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

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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?
WAVE 1 (2013 – 2015): ENHANCING THE FOUNDATION

Providing network infrastructure and a universal virtual learning environment (VLE)

- All administrators and teachers must be trained and competent in VLE

Delivering more ICT devices

- Computers, notebooks, and portable ICT devices to students and teachers

- fit for purpose

Ensuring all teachers and MOE officials are ICT literate – International Society for Technology in Education (ISTE) standards – pass diagnostic test

Shifting towards more user-created content – EduWebTV migrated to VLE – integrated platform and video library, also uploaded to YouTube

Integrated data School Management System – integrate databases hosted on the Cloud

WAVE 2 (2015 – 2020): INTRODUCING ICT INNOVATIONS

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

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

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

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
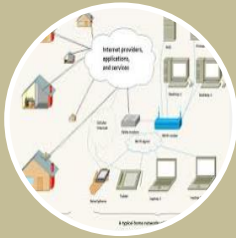
Broadband connectivity between 2 to 10 Mbps

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

Objectives

- **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**
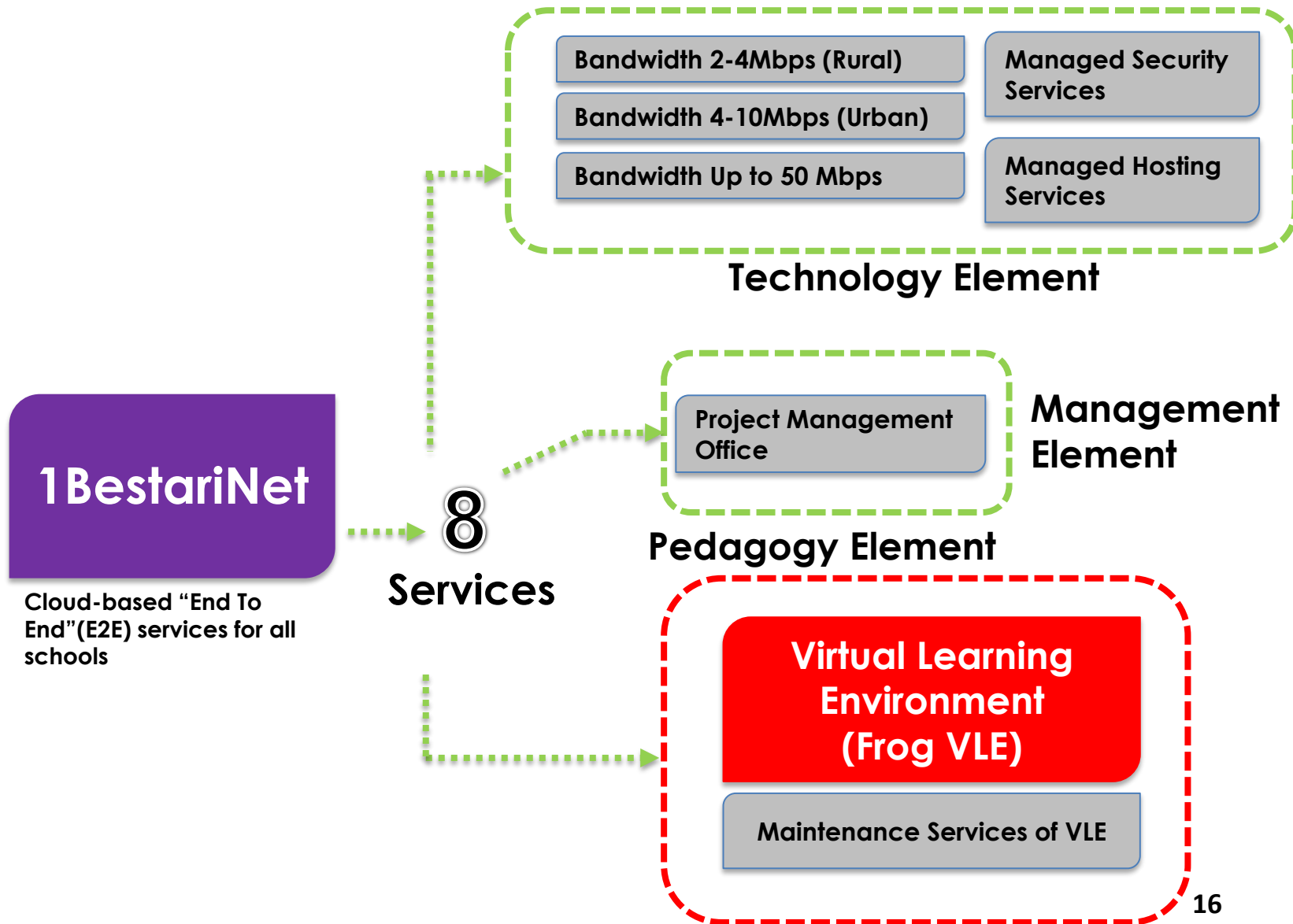- **Implement change management and VLE training**

