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ED/PDE/PAD, UNESCO

UNESCO ICT Competency Framework for Teachers (ICT-CFT) and

Institutional Strategy for Teacher Training on ICT-pedagogy Integration



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Outline

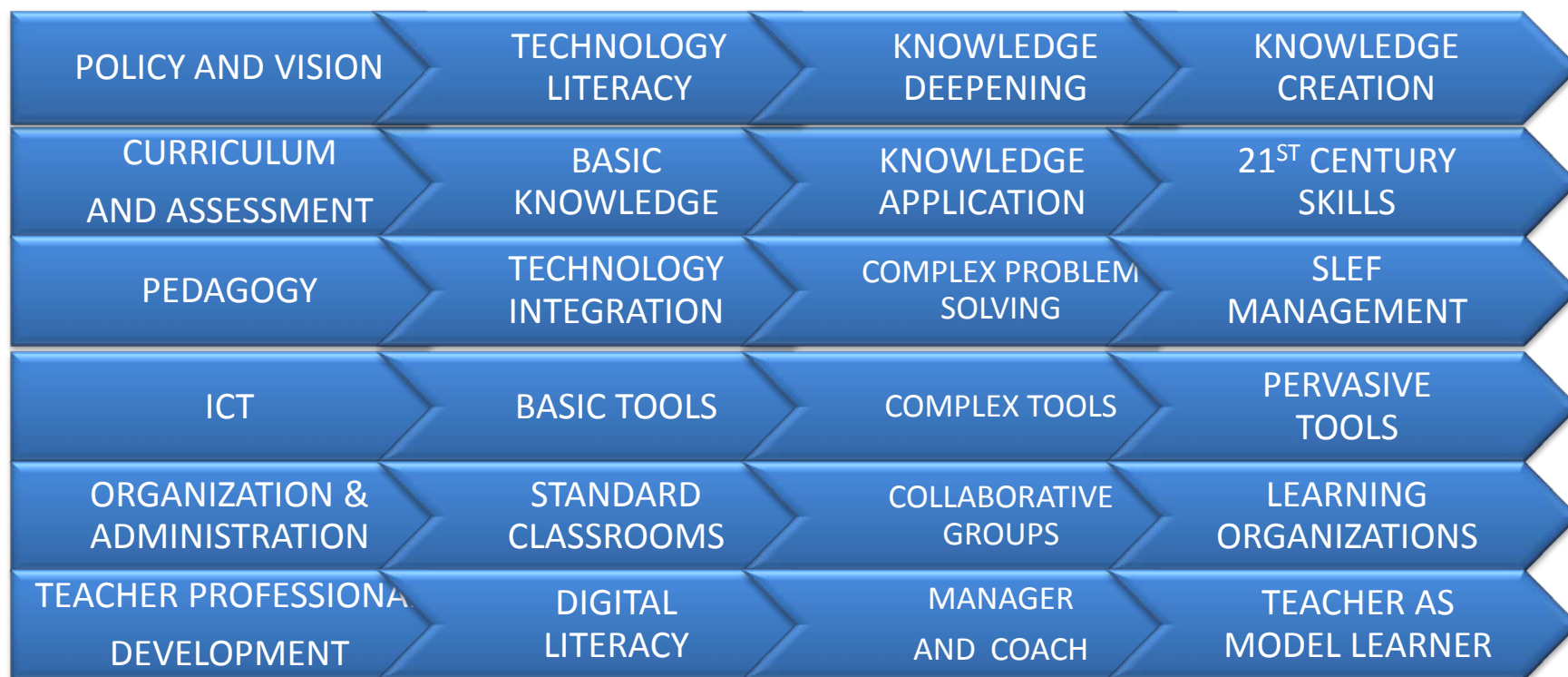
- 1. ICT CFT: Outputs & Review**
- 2. TPCK: Structure & Development**
- 3. Teacher Training: Institutional Strategy**



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What's ICT CFT

UNESCO ICT Competency **Framework** for Teachers (ICT CFT) – A reference framework





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ICT CFT: Outputs & Review

Goal

ICT-CFT project aims **to provide guidelines for planning teacher education programmes and training offerings** that will prepare pre-service teachers or facilitate in-service teachers' professional development on effective ICT- pedagogy integration

Latest Development

- **A Policy Framework:** the rationale, structure and approach
- **Competency Framework Components** (3 levels/approaches × 6 components) and the specification of the components
- Two exemplary expanded syllabi: syllabus on the specific techniques to be acquired by teachers within each set of components:
Technology Literacy & Knowledge Deepening



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How to understand the CFT Structure

Approach Components	TECHNOLOGY LITERACY	KNOWLEDGE DEEPENING	KNOWLEDGE CREATION
Understanding of ICT in Education	?	?	?
CURRICULUM AND ASSESSMENT	BASIC KNOWLEDGE	KNOWLEDGE APPLICATION	21 ST CENTURY SKILLS
PEDAGOGY	TECHNOLOGY INTEGRATION	COMPLEX PROBLEM SOLVING	SELF MANAGEMENT
ICT	BASIC TOOLS	COMPLEX TOOLS	PERVASIVE TOOLS
ORGANIZATION & ADMINISTRATION	STANDARD CLASSROOMS	COLLABORATIVE GROUPS	LEARNING ORGANIZATIONS
TEACHER PROFESSIONAL DEVELOPMENT	DIGITAL LITERACY	MANAGER AND COACH	TEACHER AS MODEL LEARNER



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How to understand the CFT Structure

- The structure is more appropriate for planning the national ICT in Education Master Plans. Some components, such as policy, and curriculum & assessment, are more related to governmental accountability or institutional capacity (policy background) than to teachers' competencies
- Understanding the relation of the ICT-CFT to national education policies, ICT-readiness, teacher development programmes, and teachers' professional and cultural environments is needed before any action



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How to apply the CFT: Localizing UNESCO's ICT-CFT or developing your own standard?

