INTER UNIVERSITY CENTRE FOR TEACHER EDUCATION
REGIONAL INSTITUTE OF EDUCATION, MYSURU-06
(NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING, NEW DELHI)

NCERT

MHRD
GOVERNMENT OF INDIA

A report on Five Day Workshop on
Integration of Technology, Pedagogy and Content
Knowledge (TPACK)
in Teacher Education Courses

March 11th - 15th, 2019

Programme Coordinator
Dr. A. Divyapriya
Associate Professor of Mathematics Education
IUCTE

REGIONAL INSTITUTE OF EDUCATION
Manasagangotri, Mysore - 570006
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March 2019

FOREWORD

The Inter University Centre for Teacher Education (IUCTE), attached to the Regional Institute of Education (NCERT), Mysore, aims to strengthen the knowledge base of Teacher Education by facilitating professional development, networking, new knowledge creation and empowerment of teachers of academic Institutions and central and state universities in southern region.

In teacher education, Pedagogical Content Knowledge has been seen as an important support for teachers' professional development. In order to acquire and update their skills, teachers must keep pace with increasing educational requirements that necessitates adaptable strategy and use of technology. The effective use of technology in teaching has re-defined education. Technology has created many learning opportunities for both teachers and students. Hence teachers are learning how to integrate technology in teaching. Teachers have difficulty in integrating technology in their instructional processes.

The module and video lessons prepared in this workshop may guide teachers, researchers, teacher educators, educationalists and program makers on the theoretical basis, practical use of TPACK and the development of the TPACK framework. The institute places on record all the encouragement received for this venture from Prof.Y.Sreekanth,Chairman IUCTE,& Principal RIE . The neverending support extended by the academic faculty of IUCTE is also highly appreciated.

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Prof. M.S Thalwar

Centre Director

IUCTE, RIEM

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ACKNOWLEDGEMENT

Technology Pedagogy And Content Knowledge(TPACK) is a systematic approach to join technical expertise in teaching with pedagogical content knowledge. TPACK is an emergent model resulting from the intersection of technology, pedagogy and content. This model considers the context as an important aspect.

The TPACK framework offers many insights into how technology should relate to other components of education in order to be successful. This framework offers clear explanations of why technology should not be treated in isolation but related with required pedagogy and content. Hence IUCTE organized a five day workshop to develop a module to train teachers and teacher educators on integration of TPACK in Teacher Education. The product of this workshop is a Module with 8 TPACK exemplar Video lessons in subjects like English, Mathematics,Science and Geography for the benefit of teachers, researchers, teacher educators, educationalists and program makers.

On this occasion,the coordinator expresses her in depth gratitude to Prof.Y.Sreekanth, the Principal RIE and Chairman, IUCTE, for all the encouragement and directions given for the completion of this work. The coordinator also wishes to acknowledge the academic and administrative support rendered by Prof.Thalwar,Centre Director and also to the colleagues of IUCTE,without whose support this venture would not have come into being.

Dr.A. Divyapriya
Associate Professor & Programme Coordinator
IUCTE, RIEM

REPORT

INTRODUCTION

The NCF(2005) has stressed the need for strengthening learning through visualization of concepts. Similarly it also assists teachers to improve the teaching methodology by creating better learning environments for students to construct their own knowledge. There is a gap in pedagogy and content knowledge. Technology bridges that gap. Moreover, "Facilitate technology integration in teacher education to transform both school and teacher education programmes" is one of the the objectives of IUCTE. Therefore a five day workshop on Integration of Technology, Pedagogy and Content Knowledge(TPACK) was planned for Teachers and Teacher Educators to develop a TPACK module with exemplar video lessons.

OBJECTIVES

The objectives of the program are to train Teacher Educators in the following aspects:

- To enable the participants in understanding the key concepts of TPACK and the process of developing TPACK
- To develop their skills to prepare TPACK in their subject area
- To train participants in blending technology with pedagogy and content knowledge
- To give Hands on experience in developing TPACK lesson plans in their subject area
- To Develop TPACK models

DAY WISE PROCEEDINGS OF THE WORKSHOP

<u>**Day 1: 11/03/2019**</u>

The programme commenced with a simple inaugural ceremony. Dr.A.Divyapriya, Associate Professor, IUCTE and Programme Coordinator welcomed the participants and gave Keynote address. Prof.M.S.Talwar, Director of Inter University Centre for Teacher Education gave inaugural address. Dr.K.K.Chandini, Associate Professor of IUCTE delivered vote of thanks. Each participant introduced themselves and talked about their experience in techno-pedagogy.

