

Moodle – a Platform to Acquire the 21st Century Skills

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Abstract - This is an informative paper that highlights the impact of Moodle in the present education scenario. The holistic development of the child needs adequate facilities for quality education. The rapidly increasing popularity of the Internet has been gradually gaining worldwide attention by the name Moodle. It has already become a term of its own synonymous with a software package designed to help educators create quality online instruction. Its design is based on socio-constructivist pedagogy. It is an Open Source software platform which is available free of charge under the terms of the General Public License. It is a teacher's dream in terms of course management features that it offers. Moodle also keeps automatic log reports of each student work. Students can look up the assignments on a calendar by moving the cursor. The student feels a kind of easiness in learning and comfort in the completion of the home assignments. Moodle allows for the integration of a wide range of resources and assessment strategies.

Key words -- Moodle, Learning Management Systems (LMS), Virtual Learning Environment(VLE), Hyper Text Mark-up Language (HTML), Sharable Content Object Reference Model (SCORM), open-source H5P project (H5P is a free and open-source content collaboration framework based on JavaScript), Atto editor (Atto is a JavaScript text editor built specifically for Moodle)

I. INTRODUCTION

Children are the treasure of any generation. With that in mind, society has relentlessly expended tenacious efforts in the field of education. The holistic development of the child needs adequate facilities for quality education. Time, in its way brought changes in the style of imparting knowledge from the Upanishads to the modern class room and later on to the learner as a learning centre. Recently, internet has its increasing importance in the field of education. The delivery of learning programmes has been gradually shifted from the local desktop to various online applications like whiteboard/video services, discussion forums, file exchange/internal mail, online journal mail, and real live chat features. There are so many open source LMS out there; due to which fact it is tedious to look for a suitable one that will meet the instructor's needs. One such system that has been gradually gaining worldwide popularity and use is known as Moodle.

What is Moodle?

Moodle is an acronym that stands virtually for Modular Object-Oriented Dynamic Learning Environment. It is a fast, useful mode of an online platform for teaching learning experiences. It is enormously employed by its users for easy delivery of a chunk of information. Among

its users, however, [1], [2] Moodle has become a popular tool of its own and is synonymous with a software package designed to help educators create quality online instruction. It was [2] the brainchild of Martin Dougiamas, a former Web CT administrator with postgraduate degrees in Computer Science and Education.

The design of Moodle is based on different learning theories. The pedagogy aspect of Moodle is mainly based on the Socio - Constructivist theories. Behaviorists, Cognitivists and Constructivists have equally contributed to the Moodle platform. This means its objective is to provide a set of tools that support an inquiry and discovery based approach to virtual learning. Moodle always purports to create an environment which allows the learner to stand by him or her and interact in an open platform of learning. It has collaborative as well as conventional styles of class room instruction. It is entirely, open source software, developed and supported by a group of programmers for its user community. It is available free of charge under the terms of the General Public License (GNU) and has no licensing cost attached. As such, it is accessible, available and affordable to anyone. [11] Each section has its own tools such as lessons, quizzes,

assignments, and forums which are all linked to a built-in grade book. Everything on a page can be individually arranged, and the elements within each section can be easily moved around or be hidden.

Course management

Moodle is the dream of a teacher and to anyone who is absolutely engaged in the field of education in terms of the course management features that it offers. It is widely used today by teachers and students in higher education and can be suggested for high school teaching learning. Access to almost all lesson assignments can be made time or password restricted. In certain versions the user is liable to operate with open or close eyes - format. The elements in the LMS can be made visible or hidden as the need or demand of the user community. Moodle also keeps automatically selected and collective log reports of student work. This means that the teacher can identify not only when students have completed or uploaded an assignment, but also how much time they spent on an assigned task or quiz.

The teacher can also set deadlines or timeframes for the students when assignments must be completed, and restrict access to learning tasks once the deadline has passed. Students can check their grades themselves and teachers have also the option to download student grades in Excel format. Students can check the result of all assignments on a calendar by moving the cursor over a given day which will list all the assignments for that day. The calendar is optional but clear and can be displayed on the front page. This provides the course content a wide variety, beauty and speed in the transaction. The student feels a kind of easiness in learning and comfort in the completion of the home assignments. The parental inclusiveness in the day to day learning processes and thus behavioral modifications can also be scientifically measured and assessed with the support of Moodle based Learning Management Systems.

