Learning Management Systems Activity Records for Students' Assessment of Generic Skills

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Abstract-

The project is aimed at developing an android application for the benefit of student in between the management. This application allows the faculties to update the student profile and marks, attendance details of the students. When his attendance comes to less than 70% .it can be automatically send the alert message to that particular person mobile number. This detail can be viewed by the student with his/her unique register number. Also the students can be notified, when the students make themselves absent with their current attendance percentage. The staff will be able to view their details for which they can login using their staff id and password. Also, the staff will be able to enter the attendance of the students. The proposed system integrates all the above features into one pocket app which is not available in any of the existing systems. Android application student Result Analysis system is used for conducting the exams, analyzing the answers, calculate the grade and displaying the results. This system the students and the faculty to have an easy access for viewing the marks and attendance. The students can only view the marks if their student's authentications are correct. Students don't have the permission to change or update the marks.

1.Introduction:

University graduates must be competent in generic skills in order to be candidates for companies. As the executive Quinton Studer stated, "All skills are important with some being more vital for some jobs than others. Obviously, some such as communication, teamwork, integrity, etc. are nonnegotiable". The Tuning Educational Structures in Europe Program established new approaches to teaching, learning, and assessing generic skills in practice, and universities have assumed responsibility by participating in international programs oriented to students' acquisition of generic skills.

In the last decade, important shortcomings have been found in the development of generic skills related to the job environment. The main challenge for the university teachers is to figure out creative ways to involve students in projects which requires the skills demanded by employers. In this vein, there are several recent works related to the learning, development, and improvement of students' generic skills in a wide range of areas: Business, Computer Science and Engineering, Hearth Science, Teachers' training, and Tourism studies, among others. However, the number of assessment papers with generic skills is much smaller than with their improvement. These approaches that address students' assessments in one or several skills have mainly focused on two issues: subjectivity and scalability.

An assessment can be considered subjective when it is based on abstracted or interpreted information provided by an observer. Consequently, students with considerably different performance can have similar grades or, vice-versa, students with similar performance can have grades which are considerably different. Generally, this situation occurs when the assessment of generic skills is delegated to students in peer-assessment processes.Scalability problems mainly appear when teachers cannot make detailed assessments of their students' generic skills. These issues are generally due to one of the following reasons: since it adds to the teachers' daily common tasks, in some cases there is a lack of time. In other cases, it is due simply to the large increase in the number of students.

Learning Management Systems (LMSs) have been adopted by higher education institutions for fostering collaboration between students and teachers and providing greater learning flexibility in numerous learning modules. Previous works used the information stored in LMSs' activity records to measure students' performance in generic skills. However, there is not a theoretical basis that relates generic skills and students' activity records. These works use their own interpretation of students' indicators for measuring performance in generic skills. What are the teachers' thoughts regarding this proposal? Do they consider that their students perform generic skills while they interact with the LMS modules? Therefore, the main objective of this research is identifying which students' skills are evaluable from LMSs activity records.

This work was performed at Universidad International de la Rioja (UNIR), an international online university in which the learning-teaching process is carried out completely online. Following Action Research (AR) methodology, this research has two fundamental parts. First, teachers of UNIR participated in a survey in which they evaluated the applicability of their students' activity records in the LMS modules to assess their performance in generic skills. Secondly, teachers of four courses at UNIR assessed their students' generic skills following the results collected in the previous survey. They used Eval Course 4 Sakai, an artefact developed to carry out this research, and were interviewed after the experience.

The rest of this paper is organized as follows: Section 2 describes the literature review; Section 3 describes the material and methods used in this work; Section 4 describes the results; Section 5 discusses the findings of the work; and finally, Section 6 presents the conclusions and an outline of future work in this area and skills that they later had to assess. Although the experience was positive from the results point of view, it should be noted that the teachers' efforts were excessive and the activities were not repeated in the future. Therefore, scalability is one of the problems that can arise if the teacher is responsible for this assessment. An assessment procedure is said to be affected by scalability problems when the number of assignments grow and the professor is not able to cope with the increase.