After a short tea break, participants assembled for the valuable session given by Dr.Madhu.B, Assistant Professor, RIE, Mysore.He waxed eloquent on 'Introduction and presentation on Integration of TPACK Model in Mathematics'. The session was an eyeopener to all the participants and it gave the vision of integrating technology, pedagogy and content knowledge. Even though the topic was related to Mathematics, all the participants could easily digest the methodology as the presentation was so lucid and clear.

After lunch break Dr.C.Karthik Deepa gave a presentation on ICT Tools for teachers. Dr.C Karthik Deepa familiarized the participants with a lot of online and offline educational softwares and she talked right from google doc to Lingro.The session was highly informative and it could clear many of the doubts participants had upon web related topics.

On the second day, the session was handled by Dr.K.Ramnath,Assistant Professor,Department of Education,Alagappa University.His presentation focused on giving awareness to teachers on ICT. He talked on copyright issues while using pictures, videos from online resources and how to select pictures and videos for preparing TPACK Model. He introduced 20 skills needed for using technology brilliantly for 21st Century Learners. He took the teachers through video editing by a very student friendly demonstration of the same. He made a very insightful discussion regarding pedagogy, andragogy, heutagogy, techno heutagogy and webagogy, cybergogy, peeragogy, blogagogy, indigogogy, chronology, mygogy; and ridgogy.

The afternoon session was a very fruitful one with discussion on script writing for a TPACK lesson plan. The session elaborated in detail various steps for writing the script. Dr.A. Divyapriya, Programme Coordinator taken initiative to take participants to the RIE Studio floor. She arranged interactive sessions with the floor experts on studio mannerisms and all the subtleties one needs to know for conducting a good video session. The session was arranged so systematically that all the participants got the needed information for making a video presentation.

Teachers were divided into different subject groups and they were assigned to prepare scripts for video presentation. Dr.A. Divyapriya and Dr.Ramnath helped participants to write script by giving the needed corrections and directions. Mr.K.Eswaran, Science Teacher, Thirukunnur, Pondicheri completed the script and gave a mock presentation before lunch break. His lesson was video recorded and supportive documents were collected for video editing.

Day 4: 14/03/2019

The session commenced with the lecture of Dr.Sreedevi, Asst.Professor, NCERT. She gave a lecture focused upon integrating curriculum with ICT. She talked on the importance of clubbing ICT with content knowledge. She stressed upon Punya Misra's concept and elaborated on factual knowledge ,conceptual knowledge, procedural knowledge and metacognition. She said that concepts are formed by exemplars and non-exemplars. Dr.Sreedevi portrayed how to present technology substitutes for conventional teaching aids. She stipulated the role of learning in clearing misconceptions and cleared the doubts of the participants on the concept of TPACK.

After tea break the participants were led to the studio floor for capturing their TPACK module.

On the recording floor the participants were guided and motivated by Dr.A.Divyapriya, Programme Coordinator. The floor officials detailed on the steps and procedures of recording. After the evening tea break Dr.R.Ramnath, took a class on lesson plan writing for TPACK and a model TPACK lesson plan was given for reference. The participants were assigned to make their subject lesson plan as a home assignment.

Day 5: 15/03/2019

As it is the fag end of the 5 day course, TPACK Participants were engaged in completing the time bound assignments so that course will attain its objective.

The focus was upon

· TPACK lesson plan

· Script of the video programme

· Supportive materials for video presentation

The valediction marked the end of the session and respected dignitaries like Prof.M.S.Talwar, Director, IUCTE, RIE Mysore, Programme Coordinator Dr.A. Divyapriya and other dignitaries came to have a talk with TPACK participants and felicitated them.

Dr.R. Ramnath presided over the function and spoke very positively about implementing technology in classroom. The video presentation on Science

TPACK Model of Mr.Eswaran was shown in the session and all watched it with a lot of enthusiasm and curiosity .

Dr.Talwar ,the Director, IUCTE distributed the certificates to all the participants. He congratulated the team members for their team work, dedication and enthusiasm.

Participants were asked to share their experience and feedback. Mr.Maheswaran Namboodiri, Dr.Vijetha and Eswaran unanimously opined that the session was excellent and extended their gratitude towards Dr.A.Divyapriya, Dr.R.Ramnath and all the faculties for their support, cooperation and patience. Dr.A.Divyapriya gave vote of Thanks. Special bouquets of gratitude were extended to studio members, office members, catering and menial staff for their hospitality and cordiality.

