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Student Accessible E-course-file : An Implementation

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ABSTRACT

We are living in the era of internet where information is available at just some click away. At the same time majority of students are unemployable, due to lack of appropriate domain knowledge by the conventional teaching and learning process. In order to cop-up with above problem, efficient utilization of course file should be increased. This paper proposes a method to implement conventional course file into e-course file by using Moodle. It is easy to create, maintain and access the e-course file with increased utilization from anywhere and anytime.

Keywords: e-learning, Course file, e-course content, moodle.

1. INTRODUCTION

As per NASSCOM report [1] only 26% engineering graduates are employable. The stature of this problem can be reduced if engineering institutes are providing well planned and effective lectures to their students. National Board of Accreditation (NBA), India [2] which is responsible to improve the overall quality of engineering education has taken many initiatives to make the teaching learning process effective. Which in turn increase the employability of engineering students.

Making experiments in teaching is a very useful tool for faculty to make the learning interesting. This learning become more interesting and effective as the faculty gain experience with time. Now what is experience? As per oxford dictionary [3] *an event or occurrence which leaves an impression on someone.* In the teaching context, after taking a class with his/her experiments the faculty have some impression about how this class could be make better. Betterment could be in terms of other experiments, some animation, appropriate real life example, widen the foundation for the class, re-sequencing of topics etc. That is how a faculty gain the experience. But how long a faculty can retain this experience without a good book-keeping? Since normally a faculty take the same class after a year, so it is quite possible he/she will forget the experience what he/she gain in previous classes. Here the course file comes in to the picture. If faculty creates a course file and maintains it properly, all his/her experience will be recorded and next time he/she can take the class without losing any experience from past classes. This approach makes his/her class more effective than previous classes. Student will also get benefited with the course file approach. Students can prepare themselves for next class, can track the topic which they miss due to their absence or repetition of the class contents.

Maintenance and updation of course file is not the easy task. Since faculty normally takes some decision prior to enter into the class (like what would be the sequence of topics, some interesting examples, how much enforcement will be given to which topic etc.) and these decisions could be updated during the class (reason could be class discussion may give the faculty better example, updated sequencing of topics or add/ remove some topics from lecture). To remember these updated decision faculty should update the course

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file so that he/she can take the benefits of new learning in his/her future classes. Manual updation of file consumes lot of time because every updation includes find the page which has to be updated, if space are available at that page update it otherwise remove all the previous pages from file insert a new page for updation followed by all the previous paper back and then index page updation. Process will be the same if new topic have to be added.

Even after putting so much effort to maintain the course file, still some problems get unaddressed, for example any animation, slides, web pages and video cannot be stored in the course file. Only link to those resources can be stored, which is normally remain unused. So the objectives of a course file could not get fulfilled. Further accessing timings of course file for the students are very limited. Students have to synchronize with that timings for accessing course file, which is practically inaccessible. Learning management systems could be potential solution for above problems.

Various learning management systems (LMS) are available such as Moodle, Blackboard, Intact and Sakai [4]. Which could be solutions to this problem. Since moodle is an open source software, it is available with lot of flexibility with almost no cost, we are using it.

2. MOODLE

Moodle [5] is an abbreviated name of Modular object oriented dynamic learning environment. It is an open source web based learning management system [6, 7]. It is developed on pedagogical principles. It is used in schools, universities and other sectors as well, across the world. It is normally used to create website with on line courses for trainers and educators. Moodle is very flexible in terms of its content management and lot of supported plugin availability. Moodle is started by Martin Dougiamas [16] as his PhD thesis from Curtin University, Australia in 1999. Martin is an educator and computer scientist in Perth, Australia.

3. PROPOSED APPROACH

Our institute has a moodle server, on which every faculty and students have their accounts. They can get login on the server at any time and from anywhere. Courses are created and every course on moodle represent the course file of that course. Weekly format is selected by default. In this format all the course duration is divided in weeks and we can put any study material or activities in a particular week. Social format is also available for any course. In this format course area is divided in parts and we can use these parts to categories the study materials, activities or units of the syllabus. In the Fig.1 a course is displayed in social format. Every part of this format is representing a unit of the syllabus, any study material, video, animation or some web-link related to a particular unite resides within corresponding unit part.

