

# Virtual Lab Using SCADA

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*Abstract – This paper shows an introduction to assessment used and the aim behind this is to support and improvement of learning. Computer-based assessment, adaptive assessment and web-based assessment methodologies are represented here. The development of new digital technologies alleviated the implementation of many web-based assessment tools. Of first concern is web-based self-assessment that allows students to practice and measure their abilities. It has been widely used in open and distance education, but it can also improve persuing in traditional class. Adaptive features are usually added to web-based self-assessment tools to manage assessment process to individual needs. The use of post-test feedback can facilitate learning self-management and gives improvement to students performance. Web-based platform for automated student assessment has been used successfully.*

**Key Words :** adaptive assessment; student self-assessment; web-based assessment; e-assessment

## 1.INTRODUCTION

Nowadays, the increasing accessibility of internet has emerged a great interest of the educational community in developing web-based assessment and self-assessment tools, to support not only distance learning, but also to improve learning in traditional class. Self-assessment that provides feedback facilitates the active involvement of students to step-by-step improve their knowledge in each subject. Adaptive self-assessment enables tailoring tests to student's preferences and interpretation. A web-based self-assessment tool allows students to access self-assessment tests using a browser on their home computers. This paper starts with introducing the reader to assessment issues, regarding that assessment is used as a tool for learning. The advantages of computerized assessment, adaptive assessment and web-based assessment are discussed here. The significant importance are web-based adaptive self-assessment systems and leads to improvement in student performances. In the past, assessment was used to decide what extend students had reached the learning objectives. Testing was traditionally used to give qualification of student's current

state of competence. However, testing was usually dissociated from instruction and was occurred within the regular flow of learning. Today, the purpose of assessment in education has changed. Assessment is assumed to be more a tool for learning, rather than a tool for grading. Recent assessment culture proposes the integration of assessment with instructions, in order to align.

## 2.LITERATURE SURVEY

The learning and instruction more with assessment, Willis states that "Assessment for learning varies from assessment of learning not only its timing and its purpose but also in the ownership in the learning where the student voice is heard in judging quality." The benefits of assessment for learning practice includes increased students' encouragement, and self-determination in monitoring and planning their own learning process. Recently, Carless, Joughin and Mok presented the term 'learning oriented assessment' to describe an approach which seeks to bring to the foreground those aspects of assessment that encourage or support students learning.

The basis of learning oriented assessment include three principles: the first principle proposes to engage students in processes that lead to assessment tasks as learning tasks. The second principle proposes students participation in evaluating their work and peers work. Finally, the third principle proposes the use of feedback to improve learning. The differentiation of two kind of assessment, summative and formative, is worthy of increased attention. Summative assessments are given periodically to determine student's level at a particular point in time, such as at the end of a chapter or at the end of a semester. A summative assessment include a grade against an expected standard. Formative assessment informs teachers and students about student's knowledge and skills during study, where adjustments regarding teaching and learning can be applied.

### 3. SYSTEM FLOW

For each subject, an instructor may store many composed tests, but permits one of them to be appeared on students screen before students sit for a test. At test time, the instructor prints the authorized tests on the students system. When all students have submitted their answers, the guide turns on a button to automate scoring of answers. Data collected during testing is recorded on the Test Data Bank. The instructor publishes the evaluation report, which include the list of students who participated in the test and their corresponding score. Web browsers are used by students to access the student assessment subsystem. Formative or summative tests composed by the instructor offline are published to the students the time just before a scheduled test begins. When students connect to the system, the scheduled test starts. Timer starts counting down when questions are appeared on the screen. As soon as a student finishes a test, he/she is expected to submit his/her answers by activating the 'submit' button. If session expires before deliberate student submission, then student answers are submitted automatically. After submission student can print preview, or print test report. Students can take either adaptive or non-adaptive tests, using the student assessment subsystem. This is a parameter determined by the guide during test composition. In non-adaptive test, topics are randomly chosen from the chapters or the units that the course instructor has predetermined. The random topic selection techniques guarantee that all students will receive tests but of similar difficulty.

In case of an adaptive test, each student initially responds to a basic set of items in order to estimate the students profile. Then, the test is converted to an adaptive test. The next item that comes on screen is adjusted to the students' profile. When the student responds, the students' profile is re-evaluated and the procedure is repeated until termination criteria are met. The adaptive assessment techniques applied to on screen also appears information such as the grading weight of each question, test duration and the remaining time until automated submission.

#### 3.1. SYSTEM DESIGN

The architecture is the representation that enables a software engineer to analyse the effectiveness of the design in meeting its stated requirements, instead being the operational software. Consider architectural alternatives at a stage when creating design changes is still comparatively easy and the risk associated with the construction of the software is reduced.

