




Title	Provision of Consultation Service: Revamp of the Teachers' IT Training Framework
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**PROVISION OF
CONSULTANTATION
SERVICE:
REVAMP OF THE TEACHERS'
IT TRAINING FRAMEWORK**

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Seminar rundown

1. Aims & Background of Study
2. Literature Review
3. Interview Summary
4. Proposed Framework for Designing Content of Teacher Professional Development
5. Proposed Professional Development Model
6. Pilot Study for Revamp of the Teachers' IT Training Framework
7. Seminar
8. Conclusion



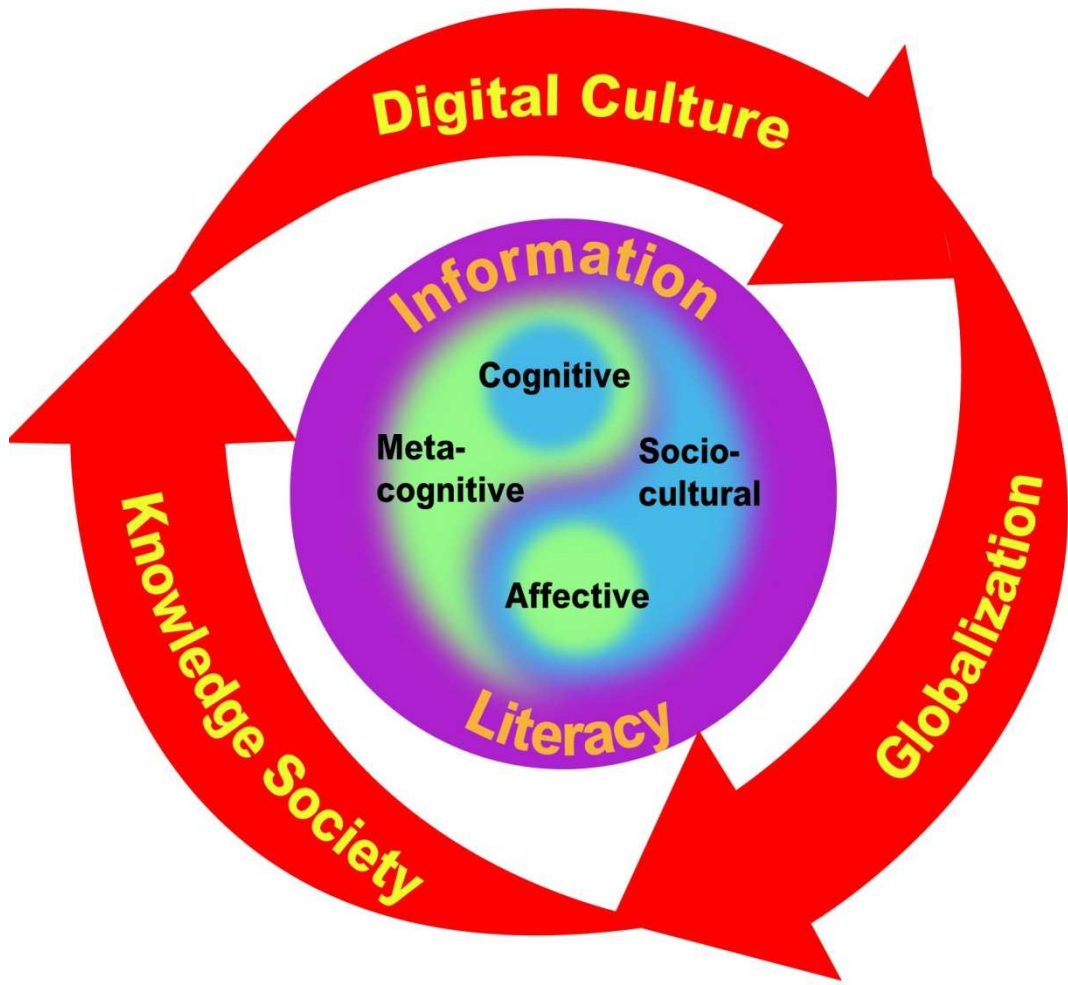
1. Aims & Background of Study

The revamp of the training framework should be:

- ✓ To sustain teachers' professional development opportunities to advance teachers' Information Literacy (IL) and pedagogical integration of IT; and
- ✓ To develop models of teacher education that will foster the establishment of teacher learning communities that will in turn generate, refine, consolidate and disseminate emerging pedagogies and professional competencies.

Information Literacy Framework for Students

(EMB, 2005)



Background

- 1998 5-Year Strategy
 - BIT (基本級資訊科技能力)
 - IIT (中級資訊科技能力)
 - UIT (中上級資訊科技能力)
 - AIT (高級資訊科技能力)

- ICT (2006) & IL framework (EMB, 2005)

- ICT & subject (KLA) pedagogy

- IL & subject teaching

- New ways teacher learning (PD)

- CPD

- Methodology



2. Literature Review

A Shift from Teaching to Learning

- Teacher-centred and learner-centred learning environments
- Changes in student and teacher roles in learner-centred environments
- Theories supporting the view of the learning process

(UNESCO, 2002)

Teachers' role in ICT implementation

- Teachers are **central** to ICT adoption at the classroom and student level. (OECD, 2001)
- Teacher is identified as the most crucial factor determining ICT use at schools (Mumtaz, 2000). The teacher factor involves:
 - teachers' pedagogical **belief**,
 - collaboration and interaction with **peers**,
 - technical **competence** and
 - **attitude** towards technology. Among these elements,
 - teachers' pedagogical beliefs and computer skills were found to be most correlated with the integration of ICT in their classroom

Teachers' role in ICT implementation

- The other two influential forces are:
 - institution
 - resource
- Similarly, Zhao & associates (2002) denoted that teachers needed:
 - to have sufficient technology proficiency;
 - consciously use technology to meet **pedagogical needs**; and
 - mobilize social **support** in school.

