Comparative Study and Usability Evaluation of Course Management System

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ABSTRACT: *Course management system (CMS) is now playing an important part in academic systems for students and teachers. As earlier, it lacks social interaction between teachers and students and managing assignments, courses and grading for educational institutes. Now solving these issues, provide such platform whose main objective is to provide effective and efficient usability. Different aspects are also highlighted like navigation, design layout, functionality available in CMS.*

The goal of this paper is the comparing the usability study between two CMS: MYCCNET and Schoology.

Teachers and students participated in this usability study and positive and negative results are drawn out from different participants according to different aspects.

From teacher's perspective, both CMS are the solution to their problems as they can grade students, make announcements, upload handouts, make events and chat with students.

From student's perspective, Schoology got more votes as compared to MYCCNET due to its simple interface and all functions available on the screen

Our research method was survey based analysis with qualitative approach to the data collection.

Results drew that CMS should be interactive with simple interface which is easier understood by both teachers and students. Schoology possess main features which a standard CMS should have. [1]

1. Introduction

We conducted a research between Schoology and MYCCNET usability evaluation sessions between March and April, 2013. Sessions were conducted in Jinnah University for Women and participants were included from all over university. The evaluation targeted two user groups: faculty and students.

Now new technologies became available made it possible to develop interactive course management systems and today there are educational institutes based entirely on course management system. The importance of course management is understood among the teachers and students by its ability to manage courses. Also the ability to offer high quality courses will be an important efficient and effective advantage amongst the growing number of educational facilities.

The evaluation focused primarily on efficiency and ease of use course management of the systems' usability. The evaluation tasks were performed by faculty and students. As a result of the evaluation of study, we identified positive and negative aspects of each system's user interface with regard to its structural nature. The results points to number of factors that should be implemented in development of CMS.

2. Methods

The usability evaluation was conducted by providing task sets which results to the direct impact on the development of a tool. This evaluation was designed to get a first impression from participants for Schoology and MYCCNET, to identify usability challenges to accomplish tasks essential for students and teachers.

The evaluation focused primarily on efficiency and ease of learning of the systems' default interface, tools, and workflows. A top requirement which emerged from the feedback is Ease of Use". With further analysis, we identified Ease of Learning and Efficiency as usability priorities

3. Participants

Most faculty participants were self-selected, and all had experience with using technology in their teaching. All participants were technical and they were not familiar with CMS but familiar with windows interface. We decided not to introduce documentation (other than the built-in help in each platform), as it would become an exercise in evaluating the documentation itself.

Their feedback was quite helping in usability evaluation

Participants participating in the evaluation study were in one of the following categories:

• Schoology: (30)

• MYCCNET (30)

4. Features

The CMS worked with Schoology and MYMYCCNET can be customized according to teacher's perspective.

4.1 MYCCNET:
• Some customization settings were needed so that the teacher and student can perform their task easily.
4.1.1 Schoology:
Teacher and student sign up individually but student must have the access-code to join the course of a particular teacher.

Nearly both Course Management System have same features for all participants but few differences made participants feel about the absence of such features as it is major feature of it. From teacher's point of view, attendance feature missing in MYCCNET made teachers feel that it must be there as all tasks are performed by just clicks then why to take attendance manually. From student's point of view, reminder feature missing in MYCCNET made them disturb that there is no such feature that alert them to submit assignment before the due date.

