Drawback Handling in Single View Report in Moodle System

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Abstract: E-Learning systems provides mechanisms to simulation of paper-based testing used in traditional learning systems, E-Learning systems such as "Modular Object-Oriented Dynamic Learning Environment" (Moodle) system provides tools to implement web based examinations, managing and calculations of grades of the students in the courses. The questions are graded either automatically by this system or manually by the teacher. Many question types such as "True/ False" and "Matching" in this system are automatically graded because the system can save specific optimal answers and grades for these questions and it performs assessments of the student's answers and evaluate the grades according to the optimal answers. "Essay" question type in this system is manually graded by the teacher by using "Manual grading' interface and impossible to grade automatically because the system doesn't save its specific optimal answers for this question type. This system allows the teacher to change the grades were automatically graded or manually graded via "Single view" report; this may cause contradiction in assessment of the student's answers and considers a loophole (drawback) in graded process. We propose in this paper processing to this drawback in the system.

Keywords: "Quiz" activity, Moodle, manually graded, automatically graded, Gradable item.

1. Introduction

Learning Management Systems (LMS) are integrated systems that provide a number of tasks performed by teachers and students during teaching and learning processes. The teachers use LMS to produce web-based course quizzes, notes, communicate with the students and grade student progress. The students use it for communication, learning and collaboration [1]. Moodle system is LMS that produces variety of teaching tools, "Quiz" activity in this system is one teaching tools used for the examinations, "Quiz" activity represents an alternative to paper-based testing and traditional face-to-face courses [2]. The teacher used "Quiz" activity to create quizzes in Moodle system, the "Quiz" consisting of questions of different types, including "True/ False", "Multiple choices", "matching" and other types [3]. Two classifications for question types in Moodle system according to method of grading, there are question types that are automatically graded as "True/ False", "Multiple choices", "matching"...etc. and question type that is manually graded, this type is "Essay". The automatically graded is the process which evaluates the student's answers for the questions by Moodle system, the system saved the optimal answers for the questions and the grade for each optimal answer, the system matching the student's answer with all the optimal answers for particular question, when the student's answer match the particular optimal answer, the system gives the grade of this optimal answer to the student's answer. The manually graded is the process which evaluates the student's answers for the questions by the teacher, and he performs enter, edit and saves the grades for these questions in Moodle system. In Moodle system, "Essay" question type is manually graded not automatically graded because this type of questions don't has specified optimal answer saved in the system.

1.1 Problem Statement

"Single view" report in Moodle system, allows the teacher to change the grades of "Quiz" activities whether they are including questions that are automatically graded or manually graded. In this system, question types that are automatically graded gives the grades for the student's answers, have a specified optimal answer and the grade for each optimal answer, these optimal answers and their grades are saved in this system. The system uses these optimal answers for comparing with the student's answer the purpose of determining the correctness of the student's answer and gives the grade, when the student's answer matches the particular optimal answer; the system gives the grade of this optimal answer to the student's answer. In the automatically graded method there is no need for grades by the teacher. Moodle system allows the teacher to change the grades which are automatically graded and no condition or restriction prevents the teacher from giving the student's answer a grade which may not deserve. Perhaps the teacher gives the grade of the incorrect answer to the student's answer which may be correct or in contract, or perhaps there are many students which have the same answers for the same question that is automatically graded but some grades of these answers are automatically graded and other graded by the teacher, therefore grades of these answers may be different, it may cause contradiction in evaluating the students' answers. In Moodle system, the teacher can change the grades

that are automatically graded via "Single view" report. This causes drawback in the grading process in this system. Therefore this requires removing this drawback from this system through not allowing the teacher to change the grades of the questions that are automatically graded in "Single view" report. In this system, the teacher can do manually grades for the questions that are impossible graded automatically (the questions of "Essay" type) via "Manual grading" interface that allow the teacher to enter, edit and saving the grades for this question type only, therefore there is no need for changing the grade of "Quiz" activity that is included questions of "Essay" type in "Single view" report.

1.2 Problem discussion
      In this paper, we propose processing of the drawback in "Single view" report in Moodle system to prevent the teacher to change any grade via this report. The proposed structure includes modifying the code in **single view** plugin which is in the directory "{main folder of Moodle system}\grade\report", this plugin customized for "Single view" report and it contains subfolders and files that are important for running "Single view" report in this system.

1.3 Objectives
1. Processing the drawback in "Single view" report in Moodle system.
2. To understand the working principles of grades reports in Moodle systems.