Outcomes of the workshop

A TPACK Module with 8 exemplar videos were developed to give hands on experience for Teachers and Teacher Educators on

- ❧ TPACK Framework and Lesson planning
- ❧ Blending technology with pedagogy and content knowledge
- ❧ Hands on experience in developing TPACK in their subject area
- ❧ TPACK models in various subject areas

CONCLUSION

According to the TPACK framework, specific technological tools (hardware, software, applications, associated information literacy practices, etc.) are best used to instruct and guide students toward a better, more robust understanding of the subject matter. It is important for teachers to understand the concepts of the TPACK framework in order to be effective teachers.In this workshop a Module with 8 TPACK exemplar Video lessons in subjects like English, Mathematics,Science and Geography were prepared. This Module will serve as a best model for teachers and teacher educators and also those who try to integrate technology, pedagogy and content Knowledge in their lessons.

Appendices
I.Programme schedule

INTER-UNIVERSITY CENTRE FOR TEACHER EDUCATION

Regional Institute of Education - Mysuru.

FIVE DAY WORKSHOP

On

INTEGRATION OF TECHNOLOGY, PEDAGOGY AND CONTENT KNOWLEDGE (TPACK) IN TEACHER EDUCATION COURSES

es : 11th to 15th March 2019   **PROGRAMME SCHEDULE**   Venue : IUCTE Hall

DAY & DATE	SESSION -1		SESSION -2		SESSION -3		SESSION-4	SESSION-5
Day I - 11/03/19	9.30 - 10.00 Registration 10.00-10.45 Inauguration	Tea Break 10.45 - 11.00	11.00 - 1.00 Introduction & Presentation on Integration of TPACK Model in Mathematics by **Dr. Madhu,** Assistant Professor RIEM	Lunch 1.00 - 2.00	2.00 - 3.30 Presentation on ICT Tools for Teachers-I by **Dr. C. Karthik Deepa,** Assistant Professor Avinashilingam Institute... Coimbatore	Tea Break 3.30 - 3.45	3.45- 4.45 Presentation on ICT Tools for Teachers-II by **Dr. K. Ramnath** Assistant Professor Department of Education Alagappa University	4.45 - 5.30 Discussion on Preparing the list of modules and distribution of duties to experts
Day II - 12/03/19	9.00 - 10.45 Discussion on blending Technology with Pedagogy and Content	Tea Break 10.45 - 11.00	11.00 - 1.00 Group work- Identifying the content and Lesson Planning	Lunch 1.00 - 2.00	2.00-3.30 Group work- Writing	Tea Break 3.30 - 3.45	3.45 - 5.00 Group work-Presentation & Discussion	5.00 - 5.30 Review of the day & Charting follow up
Day III - 13/03/19	9.00 - 10.45 Group Discussion on developing TPACK in their subject area	Tea Break 10.45 - 11.00	11.00 - 1.00 Group work- Format for Tpack Lesson plan	Lunch 1.00 - 2.00	2.00 - 3.30 Group work - Writing	Tea Break 3.30 - 3.45	3.45 - 5.00 Group work-Presentation & Discussion	5.00 - 5.30 Review of the day & Charting follow up
Day IV - 14/03/19	9.00 - 10.45 Group Discussion on developing TPACK Exemplars in their subject area	Tea Break 10.45 - 11.00	11.00 - 1.00 Group work- Preparation of TPACK Exemplars in their subject area (Contd.)	Lunch 1.00 - 2.00	2.00 - 3.30 Group work- Presentation & Discussion	Tea Break 3.30 - 3.45	3.45 - 5.00 Writing & Video Recording	5.00 - 5.30 Review of the day & Charting follow up
Day V - 15/03/19	9.00 -10.45 Group work- Preparation of TPACK Exemplars in their subject area	Tea Break 10.45 - 11.00	11.00 - 1.00 Review & Group Discussion on Prepared TPACK Exemplars	Lunch 1.00 - 2.00	2.00 - 3.30 Writing & Video Recording	Tea Break 3.30 - 3.45	3.45 - 4.45 Presentation	4.45 - 5.30 Valediction

II. List of Resource Persons

1. **Dr.K. Ramnath**
   Assistant Professor
   Department of Education
   Alagappa University,
   Karaikudi
   Tamilnadu
   9445202582, 7639423630
   rrnathedu@gmail.com

2. **Dr. C. Karthik Deepa**
    Assistant   Professor
   Department   of Education
   Avinashilingam   Institute   for   Home   Science   and   Higher
   Education for Women
   Coimbatore-641043
    7904591885
    cherrydeepa@gmail.com

3. **Mrs. Shanthi**
    Lecturer
    DIET,
    Krishnagiri,
    Tamilnadu
    9916392227
    sksanthy@gmail.com

