Asia-Pacific
Economic Cooperation

Design of Mobile Learning Applications: A pedagogical approach

Purpose: Information
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Design of Mobile Learning Applications:

A Pedagogical Approach

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Outline

- Introduction
- Design Guidelines for Mobile Learning Applications
- Mobile VClass
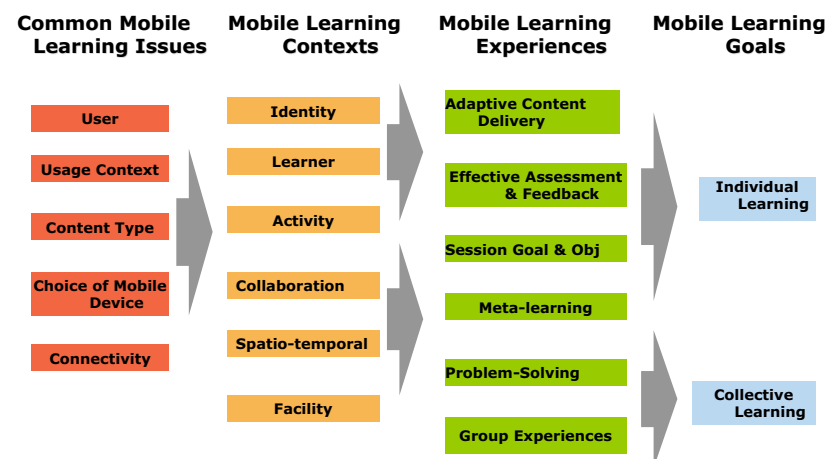- Case Scenarios
- Conclusions

Introduction

- Mobile Learning
  - Crucial paradigm of E-Learning
  - Delivers learning to students thru the use of mobile technology
  - Complements both E-Learning and Traditional learning
- Design of M-Learning Applications
  - Best pedagogic practice
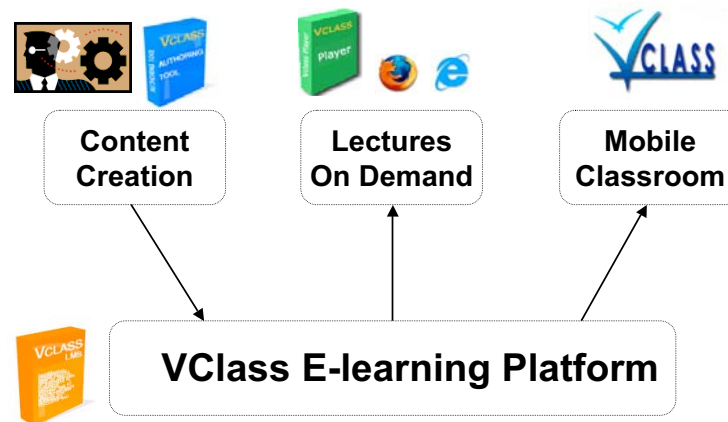 - Advanced mobile technologies

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Design Guidelines

Common Mobile Learning Issues	Mobile Learning Contexts	Mobile Learning Experiences	Mobile Learning Goals
User	Identity	Adaptive Content Delivery	
Usage Context	Learner	Effective Assessment & Feedback	Individual Learning
Content Type	Activity	Session Goal & Obj	
Choice of Mobile Device	Collaboration	Meta-learning	
Connectivity	Spatio-temporal	Problem-Solving	Collective Learning
	Facility	Group Experiences	

Slide 1

Mobile $\checkmark$**CLASS**

Slide 2

VClass E-Learning Platform

Content Creation

Lectures On Demand

Mobile Classroom

VClass E-learning Platform

Slide 3

Mobile VClass

- Initial Implementation

VClass Mobile Classroom

- A real-time m-learning application extending VClass E-Learning Platform
- Designed for synchronous learning
- Supports different learning scenarios
- Based on SIP technology
  - SIP Express Router is used as a server for SIP messages exchange
- Initially designed for PCs

Slide 4

Mobile VClass: *Look & Feel*

Mobile VClass: *Features*

- **Course Presence**
  - Shows who are currently logged in
  - Instructors are shown in blue color
  - Students are shown in yellow color

  Course Participants
  - Chulachomklao Royal Military Academy - Online
  - Silpakorn University - In Class
  - Charity Lourdes Laplap - In Class
  - Rey Padilla - In Class
  - Nisarat Tansakul
  - Andrey Student - In Class
  - Kanchana Kanchanasut - Online
  - Demo Instructor
  - Surat Lertlum - In Class
  - Panjai Tantasanawong - In Class

Mobile VClass: *Features*

- **Audio Conferencing**
  - Built-in Mobile Classroom feature
  - One call is made to a conference room for each course
  - Uses conference server
    - Asterisk PBX
    - Conference join/leave announcements