Figure 1: Social format of a course divided in to units of syllabus

To improve the student's learning quality NBA issues the guidelines, which are mainly focus on outcome based assessment of quality instead of conventional output-based. To quantize the outcome NBA proposed course outcome (CO) for each and every subject and after the competition of course, faculty have to evaluate how much course outcome has been achieved. In fig. 2 it is shown that we can add CO's to the course file which would be always visible to every student, so that they can also improve themselves in those areas. Likewise any text can be added to course file area it could be lab experiments list, lesson plan, some sort of notices etc. which is intended to visible to students.

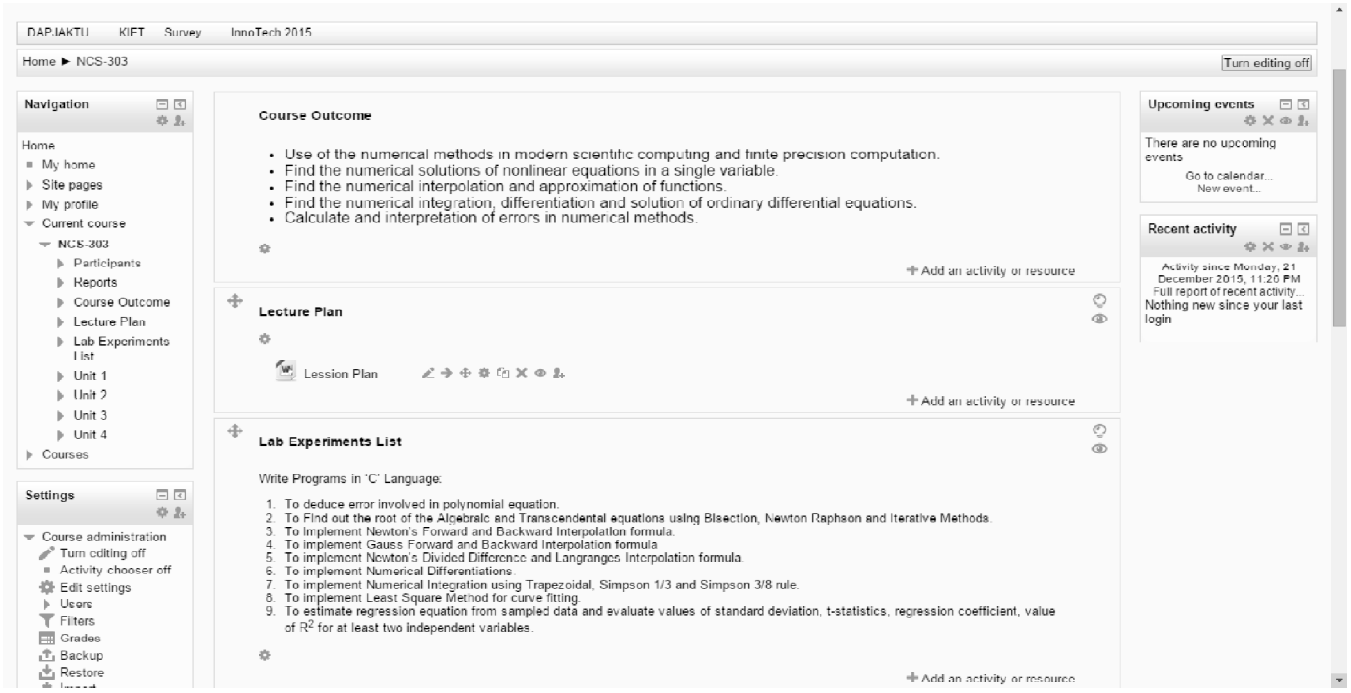

Figure 2: Course outcomes (CO's) and lab experiments list

Videos can be added as study material which is not possible in conventional course file, it (course file) can store only link to video not actually video. Student can see this video from inside the web browser, and it is not required to play with a separate media player. Fig. 3 shows an embedded Larry video [10] snapshot. Video can be embedded in course file either directly uploading of video on moodle or a link of youtube [7], Khan Academy [8], NPTEL [9] etc.