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**

- **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
- Managed Security Services
- Managed Hosting Services

Management Element

- Project Management Office

Pedagogy Element

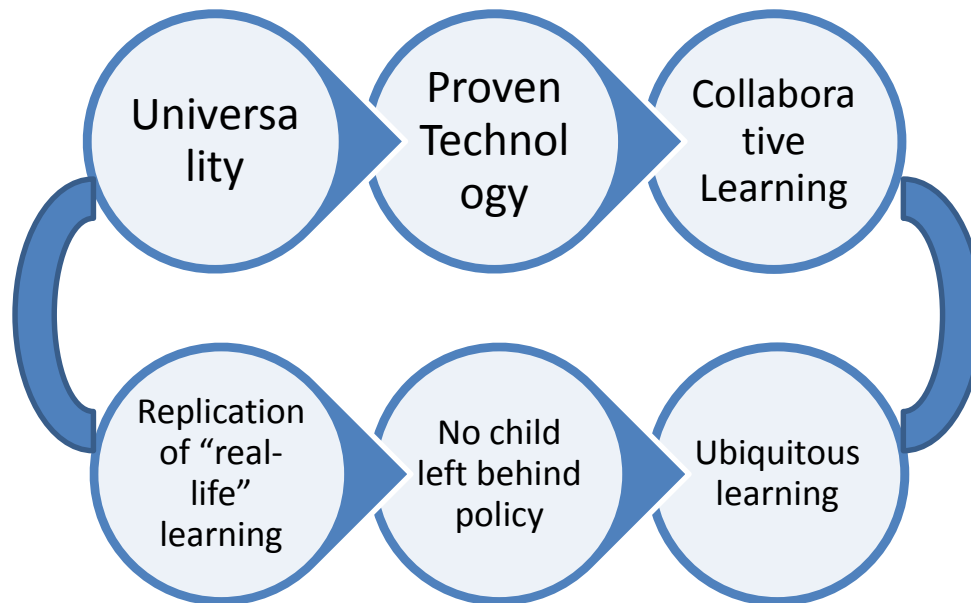**Virtual Learning Environment (Frog VLE)**

- Maintenance Services of VLE

16

Basis for Virtual Learning Environment

Frog VLE for every teacher, student and parent in Malaysia

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)

Motivation

- 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
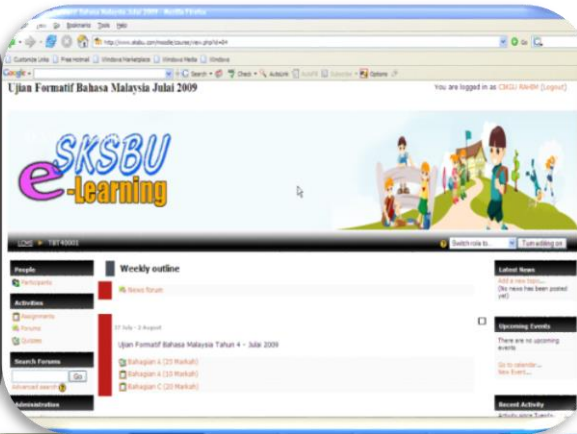
USE OF COURSEWARE FOR SELF-PACED, SELF ACCESSED, & SELF DIRECTED LEARNING

