

From: ies@pens.ac.id
Subject: [IES 2015] #1570210445 has been uploaded
Date: August 2, 2015 22:59
To: Irwan Kautsar 120D9307@st.kumamoto-u.ac.jp, Shin-Ichiro Kubota kubota@cs.miyazaki-u.ac.jp, Yasuo Musashi musashi@cc.kumamoto-u.ac.jp, Kenichi Sugitani sugitani@cc.kumamoto-u.ac.jp



Dear Mr. Irwan Kautsar:

Thank you for uploading your paper 1570210445 (*The use of Lecturer Based Supportive Tools (LBST) as Data Provider for Indonesian Lecturer Administrative Problems*) to **2015 17th International Electronics Symposium (IES)**. The paper is of type application/pdf and has a length of 2982741 bytes.

You can modify your paper at <https://edas.info/showPaper.php?m=1570210445> and see all your submissions at <https://edas.info/index.php?c=20629> using the EDAS identifier 120D9307@st.kumamoto-u.ac.jp

Regards,

M. Udin Harun Al Rasyid, Ph.D Conference Chair 2015 International Electronics Symposium (IES) Conference Website : <http://ies.pens.ac.id> || Email: ies@pens.ac.id

From: ies@pens.ac.id
Subject: [IES 2015] Congratulation Your paper #1570210445 ('The use of Lecturer Based Supportive Tools (LBST) as Data Provider for Indonesian Lecturer Administrative Problems')
Date: August 12, 2015 15:31
To: Irwan Kautsar 120D9307@st.kumamoto-u.ac.jp, Shin-Ichiro Kubota kubota@cs.miyazaki-u.ac.jp, Yasuo Musashi musashi@cc.kumamoto-u.ac.jp, Kenichi Sugitani sugitani@cc.kumamoto-u.ac.jp
Cc: M. Udin Harun Al Rasyid udinharun@pens.ac.id, Eko Henfri Binugroho sragen@pens.ac.id, Ahmad Zainudin zai@pens.ac.id

Dear Mr. Irwan Kautsar:

Congratulations - We are pleased to inform you that your manuscript #1570210445 ('The use of Lecturer Based Supportive Tools (LBST) as Data Provider for Indonesian Lecturer Administrative Problems') has now been ACCEPTED by 2015 17th International Electronics Symposium (IES).

Please make the necessary changes based on reviewers' comments and suggestions. Committee will check whether the revision has been performed or not. Fail to do so, we have a right to exclude your paper from the proceedings.

The reviews are below or can be found at <https://edas.info/showPaper.php?m=1570210445> using your EDAS login name 120D9307@st.kumamoto-u.ac.jp.

Please follow the accepted procedures here http://ies.pens.ac.id/page.php?p=info_for_author.

Now we would like your cooperation with the double check of your paper.

(1) For the copyright: Please ensure you process the copyright. The IEEE e-copyright submission can be done in EDAS electronically at 'Copyright form'.

Or you can download IEEE copyright from here <http://www.ieee.org/documents/ieeecopyrightform.doc>. Fill it, convert become PDF file, then upload in EDAS at 'Copyright form'.

(2) For the paper final version: Please Strictly use and follow to IEEE template Manuscripts (Word Format):

http://www.ieee.org/publications_standards/publications/conferences/2014_04_msw_a4_format.doc

(3) Please ensure the maximum page of your final paper is 6-page.

(4) All the papers have to go through the file conversion (become PDF file) offered by IEEE PDF eXpress. You can refer to the link here: <http://www.pdf-express.org/>. You will need the Conference ID to log in, which is: 37068X. After file conversion (become PDF file) offered by IEEE PDF eXpress successfully. You can upload PDF file paper final version in EDAS at 'Final manuscript'

(5) Please take notice that the Final Paper should be submitted by September 9, 2015.

(6) Most importantly, please ensure the similarity score is less than 33%. You can refer to EDAS to see the similarity score of your paper. According to IEEE regulations, any paper with a similarity score of more than 33% will be dropped and should be reported to IEEE. Please make sure your final paper follow this rule.

If the similarity score of final version is more than 33%, the paper will be dropped or cancelled to be presented at IES 2015.

(7) Each paper should have a registration with Full Registration Rate before September 18, 2015. Any paper without registration will be dropped automatically. Please refer to this link.

- For Local Participants : http://ies.pens.ac.id/page.php?p=reg_cost_local

- For Invited Session or Foreign Participants: http://ies.pens.ac.id/page.php?p=reg_cost_foreign_inses

(8) With all your cooperation, the presentation schedule would be announced on September 23, 2015.

(9) IEEE reserves the right to exclude a paper from distribution after the conference (e.g. removal from IEEE Xplore) if the paper is not presented at the conference.

We are looking forward to seeing you in Surabaya-Indonesia, on September 29 - 30, 2015.

Sincerely Yours,

Regards,

M. Udin Harun Al Rasyid, Ph.D

Conference Chair

2015 International Electronics Symposium (IES)

Conference Website : <http://ies.pens.ac.id> || Email: ies@pens.ac.id

Reviews/Comments:

===== Review 1 =====

*** Relevance: to IES 2015 topics

Relevant (3)

*** Novelty: Originality

Not bad (3)

*** Contribution: to the technical area and Emerging Technology

Average (3)

*** Presentation: Readability, English writing

Clear (4)

*** Accept Score: Should this paper be accepted for IES 2015?

Normal Accept (7)

*** Main Rejection Reason: What is the main reason you rejected this paper or consider it to be borderline?

No Reason (0)

| *** Comment to Author: e.g. Major reasons of your overall recommendation

The method used in this paper needs is not a novel technology. The author must explain more detail about the needs of the tools.