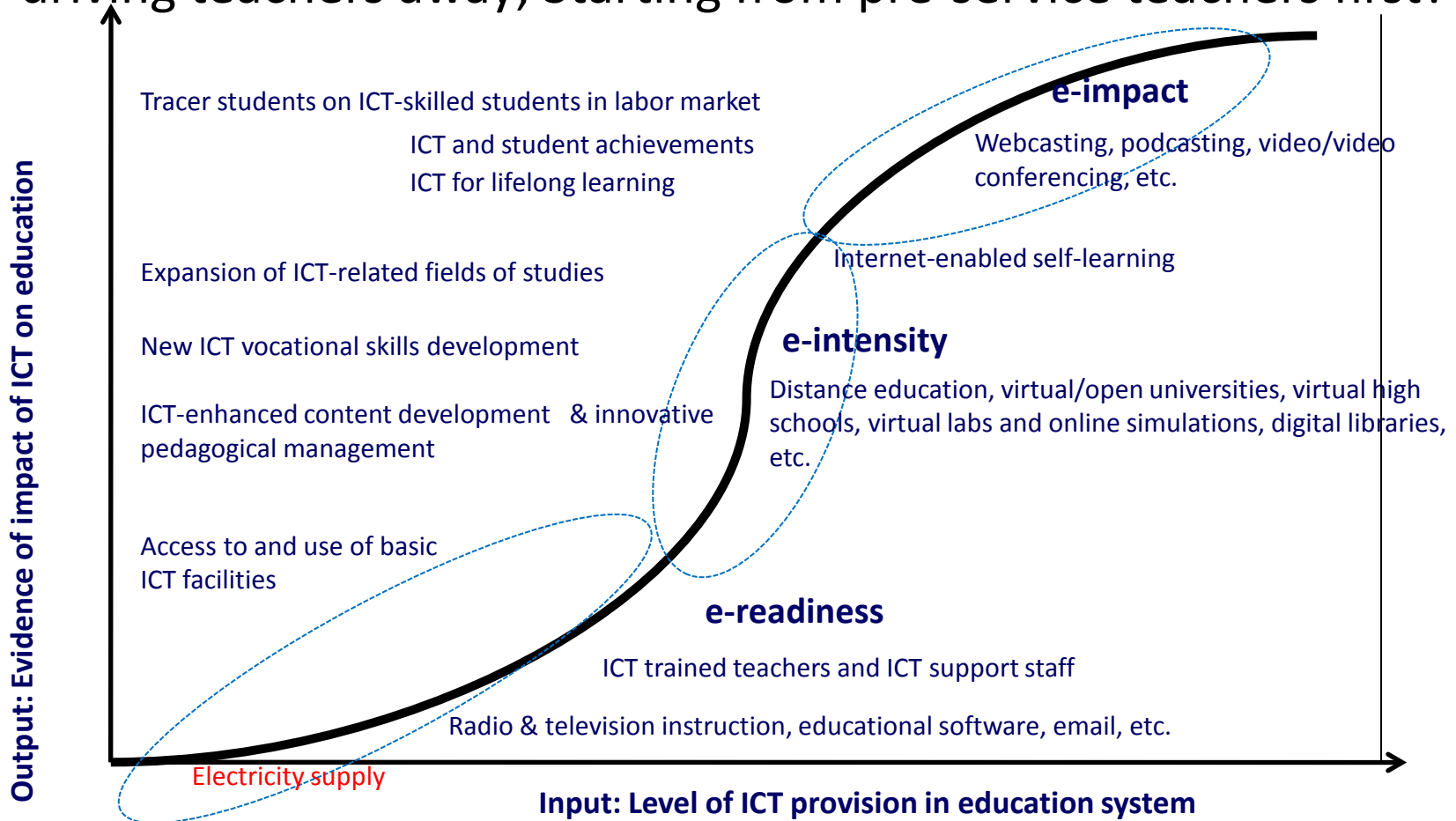
1. ICT-CFT and **E-Readiness**: ICT Competency Standards **should not be taken as mandatory standards** for teachers in developing countries without sufficient e-readiness
2. ICT CFT and **Teachers Pedagogical Content Knowledge**: Teachers' ICT qualifications should be pivoted around pedagogy.
3. Teachers' ICT competency is **not the determinant factor** for knowledge deepening and knowledge creation. Policy environment and other enabling factors are more critical.



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E-Readiness

- Readiness of member states to adopt ICT(-pedagogy) competency standards: Gradualism is better than forcible deployment to avoid driving teachers away; Starting from pre-service teachers first?





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How to apply the CFT: Localizing UNESCO CFT or developing your own standard?

- 4. Assumed pre-conditions** for knowledge deepening and knowledge creation are outside of the contextual realities of developing countries: the education level at which teachers work; the particular subject they teach and the methodologies are used; and the conditions of access to ICTs at schools by students and teachers.
- 5. Most public teacher education institutions** in developing countries lack the capacity to design and provide training courses on ICT in education. Therefore the systematic improvement of ICT-CFT under these conditions remains a challenge. s



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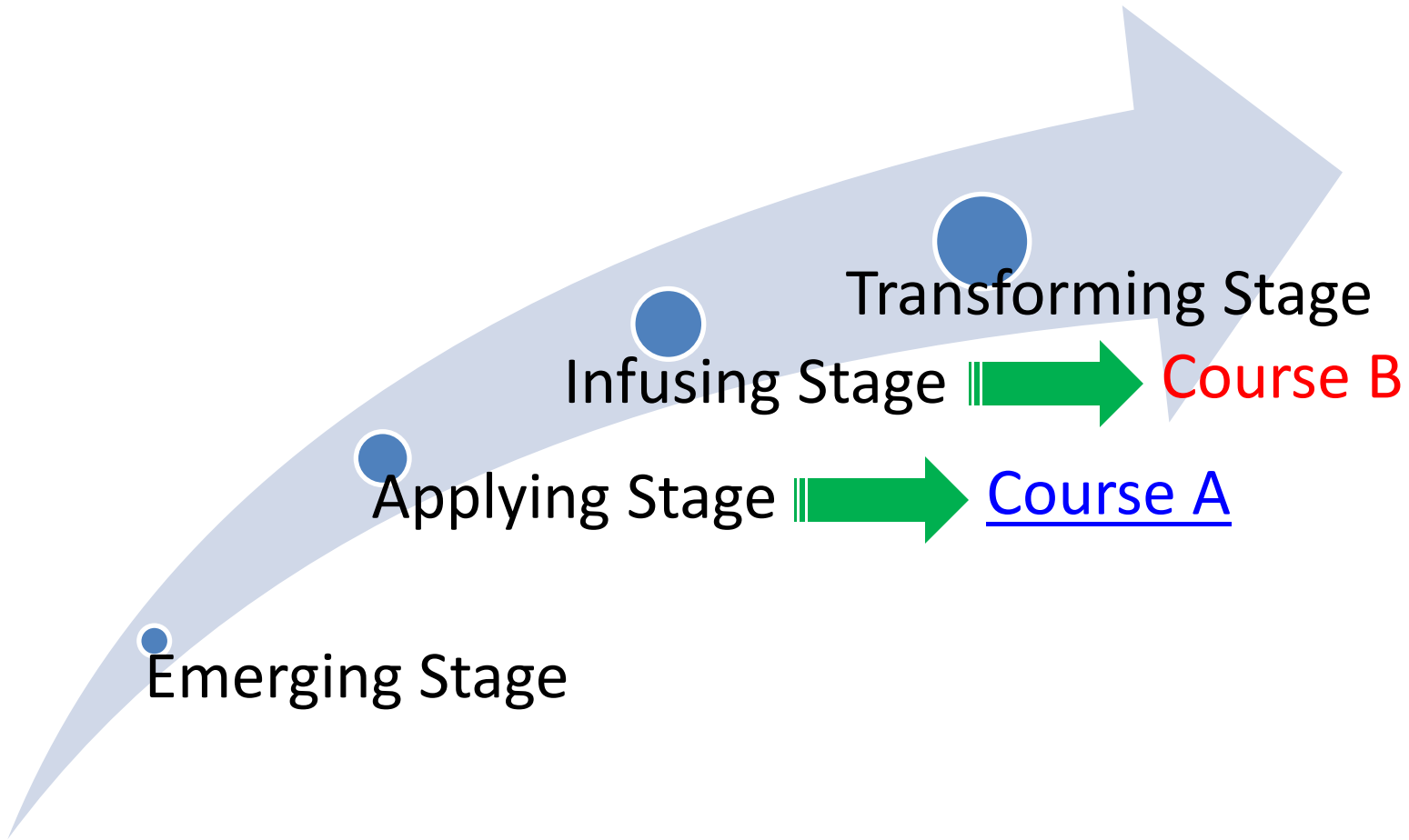
China Educational Technology Standards: An example of self-developed standard