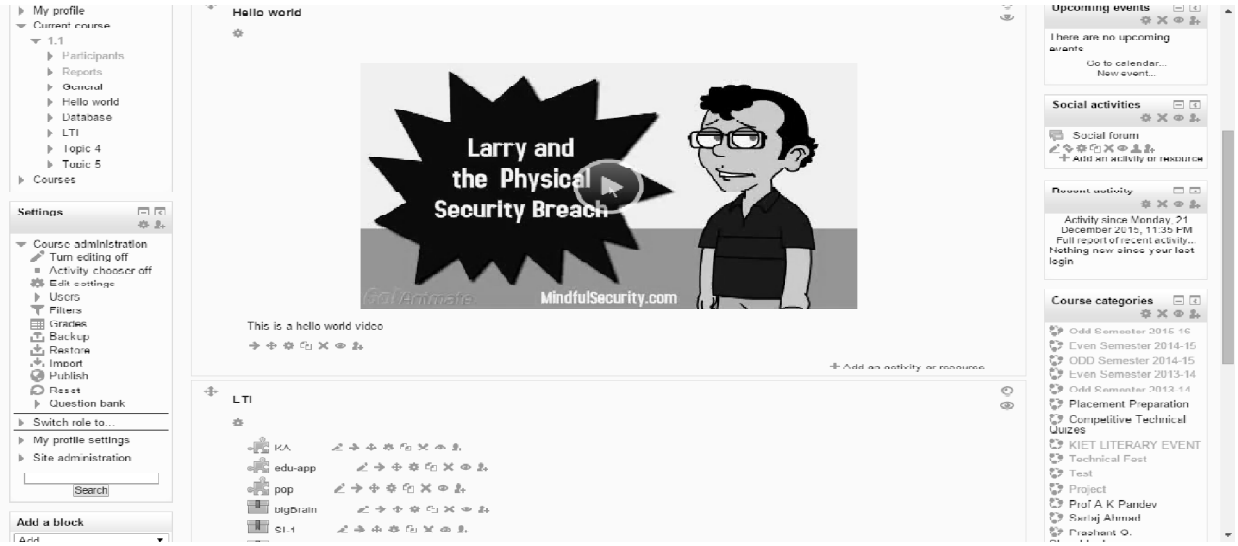

Figure 3: Video embedded course file

There are many vendors who create the animations, fancy presentations and/or simulators for well-established process which can be directly imported into moodle. Though there are specific standards to create the above items known as sharable content object reference model (SCORM), so SCORM packages are work smoothly on about all standard LMS's including moodle. Fig 4 shows an inclusion of a SCORM package named windows 8 essentials [11] into a particular course file.

Figure 4: Inclusion of SCORM package

All the students and faculties have profile page on moodle which can be made available to all the course participants. Though it is not directly part of course file, but strong connection among faculty and students are must for better outcome. In fig 5 a sample profile page is displayed from our moodle implementation.

