Harmonizing The Bleneded Learning Activities By Using Moocart With Recommendation System
(For The College Of Art– University Of Baghdad)

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Abstract: The objective of this research is to immediate an efficient strategy, in order to engage in the progression process of Iraqi higher education. The majority of the existing efforts that applied to enhance it, were restricted with the elderly methods of teaching and learning, and did not change the aged traditional framework and methods. The leading objective is to develop our learning methods and reduce the gap with worldwide universities that are progressed and developed learning and education. Executing the MOOCs system, which symbolizes a different appearance by having the qualities of e-learning and lifelong learning, will improve the learning process at the college of Arts at the first university in Iraq, which is the University of Baghdad, and the most significant role is to change it from the procedure of the old traditional learning systems. The plan is to design and perform a complete MOOCs system that competently helps and covers all Iraqi higher education necessities and the UNIVERSITY OF BAGHDAD (COLLEGE of ART), by using the most productive software and methods that minister to our foremost objective. Elameer-Idrus orbital e-education framework was used in the MOOCs designs.

keywords: College of Art, MOOC, Education, ADDIE, Online Courses, Elameer-Idrus orbital e-education framework

1. INTRODUCTION

We have to believe that the new century is the ICT century. The eyewitness of an unbelievable use of new technologies and its consequences for the learning and teaching, which made a great push and origins an extreme of evolutions in the learning process and a massive modification in the old methods that closely obsolete. Applying these modern methods of teaching and

learning by embrace the digitization of MOOCs, The expression MOOC concerns a massive open online course that made a massive movement and change in education (Xiao & Pardamean, 2016). The significance influence of MOOC, by citing from the Former Yale University director and Coursera CEO, Richard Levin in an meeting in June 2014 "In 10 or 20 years, when we judge the great universities, it will not just be on their research but on the reach of their teaching"(Rhoads). Joining this transformation goal is to place a strategy to build a perfect MOOCs system that meets COLLEGE OF ART learning needs, by inventing an interactional learning community that participates can easily communicate with each other. This will be polished by using an ADDIE framework that apportioned into five stages Analysis, Design, Development, Implementation, and Evaluation.
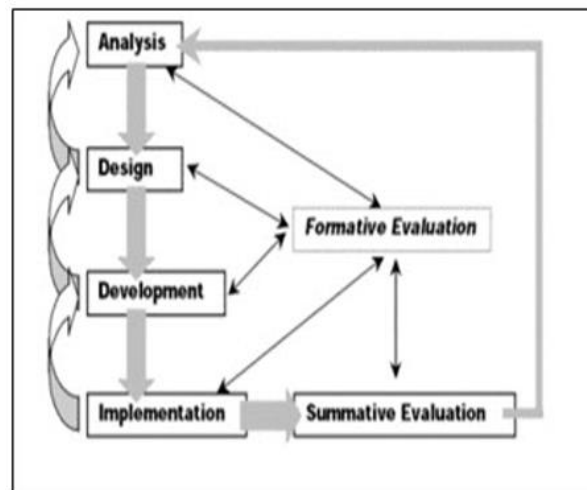

Figure (1) ADDIE Phases.

2. ORBITAL E-EDUCATION and MOOC e-LEARNING FRAMEWORK

The orbital e-education framework was used as the e-learning frame work because it was tested widely in Iraqi learning environments and a lot of e-learning applications in Iraq used it, and it is the only framework that covers the education sustainability and development which is very important in our MOOC designs.(Elameer,2011).
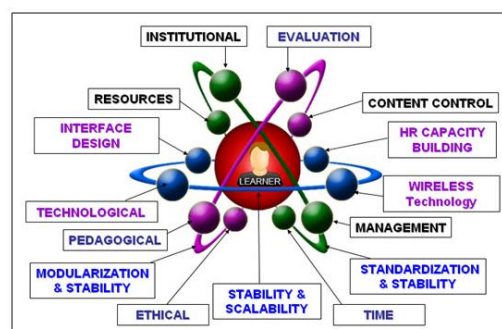

Figure 2: Orbital e-learning framework

3. FRAMEWORK

MOOCART was designed according the e-education orbital framework. The Orbital framework is the only framework which covers the sustainability issues that is required for the

future of education in all of the world and it is the main target of the United Nation Development sustainable goals 2030, and it was used widely in Iraq.

