

Case Study on XML Application: System performance Comparison between Student Academic Works Preservation System (SAWPS) and Moodle Learning System

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Table of contents

Abstract.....3

Introduction.....4

Objectives of Research.....4

Research Questions5

Literature Review5

Research Methodology.....5

Findings6

Conclusion7

Reference9

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Abstract - The paper examined the users' perception of Online Student Academic Works Preservation System on the aspect of being more efficient and being easier to search the previous works they uploaded. This paper begins by discussion with the objectives of the research, followed by research questions, literature review, research methodologies and findings. Then the findings led to the conclusion that SAWPS is perceived more efficient and easier to search the resources than Moodle.

Keywords - Online Student Academic Works Preservation System, Moodle, perception of users, efficient, easy to search.

Introduction

Nowadays university students are living in a digital age, which means their learning could be enhanced by using e-learning platforms. E-learning platforms provides the students with a system that organized all their courses and assignments. There are different kinds of e-learning platforms based on different technologies. Moodle Learning Platform is one of the most popular used e-learning platforms.

While the XML technology is getting mature these days, Online Student Academic Works Preservation System (or in short SAWPS) combines XML with e-learning concept, and offers a system that organizes students' essay, assignment and project by classifying the uploaded students' works.

Efficiency and acceptance by the users are important factors for a e-learning product to combat with others and live long in the market, especially comparing to a successful product.

This paper aims to find out whether the users perceive Online Student Academic Works Preservation System functions more efficiently than Moodle Learning System, and figure out if they find SAWPS easier to search their academic works they uploaded previously than Moodle Learning System.

In this paper, users are surveyed to provide the data that shows whether they prefer SAWPS or Moodle. After analyzing the data, the researches discuss about the findings that shows the users' perception, which shows that SAWPS does better than Moodle.

Objectives of the Research

The objectives of the research are to investigate whether students who are using Online Student Academic Works Preservation System, which is based on XML Technology, perceive SAWPS's capacity of efficiently organizing students' essay, assignment and project better than Moodle Learning Platform. SAWPS can be utilized for classifying and collecting students' works as well. Thus, using SAWPS allows students to monitor their works effectively way than Moodle. In comparison, Moodle Learning Platform which is widely used by many universities.

Research Questions

The research sought to answer the following Research Questions (RQ):

RQ1: Do the users perceive Online Student Academic Works Preservation System functions more efficiently than Moodle Learning System?

RQ2: Do the users perceive Online Student Academic Works Preservation System easier to search their academic works than Moodle Learning System?

Literature review

Sheila Morrissey and associates conducted a research in 2010 on the product Portico that uses XML for long-term digital artifacts preservation. Technically, in order to preserve content as neutral as possible and produce packaged XML metadata, the system should compress those digital artifacts provided by original publishers together with the XML metadata associated with them into ZIP files and are combined into a completely new archive as a file system which can be viewed on non-Portico-provided readers repeatedly. ^[1]

The reason of selecting XML as format choice for digital artifacts and metadata is that it has the ability to provide rich structural and semantic metadata; it is not restricted by platform, so many kinds of related languages and specifications can be connected to the system. However, restrictions do exist as well.

Examples like text management, metadata curation, linking validity and documenting and enforcing usage policies are also required to be dealt with urgently because important data may get lost. In this way, directions and suggestions for Portico system to improve are provided, like enlarge the scale in both preserving capacity and compatibility; extend the management to non-XML artifacts; increase its viability of XML to more cultural aspects such as language, idioms and modelling.

Research methodology

Qualitative data takes the form of descriptions based on language or images. And this data collection will be used in the research.

Case Study on XML Application: System performance Comparison between Student Academic Works Preservation System (SAWPS) and Moodle Learning System

To do the investigation, there are 10 questions on each Likert scale, which is using scale ranging from fully agree to not fully agreed on the questions we asked.

For example:

I think that SAWP has more specific function list on the interface than Moodle. ↵			
Fully agree ()	Agree ()	Disagree ()	Fully disagree () ↵
I prefer to use SAWP than Moodle. ↵			
Fully agree ()	Agree ()	Disagree ()	Fully disagree () ↵

Figure 1: research question examples-1 for functionality

I can search my last semester’s final project in SWAP quicker than Moodle. ↵			
Fully agree()	Agree ()	Disagree ()	Fully disagree () ↵
I can search my this semester’s lecture information in SWAP quicker than Moodle. ↵			
Fully agree()	Agree ()	Disagree ()	Fully disagree () ↵

Figure 2: research question examples-2 for easier research

We concern about what students actual think about Moodle. Therefore, solely use Likert may not allow us to really capture their thinking. In order to do this, we asked two more two open questions on what areas that SAWPS or model should be improved.

To avoid biasness of the survey, we set two days standing at the gate and randomly choose 50 students to answer the questionnaire. And to make sure the randomness, we will choose one students after every 10 students pass by.

In the questionnaire, fully agree represents 4 marks, agree represents 3 marks, disagree represent 2 marks and fully disagree 1 mark. The marks will be added and the average value will be calculated. For the first question 1, if the average value is larger than 25, we make a primary conclusion that SAWPS’s functionality is better than Moodle. For the first question 2, if the average value is larger than 25, we make a primary conclusion that it is easier to search in SAWPS than Moodle. Then the open question answers will also be analyzed.

Findings

Case Study on XML Application: System performance Comparison between Student Academic Works Preservation System (SAWPS) and Moodle Learning System

We add the marks from all the students and calculate the average. Research 1' shows that the average value is larger than 25, which means most students agree that SWAPS is more functionality than Moodle.

40	26	23	24
33	28	28	28
34	34	25	33
20	22	23	35
35	27	34	25
27	30	26	25
28	36	16	27
31	35	37	23
16	12	22	29
20	36	32	30
25	22	24	39
28	14	27	33
29	33		
average value	27.32		

Figure 3: average value for the research-1

And research 2' shows that the average value is 31.6 larger than 25 which means most student agree that it is easier to search information on SWAPS than Moodle.

33	32	25	35
32	30	30	33
36	28	39	33
34	26	29	33
33	34	26	33
30	28	33	32
36	32	28	37
24	37	26	31
30	33	28	27
34	35	30	29
28	33	32	37
30	30	32	34
31	30		
average value	31.6		

Figure 4: average value for the research-2

Also, we conclude the answers from the open question part. It is found that more students have advice about Moodle, for example: "I think it is difficult to find specific documents on Moodle. I hope they can add some retrieval functions.", "I think Moodle should improve their user friendly parts about the interface." This answers also confirm that Online Student Academic Works Preservation System functions more efficiently than Moodle Learning System and easier to search their academic resources than Moodle Learning System.

Conclusion

The research of investigating whether SAWPS are worthwhile of being widely used as a platform of preserving and classifying students' works in a consistent way has been conducted. The findings have analyzed that the functionality of SAWPS does perform well in both its efficiency and convenience aspects. Meanwhile, more potential users can be expected as the high evaluation suggested in questionnaire conclusion. With this, the exploration on SAWPS in using XML for students' profit should continue and the gradual replacement of Moodle Learning Platform can be achieved in the near future.

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