An E-classroom Management System Implementation: Contextualization, Perception and Usability
PRESENTED BY

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ARE YOU...

... A TEACHER WHO WISHES THAT IT DIDN'T TAKE YOU DAYS TO MANUALLY GRADE STUDENTS TEST PAPERS, ETC...

... A TEACHER WHO WISHES TO REDUCE CLASS ACTIVITIES AND RESOURCES ADMINISTRATION PROBLEMS...
INTRODUCTION

LMS?
LEARNING MANAGEMENT SYSTEM

The Learning Management System or LMS is an online portal that connects lecturers and students. It provides an avenue for classroom materials or activities to be shared easily.

It is also a portal that enables lecturers and students to interact out of the classroom, having discussions through forums.
(Adzharuddin and Ling, 2013)
INTRODUCTION

LMS?
LEARNING MANAGEMENT SYSTEM

An LMS provides the virtual platform for the e-learning by enabling the management, monitoring student, delivery, tracking of learning, testing, communication, registration process and scheduling. (Cavus, 2015)
INTRODUCTION

Technological developments have also affected teachers’ instructional techniques, with technology providing different perspectives to the concept of education (Uzunboylu, Bicen & Cavus, 2011).

The education technologies offer many advantages to students and teachers by helping them to learn using interactive and collaborative techniques (Concannon, Flynn & Campbell, 2005).
Education system is at the top of the systems affected by technological changes, and is undergoing fundamental changes:

> The learning needs are increasing and becoming more varied.

> The learners are demanding more flexible, personalized, and easy to reach learning methods.

> The learners do not want to be dependent upon a certain learning method.
There is need for **student centered education** instead of the classical teacher centered education.

The teacher has become the person who guides the students on how to reach the knowledge instead of giving the knowledge.

The learners are demanding more and more **to learn at the time and place of their choice**, and at their own learning speeds.
RESEARCH OBJECTIVES

PEDAGOGICAL PRACTICES, STRATEGIES AND STUDENTS CONCERNS

LEARNING MANAGEMENT SYSTEM DEVELOPMENT

TRADITIONAL TEACHING-LEARNING VS. BLENDED LEARNING

LEARNING MANAGEMENT SYSTEM

STRATEGIC RECOMMENDATIONS THROUGH LMS IMPLEMENTATION
RESEARCH METHODOLOGY

LOCATE AND RESPONDENTS

215 RESPONDENTS
(200 STUDENTS AND 15 PROFESSIONALS)

For Students:
> An IT/CS students
> Atleast 3rd or 4th year students
> Enrolled in Software Engineering and IT Capstone Development Project courses

For Professionals:
> IT/CS Faculty
> Network Administrator
> Web Developer
> System Analyst
> IT/MIS officer

PAMANTASAN NG LUNGSOD NG PASIG (PLP)
COLLEGE OF COMPUTER STUDIES
RESEARCH METHODOLOGY

RESEARCH DESIGN

QUANTITATIVE AND QUALITATIVE RESEARCH

PEDAGOGICAL PRACTICES, STRATEGIES AND STUDENTS CONCERNS

READINESS AND ACCEPTANCE

COMPARATIVE STUDY (EXISTING VS PROPOSED SYSTEM)
DEVELOPMENTAL RESEARCH

LMS FEATURES

An LMS provides the platform for the virtual learning environment and some common features of LMSs are: (West, Waddoups and Graham, 2007)

> The guidance of students in the direction of education,
> The delivery of knowledge to students in various forms, such as word, word, power-point, flash, video, audio, and so on,
> The ability of students to do interactive applications,
> Assessment of students via homeworks and examinations,
> Delivery of the results to students,
> Communication between student-student ve student-teacher (e.g. discussion boards, chat, e-mail etc.),
DEVELOPMENTAL RESEARCH
LMS FEATURES

Cont...