Moocart analysis

Building MOOC system starts from the analysis which is the prime process in order to build moocart system, this platform deliberates as a cornerstone to all other steps. Accordingly, it be supposed to have the most concentration and time (Kulvietiene & Sileikiene, 2006). So It must be prudent when preparation at this stage as well as for selecting the strategy. Fitting all the outputs from this stage that will tie the roadmap to complete the aim. Therefore, the analysis plan will be listed into three major steps.

First: settled the universe through the learning process of COLLEGE OF ART and Baghdad University as well as the needs of students and academics, shaping their capacities and the capabilities of the learning environment. Collecting the data from the meetings and interviews with the academic and teaching staff, and also the students for round up enough data and required information, that allowing to body structures the platform in a harmonious way with Iraqi higher education requirements. At the same time, let them be additionally turned on the e-learning. The collected data and information method was from the previous studies and modifying the data that cover all the learning dimensions and aspects to put the strategy for the proposed MOOCART system.

Second: assessment the College of Art website with their social media used pages, to observe if they are effective and the college learners are engaged in such media and their involvement in it. Here we will be able to analyze the electronic environment they are familiar with, and fix all types of the aspects that we need it in the design and need to deal with.

Third: surveying the most favorite and effective MOOC platforms internationally because there is no Iraqi platforms and take their newest and design advantages to try to use it with the Iraqi MOOCART and college of Arts needs.

4. DESIGN & PROCEDURE

The procedure starts with put a plan to design the MOOCART to match the data, and the information collected from the analyzing. The main goal is to produce an uncomplicated developed modern design which must be simple to drive with an imaginative view.

Sitemap design

The primary procedure is site map developing. That will show the overall form of the proposed MOOCART system. It symbolizes a list of all main topic and sub topics that we needed in the design. Moreover, it the guide to show what content will be registered with the site, and its helped in the guidance the design. Pages and content are integrated in a hierarchic tree with its roots and raise pages from the top, bigger and more accurate pages, and it will be supplemented and subject divided horizontally. So the use of slickplan.com as a instrument to draw the site map will be more realistic than the conventional ways, mild to use with so many characteristics (Reimer, 2011).

Figure (3) presents the primary page content and then will modernize other accurate elements. The main page represents the first level of the site. The second-level pages have the same design color as well to the remain level, which will make it easy to determine the hierarchic structure of MOOCART system. From the collected data and information, it was noticed the active registration with different login way's page for student, instructor, and the admin in order to determine the officialdom concerned for each one. The course's page was divided into seven departments according to College of Art number of the departments, addition to the contact and blog page.
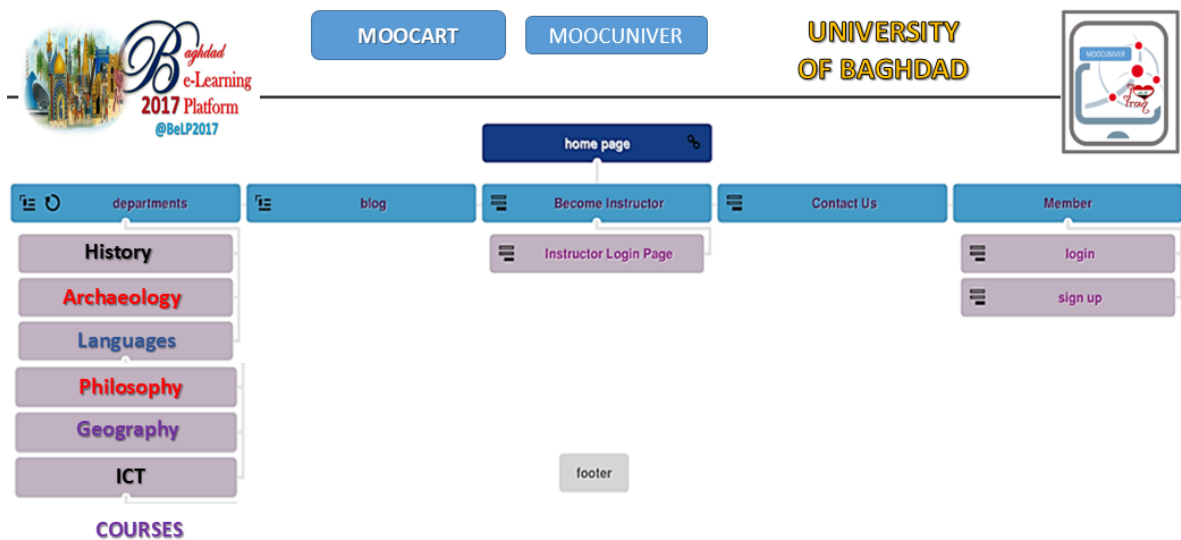
Figure (3) College of Art Main entrance and sitemap.

