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A UNIQUE CLOUD SERVICE FOR FINAL YEAR PROJECT MANAGEMENT USING RESOURCE MANAGEMENT TECHNIQUES

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ABSTRACT

Currently, the practice cloud services usage has become significant and essential for all. Cloud services are not like a webpage it become a wide survive for all kind of people in the world. Computation, storage and services are the main theme of cloud computing. Cloud services capable of select the best resource, matchmaking, scheduling, fault tolerance, load balancing and real time applications. This research work employ about real time application in simulation method. The simulation work does the Job Organization Method using Resource Management Techniques in Cloud Computing. Nowadays, the Final year project works of worldwide institutions are not maintained in common portal. So the young researchers' ideas are not exposing to the world. Some of the researchers are publishing as papers with limited pages. This service use to make a common unique cloud portal for all kind of peoples in the world. It is support by all government to maintain a unique portal for project management. Here project as a job. This research work initiates an application called Unique Cloud Service for project management system for final year project students. The outcome of the service is capable to perform many operations such as operations of user authentication, reservations systems Final Year Project, showing the title of projects, download the previous reports, also the application can offers many services as link for searching engines, also connect to library searches engines. Therefore instructors, staff, students and visitors can get helpful, easy and fast services based on cloud computing techniques. Resource Management Technique of cloud computing is to solve this applications and evaluate its performance.

Keywords: final year project management, cloud service, resource management technique, cloud computing, scheduling, advance reservation.

INTRODUCTION

Education Institutions are performs numerous assignments amid the semester, for example, into administrates, scholastics and other steady undertakings. Among the scholastic strong undertakings, individuals in offices handle Final Year Project (FYP) administration and numerous others. Students on the other hand collaborate with the department's staff in such exercises according to instruction process requirements. In this cloud service built up a cloud application which plans to ease huge numbers of these assignments for the scholarly staff and students [6]. There is no framework that a permit last year students of to choose their project groups or choose the guide.

Furthermore, their is no timetable administration framework which makes it hard to oversee and plan the Department's errands that incorporate graduation project,, on the grounds that there are a ton of understudy, so they require a framework to deal with that assignments. In Final year project, the understudy may confront challenges in FYP reservation. Right off the bat, a few students don't have the any idea about the project recommendations offered by the department in that semester which is offered by the teachers. Likewise a few students don't have a thought regarding the guidelines required for enrolling FYP. Moreover, different students confront challenges to oversee gatherings with educators to book a task or to get FYP's adaptation endorsement for the reservation.

RELATED WORKS

This section will feature some related frameworks that have comparative functionalities additionally will exhibit the examination between these frameworks with the proposed framework.

Graduation project online management system Alhosn university case study

The reason for this framework is to enhance, create and oversee graduation projects following a product that permits to students to arrange their errands with less efforts and time, moreover it enables the bosses to catch up students and their advance, and additionally it permits board of trustees individuals from the graduation undertaking to screen all exchanges occurring to guarantee that everything is well [1]. The contrast between this framework and the proposed one is that, there are no past reports which can enable students to get more data.

Online final year project system for faculty of information communication and technology

Through this system, final year project students can search for project titles based on certain criteria and preferences. They can propose their own titles using this system. This selection system also enables the project supervisors to view and update the final year project topics that will be offered. Also, it allows students to organize their tasks and deadlines with minimum effort, besides enabling supervisors and Students to book a presentation venue. This will reduce time to make an appointment with

supervisor [2]. Through this framework, last year project students can look for project titles in light of specific criteria and inclinations. They can propose their own particular titles utilizing this framework. This determination framework likewise empowers the project managers to view and refresh the last year project points that will be advertised. Likewise, it enables understudies to sort out their errands and due dates with least exertion, other than empowering guides and Students to book an introduction setting. This will decrease time to make a meeting with guide. The contrast between this framework and the proposed one is that, there are no highlights to download past reports which can help students to get more data.

CS department final year project management

This Final Year Project Management System (FYPMS) framework demonstrates a list of FYP projects. Client can choose from the list and read the project depiction [3]. The contrast between this framework and the proposed one is that, this framework does not have project reservation benefit. Likewise, it doesn't enable clients to book FYP or download its depictions.