#### 3.2. FUNCTIONAL DESIGN

The basic function of a proxy server are performed by the various server modules:

Proxy user interface: The user interface is controlled and managed by this module. An easy-to-use GUI, a window with menu is provided to the user. The menu option should provide commands to perform the following functions:

- Start
- Stop
- Exit
- Manage log
- Manage cache
- Modify configuration

#### 3.3. FINDINGS

Students generally reported that accessing the websites was straightforward about equal numbers accessed from home as well as from the university. Some students come across the difficulties with the tool, there was an early usability problem related to assignment printing, and as a number of students did not print the assignment this resulted in their choices not being recorded in the database. Additionally, it was difficult to export files to another location but the students resolved this problem themselves (being IT literates!). The module leader was emailed a range of problems by 31 students. The majority of this comprises their understanding of the requirement of the assignment specification, but some were about the operation of the website; the students complained that the site was down when they had simply failed to download the flash player which was a recurring problem. In the questionnaire, 18% reported that they had only used the tool once, 75% claimed to have used it between 2 and 5 times while remaining 7% visited more than 5 times.

Marking the students work:

The work submitted by the students was marked by the module leader. The variety and the differing nature of each assignment leads to a new approach that had to be taken to the marking process. Initially, it was decide to start with the assignment specification that allowed the maximum mark to be gained. Following this the lecturer demonstrates whether the tasks had been completed and then assessed the competence with which they had been completed.

This proved problematic on three counts:

1. Some students did not include an assignment specification, or included an incorrect assignment specification.
2. Some students had misunderstood the specification and had typically done task wrong.
3. Some students were getting 100%.

A two-handed marking system was adopted to overcome most of these problems, which 1 and 2 above did not apply and the second for those assignments for which special allowances had to be applied. Two students gained 100%, this was considered to be an exceptional but it was decided to let these marks stand.

### 3.4.EVALUATION OF THE PROCESS

The post task questionnaire was taken from the students who completed it and requested to comment on the site, the tool, and the process of designing their own assignments. Then the review about this approach was asked. The results were that 52% were in support of such an extension, 5% were confused and the rest were against. The questionnaire also asked for positive criticism and collected students' feedback on how this system can be improved or altered. The comments in favor that were made like fairness, flexibility, and the opportunity to use one's own initiative. Some students concluded that this kind of process is particularly well suited to programming or Investigative assignments.

Discussion in adopting an innovative assessment strategy few issues popped up that affected not only the lecturer but also the students. It has been concluded that for this kind of process to be effective, Students must be having clear instructions and guidance to ensure they are familiar with the procedures and so that there is unclarity in relation to the assignment properties. Marking the assignment increased workload as grading criteria for a range of possible assignments had to be produced. Despite of some technical issues, students seemed to be positive and further development of the tool especially the production of the assignment specification will enhance software.

Further research is planned with other modules and the concept will be expanded into a general constraint that will Guide staff to analyze their assessments in a similar manner. Future work is planned to make the process of breaking an assignment into parts and relating it to educational classifications. Ideally this tool would include a facility to automatically generate a student border for the generation of separate assignments.

This paper describes a web based estimation tool that was used by first year learner computing students. The basis for the project is described, referencing work on educational

taxonomies. The process of relating the parts of an assignment to different cognitive levels in Bloom's taxonomy is momentarily discussed and the web-based tool is explained. How the tool has been used and evaluated is then obtainable. Early results put forward those students who used the tool

were either very encouraging or very off-putting about the invention and the notion. Future work, focusing on the advance of a generic tool, is outlined.

Setting up a WAMP Server using software that can be originate on source forge for use. First, a little narrative is an order. A WAMP Server is a Windows Machine that has Apache, MySQL, and PHP on it (WAMP – Windows, Apache, MySQL, PHP) To install these before you would have to get the installs and binaries and organize them by hand and set everything up which can be a boring task as well as very time overriding. Once you are finished with this lesson you will be able to follow our web-based tutorials without having a domain name and/or server.