- **Step1 Standard Setting:** China Educational Technology Standards (CETS) was developed and endorsed at 2004
- **Step2 Standard Adoption:** CETS was adopted as a new set of compulsory criteria for **Teacher's Certificate**
- **Step3 Syllabus and Training Programme:** Government **invested in and monitoring** the development of in-service teacher training courses
- **Step4 Public Training Providers:** Government selected local training (and exam) centers through bidding process who are entitled funds and authorized certification
- **Step5 Coherent Teacher Education:** **Pre-service teacher** training courses reformed accordingly



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CETS-based In-service Teacher Training Courses on ICT-pedagogy Integration





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Training Course (A) for Teachers at Applying Stage

Unit 1 Orientation

Activity 1 Experiencing ICT in Education

Activity 2 Introduction to the Training Package

Activity 3 Collection and Management of Individual and Group Information

Unit Exercise and Reflection

Unit 2 Re-cap Educational Technology

Activity 1 Key Concepts of Educational Technology

Activity 2 Concepts and Methodology of Instructional Design

Activity 3 PPT on *My Understanding of Educational Technology*

Unit Exercise and Reflection

Unit 3 Application of Teaching Media and Resources

Activity 1 Understanding Values of Teaching Media

Activity 2 Processing and Compilation of Digital Learning Resources

Activity 3 Searching Educational Resources

Activity 4 Evaluating Educational Resources

Activity 4 Applying Digital Educational Resources Legally and Appropriately

Unit Exercise and Reflection

Unit 4 ICT-enhanced Expository-Based Learning

Activity 1 Analysis of Sample Lessons

Activity 2 Design and Development of Lesson Plans

Activity 3 Peer Review on Lesson Plans

Activity 4 Understanding and Applying Learning Assessment

Unit Exercise and Reflection



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Training Course (A) for Teachers at Applying Stage (cont.)

Unit 5 ICT-enhanced Inquiry-Based Learning

Activity 1 Analysis of Sample Lessons

Activity 2 Understanding and Applying Rubric

Activity 3 Design Inquiry-Based Learning Activities

Activity 4 Presentation and Peer Review on Lesson Plans

Unit Exercise and Reflection

Unit 6 Planning Facilitation and Organization of ICT-enhanced Lessons

Activity 1 Analysis of Sample Plans

Activity 2 Creation of Implementation Plans

Activity 3 Peer Review on Implementation Plans

Activity 4 Evaluating Students' Performance

Activity 4 Management of Teaching and Learning Information (Portfolios)

Unit Exercise and Reflection

Unit 7 Infusing ICT across Curriculum

Activity 1 Understanding Integration of ICT and Curriculum

Activity 2 Discussion on Key Issues and Strategies of Infusing ICT across Curriculum

Activity 3 Upgrading Integration of ICT in Lesson Planning

Unit Exercise and Reflection

Unit 8 Documentation and Sharing of Training Outcomes

Activity 1 Compilation of e-Portfolios

Activity 2 Design and Development of Learning Webpages

Activity 3 Publication of Training Outcomes

Activity 4 Peer Review on Training Outcomes

Unit Exercise and Reflection

Annex I Sample lessons or lesson plans; Annex II Related Resources



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Training Course (B) for Teachers at Infusing Stage

Unit 1 Orientation

Activity 1 Sharing of Stories on Using ICT in Teaching

Activity 2 Introduction to the Training Package

Activity 3 Team Building and e-Portfolio Creation

Unit Exercise and Reflection: Blog; Mind Mapping Tools

Unit 2 Seminar on Infusing ICT across Curriculum

Activity 1 Understanding Integration of ICT and Curriculum

Activity 2 Diagnostic Study on Effectiveness of ICT-pedagogy Integration

Unit Exercise and Reflection

Unit 3 Integration of ICT in Unit Planning

Activity 1 Understanding and Analysis of Unit Planning

Activity 2 Planning Integration of ICT in Unit-level Learning

Activity 3 Creation of Mind Map of Unit Planning

Activity 4 Finalization of Integration of ICT in Unit-level Learning

Activity 5 Unit Plan Sharing and Peer Review

Unit Exercise and Reflection

Unit 4 Design of Inquiry Based Learning

Activity 1 Mapping Out Key Concepts

Activity 2 In-depth Analysis of Inquiry Based Learning

Activity 3 Design Inquiry Based Learning Activities

Activity 4 Presentation and Peer Review

Unit Exercise and Reflection



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Training Course (A) for Teachers at Applying Stage (cont.)