Content and Resources

Moodle is an integration of a wide range of resources which include any kind of text-based or html-formatted documents, multimedia resources such as graphics, video or audio (e.g., MP3 files), SCORMs, PowerPoint, Half-Baked exercises or Flash-based applications. [3] Any tasks based on the lessons within Moodle can be linked to any resources that are uploaded to one's server or that are available on the Internet. The teacher at any time can assess the students' exploration of any of the content-based resources by using any of the Moodle-based evaluation and feedback tools. Moodle is absolutely powerful in content creation due to its built-in HTML editor. More sophisticated and highly useful presentations such as animations or text-specific feedback provisions need to be created by using outside multimedia authoring programs. Moodle also has a built-in glossary module. This allows

individual teachers in cooperation with their students to create their own text course or site-specific dictionaries.

Assessment and Testing Strategies

Moodle allows everyone a wide range of measurement and assessment strategies. The quiz modules include the following responses types: fill-ins, multiple-choices, multi-choice where more than one answer can be selected, true or false, matching, and short-answer. All types attached to it are supported with automatic tallying and scoring, based on teacher or student-determined rating scales. The essay modules allow open ended questions in each with built in comment boxes for instructors to provide feedback. Particularly notable and laudable is the workshop module, which is designed on the basis of peer assessment. All of these assessments - types can be made time and password restricted, and can be set to allow for limited or multiple retakes.

Learning Management Systems

Moodle is also a learning management system, (LMSs). Learning Management Systems differ from exclusive course management systems because they allow one to present information to learners in small units, assess what they have learned, and based on the quality and level of their achievement branch out into additional review of material or move to the next level. [4] In other words, the lesson modules allow the designing of other lessons that closely control the learning path, guiding learners step-by-step, and allowing for advancement only if sufficient mastery has been achieved.

Suggestions for the Better Implementations of Moodle in Education

To organize and share resources and "good practices" so that teachers and students have a positive Moodle experience that enhances the learning process is that the resources presented should focus on the better pedagogical implementation of Moodle in a classroom setting (whatever that classroom may look like). While Moodle can be and is used and utilized to support a number of other pedagogical and andragogic approaches, the core Moodle package will continue to be built with these five key principles in mind. [6] Moodle Pedagogy in education and training, though initially designed for higher education environment (university), has quickly become useful across a broad range of organizations worldwide, who conduct courses, fully online or support face-to-face teaching and learning. [2] Moodle for its modular characteristics, flexible nature, safety and security and free availability has attracted learning communities ranging from single primary school classrooms to large universities, businesses, government departments and other places where people learn. It is applicable in Primary education, Secondary education, Tertiary education and Adult education and training.