Wireframe design
To design the structure of the primary pages by using wireframe and render the theories collected until this point into a visual portrait of principles and content presentation, it can be considered as the backbone of the design not only a prepared of 8 gives an early opinion before coding, as well as it constructed it comfortable to rearrange and assess the view and stores the time than recoding the whole look, by viewing the bigger picture and to avoid mistakes. There are many ways to create a wireframe such as Hand drawing but it is more experienced to use an open source desktop application tool pencil application as the tool, because it is free, attainable for Windows, Linux and Mac. Applicable characteristics like multi-page documents, scaling and rotation, moreover, the capacity to export to PNG, PDF and Word document.

Main page wireframe design
The ultimate design of the prime page demonstrates all the fundamental content and moocart structure. It was very significant to give it the stronger consideration while producing it. After all the prime page with the scroll, the MOOCART design gives the complete consciousness about all MOOCART system design. The header contains the symbol and the menu bar. It is mild to use and in the same time very explicit. The slider may look so substantial, but it will

give the modern up to date look and view to the page. The proposed MOOCART project is to create an effective MOOC system not ordinary MOOC system. The most important part of the moocart is the course's page design, with course's search engine as well as the show the newest courses, the time and date of coming in courses. Figure (4) represents College of Art Main page wireframe.
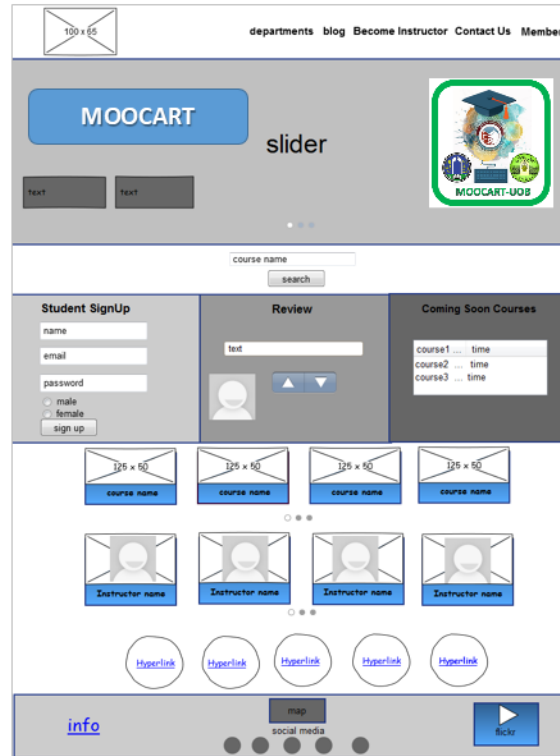

Figure (4) College of Art Main page wireframe.