5. Procedure

Each participant was given a particular CMS and different tasks were to students and teachers. After completing the tasks, the participants were given questionnaires were given to rate navigation, usability, features available and layout. An additional open ended questions were also included in questionnaires.
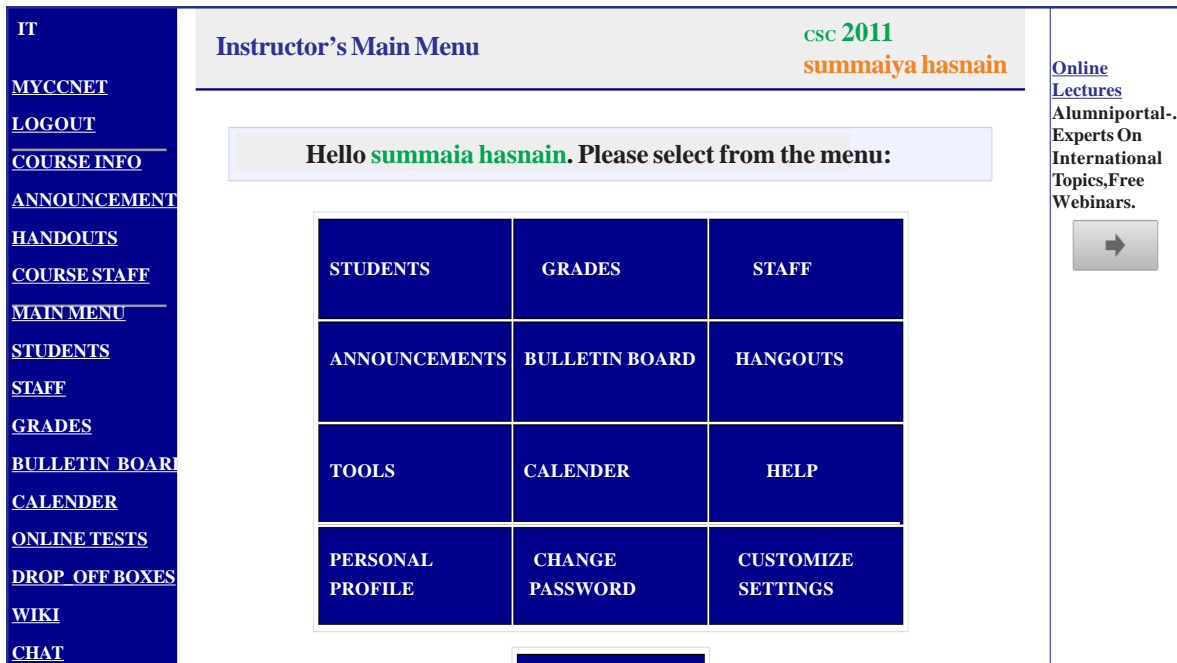
Figurre 1. Instructor's main menu's interface in MYCCNET

Figure 2. Student's main menu's interface in MYCCNET

Upload assignment and invite student require little assistance: These features required some assistance from us. Because invite students was quite confusing for the teachers and upload assignment had contradictory keyword "*Handouts*" which made teachers confuse for whether to save resources or upload handouts here. That's why these tasks takes more time as compared to other tasks

Submit Assignment, View Event and Join Course Require Little Assistance

Contradictory keyword "*handouts*" was also confusing for students as well because they thought that their lectures are uploaded here. View event was difficult because events option was there and after going in calendar events were viewed. Join course was also difficult because again contradictory word "*Manage courses*' was written and students thought that this option is for teacher
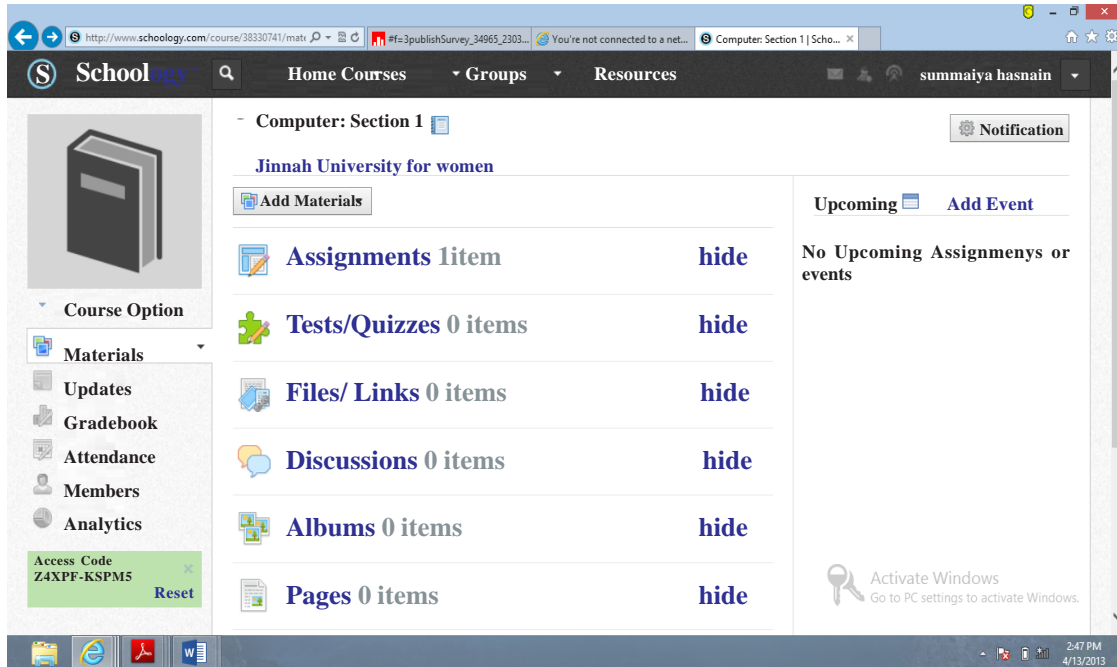