> Interaction between student-lesson content,
> registration process (Cavus & Momani, 2009),
> class management (Woods, Baker & Hopper, 2004),
> keeping records for students, teachers, and system (i.e. logs),
> collecting the homeworks (Ioannou & Hannafin, 2008),
> grade keeping (Morgan, 2003; Malikowski, Thompson & Theis 2006),
> reporting (Cavus & Momani, 2009),
> student tracking (Harrington, Staffo & Wright, 2006),
> distributing e-learning contents on-line, and
> sharing knowledge and ideas.
INSPIRATION
LMS DESIGN

LMS DEVELOPMENT
moodle

- Easy creation of courses from existing resources.
- Learner involvement.
- Intuitive online learner and teacher management features.
- Affordability
- Course content which can be re-used with different learners including content from other vendors.
> “Constructionism asserts that learning is particularly effective when constructing something for others to experience.

> Social constructivism extends the above ideas into a social group constructing things for one another, collaboratively creating a small culture of shared artifacts with shared meanings.”

Martin Dougiamas
Creator & Lead Developer
INSPIRATION
LMS DESIGN

COURSE MANAGEMENT FEATURES

Activities
> Assignment
> Attendance
> Chat
> Forum
> Quiz
> Survey
> Lesson
> Integrated API

Resources
> File
> Page
> URL
> Book
> Calendar
RESEARCH METHODOLOGY

DEVELOPMENTAL RESEARCH

SYSTEM DEVELOPMENT TOOL

Adaptive Software Development

http://www.slideshare.net/guy_davis/agile-software-development-methodologies
RESEARCH METHODOLOGY

RESEARCH DESIGN

DATA GATHERING TOOL

Interview

Survey

Research

www
RESULTS AND DISCUSSION

PEDAGOGICAL PRACTICES, STRATEGIES AND STUDENTS CONCERNS

CLASS ORGANIZATION
The classroom should be arranged to promote efficient learning and minimize behaviour problems. The classroom should also be flexible to allow for different types of learning activities. This lesson provides suggestions for making the classroom a positive and effective learning environment.

CLASS PARTICIPATION
Students must be able to see and hear instruction and have efficient access to learning materials.

CLASS MONITORING
The teacher should be able to easily monitor students and provide feedback.
### READINESS AND ACCEPTANCE PERCEPTION

<table>
<thead>
<tr>
<th>Sub-questions</th>
<th>Students</th>
<th>IT Professionals</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weighted Mean</td>
<td>VI</td>
<td>Weighted Mean</td>
</tr>
<tr>
<td>1</td>
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<td>A</td>
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<td>SA</td>
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<td>A</td>
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<td>4.58</td>
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<tr>
<td><strong>Composite Mean</strong></td>
<td><strong>4.44</strong></td>
<td><strong>A</strong></td>
<td><strong>4.38</strong></td>
</tr>
</tbody>
</table>

Legend: VI – Verbal Interpretation
- 4.51-5.00=Strongly Agree (SA)
- 3.51-4.50=Agree (A)
- 2.51-3.5=Neutral (N)
- 1.51-2.5=Disagree (D) and 1.00-1.50=Strongly Disagree (SD)

Both groups perceived and in accord that they agree in terms of e-learning acceptability based on the given criterion in the survey, it was supported by a composite mean of 4.44 and 4.7 as assessed by the students and IT professionals accordingly.

An average composite mean of 4.35 which means “Agree”
TRADITIONAL TEACHING-LEARNING VS BLENDED LEARNING

COMPARATIVE ANALYSIS

FACE-TO-FACE

A B

COMPARATIVE CRITERIA

- CONTENT OF INFORMATION CHARACTERISTICS
- INSTRUCTIONAL DESIGN AND PRESENTATION
- CLASS INTERACTION/PARTICIPATION ASPECT
- METHODOLOGICAL ASPECT
- LEARNING OUTCOMES
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Students</th>
<th>IT Professional</th>
<th>Average</th>
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<tr>
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<tr>
<td>WM</td>
<td>VI</td>
<td>WM</td>
<td>VI</td>
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<tr>
<td>Content of Information Characteristics</td>
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<td>E</td>
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<tr>
<td>Instructional Design and Presentation</td>
<td>3.60</td>
<td>4.40</td>
<td>E</td>
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<tr>
<td>Class Interaction Aspects</td>
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<td>4.60</td>
<td>VE</td>
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<tr>
<td>Methodological Aspects</td>
<td>3.80</td>
<td>4.00</td>
<td>E</td>
</tr>
<tr>
<td>Learning Outcomes</td>
<td>3.80</td>
<td>4.00</td>
<td>E</td>
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<tr>
<td>Overall Mean and Verbal Interpretation</td>
<td>3.84</td>
<td>4.20</td>
<td>E</td>
</tr>
</tbody>
</table>

