Supporting Teachers' Continuing Professional Development through ICT: Grappling with Technology

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Introduction

- e-CPDelt project – online platform to share experience, knowledge and skills for continuous professional development – collaboration between 20 teachers of 5 Smart schools.
- Sharing are accomplished by:
  a. sharing text-based narratives of perceived good lessons through blogs,
  b. sharing of video clips of good lessons through the ViP (Virtual interactive Platform), and
  c. forum discussions of lessons.

The Smart School Project

- The Malaysian Smart Schools *(Sekolah Bestari)* – technology-rich schools – 4 subjects (English Language, Malay Language, Science and Mathematics) – 90 schools in the pilot phase

- Smart Schools equipped with computers in laboratories and classrooms – teachers provided with training and skills to utilize computers in their teaching activities.
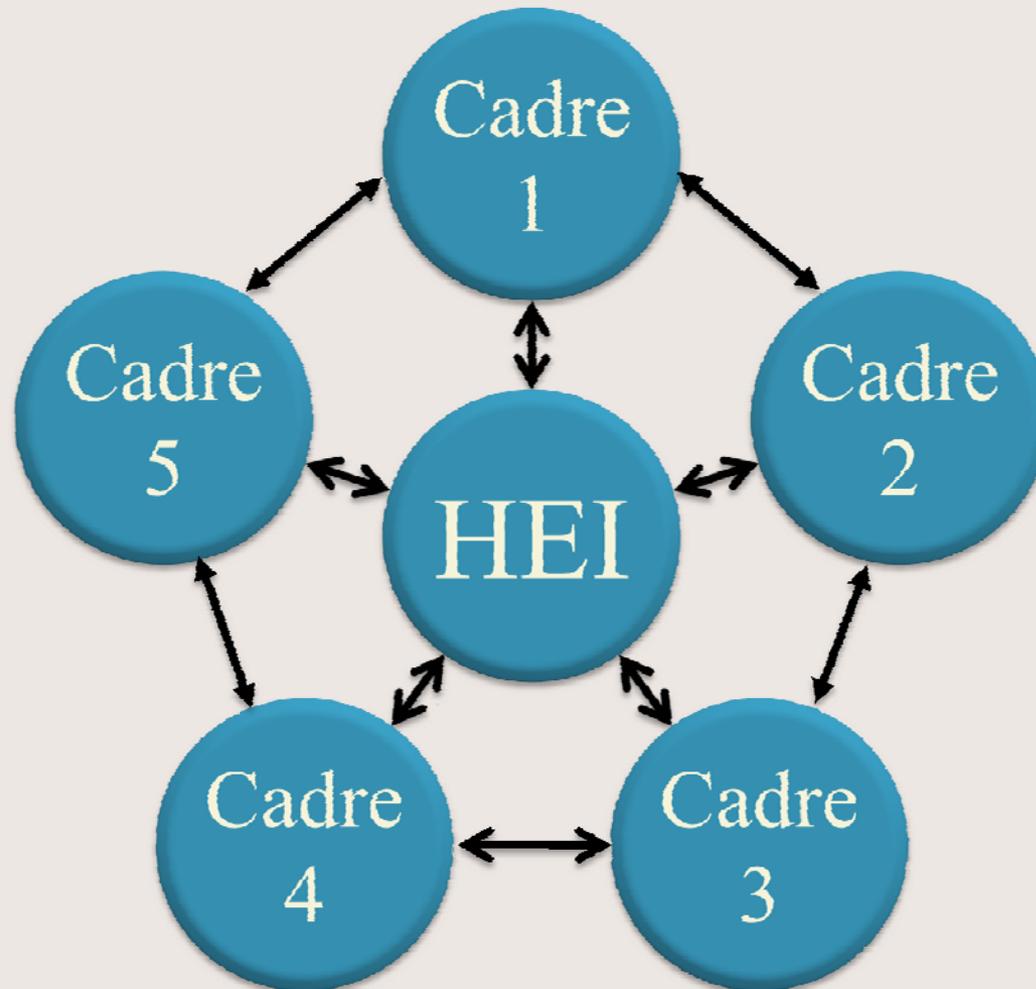
The e-CPDelt Vision 2020 model

- Proposes a partnership model for an online CPD model for training teachers of English, Mathematics and Sciences in improving their use of ICT in teaching

- Proposed model based on the Improvement Quality Education for All (IQEA) – action research framework used extensively in the UK

- Smart schools chosen – have received training and funding to improve their technology infrastructure – now facing considerable challenges of implementing government policy without ongoing support

- Aim to extend this model to teachers in normal schools in future

The e-CPDelt Vision 2020 model

- For this project, action research is the best methodology to bring about the required organizational and behavioural change

- Draw on and adapt the Continuous Professional Development (CPD) hub & spoke model based on a critical relationship between a number of school-based cadre of change-agents (Spokes) and a Higher Education Institutions (HEI)-based research team (hub)

- Spokes – 5 schools with 4 teachers (of English, Mathematics & Science) from each school

- Hub – researchers from the Higher Education Institute (The National University of Malaysia, University of Nottingham, UK and University of Sabah, Malaysia.