Mathematics
Money Up To RM10,000
Year 4

Mathematics
Mass
Year 4

Science
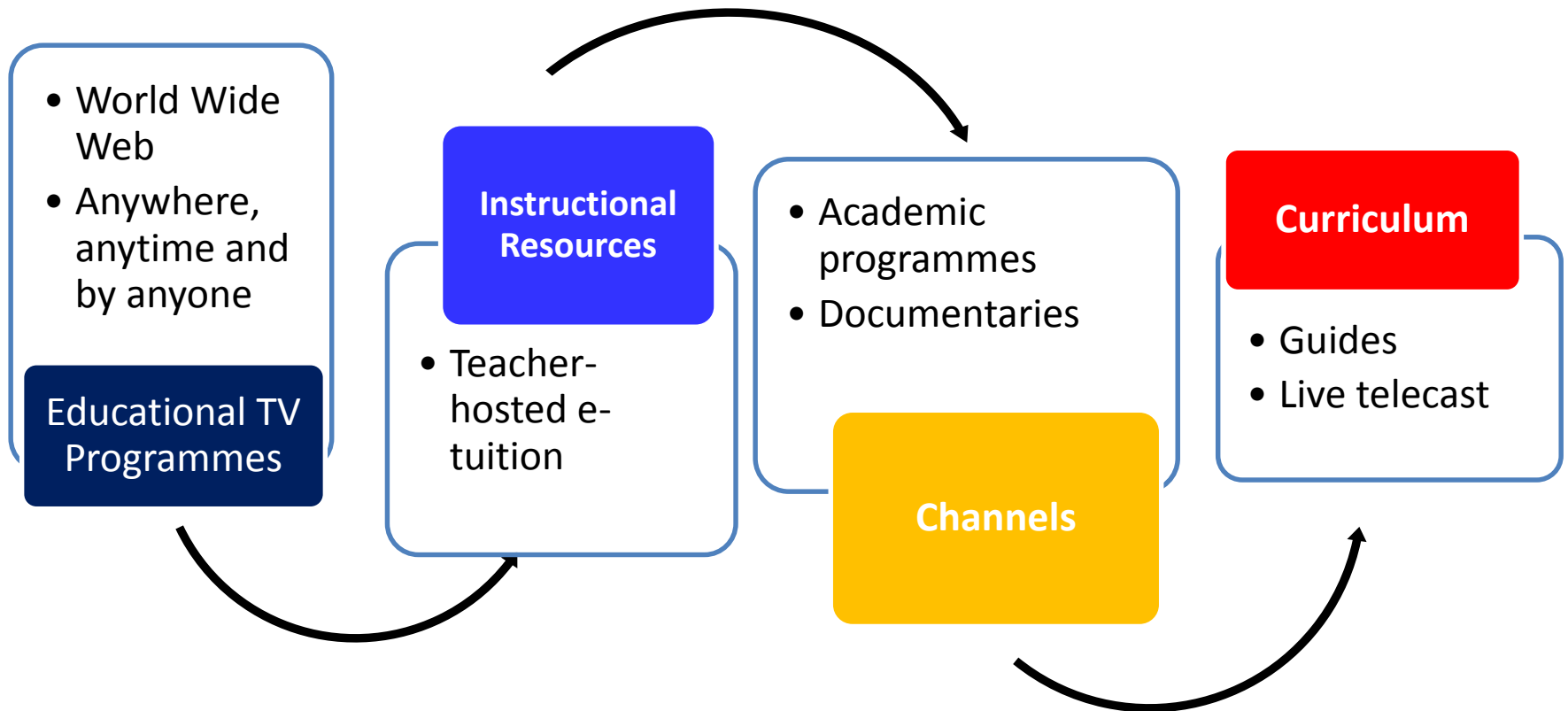Metacognition Melody
Year 4

Mathematics
Time
Year 4