To avoid scalability issues, researchers often make use of peer and self-assessment procedures. Through group work practices, students can assess their performance as a team. Garcia-Martin et al. applied the Team Work Behavior Questionnaire (TWBQ) in two steps: first, students assessed their own performance and second, they assessed the performance of their mates. However, previous works have results that peer and self-assessment procedures can bring subjective issues, since students

performing similarly sometimes may have different grades. Carreras-Marin et al. showed several discrepancies when assessing the same submission between the teachers and the students in peer-assessment for each assignment. As researchers are knowledgeable of this issue, they try to devise methods to avoid it. Staubitz et al. designed a grading rubric to avoid subjectivity and established several peer-assessments per assignment in order to increase the probability that the average grade of students' tasks was close to the grade a teacher would assign. Chan & King improved the accuracy of their peer-assessment process by leveraging students' social information. Based on the idea that students' grading bias could be affected by their friends, three probabilistic models for peer-assessment were proposed by including social connections.

2.Related Work:

Higher education institutions, supported by the business sector, promote the development of generic skills in order to contribute to graduates' employability In this context, teachers must assess their students' performance in generic skills.Thetermassessmentisusedinthisresearchtoreferto the measurement of students' performance in generic skills. To know how well students enrolled in a course perform generic skills, teachers need assessment tools. These tools include rubrics and questionnaires to be used by the teacher and/or the students themselves. In their research, Benlloch-Dualde and Blanc Clavero used several questionnaires. These teachers defined a seriesofspecificactivitiestoimprovetheirstudents'gene ric skills that they later had to assess. Although the experience

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students'gradingbiascouldbeaffectedbytheirfriends, three probabilistic models for peer-assessment were proposed by including socialconnections. A LMS is a software application for the administration,

documentation, tracking, reporting, and delivery of educational courses. At this point, it will be difficult to find an educational institution that does not have an e- learning platform of this type for the management of its courses. Some of the benefits of using LMS for students are organizationofcontent,accessatanytimeandanywherewith a computer, communication with other students or teachers, and easy tracking of their progress. LMSs are composed of modules such as wikis, exams, tasks, forums, andworkshops, among others. Teachers configure and adapt these modules for their courses and students interact with these modules during their academiclife. Several articles can be found in the literature in which teachers confirm that their students perform generic skills when working on LMS modules. For instance, there is a correlation between students' activity in online forums and the grades they achieve. They stated that in programming courses where forum participation is not assessed,studentsonlypostedwhentheyneededhelpsolving problems. In other research, Fidalgo-Blanco et al. used learning analytics to assess their students' performance in teamworkthroughtheirinteractionsinforums.

Learning analytics is the use of intelligent data, learner- produced data, and analysis models to discover information and social connections and to predict and advise on learning [.RayonJerezetal.proposedasolutionbasedonlearning analytics to assess several generic skills from students' activityinLMS,GoogleAppsforEducation,and Media Wiki[18].Interpersonal communication, analytics thinking, and writing skills were assessed through both students' participationinforumsandcommentspostedintheirGoogle Doc. Balderas et al. developed an artefact based on learning analytics techniques to retrieve evidence from a LMS to assess students' performance in leadership, self-critical, and interpersonal skills. Evidence was collected from the forum and workshop modules.

Can we claim that students' activity in forums is suitable to assess students' performance in the ability of problem solving and teamwork? Unfortunately, the answer to this or other questions is not found in the literature. Each work addresses the assessment of one or several generic skills,but there are no studies that specifically link the performance in generic skills and the activity performed in LMS modules by students. The main objective of this research is precisely to identifythisrelationshipbetweengenericskillsandthework performed inLMSs

3.Materials and Methods:

Oncetheliteraturereviewhasbeenpresented,two mainparts remain to be discussed in this AR process. First, it is necessary to know which generic skills teachers consider to be evaluable from students' activity recorded in the LMS. Second, a tool for obtaining indicators from Sakai records was developed and applied in four online courses. Their corresponding teachers were interviewed regarding the applicability of the indicators obtained by the tool for assessingthegenericskillsoftheirstudents.FollowingOates description, the features of the ARare:

Concentrationonpracticalissues:teachersworking intheironlinecoursesbasedonaLMS.

- An iterative cycle of plan-act-reflect: thisresearch

can be repeated in order to refine the proposal.

- Anemphasisonchange:improvetheassessmentof genericskills.
- Collaboration with practitioners:teachers.
- Multiple data generation methods: quantitative data via survey and qualitative data viainterviews.
- Action outcomes plus researchoutcomes.

Subjectivity is one of the main problem when assessing generic skills. When assessing for one specific skill, two different teachers can consider an activity performed by a student in a LMS quite differently.