Computer Science and Information Systems

"This Computer Science and Information Systems (CSIS) is the Final Year Project Centre for all undergraduate degrees offered by CSIS. The center contains the current FYP proposition made by individuals from personnel and additionally connects to past FYPs and reports, for example, the FYP Proposal shape and FYP Guidelines" [4]. This site does not have online reservation. The reservation is made physically by filling a PDF frame and submitting it to the Department office as said.

Computer science final year projects

It has a segment for FYP that shows a list of pervious FYP projects. It shows likewise the project's supervisors, project depiction, group names and the timetable of the task advance [5]. This site does not have an online reservation and it doesn't have an area to show a list of activities that client can look over it.

THE PROPOSED FINAL YEAR PROJECT MANAGEMENT CLOUD SERVICE

The proposed framework means to assemble a computer framework that can oversee, screen and choice of the last year projects. This administration is utilizing the Internet innovation to computerize some interior procedure inside distributed computing [7]. The principle target of this cloud benefit is to build up an intelligent cloud application to help staff, students and guests to deal with their solicitations. Other goal is that the project will uncover the undertaking group to how the genuine web applications are planned and actualized as test. This Proposed benefit is exceptionally valuable for students, organization specialists and staff. In light of this administration, any establishment students can enlist their task with any organization supervisors. Great collaboration between worlds level Institution's students, Supervisor's and Company specialists. High Knowledge Sharing between all on the planet.

The proposed final year project management cloud services are,

- Final Year Project students can reserve/Book guideship to any supervisor
- Download the previous project reports and presentation slides of completed students
- Plagiarism checker to avoid copy from existing work
- English polisher to polish the project report
- Online Forum for Discussion
- Searching engines to download more papers related to the Final Year Project
- Connect to library searches engines for E-Book
- Project publication tips
- Journal publication details for your project
- Conference alerts for your project
- Workshop/ seminar alert details about your project
- Project development tools/software
- Online Quality Drawing Tools
- Guideline for resources Access through cloud computing (Cluster computer, super computer, computers, scanner, printer, webcams)

There are several advantages by using this system such as:

- This online project service very useful for students, company experts and staff
- Based on this service, any institution students can register to any institution supervisor
- Excellent collaboration between all Institution's students, Supervisor's and Company experts
- High Knowledge Sharing
- Ease of use and clarity of the project.
- All activities of project development provided by this online service
- Student able to search for their interest title faster
- Easy reservation cancellation and replacement

Disadvantages of this proposed system,

- Traffic on the network and database as on very large method.
- Lack in real time implementation.
- Difficulty to collect all previous project reports

The following Definitions important for this work,

- **System:** A collection of elements work together to achieve a goal.
- **User:** A student or person who use the website.
- **Admin user:** Responsible for managing the system.
- **Supervisor:** Responsible for overseeing all aspects of a project from its inception to completion, and accept or reject students who register for project.

- **Coordinator:** The person who is the link between the supervisor and the student.

The Requirements Analysis of the proposed work is,

This section provides the different project's requirements and an analysis of the project using some Software engineering techniques. These requirements will be used in software design, implementation and testing [8]. Simply user requirement shows what the user expects from the system. There are three main users for OPMS: Admin, Updaters and Browsers. The following points clarify the role of each user,

Administrator
- Mange system users through adding, deleting and updating users.
- Managing slides viewer sub-system.

Updaters

FYP coordinator
- Add, delete and update FYP project list and projects proposals.
- Add, delete and update FYP pervious reports.
- Accept/ reject student's selections.

Staff and students update group:
- Students can book FYP project.
- Students can view the status of requested FYP project.

Browsers (staff, students or visitors)
- Download FYP pervious reports.
- View list of FYP reports.