Unit 5 Development and Application of Thematic Learning Resources

Activity 1 Understanding Thematic Learning Resources

Activity 2 Designing Thematic Learning Resources

Activity 3 Creating a Website of Thematic Learning Resources

Activity 4 Publication of Websites and Peer Review

Unit Exercise and Reflection

Unit 6 Designing Unit-based Learning Assessment

Activity 1 Understanding Learning Assessment

Activity 2 Analysis of Unit-based Learning Assessment Plans

Activity 3 Applying Multiple Assessment in Evaluating Unit Learning Outcomes

Unit Exercise and Reflection

Unit 7 Organization and Facilitation of Unit-based Learning

Activity 1 Creation of Unit Implementation Plans

Activity 2 Reflection on Lesson Implementation and Action Study

Unit Exercise and Reflection

Unit 8 Sharing of Outcomes and Reflection over Training Process

Activity 1 Compilation of Training Outcomes

Activity 2 Publication of Training Outcomes

Activity 3 Reflection over Process

Unit Exercise and Reflection

Annex I Sample lessons or lesson plans

Annex II Related Resources



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UNESCO's roles in promoting ICT CFT

- Standard setter
- Capacity builder
- Laboratory of Ideas
- Clearing house
- Catalyst of international cooperation

→ the lead UN agency for e-learning



UNESCO's roles in promoting ICT CFT

→What UNESCO should and will do:

▪ Standard setting and capacity building

- Strengthening the national capacity in localizing or **developing their own** ICT competency standards for teachers
- Capacity building for teacher training institutions in adapting curriculum and improving the capacity of teacher educators

▪ Advocacy of enabling policy environment

→What UNESCO should NOT do

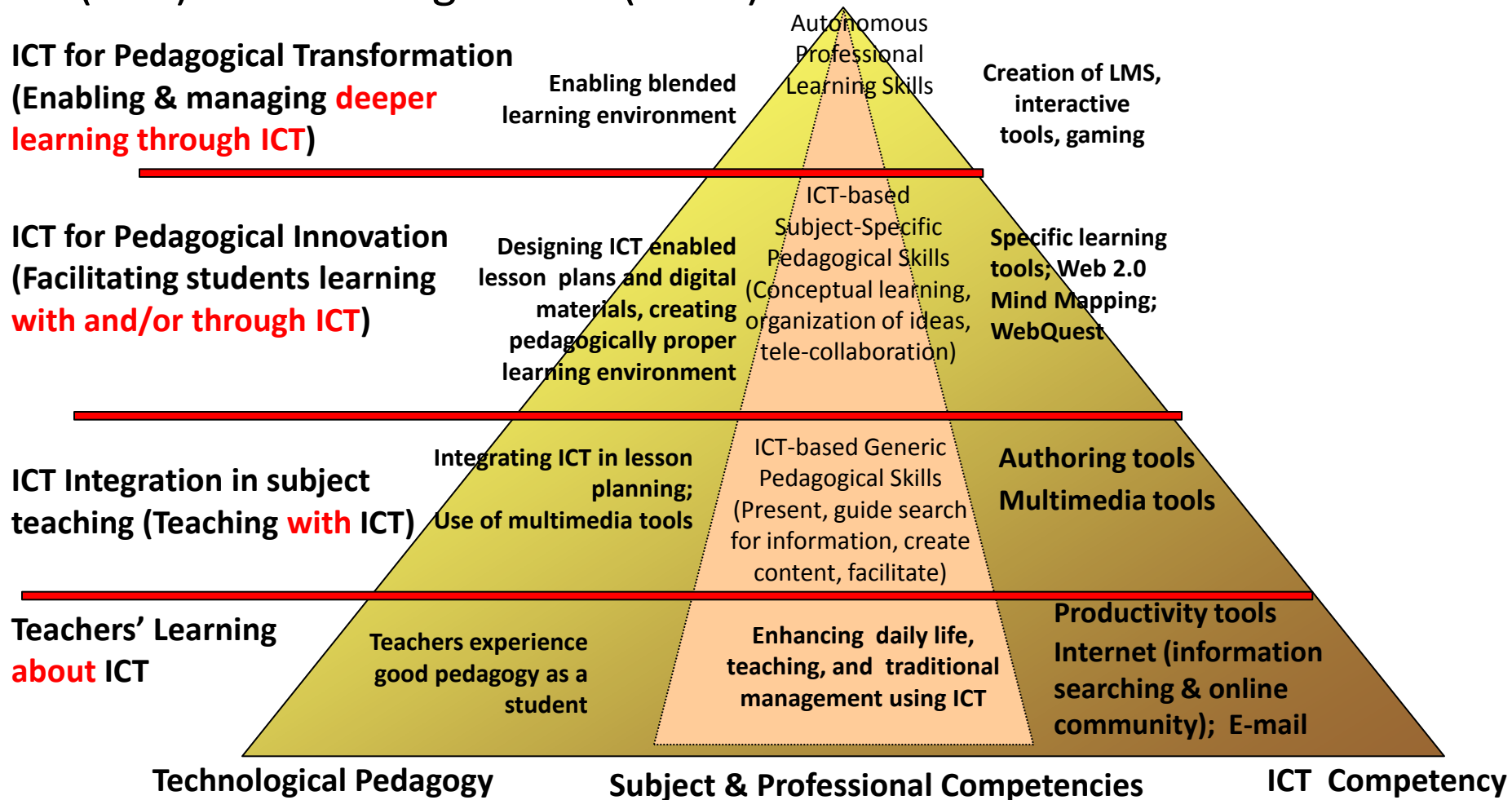
UNESCO will not provide a seal of alignment or certification, either directly or indirectly



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2. TPCK: Structure and Teachers' Development