The CPD hub and spoke model in e-CPDelt: model 2020

The e-CPDelt Vision 2020 model

- This online model proposed hopes to lead to the development of communities of practices
- Sharing between teachers – online
- Teachers work with ICT from the start – aware of the problems involved when attempt to impart skills to students
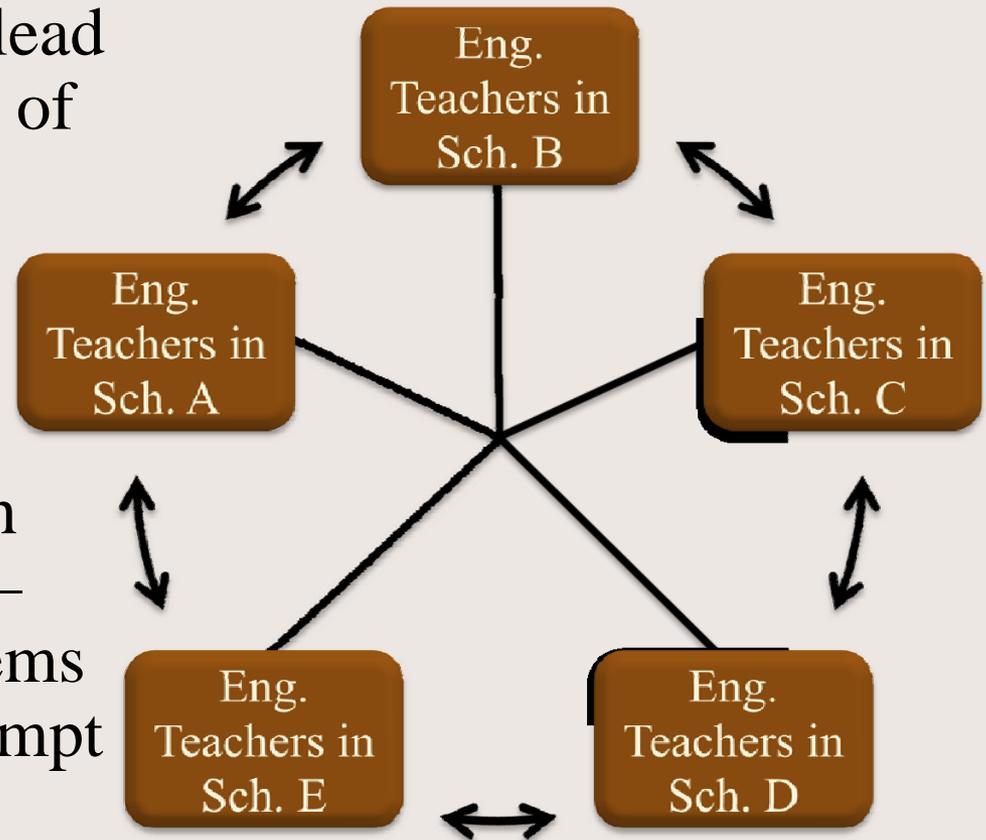
Theoretical Frameworks

1. General categories of learning barriers in adult learning and the concept of computer anxiety by Darkenwald and Merriam's (1982):

   - situational barriers,
   - institutional barriers,
   - informational barriers, and
   - psychological barriers

2. Concept of computer anxiety, particularly by Marcoulides and Wang (1990)

Theoretical Frameworks cont. I

- 3 perspectives of viewing computer avoidance by Torkzadeh & Angulo (1992) :
  - psychological,
  - sociological, and
  - operational
- Juanna Risah Sa'ari, Wong Su Luan & Samsilah Roslan (2005) - teachers who are competent in using computers find ICT to be more useful and they approach it with greater confidence and display low anxiety and aversion towards using it.