2. BACKGROUND CONCEPTS
2.1 "Quiz" activity in Moodle System [4]
      In Moodle system, "Quiz" activity is used to design and set quizzes, each "Quiz" activity may consist of many question types. All the questions are kept in a repository called the Question bank and it is possible to be reused in multiple examinations. "Quiz" activity can display feedback and results at various times during attempts on "Quiz" activity. "Quiz" activity has a number of tools and options to conduct the examination efficiently. One of the features in "Quiz" activity is to display random questions selected from a set of question bank. Also, there is flexibility in providing the online examinations in Moodle system. The exam candidates can be allows repeated attempts at "Quiz" activity or retake "Quiz" activity multiple times.

2.2 Grades Reports in Moodle system [3]
      Moodle system has many grades reports; all the grades reports are available to the teacher. The grades reports that are available to the students are "Overview report" and "User report" only. The grade reports in Moodle system are accessed through "Grade administration" block which is accessed via "Grades" link in "Course administration" block in course homepage in this system. These reports are "Grader report", "Grade history", "Overview report", "User report" and "Single view".

3. THE PROPOSED STRUCTURE FOR DRAWBACK HANDLING IN SINGLE VIEW REPORT IN MOODLE SYSTEM
3.1 "Single view" report in Moodle system Overview
      This report displays students' names, students' grades for "Quiz" activities and students' total grades in the course, it allows the teacher to change and save any grades. This report has three interfaces as follows:
1. First interface: is the main interface, it displays when login in to this report, it includes two dropdown menus as shown in Figure 1, these menus are:
- First dropdown menu is used for login to second interface in this report which displays all students' grades for one gradable item (gradable item may be "Quiz" activity or the course), this login done via select name of this gradable item from this dropdown menu.
- Second dropdown menu is used for login to third interface in this report which displays student's grades for all gradable items in a particular course, this login done by select student's name from this dropdown menu.
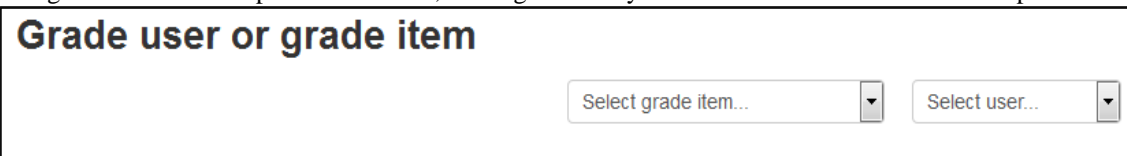

Figure 1: Main interface of Single view report

2. Second interface: displays the name of gradable item, dropdown menus (which are showed above in first interface of this report), "Save" button and the table consist of six columns and a number of the rows that

are equal to number of students in the course, each row is customized for one student, first column displays the student's name, second column displays maximum and minimum limit of gradable item, third column displays rectangular shape in inactive state (inactive state means impossible enter/edit content of the rectangular shape) customized to the student's grade for gradable item, also third column displays "Grade analysis" link which links to interface that display information about the grade , fourth column display rectangular shape customized to the feedback in inactive state, fifth column (override column) display checkbox element type and sixth column for exclude, as shown in Figure 2.

In each row of this table, when the checkbox is clicked, the rectangular shape which is customized to the student's grade and the rectangular shape which is customized to the feedback becomes in active state (active state means possible enter/edit content of the rectangular shape), the teacher can edit (change) and save the content of these shapes when they are in active state, via edit these contents and saved them through click on "Save" button in this interface.

Figure 2: Second interface of Single view report

3. Third interface: displays the student's name, dropdown menus (which are showed above in first interface of this report), "Save" button and table consists of seven columns and a number of rows which are equal to a number of gradable items in the course, each row is customized for one gradable item. First column displays the name of gradable item, second column displays category of gradable item, third column displays maximum and minimum limit of gradable item, fourth column displays rectangular shape (in inactive state) customized to the student's grade for gradable item, also fourth column displays "Grade analysis" link which is links to interface that displays information about the grade, fifth column display rectangular shape (in inactive state) customized to the feedback, sixth column (override column) displays checkbox element type and seventh column is exclude column.

In each row of this table, when checkbox is clicked, the rectangular shape which is customized to the student's grade and the rectangular shape which is customized to the feedback are becomes in active state, the teacher can edit (change) and save the contents of these shapes when they are in active state, via edit these contents and saved them through click on "Save" button in this interface.

Also, second and third interfaces are display options for bulk insert to insert addition values to the grades.