===== Review 2 =====

| *** Relevance: to IES 2015 topics
Relevant (3)

| *** Novelty: Originality
Not bad (3)

| *** Contribution: to the technical area and Emerging Technology
Average (3)

| *** Presentation: Readability, English writing
Clear (4)

| *** Accept Score: Should this paper be accepted for IES 2015?
Neutral (4)

| *** Main Rejection Reason: What is the main reason you rejected this paper or consider it to be borderline?
No Reason (0)

| *** Comment to Author: e.g. Major reasons of your overall recommendation

- 1) it's look like not to overcome bandwidth consume, it just delay the upload process
- 2) it not easy to teach lecturer/users to use the apps since its involving many technical step

Institutional Sign In

BROWSE

MY SETTINGS

GET HELP

WHAT CAN I ACCESS?

SUBSCRIBE

Browse Conferences > Electronics Symposium (IES), ...

Back to Results | Next >

The use of Lecturer Based Supportive Tools (LBST) as Data Provider for Indonesian lecturer administrative problems

Related Articles

Writing temporally predictable code

FTS: a high-performance CORBA fault-tolerance service

A static timing analysis environment using Java architecture for safety critical...

View All

Sign In or Purchase
to View Full Text

9
Full
Text Views

4
Author(s)

Irwan Alnarus Kautsar ; Yasuo Musashi ; Shin-Ichiro Kubota ; Kenichi Sugitani

View All Authors

Abstract

Authors

Figures

References

Citations

Keywords

Metrics

Media

Abstract:

Recently, Indonesia has more than 3.000 Higher Education Institutions, 300.000 lecturers, and 7.8 million higher education students. To handle those numerous stakeholders, Directorate General Higher Education Indonesia Government (DGHEI - as the regulator of higher education institutions) has been developed several websites as Information Systems (IS). The developed information system was used to manage information that attached on the stakeholders entities. Those information entities were projected for open public data access. In other hand, the Information Systems that offered by DGHEI are not only single information system. But also several information system that not integrated yet become single portal. Moreover, DGHEI regulates lecturers to upload their entities such as portfolios and other supporting documents developed IS's. However, this will be cause a time consuming, repetition activities and data redundant. Those problems are called administrative problems. In the meantime, our current development Lecturer Based Supportive Tool (LBST) has been developed as lecturer assistance to enrich learning materials on limited bandwidth condition. This paper discusses the use of LBST as Data Provider to solve the administrative problems that has been occurred in Indonesia higher education environments. Instead of uploading into DGHEI information systems, lecturers eager to use LBST as an alternative systems that offered by DGHEI. As a result, LBST could be driven into data provider that provides information that needed by DGHEI or other data customers.

Published in: Electronics Symposium (IES), 2015 International

Date of Conference: 29-30 Sept. 2015

INSPEC Accession Number: 15702794

Date Added to IEEE Xplore: 14 January 2016

DOI: 10.1109/ELECSYM.2015.7380845

ISBN Information:

Electronic ISBN: 978-1-4673-9345-4

Print ISBN: 978-1-4673-9344-7

CD-ROM ISBN: 978-1-4673-9343-0

Print on Demand(PoD) ISBN: 978-1-4673-9346-1

Publisher: IEEE

Conference Location: Surabaya, Indonesia

Download PDF

Download Citations

View References

Email

Print

Request Permissions

Export to Collabratec

Read the full document

Keywords

IEEE Keywords

Information systems, Portfolios, Education, Bandwidth, Media, Computer science, Electrical engineering

INSPEC: Controlled Indexing

information systems, educational institutions, further education

INSPEC: Non-Controlled Indexing

LBST, lecturer based supportive tools, data provider, Indonesian lecturer administrative problems,

Abstract

Authors

Figures

References

Citations

Keywords

Book Title

IES 2015

INTERNATIONAL
ELECTRONICS
SYMPOSIUM

EMERGING TECHNOLOGY IN ELECTRONIC AND INFORMATION

September 29 - 30, 2015 - Surabaya, Indonesia

2015 International Electronics Symposium (IES)

Paper Proceedings

Proceedings

2015 International Electronics Symposium (IES)

"Emerging Technology in Electronic and Information"

Electronic Engineering Polytechnic Institute of Surabaya – EEPIS
(Politeknik Elektronika Negeri Surabaya - PENS)
Surabaya, Indonesia, September 29-30th, 2015

Table of Contents

| | |
|--|--------|
| 2015 International Electronics Symposium (IES) Committee | iv |
| Conference Program Committee | vi |
| Foreword | vii |
| Welcome Message from General Chair | viii |
| Guidelines IES 2015 | ix |
| Maps and Location for IES 2015 | x |
| Technical Program | xii |
| Keynote Speaker 1 | xxviii |
| Keynote Speaker 2 | xxix |

Host Organizer

Electronic Engineering Polytechnic Institute of Surabaya
Politeknik Elektronika Negeri Surabaya (PENS)

Co-Host Organizer

IEEE INDONESIA SECTION

Advisory Committee

Zainal Arief (PENS, Indonesia)
Satriyo Dharmanto (IEEE Indonesia)
Aini Hussain (UKM, Malaysia)