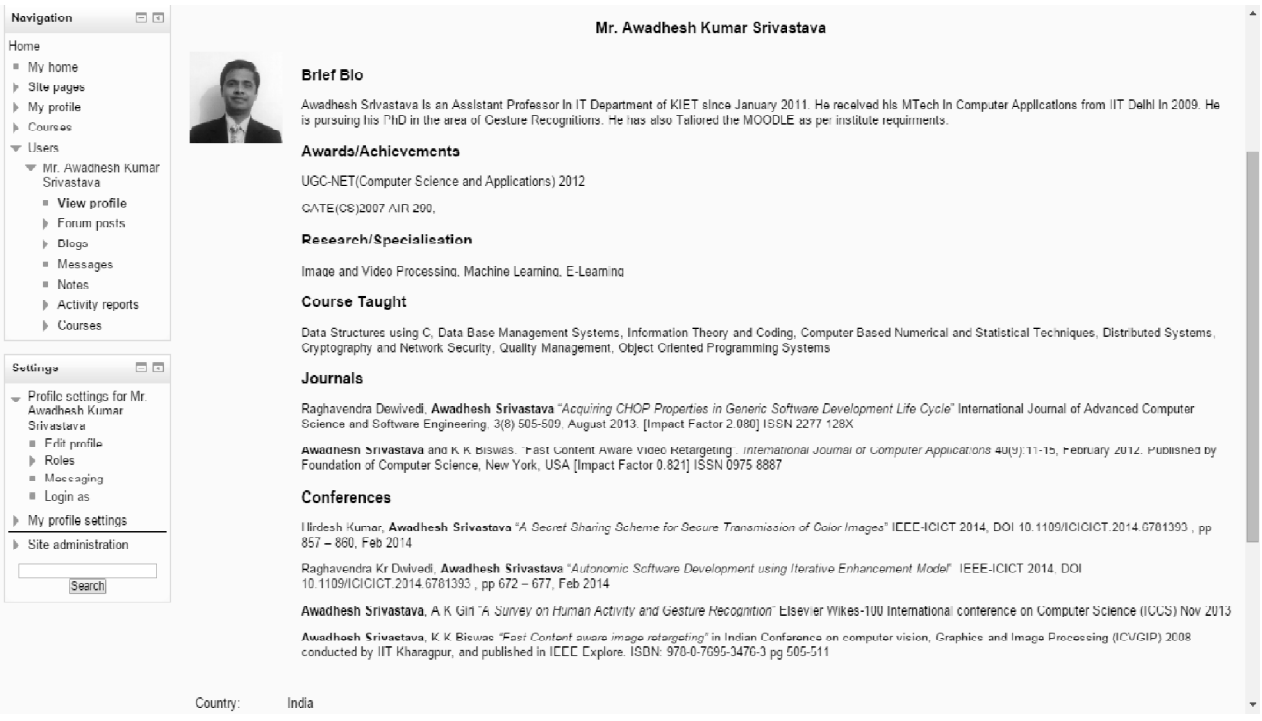

Figure 5: User's profile

4. EXPERIMENTAL RESULTS

Many institutes and universities across the world using moodle as their LMS [12, 13, 14, 15]. Implementation of course file on moodle will drastically increase the use of course file. In fig 6 we are showing number of activities done by all the students on all courses per day. This data is recorded for a month and plotted on weekly and day basis. As we can see in the graph that even on holidays (Saturday and Sunday) students activities are not zero, which is not the case in conventional course files.