System requirements describe the functionalities that are offered for the user. Functional requirement defines the functions of the system and its components. The following points are the services that the system should provide.

a) When the user clicks on the "FYP" button from the main page, the system will display a list of FYP project titles, so, when student choose a project title, the proposal of the chosen project title will be shown on the screen. Also, there will be textbox for students to enter their IDs to reserve the project.

b) After submitting the request, the system will create two accounts, one for the student(team leader) and one for supervisor ,then the system will send username and password (information will be send by email)to their emails.

c) When "previous Reports" link is clicked, the system will display list of previous FYP project titles in a list allowing user to select. After a project title is selected the system will display in a box the abstract of the report. The system will allow students to get full report of the selected FYP project and allow them to download it.

d) Rules link will show a list of FYP registration rules

The non-functional requirement specifies the different quality standards of a system. It applies to the system rather than individual features or services. Following is some detail about these requirements:

a) Security: It's one of the most important requirements in web applications. In our application, we need to protect data when it is sent by user and when it arrives to the server using many ways such as authentications encryption.

b) Availability: Our system need to be available to uses all the time during the semester, and to everyone.

c) Reliability: The system should perform correctly in different cases and it should deal with data from different users efficiently.

d) User-friendly: The system should have an attractive and clear interface so users will not have any difficulties using it. This system has more interacts with multiple users.

Design and Modeling of section will highlight the data design which shows the data that are needed in the system and how this data is represented. Also, will emphasis on the system architecture. Figure-1 shows a context Data Flow Diagram that is drawn for FYP. It contains a process that represents the system to model, the "proposed final year project management cloud service". Students, supervisors and department are the entities who will interact with the system. In between the process and the external entities, there are data flow that indicates the existence of information exchange between the entities and the system.

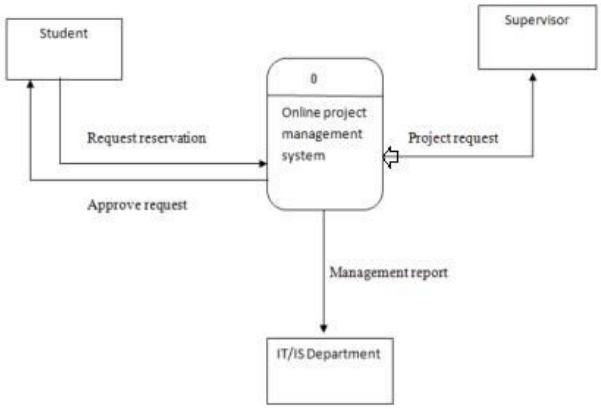

Figure-1. Context diagram of proposed system.

Figure-2 shows the flowchart for the Student process in OPMS. The Student input (his/her ID and password), process (Select list, Chose Supervisor) and (Print project list)

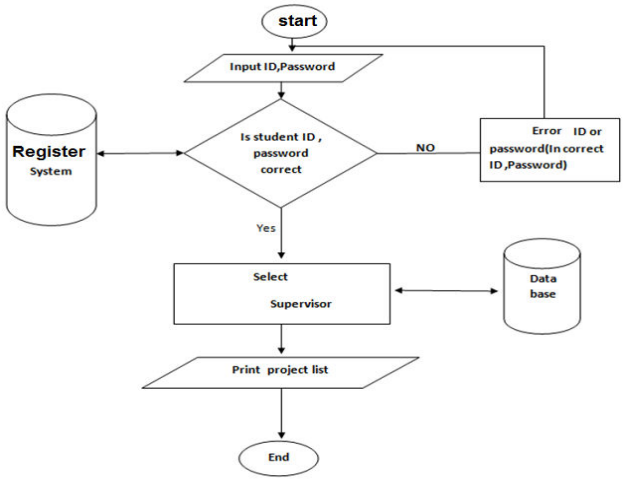

Figure-2. Flowchart diagram for student process.

Figure-3 shows the flowchart for the supervisor process in OPMS. The supervisor input (his/her ID and password), process (view lists) and output (lists).

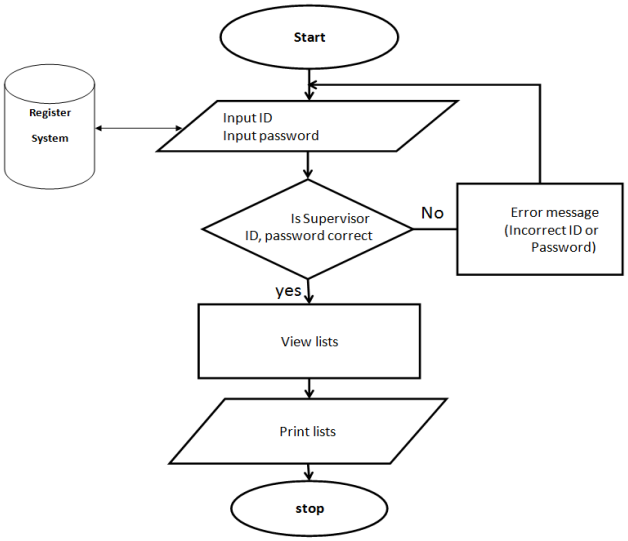

Figure-3. Flowchart supervisor diagram for process.