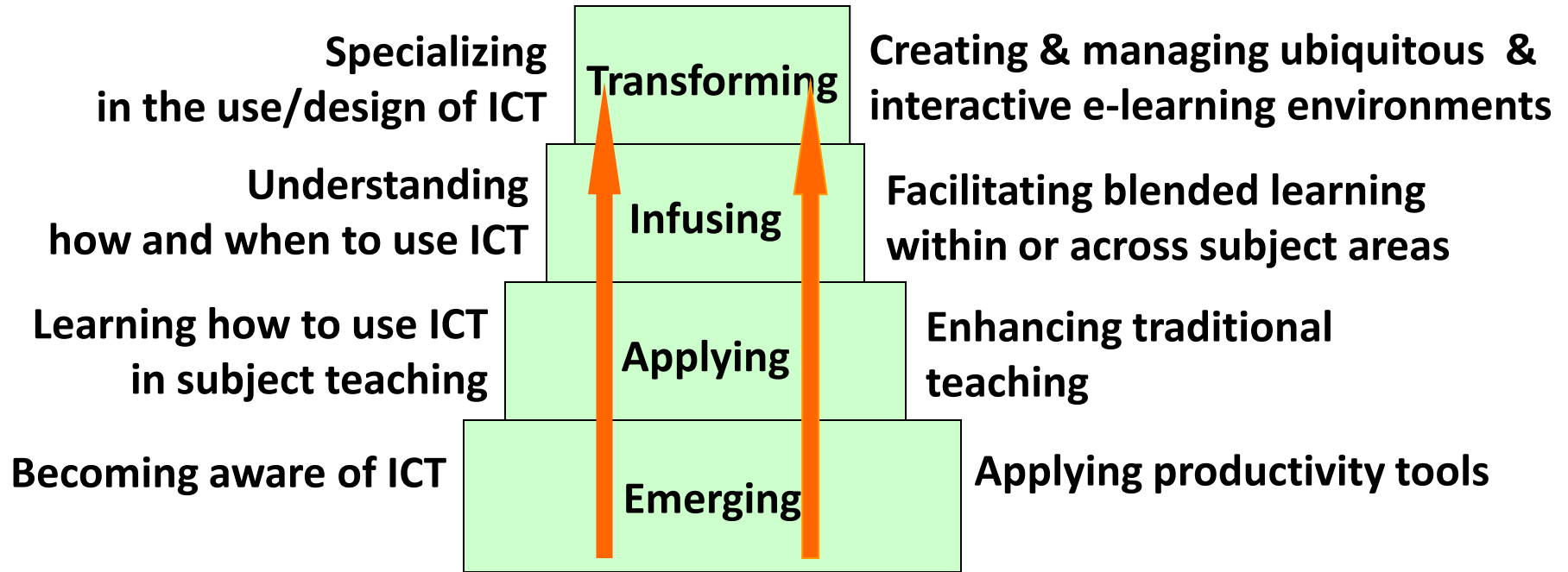
Shift of teachers' qualification: Pedagogical content knowledge (PCK) → Technological PCK (TPCK)





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Four stages of Teachers' Development on ICT-pedagogy Integration



(a) Stages of ICT usages

(b) Pedagogical Usages of ICT

ICT Transforming Education: A Regional Guide (UNESCO Bangkok)



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3. Teacher Training: Institutional Strategy

Why Institutional Capacity of TEIs?

- Why pre-service teachers prioritized: More and more non-ICT-qualified new but not next-gen teachers are supplied to schools
- Are teacher education institutions ready to prepare the next generation of teachers who can apply ICT effectively?
 - A survey by UNESCO Bangkok:
 - Lack of institutional leadership and policy support
 - Teacher educators are lack of skills and technical support
 - Curriculum are out-of-date or insufficient



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What's the Institutional Capacity of TEIs

The institutional capacity is a systemic capability of coordinating **internal elements** toward the destination illuminated by a visionary leadership, and of **assimilating** external resources or **adapting** itself to contextual changes during its evolutionary process

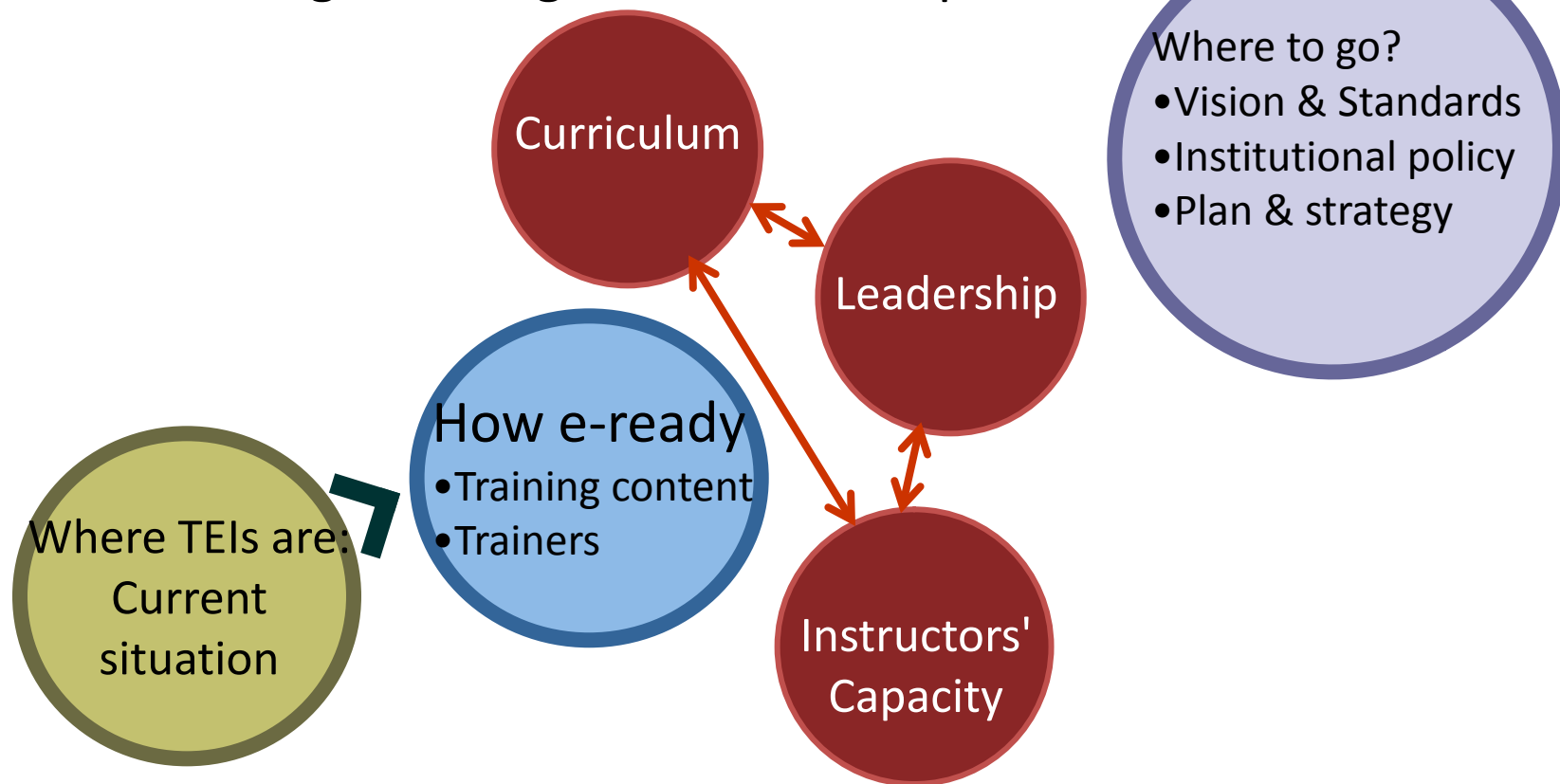




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What's the Institutional Capacity of TEIs

