Digital Empowerment in Education for School Administrators and Teachers: The Malaysian Experience

Dr. Soon Seng Thah
Malaysia
Presentation Topics

• Why is there a need for digital empowerment for school administrators and teachers?
• How does Malaysia undertake digital empowerment?
• Issues and challenges of digital empowerment in education?
Why is there a need for digital empowerment of school administrators and teachers?

- Digital empowerment leverages ICT in teaching and learning
- Digital empowerment improves teaching and learning
- Digital empowerment leads to management efficiency
- Digital empowerment leads to positive learning outcomes
How does Malaysia undertake digital empowerment?

• Systematic Plans
• Organisational Structure
• Infrastructure
• Resources
• Action Research
• Training
• Monitoring
Systematic Plans

• Plans must be a result of evidence-based decision-making on what specific programmes can contribute to digital empowerment
• Plans must have clearly defined aims and objectives to achieve the desired ideal state
• Systematic plans can be a blueprint or any strategic planning document which outlines digital quantum leap
• In Malaysia the Education Blueprint and ICT Strategic Plan outline systematic development of ICT programmes over a period of time
  – There is a need for direction - Mission and Vision
  – Delineated via into Waves, Shifts and Projects
**WHAT ARE THE DIGITAL EMPOWERMENT INITIATIVES?**


<table>
<thead>
<tr>
<th>Initiative</th>
<th>Details</th>
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<tbody>
<tr>
<td>Providing network infrastructure and a universal virtual learning environment (VLE)</td>
<td>- All administrators and teachers must be trained and competent in VLE</td>
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<td>Delivering more ICT devices</td>
<td>- Computers, notebooks, and portable ICT devices to students and teachers</td>
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<td></td>
<td>- fit for purpose</td>
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<td>Ensuring all teachers and MOE officials are ICT literate – International Society for Technology in Education (ISTE) standards – pass diagnostic test</td>
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<td>Shifting towards more user-created content – EduWebTV migrated to VLE – integrated platform and video library, also uploaded to YouTube</td>
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<td>Integrated data School Management System – integrate databases hosted on the Cloud</td>
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Exploring ICT solutions for specific groups, reviewing best practices for the system
- Introduce niche programmes for small schools, rural schools and gifted students
- Use virtual delivery, adaptive learning tools, parental and community engagement

Achieving a critical mass in ICT devices gradually
- Lower student-computer ratio to 10:1
WAVE 3 (2021 – 2025): MAINTAINING INNOVATIVE, SYSTEM-WIDE USAGE

- ICT to be fully embedded in pedagogy and curriculum

- Up-scaling and intensifying ICT usage among students and teachers
  - Device to student ratio comparable to developed countries

- Expand distance and self-paced learning
Organisational Structure

• Prevalence of an organisational structure which supports and enhances digital empowerment initiatives

• A hierarchical structure must be able to facilitate implementation
  – Lower levels of the hierarchy must be empowered to make decisions as they are closer to the schools
  – Organisational structure must be able to provide services and guide empowering decisions to school administrators and teachers
Malaysia’s Educational Technology Organisational Empowerment Structure

• Educational Technology Division (ETD) at the Ministry of Education facilitates tasks at the central level
• State ETD empowered with authority to oversee state level programmes (15 State ETD)
• Teacher Activity Centres (TAC) empowered to implement programmes at the district level in schools (367 TACs)
**Findings from research undertaken on Teacher Activity Centres – National Survey**

<table>
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<tr>
<th>Promotion / Publicity</th>
<th>Support of Teaching &amp; Learning</th>
<th>Training</th>
<th>Monitoring</th>
<th>Infrastructure</th>
<th>Help Services</th>
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<tr>
<td>• Dissemination of promotional activities crucial for success</td>
<td>• Teacher and student-needs approach crucial to provide effective support</td>
<td>• Training materials must be interesting and relevant to needs of students and teachers and meet requirements of syllabus</td>
<td>• Both formative and summative evaluations of programmes must be carried out for informed decision-making</td>
<td>• Priority must be given by ETD on the necessary infrastructure to better leverage ICT in teaching and learning</td>
<td>• Officers will be better able to provide help services if a proper work schedule is given and disseminated to schools</td>
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<td>• Briefings from TAC to schools</td>
<td>• Need for coordination of sectoral functions to better support development of teaching and learning resources at ETD</td>
<td>• Training must be appropriate to the needs of target groups with differing abilities</td>
<td>• Reports and findings must be documented for future reference and presented</td>
<td>• Need for an ICT replacement policy</td>
<td>• Help services can be better provided on an online basis to teachers</td>
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<td>• Linkages with state and district organisations via collaborations</td>
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<td>• Training must be systematically coordinated</td>
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Infrastructure

• Need to equip stakeholders with sufficient and relevant infrastructure needed to operate optimally

• All state and district educational technology centres and schools must have sufficient infrastructure
  – Gradual reduction of school to computer ratio is a must
  – Good maintenance of existing devices in schools
  – Cloud-based solutions

• High speed broadband internet connectivity is a must for all schools
The 1BestariNet Initiative