[Content for ICT PD]

- Identify difference between **technical** training and **pedagogical** knowledge of using ICT (Gillespie, 2006)
- Learning **basic computer skills** before exploring pedagogical possibilities; concrete, grade-specific integration ideas (Snoeyink & Ertmer, 2002)
- Differentiated programs offering **flexibility** and customization (Preston, 2004)
- Tailored to **subject-specific** requirements (OFSTED, 2002)
- Offer IT skills on a “**need-to-know**” basis; develop project-based CPD (Littlejohn, 2002)

Models of PD

- Putnam and Borko(2000) maintained that in accordance with situated learning theory teacher learning should be **grounded in teaching practice**. They proposed a model which combines intensive workshop introducing “theoretical and research-based ideas with ongoing support during the year as teachers attempt to integrate these ideas into their instructional programs” (p.7). They also described the pivotal role discourse **community** plays in teachers learning and practice.
- Garet and his associates (2001) provides empirical support to the importance of sustainability in teachers’ professional development. They found that “sustained and intensive professional development is more likely to have an impact” (p. 935)
- Pertains to **teachers’ needs** (Silin & Schwartz, 2003)
- McLaughlin and Talbert (1993) attributed the success of systematic reform to teachers’ “participation in a **professional community** that discuss new teacher materials and strategies and that supports the risk taking and struggle entailed in transforming practice” (p. 15).

Incentive for Teachers' participation

- Articulate rationale for educational use of technology; compatible **evaluation** and promotion system (OTA, 1995)
- Teacher mindset, support, culture
- Increased access to computers, (laptops for teachers) (Cunningham, Kerr, McEune, Smith, & Harris, 2003)
- Team approach
- School-based incentive
- Certification - accreditation portfolios published for reference of all (Preston, 2004)

Assessment of Teacher PD

- Measured through improvement in the **quality** of teaching and learning (Gillespie, 2006)
- **Traditional standardized test** is not suitable (OTA, 1995)
- Differentiated assessment; **School-based peer assessment** works better than external standard (Preston, 2004)
- Self **reflection** report; encourage focus on **outcomes** that can be evaluated. (Littlejohn, 2002)
- Summary of various **instruments** for assessing teachers' progress in technology integration (Knezek, Christensen, Miyashita, & Ropp, 2000)

[PD Design Elements (Fishman et al., 2001)]

- Content – content knowledge (CK), pedagogical content knowledge (PCK)
- Strategies – collaborative construction of understanding, enactment of new practices, reflection on practice, adaptation of material and practices
- Media – f2f interaction, technology-supported, print
- Sites – place or context

A Framework for ICT in Teacher Education

- Four themes
 - Context and culture
 - Leadership and vision
 - Lifelong learning
 - Management of change
- Four components
 - Content and pedagogy
 - Collaboration and networking
 - Social issues
 - Technical issues

Educational Technology Standards and Performance Indicators for Teachers

(Source: ISTE NETS.T)

- Technology Operations and Concepts
- Planning and Designing Learning Environments and Experiences
- Teaching, Learning, and the Curriculum
- Assessment and Evaluation
- Productivity and Professional Practice
- Social, Ethical, Legal, and Human Issues

TECHNOLOGY OPERATIONS AND CONCEPTS (1/6)

Teachers demonstrate a sound understanding of technology operations and concepts. Teachers:

- demonstrate introductory knowledge, skills, and understanding of concepts related to technology.
- demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies relevant to education.

PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES (2/6)

Teachers plan and design effective learning environments and experiences supported by technology. Teachers:

- design developmentally appropriate learning opportunities that apply technology-enhanced instructional strategies to support the diverse needs of learners
- apply current research on teaching and learning with technology when planning learning environments and experiences.

PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES (2/6)

- identify and locate technology resources and evaluate them for accuracy and suitability.
- plan for the management of technology resources within the context of learning activities.
- plan strategies to manage student learning in a technology-enhanced environment.

TEACHING, LEARNING, AND THE CURRICULUM (3/6)

Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning. Teachers:

- facilitate technology-enhanced experiences that address subject curricula and student technology standards.
- use technology to support learner-centered strategies that address the diverse needs of students.
- apply technology to develop students' higher order skills and creativity in education.
- manage student learning activities in a technology-enhanced environment.

ASSESSMENT AND EVALUATION (4/6)

Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies. Teachers:

- apply technology in assessing student learning of the subject curricula using a variety of assessment techniques.
- use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
- apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

PRODUCTIVITY AND PROFESSIONAL PRACTICE (5/6)

Teachers use technology to enhance their productivity and professional practice. Teachers:

- use technology resources to engage in ongoing professional development and lifelong learning.
- continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
- apply technology to increase productivity.
- use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

SOCIAL, ETHICAL, LEGAL, AND HUMAN ISSUES (6/6)

Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in schools and apply those principles in practice. Teachers:

- model and teach legal and ethical practice related to technology use.
- apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- identify and use technology resources that affirm diversity
- promote safe and healthy use of technology resources.
- facilitate equitable access to technology resources for all students.