Figure-4 presents Entity-relationship (E-R) diagram for the system database. It shows the entities which compose the database and relationships between them. Then we will shortly view and describe tables of our database. The primary key of each table will be underlined. User Tables- It is used to store username of users in Table-1.

Table-1. User table.

Field Name	Type & size	Description
user_name	varchar(20)	Store username
user_password	varchar(60)	Hashed user password
Is_Active	char(1)	Check if it an active user or fake user.

FYP table is storing the details of list of projects entered by FYP coordinator in Table-2.

Table-2. FYP table.

Field Name	Type & size	Description
FYP_id	int(5)	Primary key for each record
FYP_title	varchar(200)	Project title
FYP_proposal_url	varchar(200)	Path of proposal file
FYP_supervisorID	varchar(20)	Supervisor ID references user table
FYP_supervisorName	varchar(50)	Supervisor name

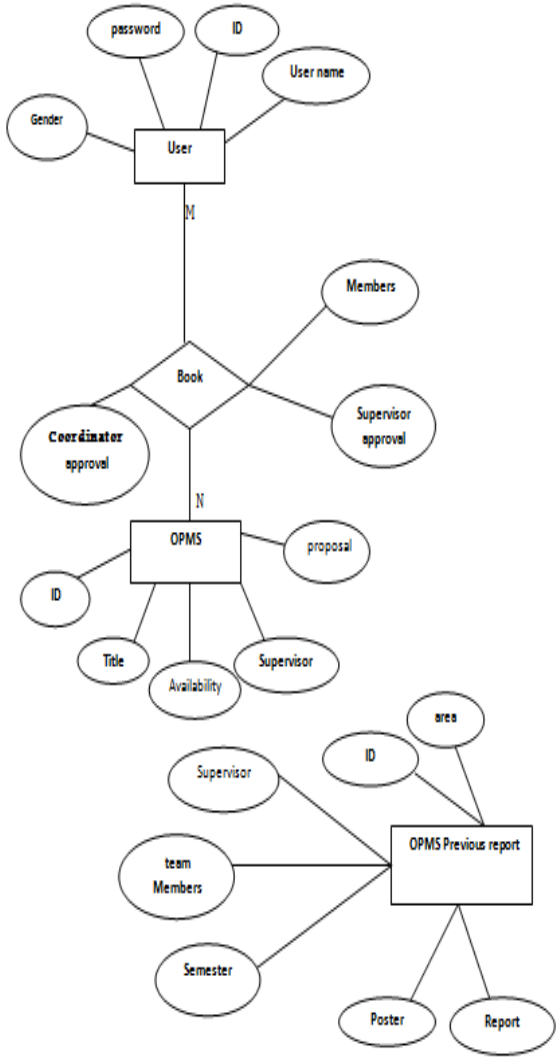

Figure-4. Entity-relationship (E-R) diagram.

Table-3 shows the data stores about FYP booking.

Table-3. FYP booking.

Field Name	Type & size	Description
FYPB_coorApproval	char(1)	Coordinator approval for student request
FYPB_supApproval	char(1)	supervisor approval for student request
FYPB_teamLeader	varchar(20)	Team leader username references user Table
FYPB_members	varchar(50)	Team members ids
FYPB_id	int(5)	Project id references FYP table

Table-4 stores the information of previous FYP reports done by department students.

Table-**4** FYP pervious reports.

Field Name	Type & size	Description
FPR_id	int(5)	Primary key for each record
FPR_area	varchar(50)	Area of project
FPR_title	varchar(200)	Project title
FPR_report_url	varchar(200)	Path of report file
FPR_semester	Varchar(4)	Done in which semester

Figure-5 represents the system architecture showing the different components in the system.