Technology Component
Broadband connectivity between 2 to 10 Mbps

Pedagogy Component
The pedagogy component concerns the use of Frog Virtual Learning Environment in teaching and learning

Management Component
The management component concerns the establishment of a Programme Management Office
1BestariNet

- Deploy and support broadband internet connectivity to all schools
- Deploy and support the Frog Virtual Learning Environment (VLE) to all students, teachers, school administrators and parents
- Provide hosting and managed security services
- Implement change management and VLE training

Critical Success Factors
- School administrators, teachers, students and parents must be empowered
- Sufficient and functional ICT infrastructure
- User-friendly applications
- Suitable resources for instructional purposes

Objectives
- Good broadband internet connectivity leading to effective instruction

Technology-enhanced Classroom
The 1BestariNet Initiative

1BestariNet

Cloud-based “End To End” (E2E) services for all schools

8 Services

Technology Element

- Bandwidth 2-4Mbps (Rural)
- Bandwidth 4-10Mbps (Urban)
- Bandwidth Up to 50 Mbps

Management Element

- Managed Security Services
- Managed Hosting Services
- Project Management Office

Pedagogy Element

- Virtual Learning Environment (Frog VLE)
- Maintenance Services of VLE
Basis for Virtual Learning Environment

Frog VLE for every teacher, student and parent in Malaysia

- Universality
- Proven Technology
- Collaborative Learning
- Replication of “real-life” learning
- No child left behind policy
- Ubiquitous learning
Key Success Factors (Research Findings)

- **Functionality, usability and ability to facilitate collaborations**
  - Characteristics of VLE

- **Broadband connectivity**
  - Good and stable broadband connectivity

- **Instructional resources developed by Community of Practitioners to facilitate instruction**
  - Materials accessible by teachers and students

- **Buy-in from stakeholders**
  - Teachers and students must use VLE. Change management is necessary
Key Success Factors (Research Findings)

- Teachers must be highly motivated to use VLE. To complement this, there must exist Continuous Professional Development in phases

**Effective Medium**
- VLE must be effective, reliable, operable, functional, learnable, memorable, and efficient

**Learning Outcomes**
- Focus on learning outcomes
Resources

• For empowerment to be successful instructional resources must be made readily available to teachers and students

• Resources must be capable to being used in multiple devices/platforms in ubiquitous learning environments
  – ICT is a significant predictor of student achievement in several cycles of TIMSS and PISA study

• The Malaysian Smart Schools empower teachers to use “smart” resources in teaching and learning
  – Procurement of customised resources for all groups of teachers and students
  – Must be technologically and pedagogically sound to be of any benefit to teachers and students. Stringent evaluation criteria must be used
RESOURCES FOR SELF-PACED, SELF-ACCESSED, & SELF-DIRECTED LEARNING
USE OF COURSEWARE FOR SELF-PACED, SELF ACCESSED, & SELF DIRECTED LEARNING

Mathematics
Money Up To RM10,000
Year 4

Mathematics
Mass
Year 4

Science
Metacognition Melody
Year 4

Mathematics
Time
Year 4

Mathematics
Trans-Miera Model
Year 4

Kajian Tempatan
Identiti Setempat (Kreativit
Guru)
Tahun 5
EduwebTV (www.eduwebtv.com)

- World Wide Web
- Anywhere, anytime and by anyone

**Educational TV Programmes**
- Teacher-hosted e-tuition

**Instructional Resources**
- Academic programmes
- Documentaries

**Channels**

**Curriculum**
- Guides
- Live telecast
Integrated School Management System

- Single log-on
- Integration of existing portals

Reduce teacher work load

Computer-based school administration
- 22 modules with wide ranging applications

Timeline
- Nation-wide implementation currently
Action Research

• Action research is seen as a programme to empower school administrators and teacher to improve their professionalism
• Collaboration between Malaysia and Thailand on this programme
• Conceptual basis – follows the action research cycle
• School administrators and teachers share findings in annual conferences and journals
Action Research Cycle

(Keimmis & McTaggart, 1988)
Training

• For digital empowerment to be successful school administrators and teachers must be continuously trained

• There is a need for change management – changing traditional thinking to digital thinking
  – Changing attitudes of school administrators and teachers – a very challenging task
  – Plenty of resistors especially the older teachers who are less technologically savvy

• Virtual training as a platform for delivery can ensure better access
Monitoring

• A good monitoring mechanism will ensure all programmes are carried out as planned
  – Smart School Qualification Standards

• A digital dashboard at the central level must be put in place and made accessible to decision-makers
  – Reports must be presented periodically for informed decision-making at all levels
  – A Project Management Office must be set up to oversee implementation over time and track issues and problems
Issues and Challenges

• The success of digital empowerment is dependent on a systematic plan and must be implemented over a period of time.
• Education is linked closely to outcomes and the measurement of empowerment success can be made by how well teachers teach and students learn.
• For empowerment to work well, there must be direct involvement of school administrators and teachers in determining “what” and “how” a programme is to be implemented.
• Teachers must be given the best facilities and support to excel.
• Parents must be involved because they guide after-school activities and provide a home environment conducive to learning.
• ICT efforts must be linked to broader education reforms.
Thank You

Email: soon@oum.edu.my
     soonst@hotmail.com