Figure 3. Instructor and students' main menu's interface in Schoology

Features for teachers	Schoology	MYCCNET
Assignment upload	✓	✓
Take online test	✓	✓
Grading students	✓	✓
Take attendance	✓	✓
Discuss / chat with students	✓	
Make announcements	✓	✓
Email	✓	✓
Manage resources	✓	

Table 1. These features were available to teachers to perform tasks given to them [3]

Before giving to these tasks, following assumption were undertaken:

Schoology is a standard Course Management System which contain all features that a CMS should have. Its simple layout would made the participants easy to learn and use quickly without any documentation or training.

After the completion of tasks, participants were asked to following questions:

➢ Rate the CMS?
➢ How was the layout?
➢ How was its navigation?
➢ How was its learnability?

Features for students	Schoology	MYCCNET
Assignment upload	✓	✓
Give online test	✓	✓
See grade book	✓	✓
See attendance	✓	
Discuss / chat with instructor	✓	✓
See announcements	✓	✓
Email to other students/teachers	✓	✓
Reminder	✓	

Table 2.These Features Were Available To Students For Tasks Given To Them

Task sets in MYCCNET	Task sets in Schoology
Create account	Create account
Invite students	Mark attendance
Create announcements	Create quiz
Personalize profile	Customize profile
Chat with students	Create discussion thread
Upload assignment	Grade students
Make event	Create course
	Message to students/teachers
	Manage resources
	Make assignment

Table 3. Tasks given to teachers in MYCCNET and Schoology [2]

Task sets in MYCCNET	Task sets in Schoology
Create account	Create account
Email to course mates/teacher	See attendance
See announcements	Give quiz
Personalize profile	Customize profile
Chat with teachers	Reply to discussion thread
Submit assignment	See your grades
See event	Join course
	Message to teachers/students
	Manage resources
	Submit assignment

Table 4.Tasks given to students in MYCCNET and Schoology

Many more questions were also given to participants after the completion of tasks.

6. Results

Results found after the completion of tasks are:

6.1 Questionnaires Rating:

Design:

Participants were asked "*How was the design and layout*?" So they want huge rating difference between both LMS. As most participants commented that layout of MYCCNET is not pleasant and can be more attractive. It should be user friendly and as simple as possible. For Schoology, all most all participants commented "*Layout same as facebook*" which make them easy to perform tasks and efficiently complete tasks in minimum time.
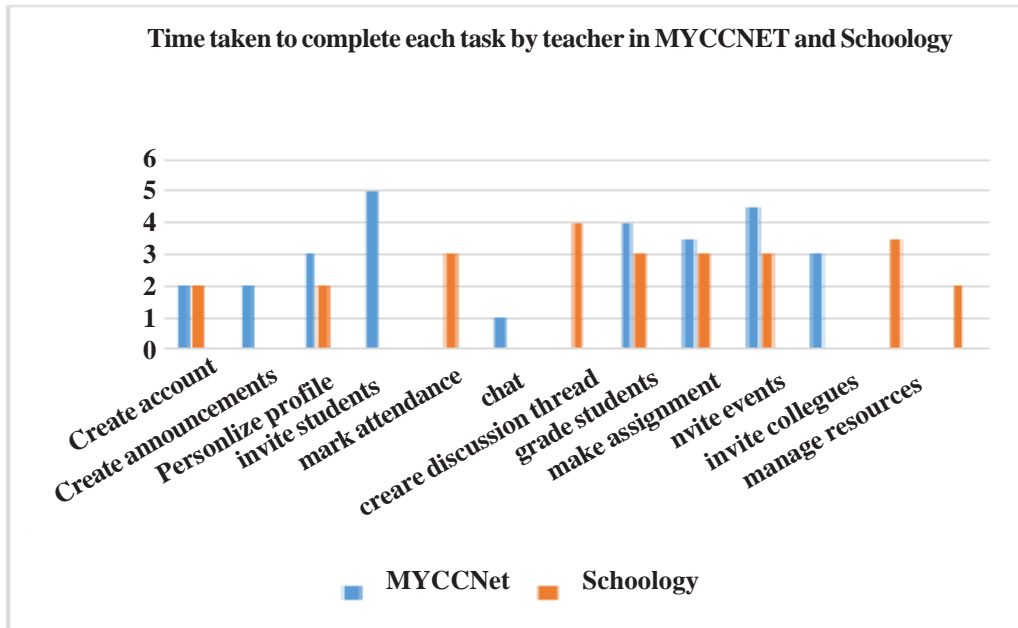

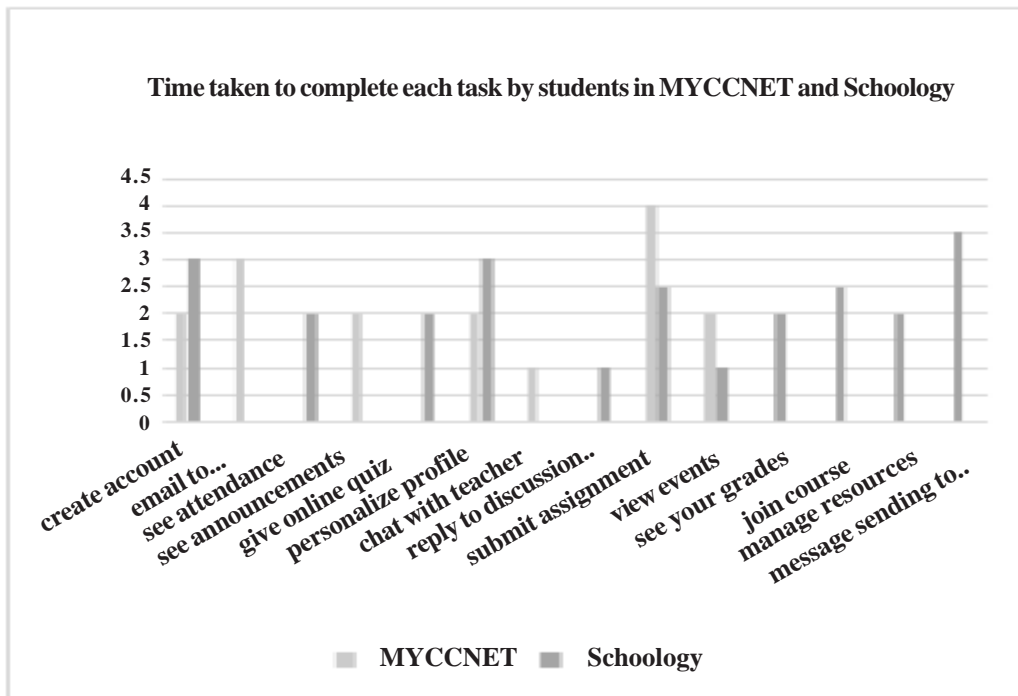Figure 4. Time taken to complete each task by teacher in MYCCNET and Schoology