Challenges to Innovations in Systemic Reform

(*Fishman et al., 2001*)

Increasing divergence of:

- Capability
- Culture
- Policy & Management



3. Interview Summary

Interview Summary

1. Experience in ICT Practices: classroom level
2. Experience in ICT Practices: school level
3. Experience in TPD
4. Views on Information Literacy
5. Professional Development Framework and Training Needs

Demographics: Stratified purposeful sampling

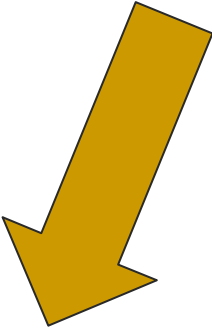
- The JCST has conducted altogether 12 focus-group interviews :
 1. language teachers (pri:7)
 2. language teachers (sec: 4)
 3. Math/Science teachers (pri: 6)
 4. Math/Science teachers (sec: 6)
 5. Humanities/Social/LS/GS teachers (pri: 9)
 6. Humanities/Social/LS/GS teachers (sec: 6)
 7. VA, Music, PE & other subject teachers (pri: 7)
 8. VA, Music, PE & other subject teachers (sec: 7)
 9. Principals (pri: 4);
 10. Principals (sec: 4);
 11. VP/Dean of Studies (sec: 6)
 12. CDO (pri: 9)

Demographics: Stratified purposeful sampling

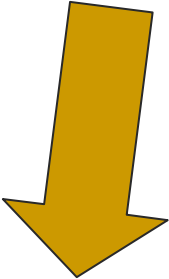
- The JCST has conducted altogether 9 in-depth interviews:
 1. Representatives from EMB;
 2. 1 CDO in GS from CDI; &
 3. 1 CDO in LS from CDI;
 4. CDC members (pri:1)
 5. CDC members (sec: 1)
 6. TEI representatives from CUHK;
 7. TEI representatives from HKBU;
 8. TEI representatives from HKU; &
 9. TEI representatives from HKIE.

[Questions]

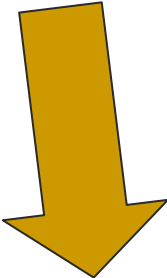
- The interviews basically encompassed a set of semi-structured questions for probing respondents’:



experience in implementation at classroom/school levels and TPD pertinent to ICT in education;



understanding of the notion of information literacy and its relationship with other subjects;



views on future TPD and its model of delivery



expectations and challenges

Experience in ICT Practices: classroom level

- The group of teachers being interviewed exhibited a wide range of ICT usage
- Popular ICT tools and resources:
 - MS Word,
 - Powerpoint,
 - hand-held devices with wireless connectivity,
 - CMS,
 - online newspapers & documentaries, etc.
- Some teachers indicated that their schools have no explicit curriculum plan for making use of the MMLC

Experience in ICT Practices: classroom level

- GS and LS teachers claimed that they often used ICT to support students' project learning
- most of the primary school **mathematics** teachers reported that the use of ICT to support teaching and learning was rare. The reasons for that were mainly due to the lack of appropriate software and the availability of computer facilities.

Experience in ICT Practices: classroom level

- ICT is used as a tool for assessing student learning

Experience in ICT Practices: school level

- Collaborative culture among teachers is emerging
 - With curriculum officer's coordination, collaboration among teachers within and across subject panels on integration of IT into subjects is enhanced.
 - The school provides a platform for teachers to share their teaching resources and to exchange teaching ideas

Experience in TPD

- IT training
 - some held the view that the IT training courses provided a **good entry point** for teachers to understand the notion of IT in education. They also helped to **establish a school culture** in using IT to support teaching and learning.
 - Some teachers opined that the IT training courses were too much **skill-oriented**, with relatively **weak emphasis on pedagogical strategies** and no direct connection to their teaching practices.

Experience in TPD

- portfolio assessment scheme
 - Provided flexibility for teachers to provide evidences about their IT competence
 - However some teachers also raised the concerns that portfolio assessment is problematic
- experience sharing from sister schools was generally welcomed by teachers and principals.

Views on Information Literacy

- Respondents' views on information literacy are rather diverse
 - Some teachers equated IL as issues related to computer crimes, plagiarism and infringement of intellectual property right
 - some associated IL with project-based learning, and information searching skills
 - Some contended that IL should be subsumed under the domain of Library subject
 - some held the view that IL should encompass the essential skills for life-long learning

Views on Information Literacy

- Most LS/GS teachers agreed that Liberal Studies and General Studies provide a suitable platform for incepting information literacy
- In terms of the articulation of IL in the existing curriculum, three models have been identified:
 - *Full Integration Model*
 - *Hybrid Model*
 - *Separation Model*

Professional Development Framework and Training Needs

- Catering for diversity
 - As teachers' needs on in education are **heterogeneous** and rather diverse, some teachers opined that it is not plausible to have **a one-size-fit-all** model for teacher professional development.
 - A variety of choices and modes of delivery of IT training programmes is deemed necessary to meet teachers' demands.

Professional Development Framework and Training Needs

- Pedagogical Orientation
 - To facilitate better integration, some respondents opined that the focus of teachers' professional development should be geared towards more subject-based, centering on the pedagogical use of IT in classroom practices.

Professional Development Framework and Training Needs

- CPD hours
 - While teachers generally welcomed the idea of making IT training in the framework **non-mandatory**
 - some pointed out that the coupling of IT training hours with CPD hours does not guarantee teachers' enrolment in the course(s).
 - Instead, the relevancy and applicability of what is to be delivered in the training are teachers' prime concerns.

Professional Development Framework and Training Needs

- Sustainability and school clustering approach
 - Some suggested a ‘**school clustering approach**’ to teacher professional development
 - The notion is that teams of teachers, comprising of subject teachers and curriculum leaders from each cluster school, join together to work on solutions for common problems they envisage in classroom or experiment with new ideas in their teaching practices through **action learning**

Professional Development Framework and Training Needs

- Sustainability and school clustering approach
 - This school clustering model can provide a **rapport** among cluster schools and on-going **communal support** for teachers even when they exit the formal training courses.