LMSs have several modules with which students interact during their academic life. A survey was created with the purpose of determining the relationship between the activity carried out by students in these modules and the generic skills performed. This surveywas planned and designed following Oates' guidelines comprising six activities Data requirements. The data needed for responses to the following questions:

What module activity records are valid to measure students' performance in generic skills? Which specific generic skills can be measured with the previously obtained module activity records? Data generation method. A questionnaire was chosen as the survey method. The most suitable requirements for this option are: It is required to obtain data from a large number of teachers. It is required to obtain standardized data: identical questions and a range of answers. Sampling frame. Population likely to be included in the survey: in this case, the list of teachers from UNIR. This is a probability sampling, i.e., the respondents are representative of the overall population being studied: teachers who supervise virtual courses.

Sampling technique. It is required to decide how the selection of people out of the sampling frame should be made. The chosen technique is random sampling. The questionnaire was randomly sent to 413 teachers from this university (a population of 700). Response rate. 144 teachers answered the questionnaire (35%).Sample size. 144 teachers represent 20% of the population. The accuracy range of this sample is +/- 7.5%, with a confidence level of 95%.

The design of the questionnaire comprised two parts: a list of generic skills and a list of the LMS modules. The list of generic skills was taken from the Tuning Education Structures in Europe Project. These skills are used by Spanish educational institutions when defining their syllabus. The list is shown below: Ability to communicate in a second language Capacity to learn and stay up-to-date with learning Ability to communicate both orally and through the written word in first language Ability to be critical and self-critical Ability to plan and manage time Ability to show awareness of equal opportunities and gender issues Capacity to generate new ideas (creativity)Ability to search for, process, and analyze information from a variety of sources Commitment to safety Ability to identify, pose, and resolve problems Ability to apply knowledge in practical situations Ability to make reasoned decisions Ability to undertake research at an appropriate level Ability to work in a team

Knowledge and understanding of the subject area and understanding of the profession Ability to work in an international context Ability to act on the basis of ethical reasoning Ability to communicate with non-

experts of one's field Ability for abstract thinking, analysis, and synthesis Spirit of enterprise, ability to take initiative Inter personal and interaction skills Ability to design and manage projects Ability to act with social responsibility and civic awareness Determination and perseverance in the tasks given and responsibilities taken Appreciation of and respect for diversity and multi culturally Ability to work autonomously Skills in the use of information and communications technologies Commitment.

For each LMS module and generic skill pair, each teacher selected an option in a 5-point Likert scale regarding usability to measure students' performance in the given skill to the activity recorded in this module. The list of the LMS modules was taken from the modules available in Sakai. These modules are listed below:

- Forum
- Videoconference
- Resources andcontent
- Assignments
- Calendar
- Exams
- Privatemessages

4.Proposed Work:

This section is divided into two parts. First, the section presents a technological artefact specifically developed to implement the proposal. Second, it describes its application to the assessment of generic skills in a series of online courses.

5.Problem Statement

This is mainly used for the convenience of the students and staff. Using this application, the staff can manage the details of students including the mark attendance and the college events to be occurred. Students also easily get login to the application and know about the events and mark details. fig 1 shows the system architecture.Therefore, they can save the time Also can know every details from the place itself.