3.2 Processing of the drawback in "Single view" report in Moodle system
Change and save the grades via second interface or third interface of "Single view" report may be causes contradiction in assessment of students' answers and considers drawback and a loophole in graded process, we proposed processing for this drawback in "Single view" report as follows:
We modified the code in single view plugin. The modifications code of second and third interfaces of this report include:
1. Remove exclude and override columns.
2. Not display options of bulk insert.
3. Display rectangular shapes for the grades in inactive state only.
   The above steps are carried out with some modification of codes of *user.php* and *grade.php* files in single view pluginin as shown in Figure 3 and Figure 4 respectively.

```php
public function init($selfitemisempty = false) {
    global $DB;
    if (!$selfitemisempty) {
        $validusers = $this->load_users();
        if (!isset($validusers[$this->itemid])) {
            // If the passed user id is not valid, show the first user from the list instead.
            $this->item = reset($validusers);
            $this->itemid = $this->item->id;
        } else {
            $this->item = $validusers[$this->itemid];
        }
    }
    $params = array('courseid' => $this->courseid);

    $seq = new grade_seq($this->courseid, true);

    $this->items = array();
    foreach ($seq->items as $itemid => $item) {
        if (grade::filter($item)) {
            $this->items[$itemid] = $item;
        }
    }
    $this->requirespaging = count($this->items) > $this->perpage;

    $this->setup_structure();

    $this->definition = array(
        'finalgrade', 'feedback'//, 'override', 'exclude'
    );
    $this->set_headers($this->original_headers());
}
  public function original_headers() {
      return array(
          '', // For filter icon.
          get_string('assessmentname', 'gradereport_singleview'),
          get_string('gradecategory', 'grades'),
          get_string('range', 'grades'),
          get_string('grade', 'grades'),
          get_string('feedback', 'grades')//,
        //  $this->make_toggle_links('override'),
         // $this->make_toggle_links('exclude')
      );
  }
```

Figure 3: The modified code of *user.php* file in single view plugin.

```
public function original_definition() {
    $def = array('finalgrade', 'feedback');

    /* $def[] = 'override';

    $def[] = 'exclude';*/

    return $def;
}

public function original_headers() {
    return array(
        '', // For filter icon.
        get_string('firstname') . ' (' . get_string('alternatename') . ') ' . get_string('lastname'),
        get_string('range', 'grades'),
        get_string('grade', 'grades'),
        get_string('feedback', 'grades'),
        // $this->make_toggle_links('override'),
        // $this->make_toggle_links('exclude')
    );
}
```

Figure 4: The modified code of *grade.php* file in single view plugin.

The interfaces associated with modified codes of *user.php* and *grade.php* files are explained in Figure 5 and Figure 6 respectively.

Figure 5: Second interface after modifying *user.php* in single view report.

Figure 6: Third interface after modifying *grade.php* in single view report.

4. THE IMPLEMENTATION REQUIRMENTS

The implementation requirements are the same as implementation requirements of Moodle system, these requirements are:
1. The operating system such as Linux or Windows [3].
2. Installation Package like WAMP (Windows, Apache, My Structured Query Language (MySQL), Hypertext Preprocessor (PHP)) or XAMPP(stands for X-OS (for different operating systems), Apache, MySQL, PHP and Perl). This package must include: Web server software that supports PHP programming language such as apache server, The PHP scripting language (version 5.5.12 or later) and a database such as MySQL or PostgreSQL are completely supported and recommended to use with Moodle system [3].

5. CONCLUSIONS

Moodle system is a flexible environment to develop. It is scalable by making updates to existing plugins. Moodle system supports two types of grades, the automatically graded by the system and the manually graded by the teacher. The automatically graded used to evaluate the students' answers for the questions that have specific optimal answers saved in this system. Moodle system provides many reports used to display the grades of each student in the course. Implementation the proposed structure prevents the changes in the grades of questions answering which aree automatically graded.

REFERENCES

[1] Marijana Despotović-Zrakić, et al, "Providing Adaptivity in Moodle LMS Courses", 2012.
[2] Mónica Blanco, Marta Ginovart ,"MOODLE QUIZZES FOR ASSESSING STATISTICAL TOPICS IN ENGINERING STUDIES ", Joint International IGIP-SEFI Annual Conference 2010, 19th - 22nd September 2010.
[3] https://www.moodle.org.
[4] Gaurav Kumar, Anu Suneja,"USING MOODLE- AN OPEN SOURCE VIRTUAL LEARNING ENVIRONMENT IN THE ACADEMIA", International Journal of Enterprise Computing and Business Systems (Online), Vol. 1 Issue 1 January 2011.