**4. Proposed Framework for
Designing Content of Teacher
Professional Development**

The proposed framework for designing the content of teacher professional development (*what teachers should learn*) in educational technology is grounded on the consideration of the following aspects:

- Literature review and findings of focus group interviews
- The framework for ICT in teacher education (UNESCO, 2002)
- Theories supporting the new view of the learning process (UNESCO, 2002), in particular the notion of knowing and learning are situated in physical and social contexts (Putnam & Borko, 2000)

The proposed framework for designing the content of teacher professional development (*what teachers should learn*) in educational technology is grounded on the consideration of the following aspects:

- Using ICT in learning and teaching as pedagogical innovations (SITES M2 studies; Fishman et al., 2004)
- Using ICT to promote school change (Preston, 2004)
- Teacher knowledge, beliefs, attitudes, and experience are equally important (Loucks-Horsley et al., 1998)
- The context of teacher professional development, including teachers' and students' learning, curriculum, organization culture, and existing practices of professional development (Loucks-Horsley et al., 1998; Fishman et al., 2001)

The proposed framework for designing the content of teacher professional development in educational technology includes four dimensions:

- Technical knowledge
- Pedagogical integration
- Managing and leading ICT
- Socio-cultural awareness

Technical knowledge

Teachers demonstrate appropriate technical competence in ICT operations and concepts. Teachers:

- understand the emerging ICT knowledge and skills
- keep abreast of current development of ICT in education
- use ICT to enhance professional practice and increase productivity
- evaluate and reflect on professional development regarding the pedagogical use of ICT

Pedagogical integration

Teachers plan and design effective subject-specific as well as level-specific pedagogical integration using ICT. Teachers:

- understand the learner-centred learning environments enabled by ICT in pedagogical practices and innovations
- design appropriate learning experiences that facilitate pedagogical practices using ICT
- apply ICT in learning and teaching to facilitate the development of student information literacy skills (EMB, 2005) and generic skills (CDC, 2000)
- apply ICT with multiple assessment methods in assessing student learning

Managing and leading ICT

Teachers demonstrate understanding of managing and leading ICT implementation in schools. Teachers:

- participate in making decision on hardware, software, and administrative systems
- participate as a team member to build school ICT capacity and promote systemic change in learning and teaching
- engage in strategic planning in ICT implementation

Socio-cultural awareness

Teachers are aware of the social, ethical, legal, and human issues surrounding the use of ICT in schools and demonstrate those principles in practice. Teachers:

- educate students with social capability to function positively in the digital culture
- model and teach legal and ethical practice related to ICT use
- promote safe and healthy use of ICT resources
- facilitate equitable access to ICT resources for all students



5. Proposed Professional Development Model

Proposed Professional Development Model

1. Modes of delivery

2. Incentive Scheme

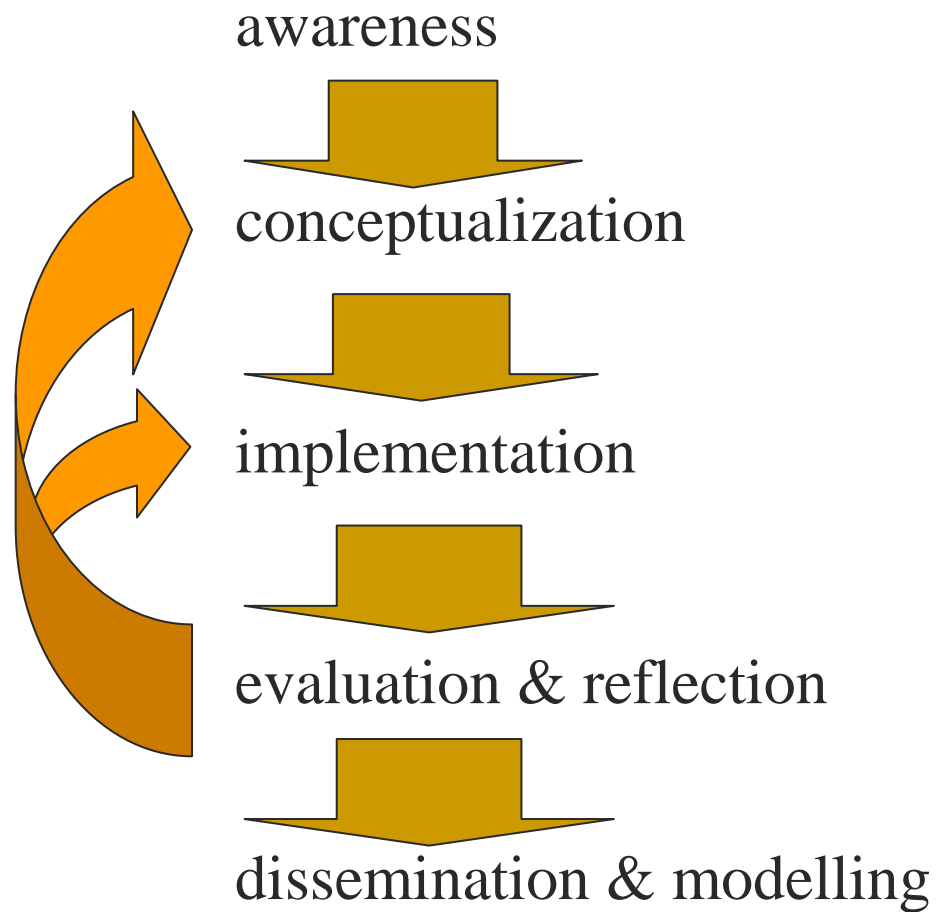
Modes of delivery

Guiding Principles

1. The modes of delivery of TPD programmes should be designed in a way that caters for the needs emerged at different stages of managing curriculum and pedagogical innovations in school:
 - a. *awareness* (e.g. pedagogical needs, pedagogical implications of emerging technologies; etc.);
 - b. *Conceptualization*
 - c. *implementation*
 - d. *evaluation & reflection, and*
 - e. *dissemination & modelling*

(e.g. school-clustering approach; reciprocal mentoring, action learning, etc.);

Stages of Managing Change



Modes of delivery: Guiding Principles

2. As any other form of experiential learning, the professional development of teachers should involve a systematic approach to learning involving *conceptualization*, *planning* and *reflection*;
3. Thus, to enable educational innovations to take root in school, the TPD programmes should encompass necessary support for participants to implement and contextualize the new practices in their

Modes of delivery: Guiding Principles

4. The TPD should be non-mandatory and flexible enough to accommodate a wide range of teachers' educational needs; and
5. The TPD should be articulated into the existing framework.