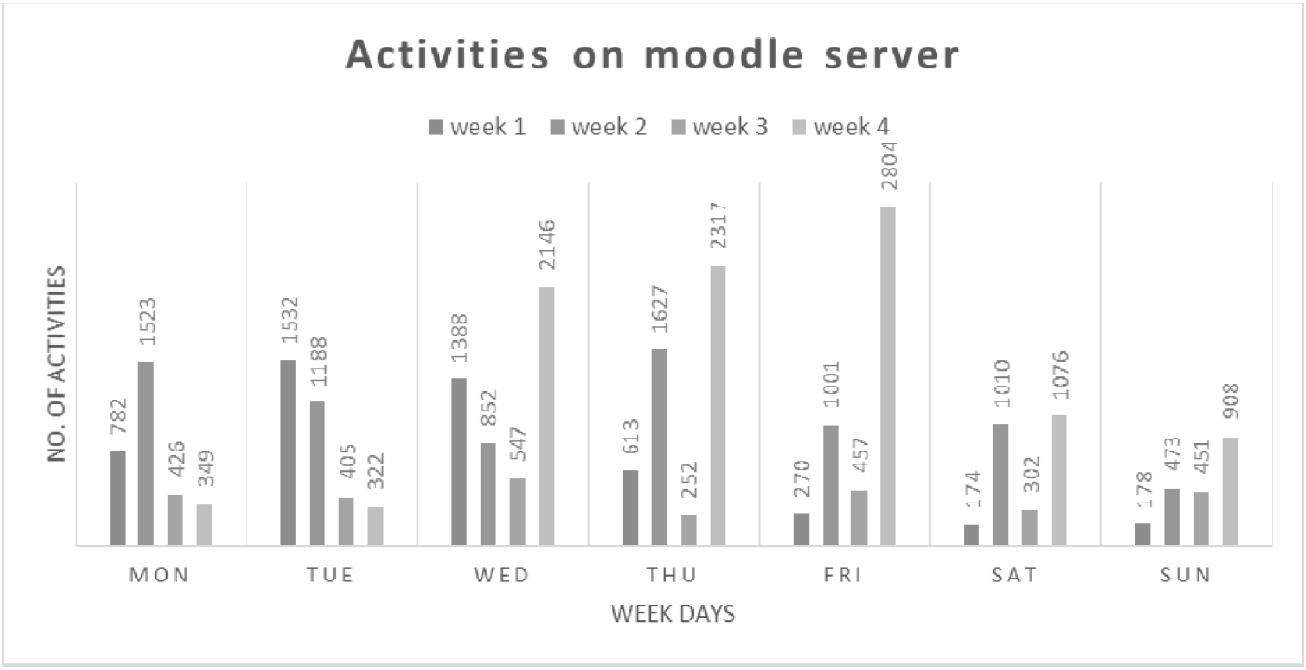

Figure 6: Activities on moodle server

Course file of any course may contains feedback of students towards the course in many forms. We are taking feedback from student after completion of course in terms of course-outcome (CO) fulfilment, which would help the faculty of the course to make his/her lecture better in a particular direction. In fig 7 there is a graph of student-opinion about CO attainment / fulfilment for a particular course. Here we categories the student's satisfaction level into satisfactory, good and excellent. Student will choose his/her satisfaction level for every CO. Faculty can see his/her class satisfaction level for individual CO's. Total 97 students

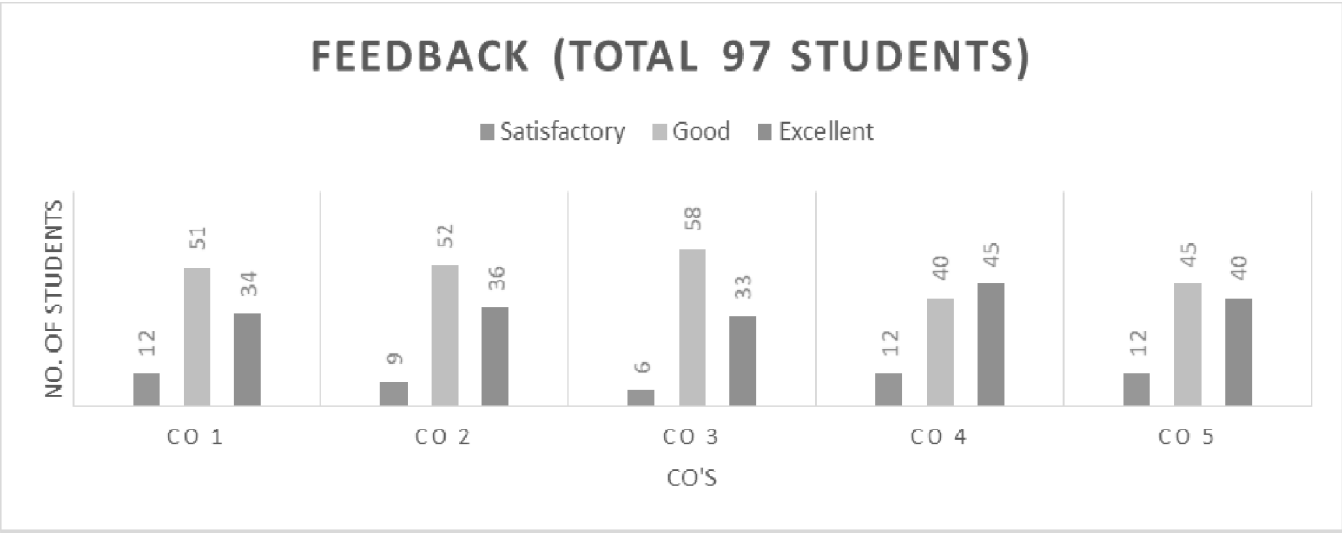

Figure 7: Course outcome feedback from 97 class students of a particular course

have given the feedback, there are 12 students who feel that CO-1 is not covered properly, 51 students are said its good while for 34 students it's perfectly covered.

5. CONCLUSION

In this paper, we have focused on implementation of course file on moodle. There are many advantages to do so, including high availability, accessibility, low maintenance effort and easy updation of course file. Multimedia content can be easily embedded in the course file. Various institutes and university across the world are using this open source, web based, learning management system. We have also shown our implementation of various course files on moodle.

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