Research Methodology

⌦ To find out the problem and challenges faced by the teachers in undertaking the various activities of the project

➢ A focus group interview was conducted on each group of teachers, (Mathematics, Science & English)

➢ Reflections 3 main mentors from the 3 groups & the overall mentor who was the IT support coordinator were asked to reflect on the problems and difficulties faced by Smart School teachers and to record their.

➢ Both the interview data and the reflections were analysed.

Research Methodology cont. I

Category	Themes	Theory/principle
Barriers to learning	Situational barrier – lack of time	Darkenwald & Merriam (1982)
	Institutional barrier – technical glitches, insufficient support from school and research team	
	Informational barrier – insufficient information given by research team	
	Psychological barrier – General computer anxiety Equipment anxiety	Marcoulides & Wang (1990)

Table 1: Themes of the data analysis

Research Methodology cont. II

✎ ***Description of online tools***

1. Google blogs - 2 teaching episodes (successful vs. less so).

2. Virtual Interactive Platform (ViP) - enable video clips sharing - clips may highlight successful or problematic use of IT by teachers.

Analysis of Data

- **Situational barriers -** e.g. cost, lack of time, lack of transportation, lack of childcare & geographical isolation

  - *M4: because I feel recording and all that .. its not that we don't want to do .. we are also struggling time .. frankly speaking we are so struggling with time .. like myself if you tell me .. if you have to record and upload, I will see what is the minimum requirement, once enough, twice enough, I'll just do the minimum requirement and I done with it.*

Analysis of Data cont. I

- **Institutional barriers -** e.g. inconvenient schedules, restrictive locations & lack of support from the schools.
- Lack of attractive or appropriate courses and institutional policies and practices that impose inconvenient, confusion, or frustration on adult learners
  - *S3: I also have problem with time as a lot of time I spend to prepare my lessons. Because I concentrate on my teaching because this is the first time I'm teaching Form 5 Biology. There's a lot of pressure on me. I've got to prepare the teaching materials. So sometimes I'll do until midnight. So it is hard to find the time to do blogging.*

Analysis of Data cont. II

- Frustrated by technical problems - Google blogs & the ViP were not user friendly.
  - *E3: My problem is I don't open my blog often. I don't know whether people have commented on my response or not. In Facebook, if someone has commented on your whatever, it will be in the e-mail. But not here. That's the problem...I don't open the blog.*
- 5 main technical problems of ViP - Jakob Nielsen's 10 Heuristics (1994):
  - Mismatch between system language and human language
  - Restricted user control and freedom
  - Less flexibility and inefficiency of use
  - No guide for error recovery
  - No documentation to fall back on for help

- **Informational barriers -** institutional failure in communicating information on learning opportunities. E.g. uncertainty regarding what was required.
  - *When we saw member X's comments, we thought that's what's expected of us. I printed to make sure mine is structured like hers. I was afraid if I were to write something simple, it's way far from her standard. I printed out the tasks and was wondering how to write….must be long and formal.*

- **Psychological barriers -** individually held beliefs, values, attitudes, or perceptions that inhibit participation in organized learning activities

  - *General computer anxiety*

    - *Okay, to start off this, I must say that involving myself in IT is not my cup of tea lah .. but I did try, to log in to VIP .. and I keep trying to see what others have, but the questions they have posted were not the one that I comment on. Maybe the questions they posted maybe were not the level I'm teaching and so on. I could not comment much.*

Analysis of Data cont. V

➢ ***Equipment anxiety***

   ➢ teachers lacked the basic knowledge regarding the computer and this made them approach the ViP with fear and apprehension

   ✦ *S4: The problem is when I want to edit the video, technical problem la, we want to edit the video, and then we want to import the video, we can open the video, we can see what happen but when we want to import, to edit it, to er using the movie maker, then problem.*

Discussion of findings

- The problem: "Lack of time" - cover up deficiencies faced by the teachers.

- Computer anxiety - teachers are nervous and anxious about using computer

- Baylor & Ritchie (2002) - Technology will not bring about transformations in the classroom if teachers do not have the skills, knowledge and attitudes necessary to incorporate it into the curriculum

- Institutional barriers, lacked the interests and motivation to want to learn, experiment and try out new methods of teaching.

Discussion of findings

- On-going support will be continually provided

- Refresher courses and more interactive activities to arouse teachers interest

- Activities and tasks offered - improved or modified based on research findings

- Clearer, more explicit and more open-ended instructions in tasks - creative & adventurous

- More structured designed with specific, lucid goals - teachers know what are expected & type of benefits they get.

THE END