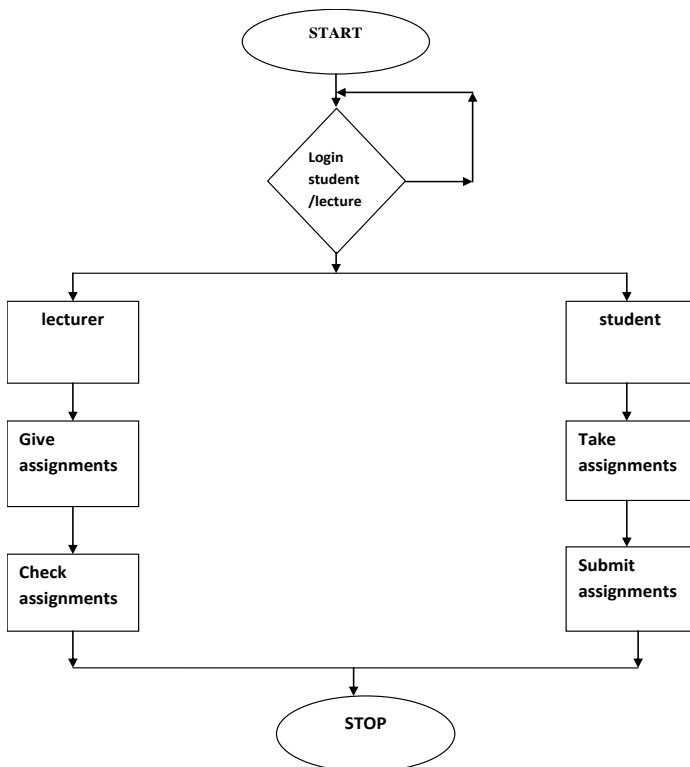
- The above list of options is what you will get if you simply left-click once on the tray icon.
- Localhost – This option merely open the webpage that is stored in the home directory (which is "C:\wamp\www\index.php" by default). You can also get to this page by typing "localhost" in your web browser, or by typing 127.0.0.1 in your web browser.
- phpMyAdmin – This option will start on phpmyadmin (which can also be launched by going to <http://localhost/phpmyadmin/> in your web browser. phpMyAdmin is a tool to run, query, select, and browse your MySQL databases. It is php based and moderately simple to make use of.
- SQLSiteManager – This launches a tool to make and delete whole databases. You use this to create the databases and use phpmyadmin to operate the data in them. This can also be access from <http://localhost/sqlitemanager/> in your web browser.
- www directory – a folder will be opened where sites are stored. These are brought when localhost is accessed.
- Apache – this area gives the configuration setting for apache and permits to make configuration needed for this service.

- PHP – this area gives the configuration settings for PHP and permits to make configuration needed for this service.
- MySQL – this area gives the configuration settings for MySQL and permits configuration needed for this service.

Then the users are provided with the option to control the services and take the server on and offline. By default, the server is set up with an index.php file that will show the services that are started for the services. The projects that have started on the server based on the folders that are within the www folder are also shown in this file. The user can avoid this file if they wish to. They can delete it and make their own index.php that will be shown whenever localhost is accessed. Many configurations are there which can be made to this server setup.

- phpMyAdmin – this option will launch phpMyAdmin (which can also be launched by going to <http://localhost/phpMyAdmin/>) in web browser. phpMyAdmin is a tool to manage, query, select and browse MySQL databases. It is php based and relatively easier to use.

**4.FIGURES**



**5.ADVANTAGES**

Log file analysis has some advantages over page tagging-

Normally log files are already produced by web server, so the raw data is already available. The website requires no changes.

The company’s server has the data which is not in proprietary format but is in standard format. So it becomes easy to analyse the historical data and switch the programs afterwards.

When the purpose and methods get identified a timeline is developed by instructor for data collection. The time required to distribute the assessment, the time that the students will take to complete the assessment, also the time took for the receipt of assessment and also the time for analysing the data so that it match to the course method is took into account by timeline.

A computer skill assessment is conducted (the idea is to provide training to the students if they lack the skills) an assessment with ample time prior to the course is conducted by the instructor. During the higher education the students who attended the course from the beginning are not known to the professor. So the assessment of students need can be conducted in this case. The written timeline’s get more critical as it help streamline the time took for conducting an assessment when the course was started.

**5.1.NEEDS ASSESSMENT BEING CONDUCTED**

There are many ways for conducting the needs of assessment. The general assessment may be combined with different assessment areas by the instructor or individual assessment may be conducted for each area. Telephone, email, and web-based surveys are collection methods for both general and individual assessment. Telephonic interview are conducted for interview but it is very time consuming and costly. Immediate feedback is provided and questionnaires, standardized tests, and informal questioning via email and web-based methods all are inexpensive. For assessing computer skills and available resources data is provided by them that is necessary computer skill and technology resource are known to the students if they respond to the email survey.

## 5.2.DATA ANALYSIS

There are different methods for analysing need assessment data. Scoring procedure and analysis guide comes with an instructor a quantitative method, instruments and standardized tests usually are selected. According to the major theme qualitative data is interpreted by first identifying major themes and then categorizing individual responses. Quasi-structured fashion is used to analyse quantitative data. Both specific group needs and individual needs in their analysis should be noted and intuition should be followed by the instructors. A web platform is developed that performs curriculum collaborative and provides schools with hundreds of standards-aligned curriculum and assessment components that they can implement. It should be reliable and flexible so that the teachers spend less time worrying about how to map curricula and dedicate more time to teaching.

## 6.CONCLUSION

Here the main focus was Web-based adaptive assessment and self-assessment in Higher Education Basic assessment issues in the literature review was presented. Productive student learning assessment can play a crucial role. Grading students is not the basic aim of effective assessment. Rather than learning grading deals with recording and management. Assessment for learning is carried throughout the learning process. Also no grades are being given to the students. For the students assessment the development of web based tools are the result of development of digital technologies. To provide test to the student knowledge level adaptive assessment is incorporated to a Web-based assessment tools. Both distance learning and student learning can be done by Web-based adaptive self-assessment.

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