4. **Mr. Maheswaran Namboodiri PM**
   HSST (ENG)
   Mattanur Higher secondary school
   Mattanur, Kerala
   Phone – 9446265586
   maheswarpm1964@gmail.com

5. **Mrs. Sindhu .P**
   HSST (ENG)
   Government Vocation Higher Secondary School GVHSS
   KUTTICHIRA, Kerala
   9747276721
   sindhupraj@gmail.com

6. **Mr. A. Anbu**
Assistant Professor,
Thiagarajar College of Preceptors
Tepakulam
Madurai-625009
9865341959
prof.aanbu@gmail.com

7. **Dr. Palnaty Vijetha**
Reader in Special Education
All India Institute of Speech and Hearing
Mysore, Karnataka
2502000-2565, 9980616337
palnatyvijetha@gmail.com

8. **Mrs. V. Deepa**
TGT Maths
Kendriya Vidyalaya
Mysore, Karnataka
9009110585
deepa_vavath@yahoo.co.in

9. **Mr. K. Eswaran**
 BT Science   Teacher
 GHS,
Thirukkanur,
Puducherry
9842398305
eswaranpdy@gmail.com

10. **Dr. Chandran R**
Assistant Professor
Sri Ramakrishna Mission Vidyalaya College of Education
Coimbatore
chandran.r.123@gmail.com
09943653202

III. ABSTRACT

- **Title of the program**   : 'Five Day Workshop on Integration of
  Technology,

       Pedagogy and Content Knowledge
  (TPACK) in Teacher Education
  Courses'

- **Type**   : Training

- **Category**   : New

- **Specific Objectives**   :

The specific objectives of the program are to train Teacher Educators in following aspects of pre-service teacher preparation:

- To enable the participants in understanding the key concepts of TPACK and the process of developing TPACK
- To develop their skills to prepare TPACK in their subject area
- Create and utilize these skills in their teaching learning process

- **Methodology**   :

Forty Teacher Educators working in six southern states and three UTs will be trained on Integration of Technology, Pedagogy and Content Knowledge (TPACK) in Teacher Education Courses. Five day Workshop will be organized for Teacher Educators. In this training programme teacher educators are sensitized on Technology including the following

- Training participants in blending technology with pedagogy
- Hands on experience in developing TPACK in their subject area
- Developing TPACK models

- **Total Budget**   :Rs. 5,52,750=00

- **Plans for utilization and Dissemination of the end Product(s):**

The training programme will be video recorded. This video will be uploaded in IUCTE and NROER websites for online training. The TPACK models developed will be published as a manual.

PROFORMA FOR PROGRAMME PROPOSALS
2018-19

(Only for Development, Training and Extension Proposals)

1.	Name of the NCERT Constituent /Department	IUCTE RIE Mysore
2.	Title of the program	'Five Day Workshop on Integration of Technology Pedagogy and Content Knowledge (TPACK) in Teacher Education Courses'
3.	(a) Type of the program	Training
	(b) Category of the prog.	New
	(c) If the program is on-going or carried over, mention the PAC Code No. and year of approval	Not Applicable
4.	Total duration of the program as phased in column 10 (months)	3 months
	(a) Date on which program to be commenced	18th March 2019
	(b) Target date of completion	22nd March 2019
5.	Target Groups	
	(a) If program is meant for a group with special needs.	Not Applicable
	(b) Stage of education to which the program is meant.	Teacher Education
	(c) If program is State/Region/Agency specific, please specify the State/Region/Agency	Regional
6.	Beneficiaries	Teacher Educators

7. Need and Justification:
The NCF has stressed the need for strengthening learning through visualization of concepts. Similarly it also assists teachers to improve the teaching methodology

by creating better learning environments for students to construct their own knowledge. There is a gap in pedagogy and content knowledge. Technology bridges that gap. Moreover, "Facilitate technology integration in teacher education to transform both school and teacher education programmes" is one of the the objective of IUCTE.

8. (a) Specific Objectives:

The specific objectives of the program are to train Teacher Educators in following aspects of pre-service teacher preparation:

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- To develop their skills to prepare TPACK in their subject area
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(b) Methodology:

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Phasing of the program with precise information on activities:

Sl. No.	Activity proposed to be organized	Programme dates	Estimated Expenditure	Actual Expenditure
1.	'Five Day Workshop on Integration of Technology Pedagogy and Content Knowledge (TPACK) in Teacher Education Courses	11-15th March 2019	Rs.2,38,250.00	Rs.1,43,571.00

IV. TPACK Module
V. TPACK Videos