Recommendations: Modes of delivery

- a. School-Clustering Approach**
- b. System-Wide Approach**

Notion of School Clustering Approach

Background & Rationales

1. Traditional TPD is usually carried out by means of formal short-term courses to provide teachers with opportunities to refresh and update their knowledge of the developments and implementations of innovative curricular design or pedagogical practices. Teachers are then expected to bring back to their classrooms what they have acquired during the training.

Notion of School Clustering

Approach

2. But when teachers exit the formal training courses and return to their workplace, the channel for resource exchange, knowledge communication and peer support has already been terminated and teachers are on their own again.

Traditional TPD is thus segregated from the day-to-day work of teachers and is therefore limited in its utility, vitality and impact.

Notion of School Clustering

Approach

3. Teachers need to overcome isolation from other teachers by sharing experience and resources with peer, and engaging themselves in an on-going professional discourse during the entire change process.
4. To realize this goal, we propose the adoption of a *school-clustering approach* in delivering TPD.

Notion of School Clustering Approach

1. The underlying notion of the school clustering approach is that small teams of teachers, comprising of *frontline teachers*, *curriculum leaders* and *school administrators* from each cluster school, join together to work on solutions for common problems they envisage in classroom or experiment with new ideas in their teaching practices through action learning.

Notion of School Clustering Approach

2. The training programmes may comprise of a series of action studies on the new practices. The TPD provider is expected to establish a rapport among cluster schools and to provide mentoring support for teachers.
3. The duration of these training programmes should be extended to *three months or even an academic year* if necessary, to enable the participating teams to plan, implement and evaluate the new practices in their respective schools.

[System-Wide Approach]

The TPD should cater for the needs arising from different stages of the change process.

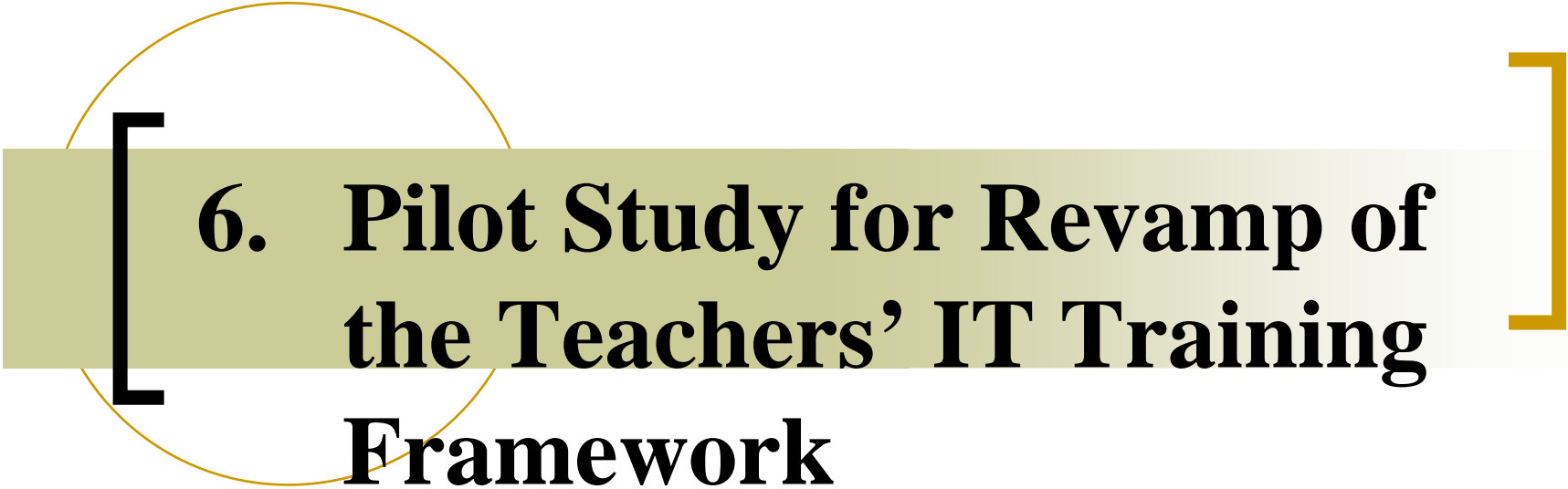
Thus, to enhance teachers' *awareness* of pedagogical uses of emerging technologies, TPD in form of short refresher training courses, experience sharing sessions, teacher conferences, support from online community or should be maintained.

Incentive Scheme

- Owing to the *non-mandatory* nature of the proposed TPD in IT, it is desirable to provide appropriate incentives to encourage schools to make good use of technology in enhancing learning and teaching.
- The incentives could be delivered through a certification system to award individual schools in terms of their achievement in IT implementation and their teachers' participation in TPD in IT.

[Incentive Scheme]

- To ensure credibility, the issuing body should comprise of:
 - A consortium of teacher education providers;
 - Professional bodies; and/or
 - EMB.