General Chair

M. Udin Harun Al Rasyid (PENS, Indonesia)

Program Chairs

Ali Ridho Barakbah (PENS, Indonesia)
Ford Lumban Gaol (IEEE Indonesia)
Pekik Argo Dahono (ITB, Indonesia)
Shiori Sasaki (Keio University, Japan)
Hafizah Husain (UKM, Malaysia)

Publications Chair

Son Kuswadi (PENS, Indonesia)

Publicity Chair

Sritrusta Sukaridhoto (PENS, Indonesia)

Award Chair

Riyanto Sigit (PENS, Indonesia)

Workshop Chair

Eko Henfri Binugroho (PENS, Indonesia)

Local Arrangement Chair

Kholid Fathoni (PENS, Indonesia)

Technical Program Committee

Achmad Arifin (ITS, Indonesia)
Achmad Basuki (PENS, Indonesia)
Alridjajis (PENS, Japan)
Amang Sudarsono (PENS, Indonesia)
Anto Satriyo Nugroho (BPPT, Indonesia)
Aran Hansuebsai (Chulalongkorn University, Thailand)
Arman Jaya (PENS, Indonesia)

Technical Program Committee (cont'd)

Bambang Sumantri (TUT, Japan)
Bima Dewantara (TUT, Japan)
Charasroj Bothdamrih (Chulalongkorn University, Thailand)
Dadet Pramadihanto (PENS, Indonesia)
Dedet Candra R (ITS, Indonesia)
Dedid Cahya Happyanto (PENS, Indonesia)
Didi Rosiyadi (Lembaga Ilmu Pengetahuan Indonesia (LIPI), Indonesia)
Endra Pitowarno (PENS, Indonesia)
Hary Okta (TUT, Japan)
Heri Suryoatmojo (ITS, Indonesia)
Hero Yudho Martono (TUT, Japan)
Hestiasari Rante (Univ. Of Bremen, Germany)
Hiroyuki Masuta (Toyama Prefecture University, Japan)
Huai-Kuei Wu (Ling-Tung University, Taiwan)
Khoirul Anwar (JAIST, Japan)
Kuncoro Wastuwibowo (IEEE Indonesia)
I Gede Puja Astawa (PENS, Indonesia)
Indra Adji Sulistijono (PENS, Indonesia)
Irfan Al-Anbagi (University of Ottawa, Canada)
Iwan Syarif (Southampton Univ., UK)
Meng-Shiuan Pan (Tamkang University, Taiwan)
Mohammad Faiz Liew Abdullah (Universiti Tun Hussein Onn Malaysia (UTHM), Malaysia)
Mohd. Marzuki Mustafa (UKM, Malaysia)
Mohammad Syafrudin (Vienna University of Technology, Austria)
Novie Ayub Windarko (PENS, Indonesia)
Nu Arini (University of Southampton, UK)
Pitipong Chanloha (Chulalongkorn University, Thailand)
Prima Kristalina (PENS, Indonesia)
Raden Sanggar Dewanto (PENS, Indonesia)
Ratno Nuryadi (BPPT, Indonesia)
Rinaldi Munir (ITB, Indonesia)
Risanuri Hidayat (UGM, Indonesia)
Riyanto Sigit (PENS, Indonesia)
Rusminto Tjatur Widodo (PENS, Indonesia)
S. Agrawal (Delhi Technological University (DTU), India)
Surya Sumpeno (ITS, Indonesia)
Tessy Badriyah (PENS, Indonesia)
Titon Dutono (Kemenkominfo/PENS, Indonesia)
Tri Budi Santoso (PENS, Indonesia)
Trio Adiono (ITB, Indonesia)
Tri Harsono (PENS, Indonesia)
Tubagus Maulana Kusuma (Gunadarma University, Indonesia)
Wahjoe Sesulihatien (Keio University, Japan)
Young Bong Seo (Pusan National University, Korea)
Yukari Shirota (Gakushuin University, Japan)

Chair

Eko Henfri Binugroho

Member

Ahmad Zainudin
Hendhi Hemawan
Syechu Dwitya Nugraha
Erik Tridianto
Hendy Briantoro
Desy Intan Permatasari
Bayu Sandi Martha
Endro Wahyono
Andri Suryandari
Achmad Alfian Hidayat
Mochamad Mobed Bachtiar
Fardani Annisa Damastuti
Ita Zoeriah
Esti Kesumawardhani
Siti Ayu Mulyantika
Akhmad Alimudin
Dwi Susanto
Halimatus Sya'diyah
Fadilah Fahrul Hardiansyah
Irene Erlyn Wina R.
Dias Agata
Irma Wulandari
Ida Anisa
Achmad Bashori
Rengga Asmara
Imam Mujoko
Bowo Raharjo
Ira Prasetyaningrum
Isnadi
Katijo

Legend :

A. Registration, Opening ceremony and Certificate delivery :

Pascasarjana Hall Floor 6

B. Seminar Room

3rd Floor Pascasarjana Building
Tuesday, September 29th, 2015

| |
|---|
| Session : Parallel Session 01 |
| Track : Electronics Technologies and Applications; Electrics & Energy Technologies and Applications |
| Room : Room 13 |
| Session : Parallel Session 02 |
| Track : Recent Advances in Signal, Image and Video Processing Technology; Multimedia Creative Technologies and Applications |
| Room : Room 15 |
| Session : Parallel Session 03 |
| Track : Mechatronics & Robotics Technologies and Applications |
| Room : Room 17 |
| Session : Parallel Session 04 |
| Track : Informatics & Computer Technologies and Applications |
| Room : Room 18 |