The institutional capacity is a systemic capability of coordinating internal elements toward the destination illuminated by a visionary leadership, and of assimilating external resources or adapting itself to contextual changes during its evolutionary process

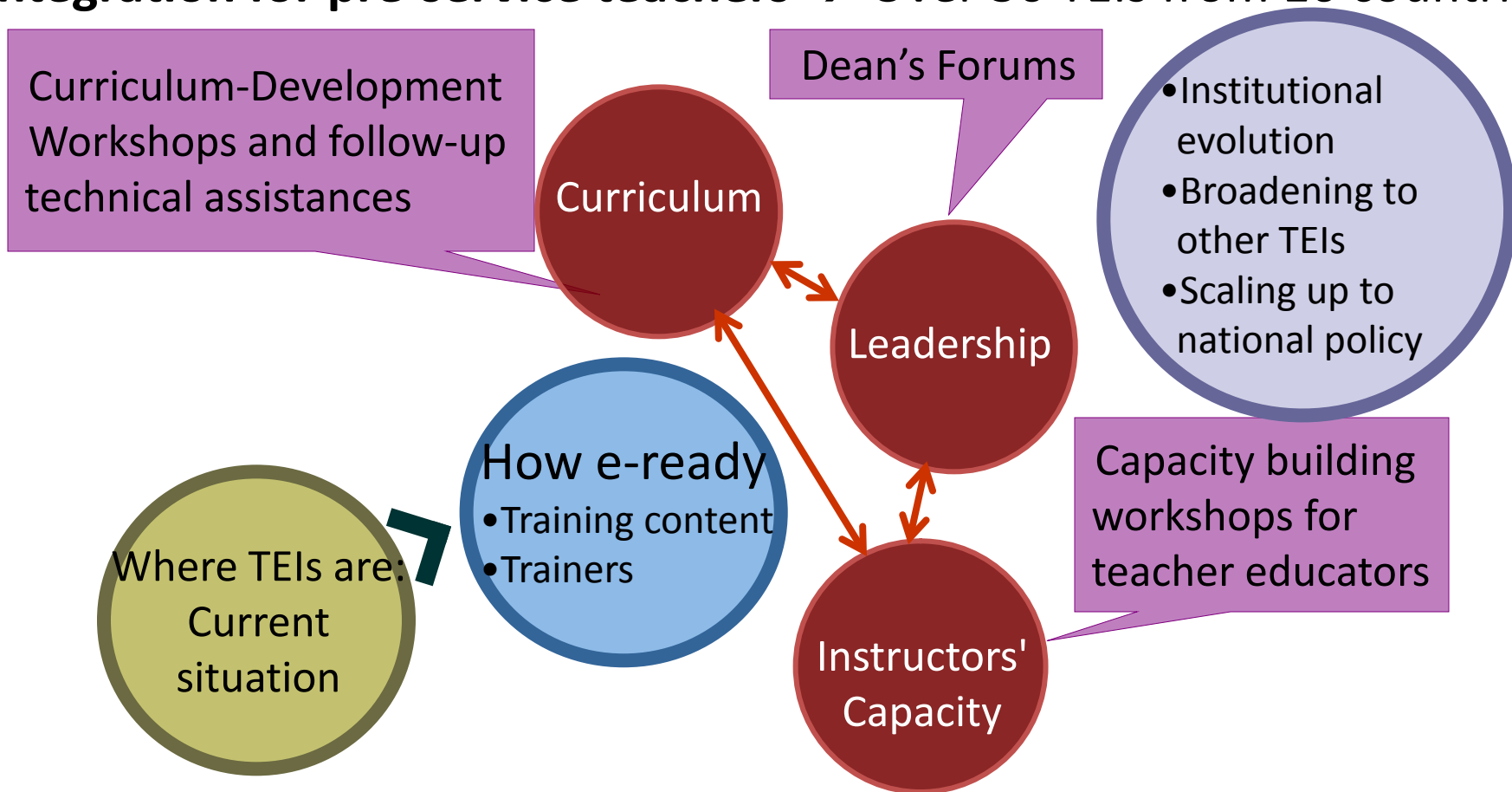




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How to Build the Institutional Capacity?

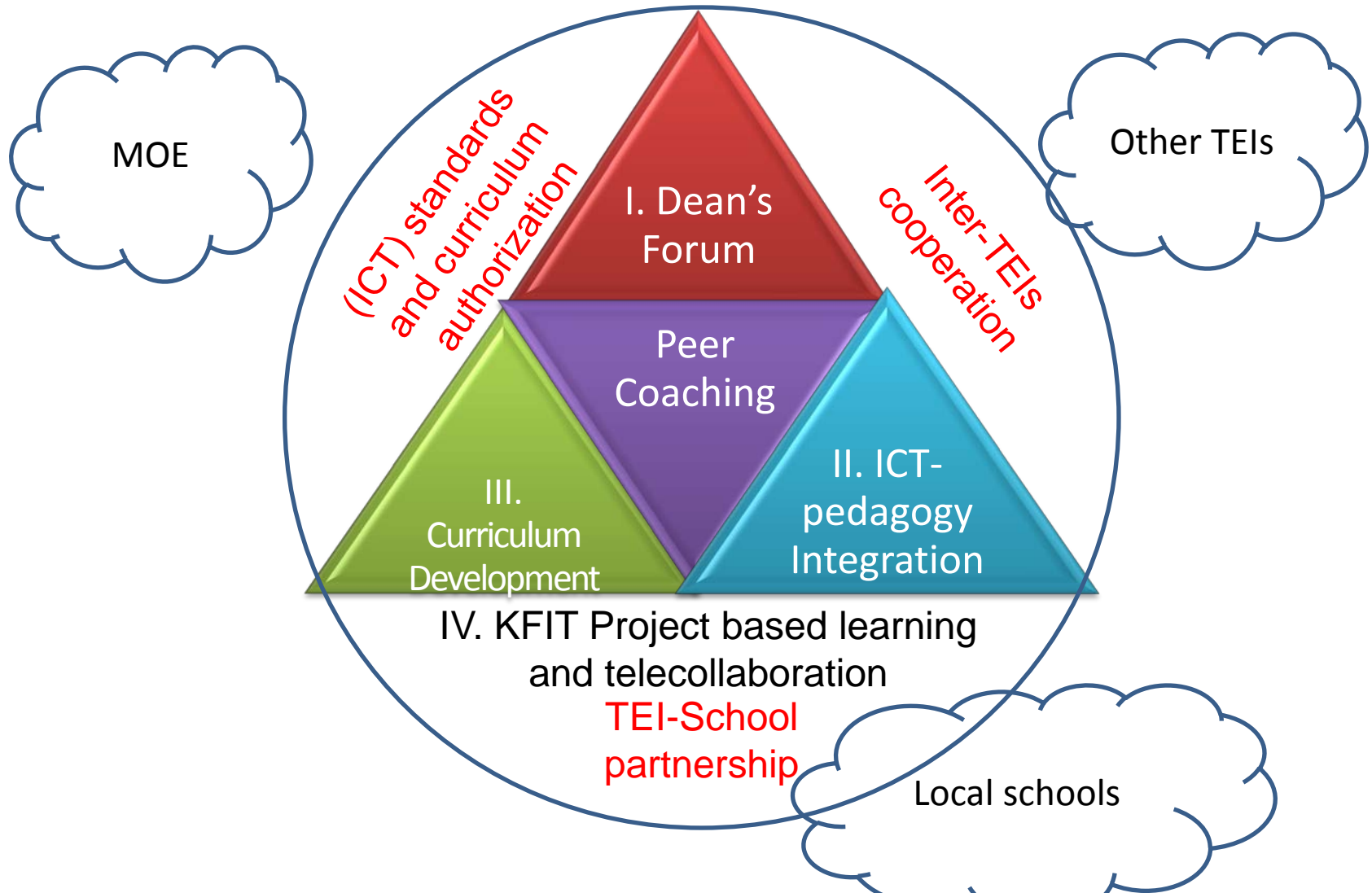
UNESCO Next Generation of Teachers Project: Building the institutional capacity of the TEIs in **designing and providing the training on ICT-integration for pre-service teachers** → Over 50 TEIs from 16 countries