**6. Pilot Study for Revamp of
the Teachers' IT Training
Framework**

Seminar is composed by 4 modules

1. Information Literacy and Project-based Learning
2. Computer-Supported Collaborative Learning
3. The Role of Pedagogy in Using Technology for T&L
4. The Role of Pedagogy in Using Technology for T&L: School Experiences

Information Literacy and Project-based Learning: Objectives

- to develop **pedagogy** of teacher in using PBL to develop the **information processing skills** of learners
- to develop **pedagogy** of teacher in using PBL to develop the **social responsibilities** of learners in using digital resources
- to develop the **developmental assessment approach** as a way to promote assessment for learning

Information Literacy and Project-based Learning: Contents

- **Vision and mission** of implementing IL in school education
- Pedagogy of developing information processing skills in conducting PBL with **examples** illustrating the appropriate use of IT tools in completing various stages of PBL
- Pedagogy of developing social responsibilities in conducting PBL with **examples** illustrating ways and means of using digital resources in completing various stages of PBL
- Adopting the **developmental approach** to **promote** assessment for learning in IL education

[Computer-Supported Collaborative Learning: Objective]

- to develop pedagogy of teacher in using computer as a **mediator for reciprocal tutoring**;
- to develop pedagogy of teacher in using computer as a **visual representation tool for facilitating collaborative learning**;
- to develop pedagogy of teacher in using computer as a **communication tool for facilitating collaborative learning**.

Computer-Supported Collaborative Learning: Contents

- Computer as a **visual representation tools** for collaborative learning
- Computer as a mediator for **reciprocal tutoring**
- Computer-supported **communication** for collaborative learning
- **The development of computer-supported collaborative learning**

The Role of Pedagogy in Using Technology for T&L: Objectives

- to understand the role of pedagogy in using technology for teaching in the digital world;
- to understand the role of pedagogy in using technology for learner-centered learning in the digital world;
- to reflect the role of pedagogy in using technology for teaching and learning in school education in the digital world.

The Role of Pedagogy in Using Technology for T&L: Contents

- Pedagogy in using technology to teach in the digital world
- Pedagogy in using technology to induce learner-centered learning such as inquiry-based learning
- Pedagogy in using E-learning platform for teaching and learning
- Reflection on the role of pedagogy in using technology for teaching and learning in school education

The Role of Pedagogy in Using Technology for T&L: School Experiences: Objectives

- to offer opportunities for school teachers to visit schools with experiences on designing pedagogy in using technology for teaching and learning;
- to offer opportunities for school teachers to share experiences on designing pedagogy in using technology for teaching and learning;
- to offer opportunities for school teachers to share and reflect the key issues of designing appropriate pedagogy in using technology for teaching and learning.

The Role of Pedagogy in Using Technology for T&L: School Experiences: Contents

- Reading literatures on the role of pedagogy in using technology for teaching and learning

- Experience sharing by
 - school visit
 - sharing with teachers

- Making reflection in joining a post-visit discussion forum on discussing the key issues of designing appropriate pedagogy in using technology for teaching and learning.

School Participation

Group number	Number of participants
1	2
2	4
3	3
4	5
5	4
6	3
7	2
8	3
9	4

Information Literacy and Project-based Learning : Assessment Result (5 = Strongly Agree, 1 = Strongly Disagree)

Table 1: Evaluation results of Module 1 “Information Literacy and Project-based Learning” (28 October 2006)

Evaluation Item		Mean (S.D.)	No. of Participants=23; No. of Responses= 23				
			Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)
1.	The methods introduced in the seminar are helpful for the teaching and learning of identifying the source of information .	4.35 (0.58)	9	13	1	0	0
2.	The methods introduced in the seminar are helpful for the teaching and learning of selecting information .	4.44 (0.67)	12	9	2	0	0
3.	The methods introduced in the seminar about information retrieval are helpful for understanding the teaching and learning of social responsibilities in retrieving information .	4.26 (0.77)	10	9	4	0	0
4.	The modes of assessment introduced in the seminar are helpful for me to reflect on assessment practices.	3.96 (0.90)	7	9	6	1	0
5.	The methods introduced in the seminar are helpful for implementing IL education .	4.13 (0.64)	6	14	3	0	0
6.	I will introduce the idea of fostering IL in project-based learning to other teachers.	4.35 (0.58)	9	13	1	0	0
7.	I will consider trying out the pedagogy introduced in the seminar in my class/school.	4.13 (0.77)	7	13	2	1	0
8.	I am interested to participate in other programmes / seminars / workshops of related subject in the future.	4.17 (0.66)	7	13	3	0	0
9.	The material distributed in the seminar can assist with my teaching.	4.35 (0.66)	10	11	2	0	0
10.	The length of the seminar is suitable.	4.35 (0.79)	12	7	4	0	0
11.	In summary, this seminar is useful for my professional development in IT.	4.30 (0.57)	8	14	1	0	0
Evaluation Item		Mean (S.D.)	Very good (5)	Good (4)	General (3)	Bad (2)	Very bad (1)
12.	Overall grading	4.30 (0.57)	8	14	1	0	0

Information Literacy and Project-based Learning : Comment

- 非常好的課程。
- 每個單元活動可長一些。整體來說非常好！
- Well-prepare and good presentation skills.
- 對圖書館主任也有用，因為圖書館主任也要教資料篩選。資訊素養應滲透在專題研習。能清楚說明資訊素養的重要及教學方法的例子
- 可加長活動的時間。
- 如果有一些學理上的pre-reading materials給予學員，則課堂中的投入及專業空間將會更好。謝謝！
- 介紹的網站有部份是簡體字，會否有人不懂？用民族做切入點，在常識課程中佔的比重是否太少？有沒有一些比重較大，教師接觸較多的課題？
- 分組活動有助我們認識這課題。
- 可再加入更多的活動，可令講解更為有趣，例如可加入互動討論！