3rd Floor Pascasarjana Building
Wednesday, September 30th, 2015

| |
|--|
| Session : Parallel Session 01 |
| Track : Telecommunication Technologies and Applications |
| Room : Room 13 |
| Session : Parallel Session 02 |
| Track : Informatics & Computer Technologies and Applications |
| Room : Room 15 |
| Session : Parallel Session 03 |
| Track : Mechatronics, Informatics, Telecommunication Technologies and Applications |
| Room : Room 17 |

C. Lunch

Pascasarjana Hall Floor 6

D. Information

Pascasarjana Hall Floor 6

E. Poster Presentation and Exhibition Session

Pascasarjana Hall Floor 6

2015 International Electronics Symposium (IES)
 Date : September 30, 2015
 Venue : Politeknik Elektronika Negeri Surabaya (PENS), Indonesia

| Time | Description | Honorable Person(s) | Person in Charge / Moderator | Venue |
|---------------|---|--|------------------------------|--------------------------------------|
| 08.00 - 08.30 | Registration | - | Committee | Pascasarjana Hall Floor 6 |
| 08.30 - 09.30 | Keynote Speech II | Prof. Nobuo Funabiki (Okayama University, Japan) | Dr. Sritusta Sukaridhoto | Auditorium Pascasarjana Hall Floor 6 |
| 10.00 - 10.15 | Photo Session | - | All Participants | Auditorium Pascasarjana Hall Floor 6 |
| 10.15 - 10.30 | Coffee Break | - | Committee | Pascasarjana Hall Floor 6 |
| 10.30 - 12.00 | Poster Presentation and Exhibition Session | - | Dr. Achmad Basuki | Pascasarjana Hall Floor 6 |
| 12.00 - 13.00 | Break & Lunch | - | Committee | Pascasarjana Hall Floor 6 |
| 13.00 - 15.00 | Conference Parallel Session | - | Committee / Moderator | Pascasarjana Hall Floor 3 |
| 15.00 - 15.15 | Coffee Break | - | Committee | Pascasarjana Hall Floor 6 |
| 15.15 - 16.00 | Giving Certificates, Best Paper & Poster Awards, and Closing Ceremony | Dr. Zainal Arief (Director of PENS) | Dr. Riyanto Sigit | Auditorium Pascasarjana Hall Floor 6 |

Session : Parallel Session 02
Room : Room 15, Pascasarjana Building, 3rd floor
Moderator : Dr. Iwan Syarif
Date : Wednesday, September 30, 2015
Track : Informatics & Computer Technologies and Applications

| Time | ID Paper | Title | Author(s) |
|-------------|------------|---|---|
| 13.00-13.15 | 1570210243 | Optimizing Airline Seat Allocation using Reinforcement Programming | Muhammad Imam Isfahani, Ali Ridho Barakbah, Entin Martiana Kusumaningtyas (Politeknik Elektronika Negeri Surabaya(PENS)-Indonesia, Indonesia) |
| 13.15-13.30 | 1570210281 | River Water-quality Analysis: "Critical Contaminate Detection", "Classification of Multiple-water-quality-parameters Values" and "Real-time Notification" by rSPA Processes | Chalisa Veesommai, Yasushi Kiyoki (Keio University, Japan) |
| 13.30-13.45 | 1570210359 | Implementing Singleton method in Design of MVC-Based PHP Framework | Umi Saadah, Jauari Hasim, Masfu Hisyam (Politeknik Elektronika Negeri Surabaya (PENS), Indonesia) |
| 13.45-14.00 | 1570210435 | Measuring Level of Difficulty in Game Using Challenging Rate (CR) on 2D Real Time Strategy Line Defense Game | Christyowidiasmoro, Ramadhany Candra Putra, Supeno Susiki (Sepuluh Nopember Institute Of Technology, Indonesia) |
| 14.00-14.15 | 1570210445 | The use of Lecturer Based Supportive Tools (LBST) as Data Provider for Indonesian Lecturer Administrative Problems | Irwan Kautsar (Kumamoto University, Japan); Shin-Ichiro Kubota (University of Miyazaki, Japan); Yasuo Musashi and Kenichi Sugitani (Kumamoto University, Japan) |
| 14.15-14.30 | 1570210489 | Ecological Context-Dependent Analysis and Prediction using MMM:A Case of Dengue Fever Disease | Wahjoe Sesulihatien (Keio University; Politeknik Elektronika Negeri Surabaya, Japan); Yasushi Kiyoki and Shiori Sasaki (Keio University, Japan) |
| 14.30-14.45 | 1570210833 | A Survey on Botnet: Classification, Detection and Defense | Pedram Amini (Malek-Ashtar University, Iran); Muhammad Amin Araghizadeh (University of Tehran, Iran); Reza Azmi (Alzahra University, Iran) |
| 14.45-15.00 | 1570211179 | Spatio-Temporal History of Islamic Inventors Based on Mobile | Liwan Abdullah, Entin Martiana Kusumaningtyas, Ali Ridho Barakbah (Politeknik Elektronika Negeri Surabaya, Indonesia) |

The use of Lecturer Based Supportive Tools (LBST) as Data Provider for Indonesian Lecturer Administrative Problems