Mathematics
Trans-Miera Model
Year 4

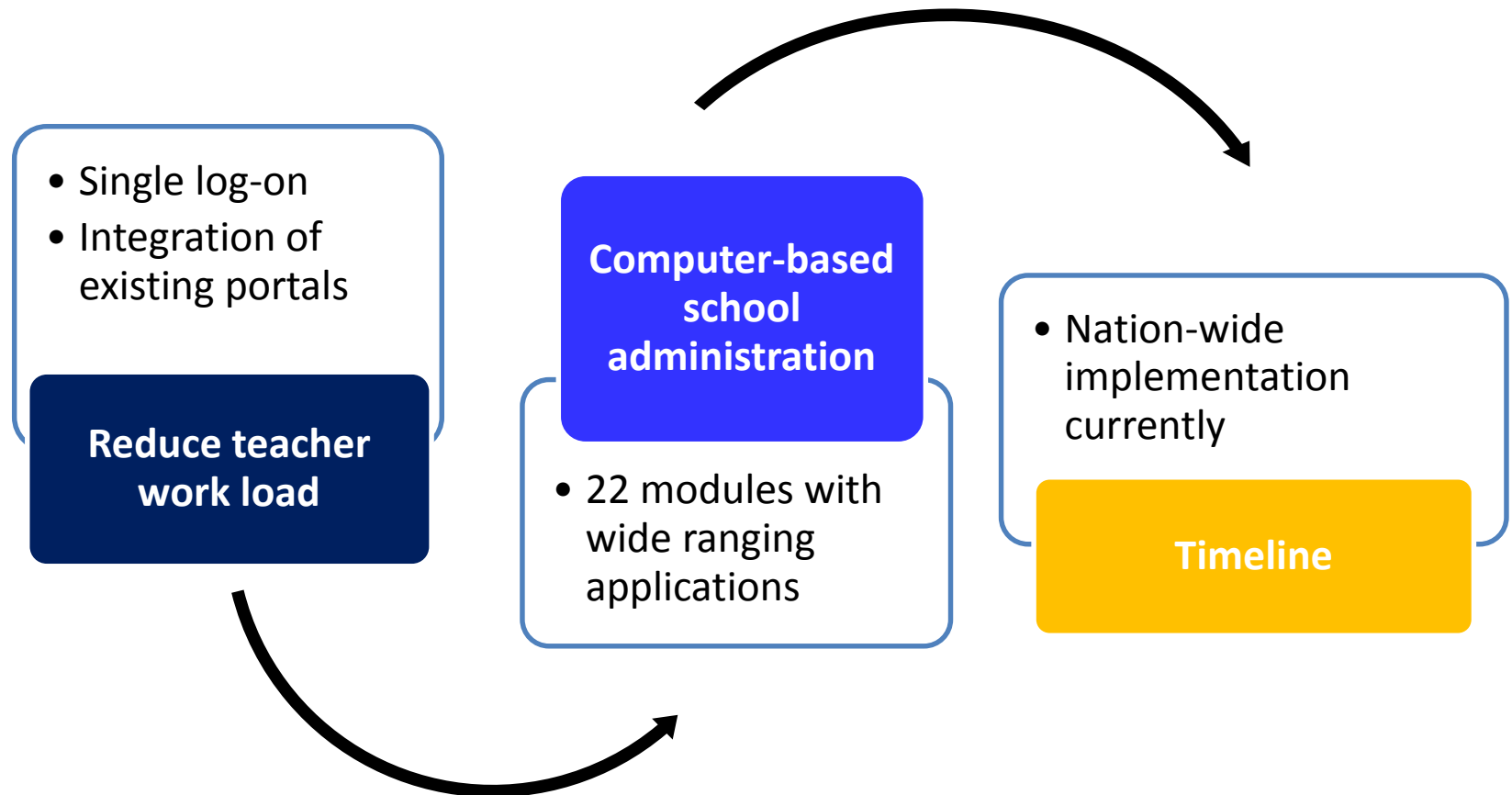**Kajian Tempatan**
Identiti Setempat (Kreativit Guru)
Tahun 5

EduwebTV (www.eduwebtv.com)