Computer-Supported Collaborative Learning : Assessment Result (5 = Strongly Agree, 1 = Strongly Disagree)

Table 2: Evaluation results of Module 2 “Collaborative Learning and IT” (28 October 2006)

Evaluation Item		Mean (S.D.)	No. of Participants=19; No. of Responses= 17				
			Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)
1.	The communication tools introduced in the seminar are helpful for organising collaborative learning.	4.47 (0.51)	8	9	0	0	0
2.	The approach of reciprocal tutoring introduced in the seminar is helpful for organising collaborative learning.	4.41 (0.62)	8	8	1	0	0
3.	The visual learning tools introduced in the seminar are helpful for organising collaborative learning.	4.41 (0.72)	9	6	2	0	0
4.	The seminar can introduce the theory of using IT in collaborative learning.	4.47 (0.51)	8	9	0	0	0
5.	I believe that the appropriate use of IT can support collaborative learning.	4.47 (0.63)	9	7	1	0	0
6.	I will introduce the idea of collaborative learning and IT to other teachers.	4.41 (0.62)	8	8	1	0	0
7.	I will consider trying out the pedagogy introduced in the seminar in my class/school.	4.35 (0.60)	7	9	1	0	0
8.	I am interested to participate in other programmes / seminars / workshops of related subject in the future.	4.35 (0.60)	7	9	1	0	0
9.	The material distributed in the seminar can assist with my teaching.	4.35 (0.60)	7	9	1	0	0
10.	The length of the seminar is suitable.	4.29 (0.70)	7	8	2	0	0
11.	In summary, this seminar is useful for my professional development in IT.	4.41 (0.50)	7	10	0	0	0
Evaluation Item		Mean (S.D.)	Very good (5)	Good (4)	General (3)	Bad (2)	Very bad (1)
12.	Overall grading	4.41 (0.50)	7	10	0	0	0

Computer-Supported Collaborative Learning : Comment

- 節目精彩亦實用
- 內容較緊迫
- 時間太緊迫

The Role of Pedagogy in Using Technology for T&L : Assessment Result (5 = Strongly Agree, 1 = Strongly Disagree)

Table 3: Evaluation results of Module 3 "The Role of Pedagogy in Using Technology for Teaching and Learning" (4 November 2006)

Evaluation Item		Mean (S.D.)	No. of Participants=26; No. of Responses= 23				
			Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)
1.	The methods provided in the seminar are helpful for me to use digital resources in lesson planning.	4.21 (0.42)	4	19	0	0	0
2.	The seminar can help me to understand my teaching role in fostering IL of students.	4.42 (0.51)	9	14	0	0	0
3.	The methods provided in the seminar are helpful for me to organise student-centred learning.	4.33 (0.49)	8	15	0	0	0
4.	The information provided in the seminar can help me to understand the usage of e-learning platforms.	4.21 (0.52)	6	16	1	0	0
5.	The seminar can introduce the role of pedagogy in using technology for teaching and learning.	4.42 (0.52)	9	14	0	0	0
6.	I believe that the appropriate integration of pedagogy with the use of technology can enhance the teaching and learning effects.	4.42 (0.52)	10	13	0	0	0
7.	I will consider trying out the pedagogy introduced in the seminar in my class/school.	4.38 (0.50)	8	15	0	0	0
8.	I am interested to participate in other programmes / seminars / workshops of related subject in the future.	4.42 (0.59)	10	12	1	0	0
9.	The material distributed in the seminar can assist with my teaching.	4.33 (0.57)	9	13	1	0	0
10.	The length of the seminar is suitable.	4.33 (0.49)	8	15	0	0	0
11.	In summary, this seminar is useful for my professional development in IT.	4.46 (0.51)	11	12	0	0	0
Evaluation Item		Mean (S.D.)	Very good (5)	Good (4)	General (3)	Bad (2)	Very bad (1)
12.	Overall grading	4.38 (0.50)	9	14	0	0	0

The Role of Pedagogy in Using Technology for T&L : Comment

- Very good
- 能將各個地區聯合IT & ICT教學中，好！
- good prepare and well presentation, good manner.
- 非常好玩，教學內容能刺激對[ICT]教學新路向的反思
- I've learned some new concepts about using and applying IT in teaching, especially the use of inquiry-based approach.
- 內容上如能再加詳細講述更好！
- 在課程中有引用一些例子，如果能加以解說如何運用課程所述之教學法會更好

The Role of Pedagogy in Using Technology for T&L: School Experiences: Assessment Result 評鑑結果

(5 = Strongly Agree, 1 = Strongly Disagree)

Table 4: Evaluation results of Module 4 "The Role of Pedagogy in Using Technology for Teaching and Learning: School Experience" (4 November 2006)