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Main deliverables of UNESCO in building institutional capacity of TEIs





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I. Dean's Forum



4 Forums: 4 forums for 150 deans
of 50+ TEIs from 16 countries

Objectives

Setting
vision;
Building
leadership,
Action
planning

Thematic or in-
depth Dean's
Forum

- Thematic discussion and experience sharing

National Forums
or inter-TEI
exchange

- Local follow-up
- Institutional actions

1st Regional
Dean's Forum

- Systematic vision
- Training on leadership

**Institutionalization is a process
of fossilization of best practices**

Example of results achieved-
Institutional Policy

From: Filomena Dayagbil
ftdayagbil@yahoo.com

I am Filomena T. Dayagbil, Dean of the College of Teacher Education of Cebu Normal University (CNU). We have **institutionalized** our ICT training for graduating Education students in the university. For the past two years, all 4th year Education students (600 students every year) **cannot graduate without undergoing the training on ICT integration** into teaching and learning.



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II. Workshop on ICT-pedagogy Integration

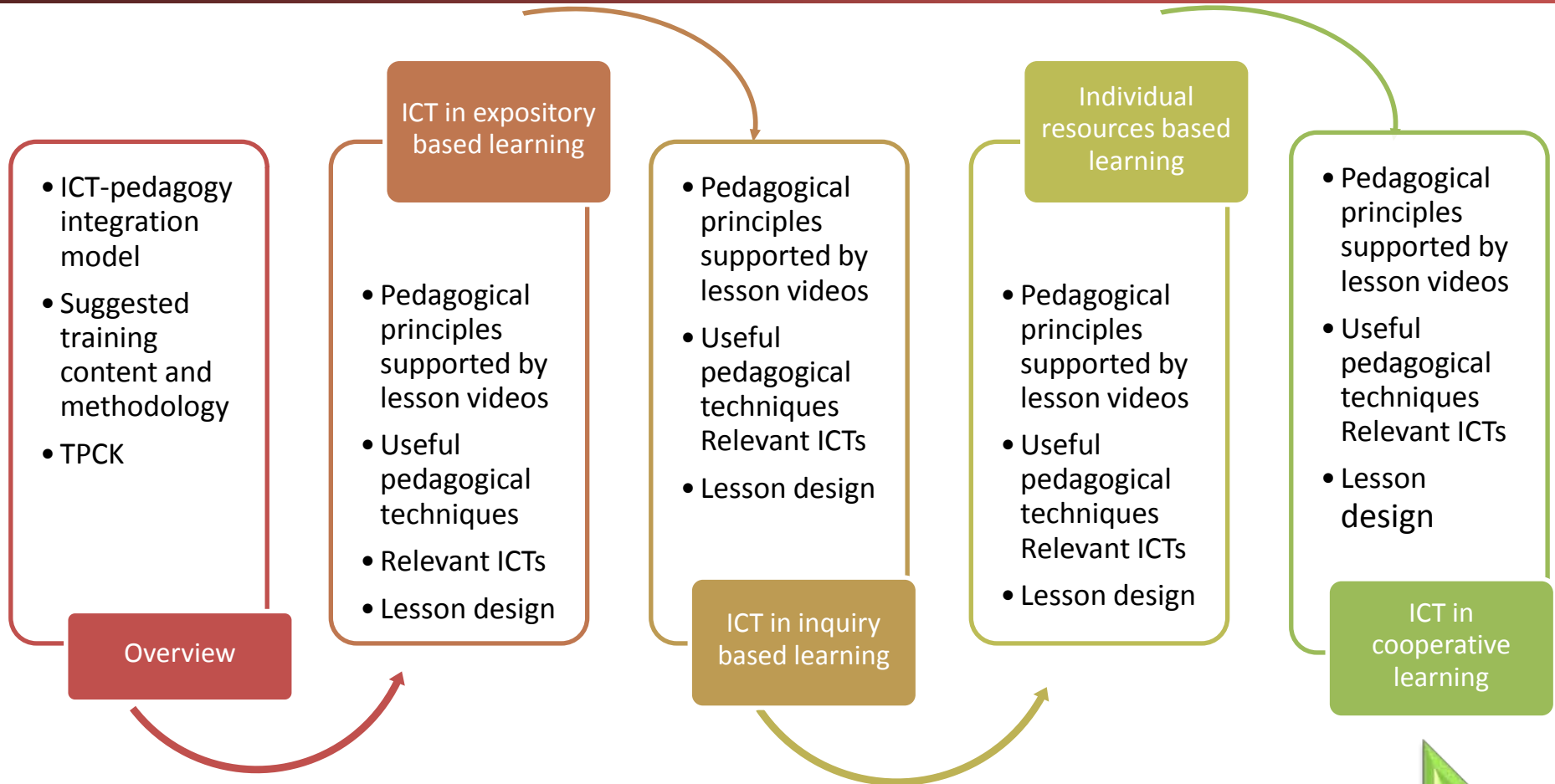
- A 5-day workshop for **teacher educators** on **ICT-pedagogy integration**
- Effective (training) strategies on how to use ICT into different pedagogy: Pedagogical principles, supporting examples, appropriate tools, etc.
- Hands-on practices of ICT-based unit/lesson design
- Achievement: 13 national Workshops on ICT-pedagogy Integration have been organized