Irwan Alnarus Kautsar
CMIT Lab., GSST, Kumamoto University¹.
Universitas Muhammadiyah Sidoarjo².
1: Kumamoto, Japan. 2: Sidoarjo, Indonesia.
120D9307@st.kumamoto-u.ac.jp

Shin-Ichiro Kubota
Department of Computer Science and Systems Engineering,
University of Miyazaki
Miyazaki, Japan.
kubota@cs.miyazaki-u.ac.jp

Yasuo Musashi
CMIT Lab. GSST, Kumamoto University
Kumamoto, Japan.
musashi@cc.kumamoto-u.ac.jp

Kenichi Sugitani
CMIT Lab., GSST, Kumamoto University
Kumamoto, Japan.
sugitani@cc.kumamoto-u.ac.jp

Abstract—Indonesia has more than 3,000 Higher Education Institutions, 300,000 lecturers, and 7.8 million higher education students. To handle those numerous stakeholders, Directorate General Higher Education Indonesia Government (DGHEI - as the regulator of higher education institutions) has been developed several websites as Information Systems (IS). The developed information system was used to manage information that attached on the stakeholders entities. The example entities are the profile and academic activity of the lecturers, the Institutions and the students. Those information entities were projected for open public data access. However, The Information Systems that offered by DGHEI are not only single information system. But also several information system that not integrated yet become single portal. The regulation is obligates a lecturer upload their entities such as portfolio's and other supporting documents to several developed IS. However, this will be cause a time consuming, repetition activities and data redundant. Those problems are called administrative problems. On the other hands, our current development Lecturer Based Supportive Tool (LBST) has been developed as lecturer assistance to enrich learning materials on limited bandwidth condition. This paper discusses the use of LBST as Data Provider to solve the administrative problems that has been occurred in Indonesia higher education environments. Instead of uploading into DGHEI information systems, lecturers eager to use LBST as an alternative systems that offered by DGHEI. As a result, LBST could be driven into data provider that provides information that needed by DGHEI or other data customers.

Keywords—Higher Education; Administrative Problems; Lecturer Based Supportive Tool;

I. INTRODUCTION

Lecturers are the key role to enhance education quality on the Higher Education Institutions [1], [2]. By 2014, Indonesia has 3,658 Higher Education Institutions (HEI), 313,076 lecturers, and 7,857,927 higher education students [3]. With numerous amounts of students on the higher educations institutions, lecturers were eager to use electronics media to adapt with imbalance of lecturers-students ratio. The electronics media so called LMS was an alternative solution to deal with numerous students in one session academic activity [4].

It has been reported about several IS's that offered by DGHEI [5]. Developed IS's were designed to look after data that attached on the higher education entities (lecturers, students and higher institutions itself). It's called FORLAP (<http://forlap.dikti.go.id>), SERDOS (<http://serdos.dikti.go.id>) and SIPKD (<http://sipkad.dikti.go.id>). Although, the developed IS are designed to provide public domain access about Indonesia education environments, it is necessary need lecturer's involvement in order to complete the data for the public domain access. Directorate General Higher Education Institutions (DGHEI) Indonesian Government obligate lecturer to record their academic activities and report it into designated Information Systems. This condition will imply the lecturer performance when do teaching and reporting using different systems. Because, at the same time, lecturer must be adapt with the regulation from DGHEI and use a LMS as part of their academic activities.

This paper presented as follows: Section II, describe and analyze the problems. Section III, discuss LBST as proposed method. Section IV, Implementation. Section V, Conclusion and Future Work.

II. PROBLEM ANALYSIS

A. Lecturer as Learning Materials Authors

Learning Management Systems (LMS) was chosen by lecturers as part of their academic activity because LMS's has offered the flexibility and customization systems for delivering learning materials [1], [4]. Also, the use of LMS's allows for 24/7 access to courses and content. Furthermore, by using LMS's, rich media content such as presentation files, videos and other electronics media such as e-book can be accessed from anywhere as long as learners have an Internet access. Also, it has flexibility for learner's to learn on their own time. However, good LMS's are need rich learning materials. For this, it was one of lecturer's roles.

Especially in Indonesia, to use LMS's as daily basis still remained ineffective. The common problems when using LMS as academic activity are:

1. Bandwidth Limitation.

Mostly, eLearning tools such as LMS was developed as web technology and deploy the LMS on designated server on public domain, then both lecturer and student can use it anytime anywhere. This mean the use of LMS will remain ineffective on limited bandwidth condition.

2. Ease of Installation

Because the LMS was developed as web applications, it need pre configuration of the web server, database, and the LMS itself, when lecturer need to use it on local machine. This pre configuration is not user friendly for lecturers.

B. Lecturer and Administrative Task

By regulation from DGHEI, lecturer needs to report their academic activity both teach and research. To teach and research, it may use the desirable media. But to report the academic activities, it was obligated to use the DGHEI Information Systems. Lecturers are obligate to update their recent information about their portfolios and upload supporting documents into DGHEI Information Systems. These pursue lecturers to transfer created learning materials and other portfolios from their chosen LMS into DGHEI Information Systems, periodically. From this condition, it has two main problems.

1. Time consuming

Since lecturer are obligate to report their academic activities (teaching and researching), lecturer need to allocate their valuable time to meet with DGHEI regulations. Because, even though lecturers use information systems that can be use anytime and anywhere, lecturers should follow the period time that decided by DGHEI. And upload the portfolios and supporting document into designated information systems. In this case, lecturer need to follow regulations, where the proper information system, whether SIPKD, FORLAP or SERDOS.