- World Wide Web
- Anywhere, anytime and by anyone

Educational TV Programmes

Instructional Resources

- Teacher-hosted e-tuition

- 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

- Nation-wide implementation currently

Timeline

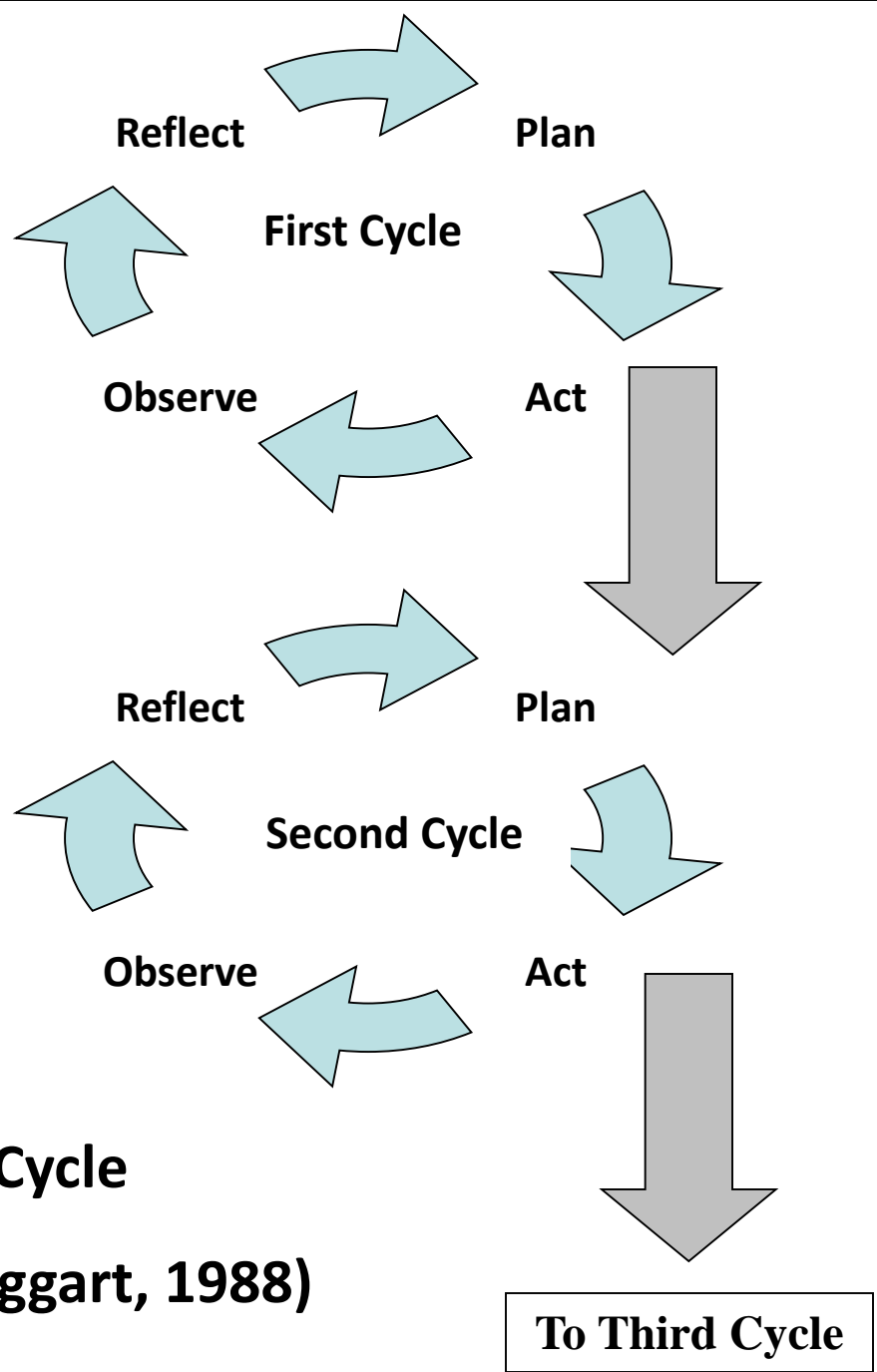# Action Research

- 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

Reflect → Plan

First Cycle

Observe ← Act

Reflect → Plan

Second Cycle

Observe ← Act

Action Research Cycle

(Kemmis & McTaggart, 1988)

To Third Cycle

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

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