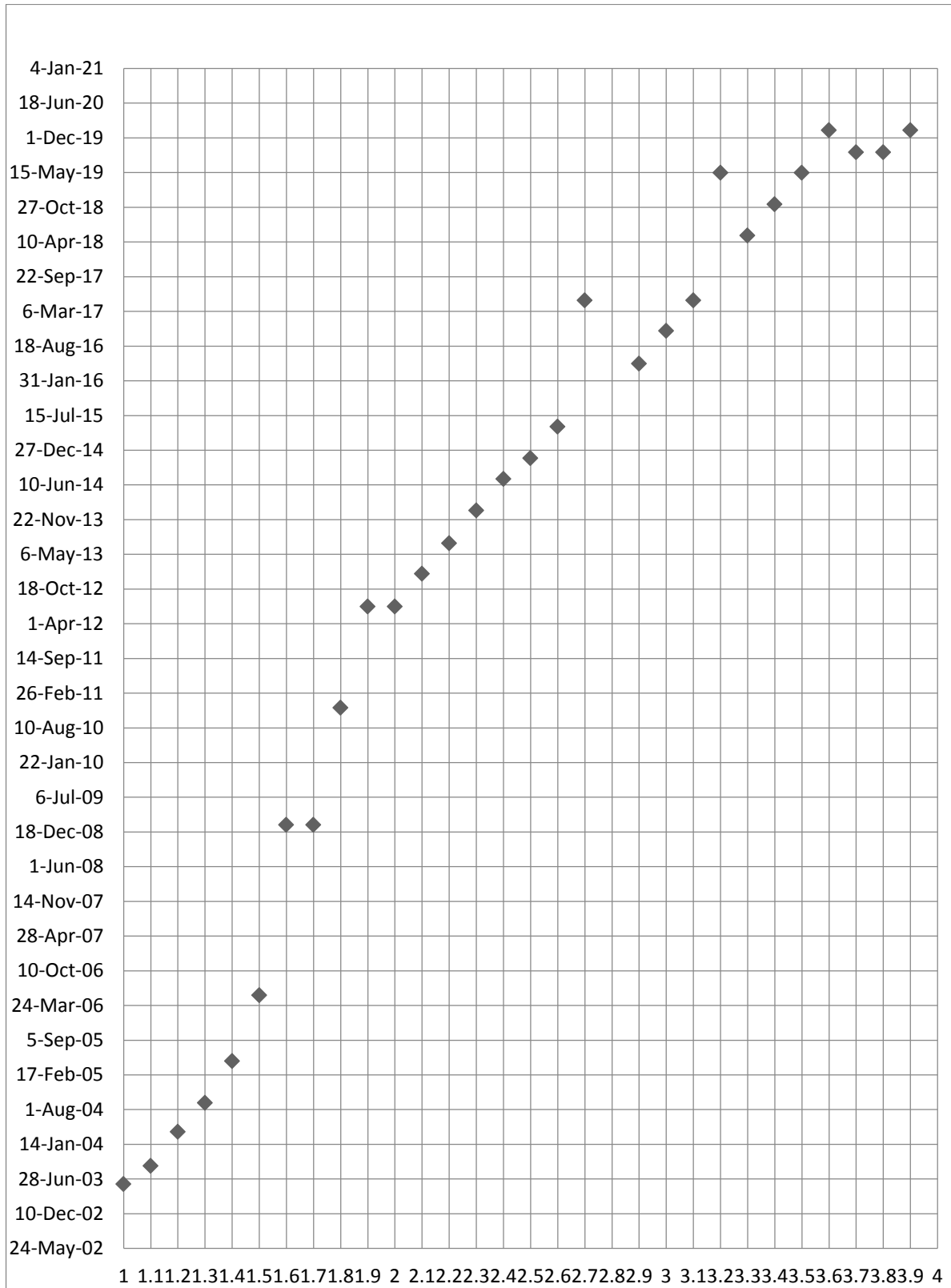
Since 2002, Moodle has undergone many changes through its updated versions. Currently, the most widely used stable version of Moodle is 2.6. It is a major stable version released in November 2014. It contains many improvements and new features. Users will be able to import and export content in and out and it is easier to have scaffold courses and activities by using conditions for

entry, improved evaluations [9] with its re-designed quizzing and other workshop activities, search, enroll in and share courses via community hub, enter comments in a range of places, navigate easier, integrate better with other systems, mobile devices, customize their personal home page and more.

Table 1 (Moodle Version History in Tabular Representation)