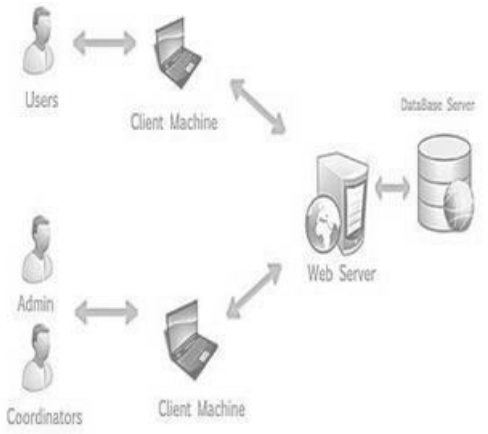

Figure-5. System architecture.

The proposed system consists of three subsystems; each subsystem consists of PHP pages that provide an interactive service between users and coordinators in Figure-6. This section describes different pages of the system and the implementation of the main functionalities of the system in Figure-7.

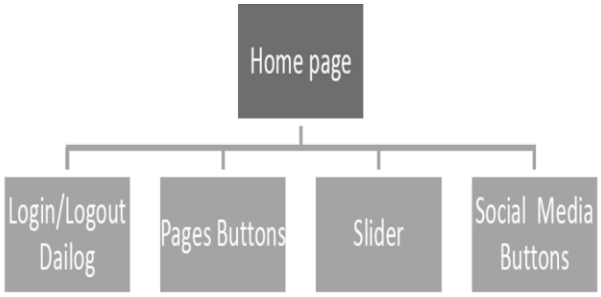

Figure-6. System pages.

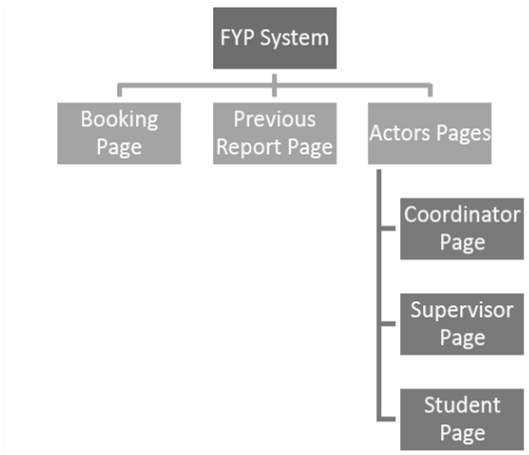

Figure-7. Final year project system.

Figure-8 shows the final year project booking page that has a form section to get the students ids who want to book. Also, the system displays the project

proposals in PDF viewer. Also users can download it from previous report in Figure-9.

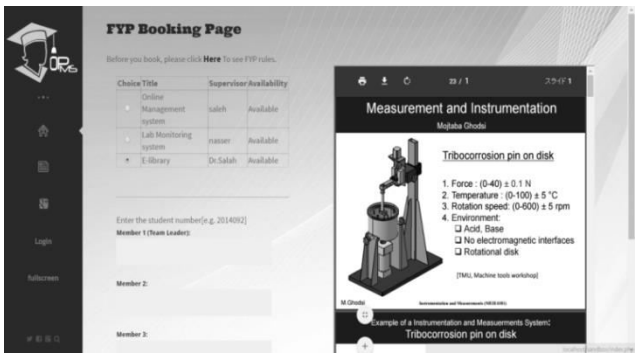

Figure-8. FYP booking page.

Figure-9. Previous FYP report page.

Figure-10 shows the FYP Supervisor page for adding new project to the list of projects. Moreover, it has a section where by an existing FYP record can be added. Also, there is a section to upload pervious projects.

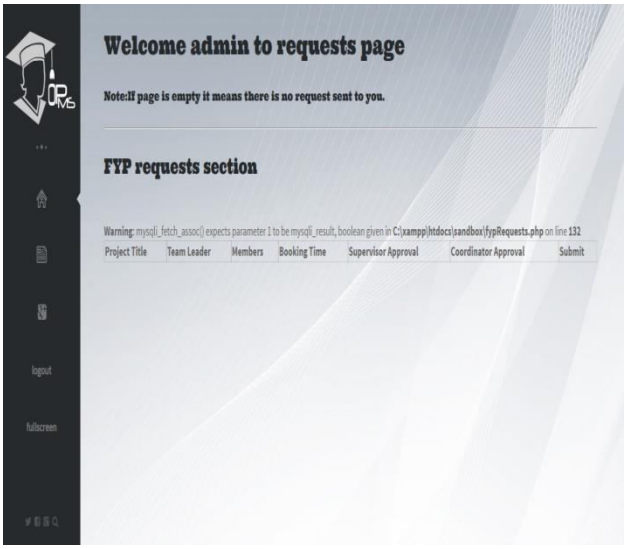

Figure-10. FYP supervisor page.