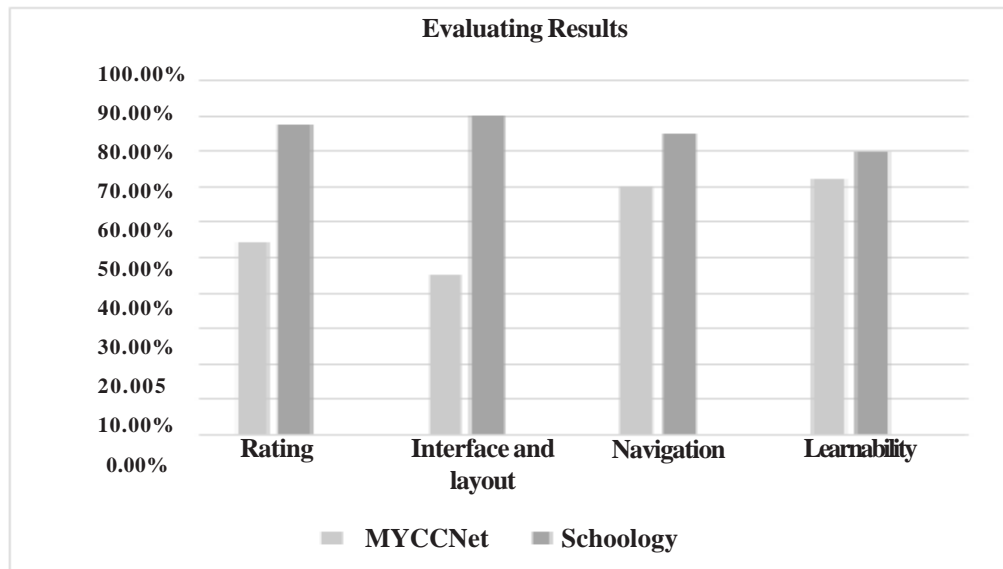Figure 5. Time taken to complete each task by students in MYCCNET and Schoology

Figure 6. Evaluating results

6.2 Interface and Layout

Participants were asked "*How was the layout*?" Schoology's simple layout and interface takes rating to their side while MYCCNET was able to do all tasks but it was confusing for participants to perform task. Its interface got very less rating.

6.3 Navigation

Participants were asked "*how was the navigation*?" Award winning CMS Schoology possess best navigation but MYCCNET also got votes in navigation as well. Navigation was a competitive feature between both CMS. Participants felt comfortable with navigation.

6.4 Learnability

Both CMS were easy to learn but due to some more votes Schoology also wins here because all options were clear and visible to the main screen that allow them to understand the system easily.

6.5 Our Usability Evaluation After Testing

According to student's perspective, in MYCCNET, after registration participants (students) were unable to find where to register for a course and there was no search bar in home page so it was difficult for user to perform tasks. Most of the participants (students) were able to perform tasks after some assistance. Whereas in Schoology, there was access code restriction for students to register for a course and in sign up step.

According to teacher's perspective, they can register for both CMS easily. As no access code restrictions were on the teacher's side in sign up process. No instruction is provided that password should be more than 6 words, this issue was faced by all participants in MYCCNET.

All participants (teachers and students) also gave views about interface. Participants were pleased with the interface of Schoology as it was understandable and all options were provided on the home page. Interface was pleasant as all options have graphical representations as well.

But interface of MYCCNET, is all text based and difficult to navigate all options and difficult to maintain participant's interest. It was frustrating them for finding different options in performing tasks.

7. Conclusion

The goal of this study was to report the results of a comparative usability study conducted in Jinnah University on two

different course management systems, MYCCNET and Schoology. It can be concluded from this study that according to their functionality comparisons all participants favored Schoology over MYCCNET with the exception of some similarities like announcements, events (calendars), grades, assignment (upload, submit).

At the end of the study, we proved and concluded that Schoology is really a standard course management that can be easily implemented in any higher education institute. It also concluded that managing courses through Schoology is more effective and efficient as compared to other CMS

References

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