Virtual Learning Environment Implementation Framework of Mariano Marcos State University

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What is Virtual Learning Environment (VLE)?

a web-based package designed to help teachers create online courses. It involves facilities for teacher-learner and peer-to-peer communication.
What is Virtual Learning Environment (VLE)?

can help you manage the administration, delivery, tracking and reporting of instructor-led classes and eLearning programs.
What is Virtual Learning Environment (VLE)?

refers to the components in which learners and tutors participate in “on-line” interactions of various kinds, including on-line learning.

- Joint Information Systems Committee
The Mariano Marcos State University
Purpose

- To design a VLE framework for State Universities.
- To introduce new pedagogic model for learning.
- Provide virtual interaction among faculty and students.
Virtual Learning Environment Implementation Framework of MMSU

- Definition
- Introduction
- Purpose
- Research Paradigm
- Results
- Conclusion
- Recommendation

#MootPH18
## Results

### MMSU ICT Infrastructure

<table>
<thead>
<tr>
<th>Network Connectivity</th>
<th>wireless, LAN, WAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet connection</td>
<td>Dedicated Internet Access (DIA) with 1:1 Mbps bandwidth. Some colleges have their own independent DSL Connections (3.5 Mbps) for their internet access point.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Servers</th>
<th>web (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>database (1)</td>
</tr>
<tr>
<td></td>
<td>mail (1)</td>
</tr>
<tr>
<td></td>
<td>proxy (2)</td>
</tr>
</tbody>
</table>

| Computer Laboratory   | 7 – maintained by ITC |
|                       | 1 – maintained by CAS-DCS |
|                       | 2 – COE-DCPE         |
## Results

### Users’ ICT Profile (Faculty)

<table>
<thead>
<tr>
<th>Level</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advance</strong></td>
<td>Presentation Skills</td>
</tr>
<tr>
<td><strong>Intermediate</strong></td>
<td>Basic Computer Operation</td>
</tr>
<tr>
<td></td>
<td>File Management</td>
</tr>
<tr>
<td></td>
<td>Word Processing</td>
</tr>
<tr>
<td></td>
<td>Spreadsheet Use</td>
</tr>
<tr>
<td></td>
<td>Database Use</td>
</tr>
<tr>
<td></td>
<td>Internet Use</td>
</tr>
<tr>
<td></td>
<td>Technology Integration</td>
</tr>
<tr>
<td><strong>Beginner</strong></td>
<td>Graphics Use</td>
</tr>
<tr>
<td></td>
<td>Telecommunications Use (email)</td>
</tr>
<tr>
<td></td>
<td>Ethical Use/Understanding</td>
</tr>
<tr>
<td></td>
<td>Information Searching</td>
</tr>
<tr>
<td><strong>No Capability</strong></td>
<td>Video Production</td>
</tr>
</tbody>
</table>
Results

Status of MMSU’s ICT Infrastructure

Overall level of implementation of MMSU’s ICT infrastructure.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers</td>
<td>Moderate</td>
</tr>
<tr>
<td>Network and Internet</td>
<td>Moderate</td>
</tr>
<tr>
<td>Display Screen Technologies and Peripherals</td>
<td>Moderate</td>
</tr>
<tr>
<td>Software and Information Systems.</td>
<td>High</td>
</tr>
</tbody>
</table>

Overall Moderate
Results

Comparative Study Between the VLE Products Based on Functions

![Bar chart comparing VLE products](image)
Results

Program Requirements for Faculty Users

- Faculty should undergo re-training programs and/or attend refresher courses on basic computer operations, file management, word processing and spreadsheet.

- Faculty should attend short-term courses on database and graphics.

- Faculty should go through re-training programs on Internet and telecommunications.
Program Requirements for Faculty Users

- Faculty must be educated with the basic understanding of copyright and fair use through seminars/forums.

- Faculty should attend to enhancement trainings on information searching.
Program Requirements for Faculty Users

- Faculty should enrol to short-term courses on video production.

- Faculty should undergo re-training to enhance their skills in presentation and technology integration.
Program Requirements for ICT Infrastructure

- Maintain or increase the number of computers to students to achieve a 1:1 ratio.

- Maintain or increase the number of Internet-enabled computers to students to achieve a 1:1 ratio.