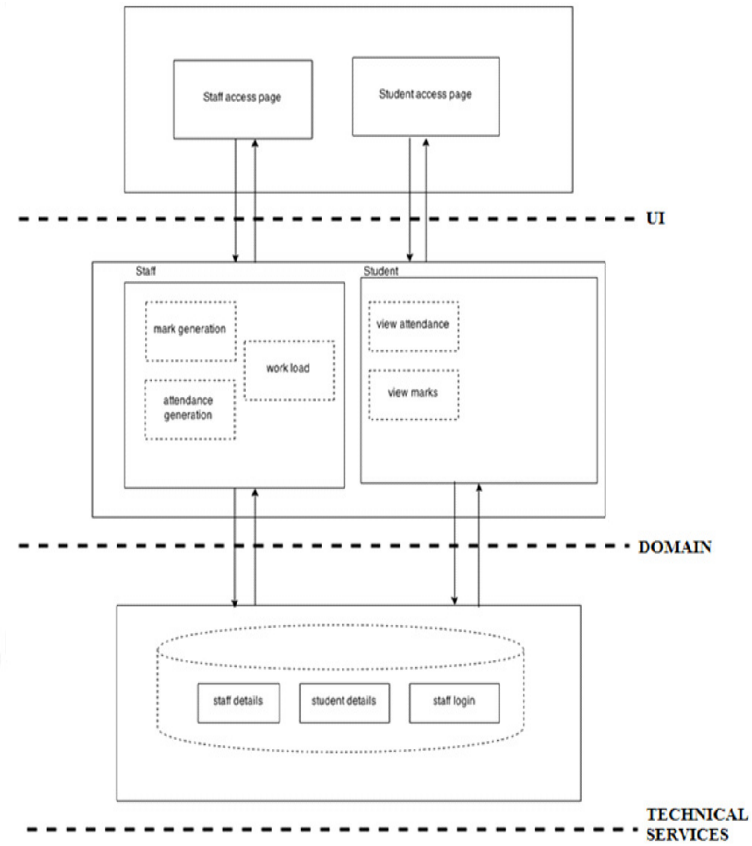


Fig1:System Architecture

MECHANISM

- ATTENDANCE MODULE
- MARKS UPDATION MODULE
- PROFILE GENERATION
- FEEDBACK MODULE

This module allows the staffs to enter the day-wise attendance of the students.

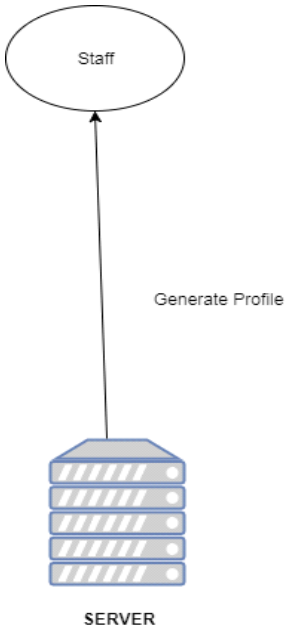
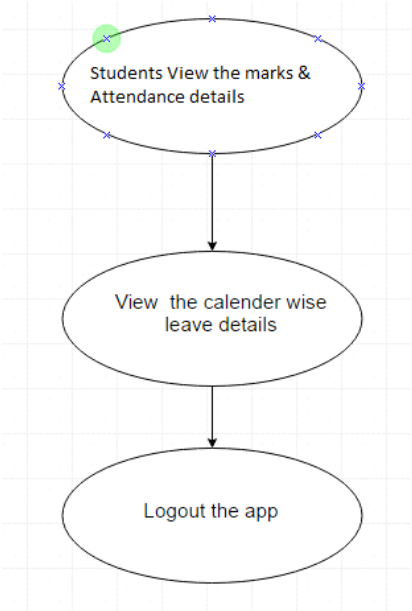


Fig2: Generate profile

Generate profile (fig2) shows the Marks of different exams can be uploaded by the staffs into the server which will be computed for internal mark calculation.



Profile Generation

Staffs can generate their profile which can be viewed and edited later.

Feedback Module

In this module fig3 shows the student can give the feedback to the staff. Once the Student want to get login to the application and give the feedback to the particular staff.

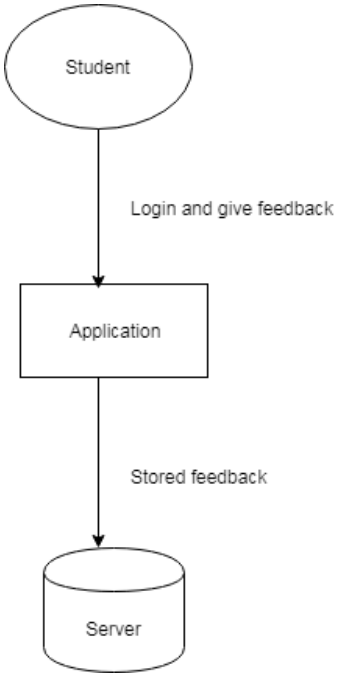


Fig3:Feedback Module

Conclusion

To conclude, Project Data Grid works like a component which can access all the databases and picks up different functions. It overcomes the many limitations incorporated in the attendance. Easy implementation Environment Generate report Flexibly

The project has a very vast scope in future. The project can be implemented on intranet in future. Project can be updated in near future as and when requirement for the same arises, as it is very flexible in terms of expansion. With the proposed software of database Space Manager ready and fully functional the client is now able to manage and hence run the entire work in a much better, accurate and error free

manner. The following are the future scope for the project.Discontinue of particular student eliminate potential attendance. Smart Phone based attendance system.Individual Attendance system using Student login. Event Sharing Using both student and staff login.

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