2. Repetition and Data Redundant

The administrative job such as reporting academic activities are possibly forced lecturers doing repetition activity. Since, DGHEI Information Systems has not been integrated into single information systems. Furthermore, when there is an updates from lecturers about reported activities or uploaded documents, it will possibly data redundant on DGHEI server. Fig. 1 show the redundant document that uploaded to other DGHEI information systems called STUDI DIKTI (<http://studi.dikti.go.id/>). The STUDI DIKTI is the information systems designated for lecturer to report their academic activities during their study abroad activities.

| ID | User | Document Name | Status | Size | Upload Time |
|----|------|---|----------|-----------|-----------------------|
| 15 | | Progress Report Semester 6, Periode April 2015 hingga Juni 2015. | PROGRESS | 427.43 KB | 11 Juni 2015 21:16:29 |
| 16 | | Progress Report Semester 5, Periode Oktober 2014 hingga Maret 2015. | PROGRESS | 549.92 KB | 10 Juni 2015 08:33:34 |
| 17 | | Progress Report Semester 4, Periode April 2014 hingga September 2014. | PROGRESS | 302.22 KB | 10 Juni 2015 08:32:30 |
| 18 | | Progress Report Semester 3, Periode Oktober 2013 hingga Maret 2014. | PROGRESS | 484.71 KB | 10 Juni 2015 08:31:40 |
| 19 | | Progress Report Semester 2, Periode April 2013 hingga September 2013. | PROGRESS | 167.83 KB | 10 Juni 2015 08:30:53 |
| 20 | | Progress Report Semester 1, Periode Oktober 2012 hingga Maret 2013. | PROGRESS | 469.91 KB | 10 Juni 2015 08:30:08 |
| 21 | | Letter of Acceptance | LOA | 675.79 KB | 10 Juni 2015 08:28:41 |
| 22 | | Publication List Hingga July 2015 | PROGRESS | 1.28 MB | 10 Juli 2015 11:52:16 |
| 23 | | Progress Report Semester 6, Periode April 2015 hingga Juni 2015. | PROGRESS | 427.43 KB | 11 Juni 2015 21:16:29 |
| 24 | | Progress Report Semester 5, Periode Oktober 2014 hingga Maret 2015. | PROGRESS | 549.92 KB | 10 Juni 2015 08:33:34 |
| 25 | | Progress Report Semester 4, Periode April 2014 hingga September 2014. | PROGRESS | 302.22 KB | 10 Juni 2015 08:32:30 |
| 26 | | Progress Report Semester 3, Periode Oktober 2013 hingga Maret 2014. | PROGRESS | 484.71 KB | 10 Juni 2015 08:31:40 |
| 27 | | Progress Report Semester 2, Periode April 2013 hingga September 2013. | PROGRESS | 167.83 KB | 10 Juni 2015 08:30:53 |
| 28 | | Progress Report Semester 1, Periode Oktober 2012 hingga Maret 2013. | PROGRESS | 469.91 KB | 10 Juni 2015 08:30:08 |

Fig. 1. Document redundant on DGHEI information system

III. LECTURER BASED SUPPORTIVE TOOL (LBST)

A. *LBST as a Authoring Tools*

Lecturer Based Supportive Tools (LBST) has been proposed to solve common problem that occurred when lecturer need to use e-learning as daily basis such as bandwidth limitation and ease of installation [5]. With LBST, lecturers could author learning materials offline conditions. Also, LBST enable lecturer to upload their created learning material into existing LMS's. Fig. 2 illustrates how LBST solve bandwidth limitation while lecturers need to use LMS to author learning materials.

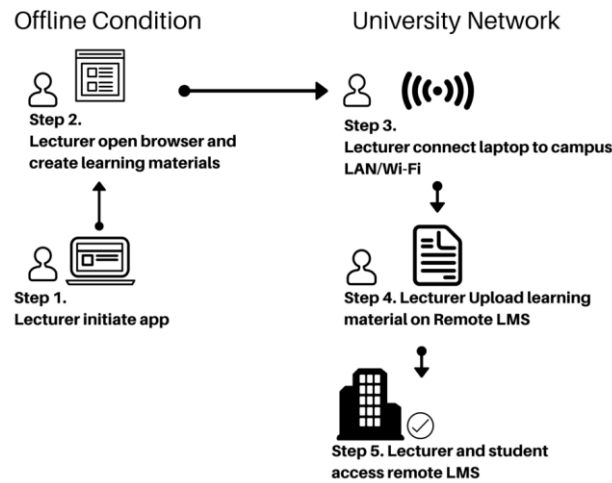


Fig. 2. The use of LBST for bandwidth limitation solutions

LBST designated to solve two problems that have been mentioned on section II A: Bandwidth limitation and ease of installation. In order to solve bandwidth limitations, LBST has been developed to enable lecturer create learning material in offline condition, then using local network infrastructure (LAN or Wi-Fi) to upload created materials.

To use LBST, lecturer only need run single script to initiate the applications (Fig. 3). Then it will activate web server which lecturer could start author learning materials (Fig. 4). Compare with web based LMS's such as Moodle LMS; lecturers will experience with complex installation and pre-configuration, in order to use LMS in offline condition with install it on the local machine.

```

python -- 80x24
12:10:57]$ python run.py
* Running on http://0.0.0.0:5000/
* Restarting with reloader
  
```

Fig. 3. LBST initiation

The example created materials that created from LBST are shown on Fig. 5.