Evaluation Item		Mean (S.D.)	No. of Participants=19; No. of Responses= 17				
			Strongly agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly disagree (1)
1.	The teaching and learning experience of using electronic whiteboards increases my understanding of the role of pedagogy in using technology for teaching and learning.	4.47 (0.62)	9	7	1	0	0
2.	The teaching and learning experience of using digital resources increases my understanding of the role of pedagogy in using technology for teaching and learning.	4.24 (0.54)	5	11	1	0	0
3.	The teaching and learning experience of using electronic schoolbags increases my understanding of the role of pedagogy in using technology for teaching and learning.	4.12 (0.81)	6	7	4	0	0
4.	The sharing discussions in the seminar can increase my understanding of the role of pedagogy in using technology for teaching and learning.	4.24 (0.66)	6	9	2	0	0
5.	The seminar can introduce the role of pedagogy in using technology for teaching and learning.	4.24 (0.40)	4	13	0	0	0
6.	I believe that the appropriate integration of pedagogy with the use of technology can enhance the teaching and learning effects.	4.53 (0.52)	9	8	0	0	0
7.	I will consider trying out the pedagogy introduced in the seminar in my class/school.	4.35 (0.60)	7	9	1	0	0
8.	I am interested to participate in other programmes / seminars / workshops of related subject in the future.	4.47 (0.54)	8	9	0	0	0
9.	The material distributed in the seminar can assist with my teaching.	4.29 (0.52)	6	10	1	0	0
10.	The length of the seminar is suitable.	4.24 (0.53)	6	9	2	0	0
11.	In summary, this seminar is useful for my professional development in IT.	4.41 (0.53)	8	8	1	0	0
Evaluation Item		Mean (S.D.)	Very good (5)	Good (4)	General (3)	Bad (2)	Very bad (1)
12.	Overall grading	4.35 (0.52)	7	9	1	0	0

The Role of Pedagogy in Using Technology for T&L: School Experiences: Comment

- 此課程能啟發老師對IT教學有啟發性的反思，所介紹的教學方法具實用性。
- 這個課程內容多元化，理論、實踐、分享全備。
- 讓前線同工有直接交流的機會，有助於應用科技於教學的反思，獲益良多！謝謝！
- 在學校應用例子方面教學法的角色與應用並不明顯，只是一個應用例子，用了什麼教學法？不什了了。而應用了這些科技對學習的促進也並不太明顯與具體。加上這些設備在應用上須投放額外的資源，對其他學校老師幫助不大。可以以更多一些一般學校均有的資源如何應用於教學上，而又改變了學習的質量的。這將更有助老師理解應用資訊科技如何促進學習；如何促成學生的合作學習；如何讓學生能把學習成果變成一種可以向其他人表達的內容。

[**Result 1: Pedagogy**]

- **Result:** According to the survey evaluation and feedback from teachers, teachers agreed the importance of pedagogy in using technology for teaching and learning
- **Recommendation:**
The teachers' IT PD Framework should include pedagogy as a key elements of the contents

Result 2: School-based

- **Result:** According to the school participation of the **pilot** teachers' PD programme and feedback from teachers, teachers are willing to form groups from school to attend PD
- **Recommendation:**
The model of the teachers' IT professional development can be designed in the form of school-based unit for training, which allow capacity building in using information technology for teaching and learning in school

Result 3: Sharing

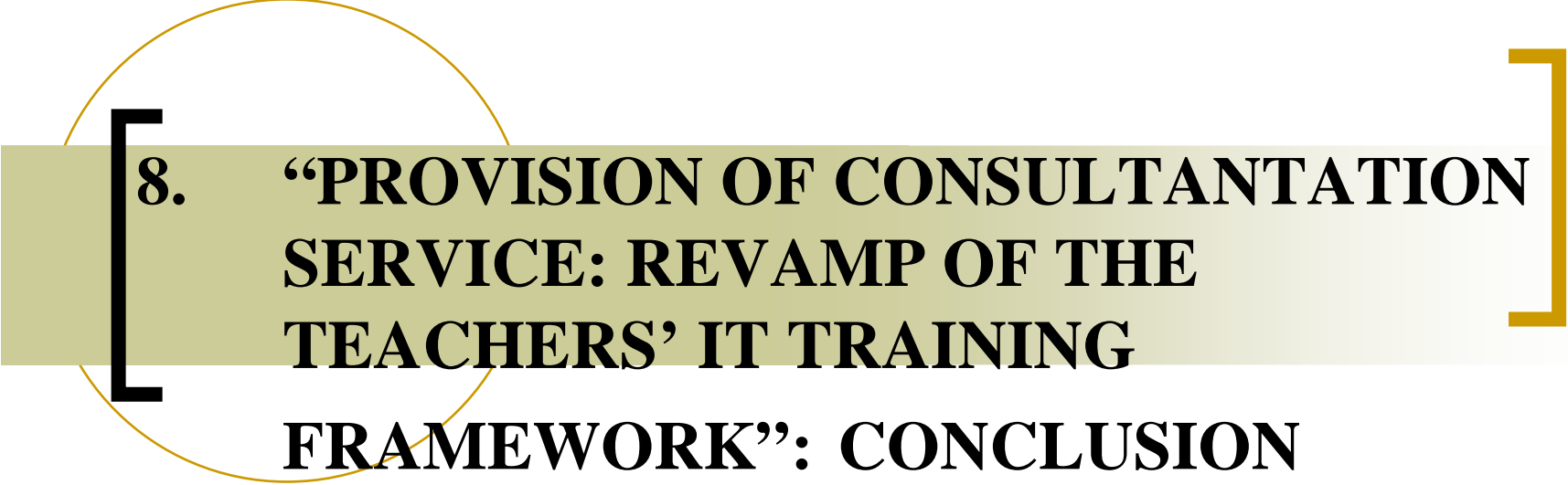
- **Result:** According to the survey evaluation and feedback from teachers, teachers realize the importance of experience sharing in using IT in teaching and learning
- **Recommendation:**
The model of the teachers' IT professional development should incorporate channels for sharing of teachers' professional ideas and experiences



**7. “PROVISION OF CONSULTANTATION
SERVICE: REVAMP OF THE
TEACHERS” IT TRAINING
FRAMEWORK” SEMINAR**

Open for discussion

S.W. Pun, Sandy Li, S.C. Kong, Allan Yuen



**8. “PROVISION OF CONSULTANTATION
SERVICE: REVAMP OF THE
TEACHERS’ IT TRAINING
FRAMEWORK”:** CONCLUSION

Thank you for your opinions!

**Education & Manpower Bureau
HKSAR**