The FYP Supervisor page which has a table of FYP requests that were sent by the students. Through this page the supervisor can accept or reject the request.

CONCLUSION AND FUTURE DIRECTION

This cloud application was which makes use of internet services to computerize and schedule some department tasks such as booking FYP and many other tasks. Based on this work, learners will learn many things: about the tasks we considered in our proposed work, such as: how the processes actually are done. Regarding the web development environments, we gained a good experience in many areas of the field, and we learned many new techniques and skills. Finally we hope this application will really serve the department to simplify the handling of the targeted tasks. We hope it helps coordinators to manage their works, helps student in booking process, also helps to get department news easily which will be displayed in Slides Viewer. For future work, Implemented as real time service & add more features to each section.

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REFERENCES

[1] Khelifi Adel, *et al*. 2011. Graduation project online management system ALHOSN university case study. Proceedings of the 10th WSEAS international conference on Software engineering.

[2] Lim, Shu Shin. 2013. Online final year project system for FICT, UTAR using AMP technologies. Diss. UTAR.

[3] CS Department Final Year Project Management System, http://csapp.cs.cityu.edu.hk/fypms2/.

[4] Computer Science & Information Systems (CSIS) (University of Limerick) http://www.csis.ul.ie/fyp.

[5] CS Final Year Projects (University of Hong Kong) http://www.cs.hku.hk/people/student/csfyp/csfyp.jsp.

[6] GUO Xiu-juan1, WANG Chun-guang. 2010. Development and Implementation of Graduation Project Management System Based on B/S Mode. Computer Technology and Development.

[7] Surendran R., Parvatha Varthini B. 2013. Inject an Elastic Grid Computing Techniques to Optimal Resource Management Technique Operations. Journal of Computer Science. 9(8): 1051-1060, ISSN: 1549-3636, Science Publications.

[8] Tamilvizhi T; Parvatha Varthini B. 2016. Online vaccines and immunizations service based on resource management techniques in cloud computing. Biomedical Research-India; Special Issue, Special Section: Health Science and Bio Convergence Technology: Edition-I, ISSN 0970-938X, E-ISSN: 0976-1683, pp. S392-S399.

[9] Tamilvizhi T, Parvatha Varthini. B. 2017. A Novel Method for Adaptive Fault Tolerance during Load Balancing in Cloud Computing. Cluster Computing, The Journal of Networks, Software Tools and Applications, Springer Journal, ISSN: 1386-7857 (Print) 1573-7543 (Online), Impact Factor 2.040 (Web of Science Journal - Science Citation Index), Online First, doi:10.1007/s10586-017-1038-6.

[10] Run-min, F. E. N. G. 2009. Design and implementation of high education student management system based on struts & hibernate & spring [J]. Computer Engineering. 6: 280-282.

[11] Chan K. L. 2001. Statistical analysis of final year project marks in the computer engineering undergraduate program. IEEE transactions on education. 44(3): 258-261.

[12] Thambyah Ashvin. 2011. On the design of learning outcomes for the undergraduate engineer's final year project. European Journal of Engineering Education. 36(1): 35-46.

[13] Sanchez, J. L., C. S. Gonzalez, and S. Alayon. 2011. Evaluation of transversal competences in the final year project in engineering. EAEEIE Annual Conference (EAEEIE), 2011 Proceedings of the 22nd. IEEE.

[14] Karazi Shadi, *et al.* 2008. An analysis of final year student project performance in mechanical engineering.

[15] Jawitz J. E. F. F., S. U. E. L. L. E. N. Shay and R. Moore. 2002. Management and assessment of final year projects in engineering. International Journal of Engineering Education. 18(4): 472-478.

[16] Goldfinch Judy and Robert Raeside. 1990. Development of a peer assessment technique for obtaining individual marks on a group project. Assessment and evaluation in Higher Education. 15.3: 210-231.