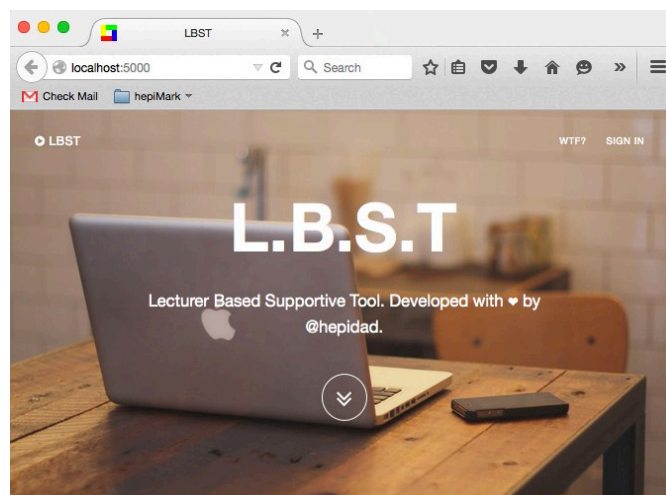


Fig. 4. Lecturer Based Supportive Tool front page

COOKING CLASS FOR BEGINNER

WHAT THIS COURSE ABOUT?

The awesome learning material for being a passionate chef.



WHY COOKING IS IMPORTANT?

Because, we can choose our menu and our healthy foods.



WHAT NEED TO BE PREPARE BEFORE COOKING?

A recipes, ingredients and skill to process it.



WHEN THE BEST TIME TO WE START LEARNING TO COOKING?

As young as possible.



THERE IS ANY BOOK FOR REFERENCE?

Yes there is. One of is "The Joy of Cooking Book by Marion Rombauer Becker, Ethan Becker and Irma S. Rombauer.

Fig. 5. Example of created learning materials on LBST.

B. LBST as Data Provider for Administrative Task

Lecturer has been proposed to be a Pivot Data Provider as in order to solve administrative problems with REST (Representational State Transfer) approach [6]. The mentioned administrative problems are time consuming, repetition activities, and data redundant. In this paper, LBST and created material are propose to use as portfolios and to store supporting document with consider to problems that has been mentioned in section II B. LBST could solve those problems if:

1. LBST has a feature that enables lecturers to record their academic activities, portfolios and uploads supporting documents. The evidence of lecturer academic activities is needed by DGHEI to certificate lecturers. As written in Indonesia Act (No.14/2005) and Ministry of National Education (No. 47/2009).
2. LBST are able to upload into designated information system that determined by DGHEI or other server that accessible by public domain or data customers. In this case, DGHEI could be as data consumers.

Table 1 compares existing features on LBST when using to enrich learning material on remote LMS and expected features on LBST as data provider as meet the need of DGHEI regulations. Table 1 show that to enable LBST become data provider, it doesn't need extreme reengineering on the LBST. It can use existing learning materials to generate into portfolios.

TABLE I. COMPARISON OF DEVELOPED FEATURE ON LBST AS AUTHORING TOOL AND DATA PROVIDER

| | LBST – Authoring Tool | LBST - Data Provider |
|---|---|---|
| 1 | Authoring learning material and uploaded to remote LMS. | Authoring portfolios and upload supporting documents to designated Information Systems. |
| 2 | Synchronize created materials with remote LMS. | Synchronize created portfolios and uploaded supporting documents from LBST into designated Information Systems. |
| 3 | Provide created learning materials, directly from LBST. | Provide created portfolios and uploaded supporting documents directly from LBST. |

IV. IMPLEMENTATION

Three important features that needed on LBST that mentioned on section III are 1). Lecturer could make portfolios from created learning materials and 2). Lecturer could upload supporting document to LBST. And 3). LBST could be as data provider for public data customer.

A. Portfolio from created learning materials

Lecturers could make portfolios by select the created learning materials. Shown on Fig. 6.

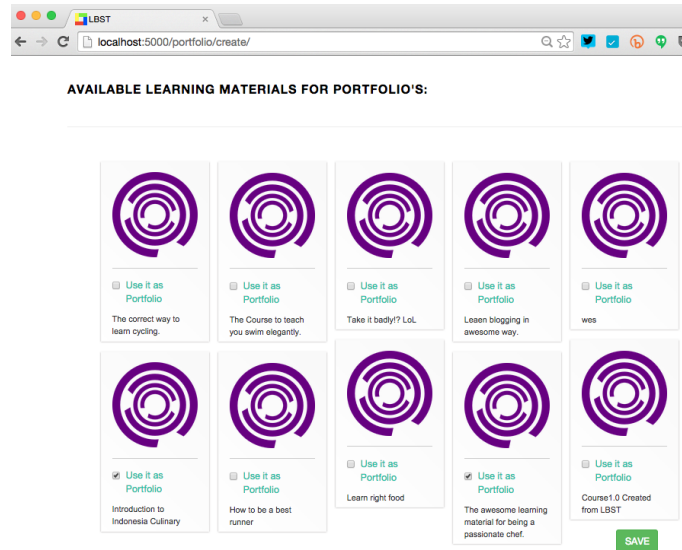


Fig. 6. Learning Materials selection for build portfolio.