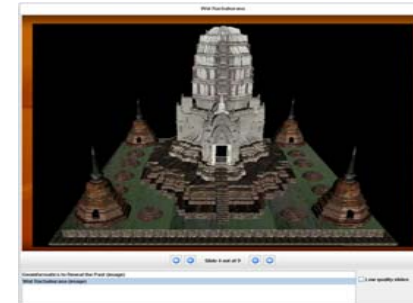## Mobile VClass: *Features*

- **Video Conferencing**
  - Similar to audio conferencing
  - Peer-to-peer between students and instructor
  - Automatically initiated between instructors and students when video is enabled within a course
  - One-way and two-way video is supported

Mobile VClass: *Features*

- **Shared Slides**
  - Shared slides may be added for each course
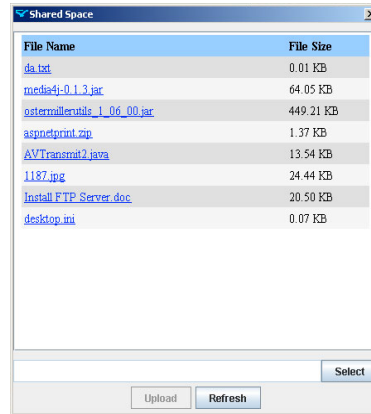 - Students may choose to synchronize their slides with instructor during lectures
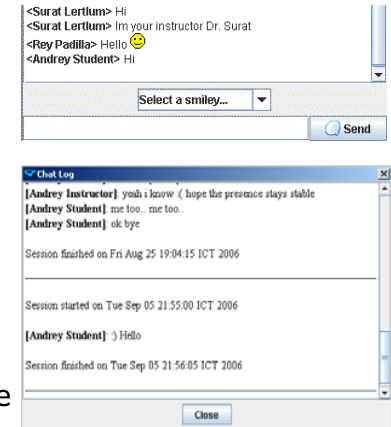
Mobile VClass: *Features*

- **Shared Folder**
  - Shared folder is used for simple file exchange within one course
  - Uses HTTP protocol for upload/download
  - VClass Administrator can adjust maximum upload file size

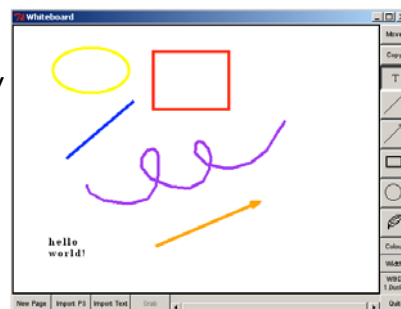# Mobile VClass: *Features*

- **Group Chat** ☺
  - Online participants of the course may send instant messages to each other
  - Useful for real-time discussions
  - Chat logs are maintained for each course
    - for future reference

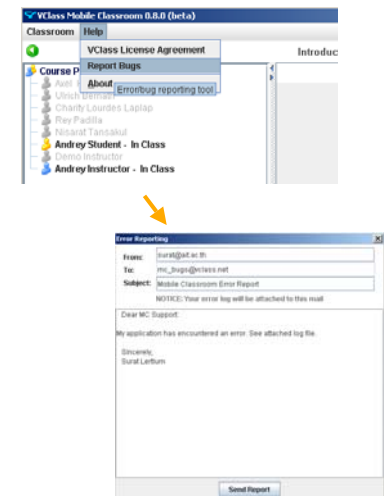# Mobile VClass: *Features*

- **Multicast Whiteboard**
  - 3rd party application
  - Prior installation of this tool is necessary
  - Use is limited to multicast enabled networks only

Mobile VClass: *Features*

- **Error Reporting**
  - Online built-in error reporting mechanism
  - Whenever program exhibits undesired behavior, user may send his/her report to developer team

Mobile VClass

- Future Implementation

  - Improve existing VClass Mobile Classroom application for PCs
  - Create similar application for PDA's and 3G mobile phones
  - Use J2ME technology

Case Scenarios

- Use of Mobile VClass in MBA and DBA programs in School of Management, AIT

  - Existing and Proposed Scenarios:
    - Online chat to facilitate groupwork (MBA)

    - Real-time lectures conducted by faculty on-campus (MBA, DBA)
      - mobile students attending class off-campus
      - Q&A facilitated by Group Chat
      - Video/audio conference
      - Use of Shared Slides for presentation
      - Use of Shared Folder to share files
      - Use of e-Whiteboard

    - Real-time lectures conducted by faculty off-campus (MBA, DBA)
      - same scenario as above, but used by faculty to conduct lectures to students while off-campus.
      - classroom set-up for on-campus students

Conclusions

- Mobile Learning needs effective tools to best complement e-learning and traditional learning.

- Design guidelines based on best pedagogic practice combined with advanced mobile technology considerations facilitate in the design of effective mobile learning applications/tools.

- Mobile VClass provides functionalities for instructors to conduct effective real-time classes and students to engage in a mobile learning environment.

- In the evolutionary process of Mobile VClass development, more requirements in the guidelines should be integrated in the design. Further implementation is necessary.

Contact Us

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Thank you!