- Increase the number of computers to academic staff.
Results

Program Requirements for ICT Infrastructure

- Increase the number of Internet-enabled computers to academic staff.
- Increase the network specification to Gigabit or better.
- Improve network infrastructure and increase Internet bandwidth.
Program Requirements for ICT Infrastructure (cont...)

- Expand the wireless coverage to 100% of the learning area.
- Subscribe higher Internet bandwidth for faster Internet access even at busy times.
Program Requirements for ICT Infrastructure (cont...)

- Provide all (100%) classrooms with display screen technologies.

- Increase the number of printers and other peripherals such as scanners, speakers, camera, etc.
Results

Program Requirements for ICT Infrastructure (cont...)

- There should be a regular update on the latest versions of the available application software.

- Development and implementation of a VLE for the entire University.

- Migrate or redesign existing student information systems that allows interoperability to other existing information systems such as Library, student services, etc.
IMPLEMENTATION REQUIREMENTS

**Users**
- Improved Faculty ICT Profile on:
  - Basic Computer Operation
  - File Management
  - Word Processing
  - Spreadsheet Use
  - Database Use
  - Graphics Use
  - Internet Use
  - Telecommunications Use
  - Ethical Understanding
  - Information Searching
  - Video Production
  - Presentation Skills
  - Technology Integration

**Environment**
- Sustainable ICT Infrastructure in terms of:
  - Computer
    - Maintained or increased number of computers and Internet-enabled computers to students and academic staff to achieve a 1:1 ratio.
  - Network and Internet
    - Increased network specification to Gigabit or better and increased Internet bandwidth.
  - Display Screen Technologies and Peripherals
    - Increased number of printers and other peripherals such as scanners, speakers, camera, etc.
  - Software and Information Systems
    - Migrated or redesigned existing student IIS allow interoperability to existing IIS such as Library, student services, etc.

**Architecture**
- VLE Functional Requirements, Components, Features and Capabilities
- Moodle System
- Moodle Technical Specifications
  - Disk Space: 160MB (for the system) | 5GB (for materials)
  - Backup: at least same as disk space
  - Memory: 256MB
  - Any Operating System
  - Any web browser
  - Apache or Internet Information Services web servers
  - Database server: any of the following:
    - MySQL - min version 5.0.25
    - PostgreSQL - min version 8.3
    - MSSQL - min version 9.0
    - Oracle – min version 10.2
    - SQLite - min version 2.0

**VLE Tools**
- Learner Tools
  - Communication Tools
    - Email
    - Chat
  - Productivity Tools
    - Bookmarking
    - Searching
    - Calendar
  - Student Involvement Tools
    - Self-assessment

**Support Tools**
- Administrative Tools
  - Authentication
  - Course Authorization
  - Registration
  - Hosted Services
- Course Delivery Tools
  - Course Management
  - Online Grading Tools
  - Student Tracking
  - Automated Testing and Scoring
- Content Development Tools
  - Accessibility Compliance
  - Customized Look and Feel
  - Content Sharing or Re-use

**MMSU VLE ARCHITECTURE**

**USERS**
- Administrator
- Faculty
- Student

**ENVIRONMENT**
- ICT Infrastructure
  - Computer
  - Network and Internet
  - Display Screen Technologies and Peripherals
  - Software and Information Systems
Conclusion

- The status of MMSU faculty ICT profile is inadequate enough to engage them in VLE.

- The University is capable of implementing VLE to support online learning.

- Moodle turned out to be the best and most suitable choice of VLE platform that meets the requirements of MMSU.

- The designed VLE framework can support MMSU needs and other State Universities.
Recommendation

- Faculty members of the university must have a sufficient level of ICT skills
  - skills audit
  - long-term programme of faculty development

- There should be a VLE system administrator in charge of the system.

- The university should allocate a budget for the implementation of the VLE.
  - purchase or improvement of ICT infrastructure
  - finance the faculty ICT skills training and development.
mVLE: MMSU Virtual Learning Environment

Seamlessly molding competent and virtuous human resources through Virtual Learning.

mVLE is the official Virtual Learning Environment System of the Mariano Marcos State University.

Search courses:  Go

Available courses
Thank you.