Branch	Version	Original release date	Version Modified	Version release date
1	1.0.9	20-Aug-02	1	30-May-03
1.1	1.1.1	29-Aug-03	1.1	11-Sep-03
1.2	1.2.1	20-Mar-04	1.2	25-Mar-04
1.3	1.3.5	25-May-04	1.3	9-Sep-04
1.4	1.4.5	31-Aug-04	1.4	7-May-05
1.5	1.5.4	5-Jun-05	1.5	21-May-06
1.6	1.6.9	20-May-06	1.6	28-Jan-09
1.7	1.7.7	7-Nov-06	1.7	28-Jan-09
1.8	1.8.14	30-Mar-07	1.8	3-Dec-10
1.9	1.9.19	3-Mar-08	1.9	9-Jul-12
2	2.0.10	24-Nov-10	2	9-Jul-12
2.1	2.1.10	1-Jun-11	2.1	14-Jan-13
2.2	2.2.11	5-Dec-11	2.2	8-Jul-13
2.3	2.3.11	25-Jun-12	2.3	13-Jan-14
2.4	2.4.11	3-Dec-12	2.4	14-Jul-14
2.5	2.5.9	14-May-13	2.5	10-Nov-14
2.6	2.6.11	18-Nov-13	2.6	11-May-15
2.7	2.7.20	12-May-14	2.7	8-May-17
2.80	2.8.12	10-Nov-14	2.9	9-May-16
2.90	2.9.9	11-May-15	3	14-Nov-16
3	3.0.10	16-Nov-15	3.1	8-May-17
3.1	3.1.18 (LTS)	23-May-16	3.2	13-May-19
3.2	3.2.9	5-Dec-16	3.3	17-May-18
3.3	3.3.9	15-May-17	3.4	12-Nov-18
3.4	3.4.9	13-Nov-17	3.5	13-May-19
3.5	3.5.10 (LTS)	17-May-18	3.6	13-Jan-20
3.6	3.6.6	3-Dec-18	3.7	9-Sep-19
3.7	3.7.2	20-May-19	3.8	9-Sep-19
3.8	3.8.1	18-Nov-19	3.9	13-Jan-20
3.9	3.9		4	

Figure 1 (Moodle Version History Graph)



Moodle has been continuously evolving since 1999 (since 2001 with the current architecture). It has been translated into over 100 different languages and is accessible in many countries worldwide. Institutions can add as many Moodle servers as needed without having to pay license fees. The Open University of the UK currently uses a Moodle installation for their 200,000 users while the UK government uses a Moodle installation for their Civil

Service Learning platform serving half a million employees.

In UAE, almost all schools especially with CBSE curriculum use the maximum utility of the Moodle. The stake holders belong to all categories from the school management, teachers, students and the parent community as a whole. The categorically hybrid parent community belonging to the so called organizational structure in the society need these kinds of tools to teach their wards who

are supposed to perform with higher grades and top ranks in the schools.

Now the new release has reached up to 3.8 version of Moodle and the Moodle community has improved with participation, mutual help from software developers, educators, translators and many others worldwide. There are many ways to participate in the Moodle community, regardless of background and interest. The recent Moodle version 3.8 enables teachers to easily embed interactive multimedia content from the open-source H5P project into areas such as Pages, Books and Labels. With the new and very significantly useful H5P button in the Atto editor, teachers can link to or upload a variety of quizzes, presentations, video exercises and more. This includes two new analytics insights that allow teachers to easily monitor and contact students who have not accessed the course recently or at all.

II. CONCLUSION

In the beginning, the investigator asked what Moodle was. He would like to conclude by commenting on what Moodle is not. It is not a panacea for language learning. It is a course management and delivery system. As such, Moodle has great potential and above all access to create successful e-learning experiences by providing a plethora of excellent tools that can be used to enhance conventional as well as traditional classroom instruction, in hybrid courses, or any distance learning arrangements. The virtual learning environment (VLE) takes the learner to a world of exuberant and immaculate learning experience. This supports the 21st century skills which refer to a broad set of knowledge, skills, work habits, and character traits that are believed by educators, school reformers, college professors, school teachers, employers, and others to be critically important to success in today's world especially the following four Cs.

Critical thinking

Creativity

Collaboration

Communication

To conclude, in recent years, several companies and educational institutions have cut their L&D (Learning and Development) budgets. According to the 2019 Training

Industry Reports, published by The Training Industry, only 37% of organizations increased their training budgets. To deal with financial constraints, many organizations are looking for cost-effective software applications; to meet their learning management needs because Moodle based learning management systems invariably supports the institutions in the following ways.

1. Manage Online Courses in a Cost-effective Manner
2. Meet the Needs of Growing Businesses
3. Use Hundreds of Plug-ins to Perform Various Functions
4. Integrate Training with Other Enterprise Functions

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