B. Upload supporting documents

In some cases, lecturers might have previous portfolios in open document format (ODF) or supporting documents such as project reports in PDF format. All documents or evidences from academic activities are called artifacts. To enable LBST as a data provider, it is necessary to develop LBST as virtual storage for lecturer artifacts (Fig. 7).

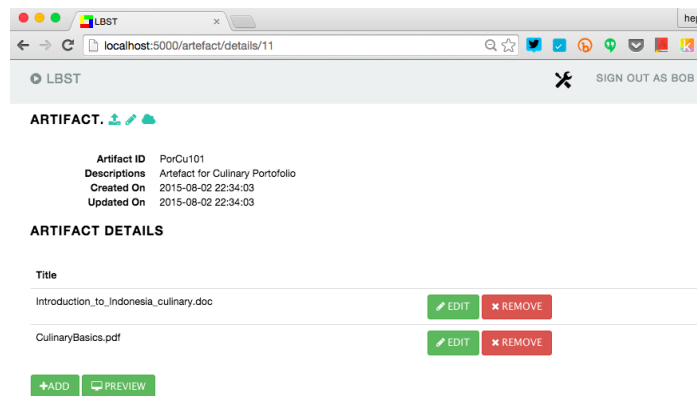


Fig. 7. Virtual storage for supporting documents/artifacts on LBST.

C. LBST as data provider

The last feature and the important features are to expose the created portfolios and uploaded artifacts. In the previous reports, it has been proposed using a REST approach to expose lecturer user profiles on the data provider called Institution Data Provider. In this experiment, it has been developed REST web services to expose created portfolios and uploaded supporting documents/artifacts. Shown on Fig. 8.

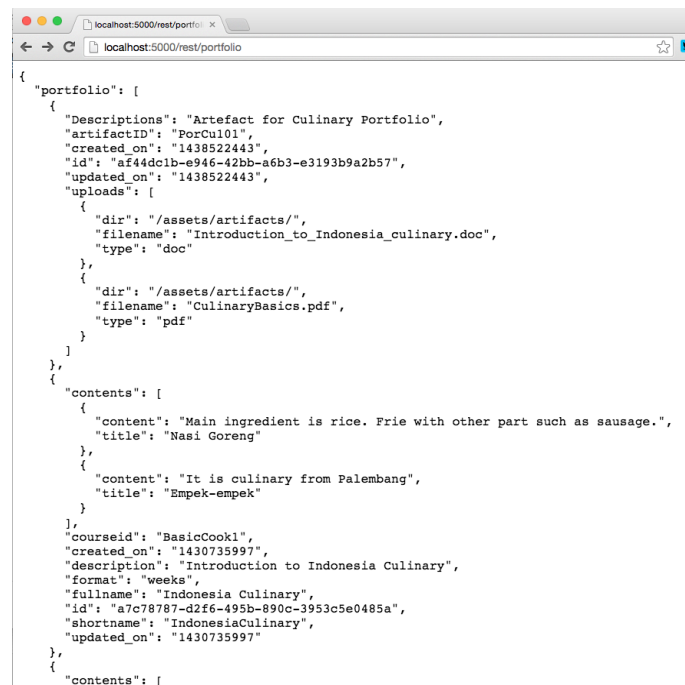


Fig. 8. Exposing created portfolios and uploaded supporting documents/artifacts.

V. CONCLUSION AND FUTURE WORK.

LBST has been proposed to create portfolios from created materials and virtual storage to store supporting documents/artifacts. Also LBST is an alternative system to upload necessary information that needed as regulated by DGHEI. The necessary information's are portfolios, supporting documents that show evidences of academic activities.

With expose the lecturer academic activities evidences as portfolios and other artifacts, it made possible to grab data from lecturer machine that installed LBST. These mean lecturers do not need upload to DGHEI information systems and lecturers machine/laptop became data provider for public data consumer. This novel approaches eliminate time consuming, repetition activities and data redundant. Lecturers were eager to focus on authoring learning materials.

As future works, LBST features need to be developed are real time collaborations in order to create portfolios within pair works and discuss security aspect when expose lecturer resources.

REFERENCES

- [1] M. A. Conde, F. García, M. J. Rodríguez-Conde, M. Alier, and A. García-Holgado.: "Perceived openness of Learning Management Systems by students and teachers in education and technology courses", *Comput. Hum. Behav.*, vol. 31, 2014, pp. 517– 526.
- [2] S. Paragina, F. Paragina, A. Jipa, T. Savu, and A. Dumitrescu.: The Moodle course management system and its e-learners needs, *Procedia - Soc. Behav. Sci.*, vol. 15, 2011, pp. 1226–1230
- [3] Directorate General Higher Education (2014, 12, 09), FORLAP [Online]. Available: <http://forlap.dikti.go.id>.
- [4] Jones, R. Godwin, "Merging Technologies challenging Hegemonies in Online Learning", *Language Learning and Technology*, Vol. 16 No. 2. 2012, pp.4-13.
- [5] Kautsar, I.A., Kubota, S., Musashi, Y., Sugitani, K., "A supportive tool for lecturers to upload LMS learning contents automatically", *JCEEE Kyushu* 66, Kumamoto, 2013, 04-1P-02, pp. 180.
- [6] Kautsar, I.A., Kubota, S., Musashi, Y., Sugitani, K., "Redefining data provider: the REST approach to solve Indonesia lecturer administrative problems", *IEEE-TALE*, Wellington, 2014, pp. 175-178.