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ICT-pedagogy Workshop



▪ Starting from what they can do what they need to do

▪ Practicing “pedagogy-in-use”

▪ Gaining confidence by self-achievements



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Training FRAMEWORK on ICT-pedagogy integration

Introduction

Pedagogy Content Knowledge

ICT-facilitated

Hands-on

Instructional Design

■ Expository based learning

■ Inquiry based learning

■ Individual learning

■ Cooperative learning

PBL on pedagogy:

- Learning theory background;
- Key concepts;

Key features

- What ARE & ARE NOT

Practical knowledge

- General procedure
- Typical issues & coping strategies

Further quest:

- Key problems or key concepts
- Resources

■ **General principles and showcases**

- Key points showing relative advantage ICT for pedagogy

- Suggestions and principles

■ **Scenarios to read and analyze**

- Analyze their appropriateness, effectiveness, and efficiency

- Connected to real context

Put all together For what?

- Content and objectives

■ **To whom?**

- Student Ana.

■ **Match of ICT & pedagogy:**

- ICT-amplified existing ones & ICT-empowered emerging ones.

■ **Design and provision of ICT**

- Select; combine compile; create



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III. Curriculum Development Workshops

- Objectives: Building capacity in ICT-related course development
- Expected results: Existing training courses on ICT updated or new ones developed and authorized
- Activities: Curriculum-development workshops followed by technical assistances and wrapped up by curriculum authorization



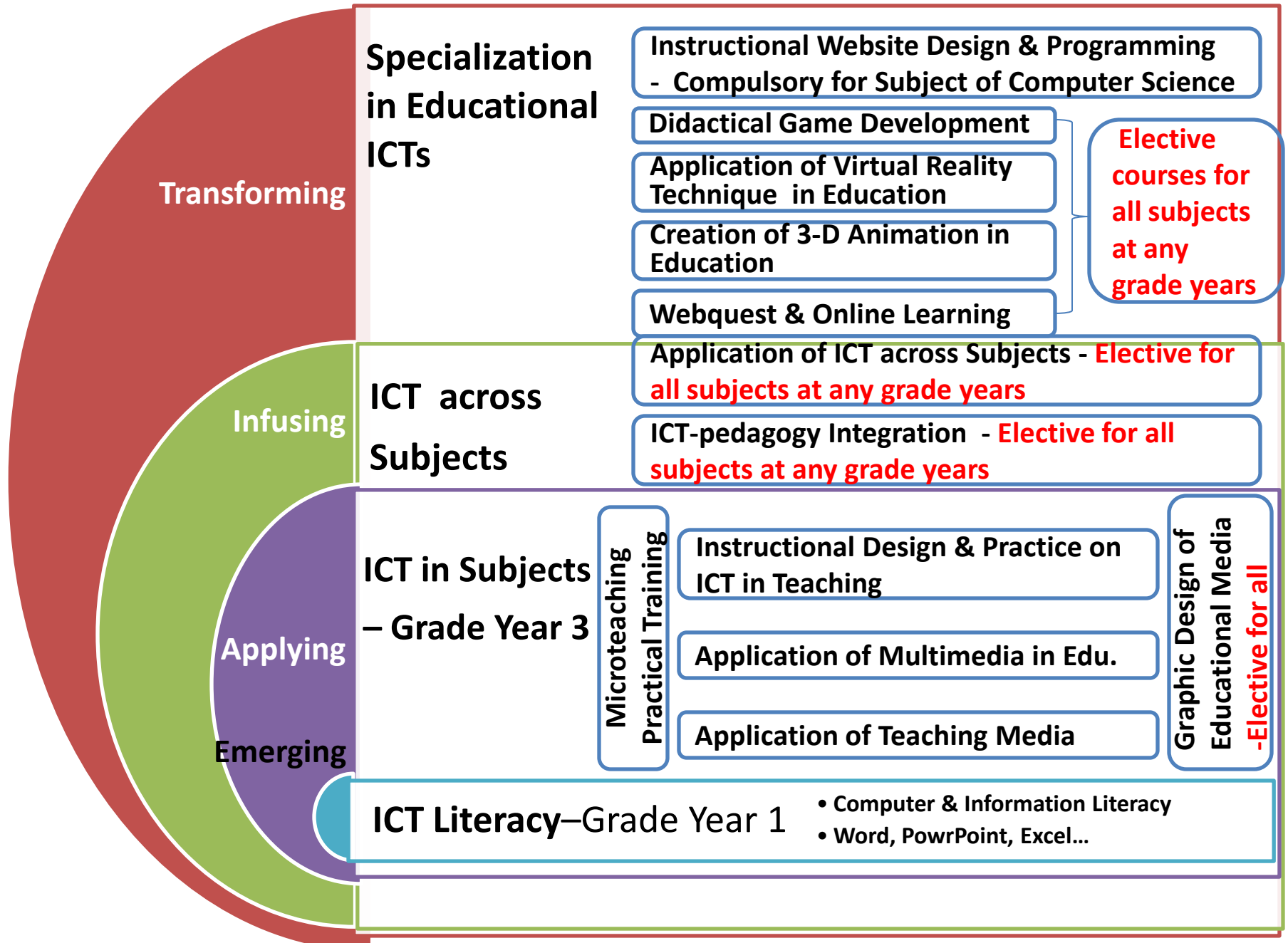


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Main Categories of ICT-related Training Courses in TEIs

	Main Curricular AREAS			
Decision you need to make (authorization & resources)	E. ICT-subject teacher training courses ...			
	A. Educational Technology non-computer computer-based Other media	B. ICT in Subjects subject tools courseware design lesson design	C. e-learning Focusing on design & development of online environments	D. ICT-pedagogy integration Focusing on pedagogical design
1. Develop a new course			+	+
2. Upgrade the content		+		
3. Promote methodology	+		+	

ICT-related Teacher Training Courses – East China Normal University





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Promoting Peer Coaching to Sustain School-based Professional Development

Collective school-based professional development

- Objectives: Training of (master) trainers on ICT-pedagogy integration → peer coaching and institutional trainings
- Activities: 2 Peer Coaching workshops covering >60 master teacher educators
- Results: Peer coach adopted by TEIs training localized





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Thank you...

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<http://twitter.com/#!/UNESCOICTs>

<http://www.unesco.org/new/en/unesco/themes/icts>