a significant positive relationship with the number of faculty members reached through the training workshops organised. The participants used to post queries, information about the workshop they have planned as well as their plans of the workshop. After the workshop they posted photographs, images, videos as well as textual messages. Appreciation from fellow participants, encouragement, guidance from the resource persons must have worked positively.

The Resource Persons used to give feedback, appreciate the strategies used for the workshop, interaction among the faculty members during the workshop, provide additional resources for their workshops, share links to useful videos and other types of resources etc. The number of posts of Resource persons (2 in number) is nearly 21% of the total posts. This was the process of creating Local Community of Practices through Handholding after the workshop.

### **Relationship between the ICT use and Extent of Reach**

In order to find out the significance of relationship between these two variables, Pearson Coefficient of Correlation was computed.

The value of Pearson coefficient of Correlation is 0.454 which is significant at 0.05 level. This implies the use of ICT tools has a significant relationship with the extent of reach (number of faculty members trained through the workshops). Since the workshops to be conducted were on Flipped Learning approach and use of ICT tools is an important aspect of this approach, it was expected that those with greater use of ICT tools will tend to master the Flipped Learning approach better and also will be able to train others in this approach. The significant relationship (level of significance beyond .05) shows this premonition was true.

### **Findings**

This was a one-year long process of creating Local Community of Practices through Handholding (LCOPH) which was used with the participants (who were faculty members teaching in colleges and universities) to help them use the ICT in effective manner.

It was found that before the workshop the level of use of ICT was at medium level. The use of many ICT tools was nearly very low. During the workshop many ICT tools and platforms were introduced. It was expected that the participants use those in their own teaching learning process in regular face to face class. They were also expected to train at least 50 faculty members teaching in higher education institutes.

1. It was found that the percentage of users of all tools and platforms was increased during the year. This can be attributed to the LCOPH process used by the Resource Persons during the year.
2. It was also found that out of 44 participants who responded to the online survey after one year, 21 participants (47.7%) trained 1317 faculty members which is 60% achievement of the set target.
3. It was found that there is a positive significant relationship between the Social presence in LCOPH and Extent of Reach
4. The study also found that there is a positive significant relationship between the Use of ICT and Extent of Reach

### **Conclusion**

It can be safely concluded from this year long experience that the process of creating Local Community of Practices through Handholding (LCOPH) after the Teacher Professional Development (TPD) programme brings significant change in the behaviour of participants in terms of sharpening and using the skills learned during the workshop/training programme.

### **References**

- Alberth, A., Mursalim, M., Siam, S., Suardika, I. K., & Ino, L. (2018). Social Media as a Conduit for Teacher Professional Development in the Digital Era: Myths, Promises or Realities? *TEFLIN Journal*, 29(2), 293-306.
- Cochrane Thomas and Antonczak Laurent (2014) Implementing a Mobile Social Media Framework for Designing Creative Pedagogies. *Social Science* 3, 359–377, ISSN 2076-0760
- Cochrane Thomas and Narayan Vickel (2013) Redesigning professional development: reconceptualising teaching using social learning technologies. *Research in Learning Technology*. Vol. 21
- McConnell, T. J., Parker, J. M., Eberhardt, J., Koehler, M. J., & Lundeberg, M. A. (2013). Virtual professional learning communities: Teachers' perceptions of virtual versus face-to-face professional development. *Journal of Science Education and Technology*, 22(3), 267-277.