Legend: WM - Weighted Mean and VI - Verbal Interpretation

- 4.51-5.00 = Very Effective (VE)
- 3.51-4.50 = Effective (E)
- 2.51-3.50 = Average (A)
- 1.51-2.50 = Inadequately Effective (IE)
- 1.00-1.50 = Needs Improvement (NI)

These findings recognized as to the results of the study conducted by Duran, Romey and Frear as to guide or investigate the effectiveness of using e-learning instructional materials. Learners using interactive materials expressed higher satisfaction in the self-pacing interaction of instruction which is in accord to the result of the survey that in the proposed system recognized the class interaction criteria as very effective.
LEARNING MANAGEMENT SYSTEM DEVELOPMENT
PROPOSED SYSTEM

PROPOSED SYSTEM'S MODULES

- LMS CONCEPT
- MOBILE APPLICATION
- DESCRIPTIVE ANALYTICS
- SMS
The proposed system has an over-all weighted mean of 4.65 which is equivalent to a very satisfactory evaluation. Thus, the proponent determined that the proposed system is effective and accepted by the respondents.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weighted Mean</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functionality</td>
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<td>Very Satisfactory</td>
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<tr>
<td>Usability</td>
<td>4.65</td>
<td>Very Satisfactory</td>
</tr>
<tr>
<td>Reliability</td>
<td>4.45</td>
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</tr>
<tr>
<td>Portability</td>
<td>4.79</td>
<td>Very Satisfactory</td>
</tr>
<tr>
<td>Supportability</td>
<td>4.61</td>
<td>Very Satisfactory</td>
</tr>
<tr>
<td><strong>Overall Mean and Interpretation</strong></td>
<td><strong>4.65</strong></td>
<td><strong>Very Satisfactory</strong></td>
</tr>
</tbody>
</table>
Results showed that significant differences in respondents' views on the comparative analysis were noticed regarding their learning style. (Class Interaction Aspect with mean score of 4.67 of the proposed system over 3.84 of the current existing system).

The analysis found that on average, respondents in a blended learning conditions performed modestly better as compare to those receiving face-to-face conditions.
The overall results of the comparative analysis as to the perception of the respondents to both F2F (3.78 - Effective) and blended learning (4.36 - Effective) has no significant difference in terms of its effectiveness with the following criteria:

- Content of Information Characteristics
- Instructional Design and Presentation
- Class Interaction Aspects (*except*)
- Methodological Aspects
- Learning Outcomes
CONCLUSION AND RECOMMENDATION

Blended learning also tended to involve additional learning time, instructional resources, and course elements that encourage interactions among learners. This confounding leaves open the possibility that one or all of these other practice variables contributed to positive outcome for blended learning. Further research and development on different blended learning models is warranted. Experimental research design principles for blended learning and face to face instruction for different kinds of learners is needed.

As some authors (Maddux, Ewing-Taylor, Johnson, 2002; Thiele, 2003) have noted, when designing e-learning environment, adequate support strategies must be provided for students with different learning styles and adapt online course design to accommodate these styles. Catering to the different learning styles could result in higher retention in e-learning environment.

Crafting Syllabus with Mix-Mode Teaching Strategy which will aim the following:

- Provide pedagogical background on the use of LMS as a tool in teaching and learning.
- Identify courses that will be developed as mixed-mode course.
- Develop syllabus that will complement the mixed-mode teaching strategy.
- Understand teaching pedagogy using Learning Management System.