Courses page wireframe design

The view of course's page for each college department is a brief description to deliver the quick consciousness to the subject of the course, name and instructor's name and a key to enter the course. Pagination is significant in such a page. Figure (5) represented College of Art courses page wireframe.
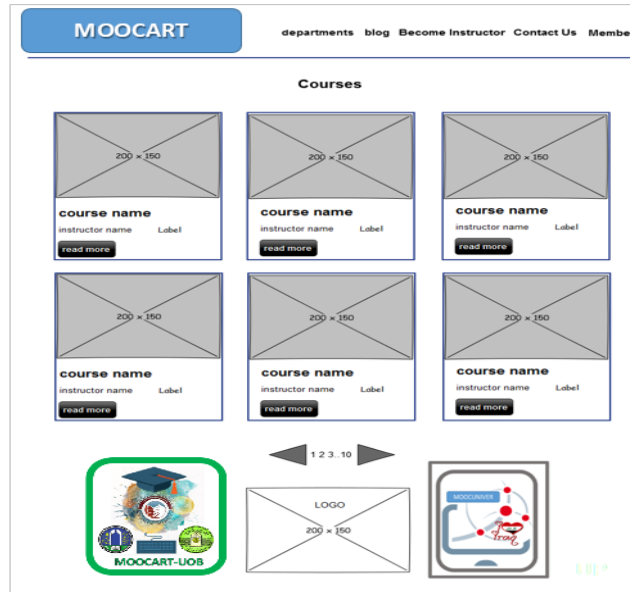
Figure (5) MOOCART Courses page

Course page wireframe design

Figure (6) represent the difference, before and after students enrolling in the courses.

Figure (6) MOOCART before and after students enrolling.

Tutorial page design

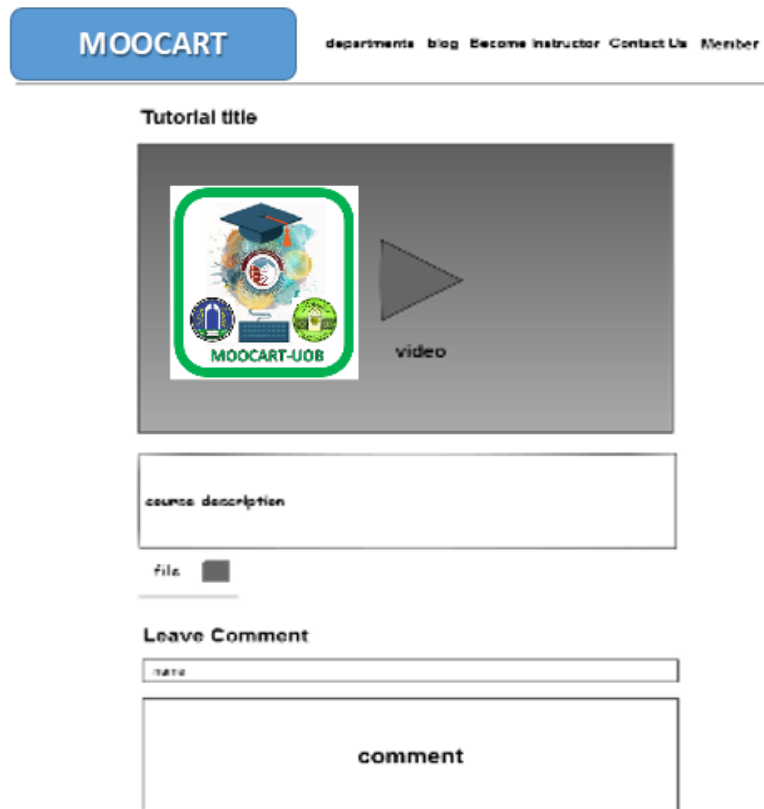Figure (7) represent the design and components of MOOCART Tutorial page.

Figure (7) MOOCART Tutorial page.

To make the wire framing design effective, it must take into consideration these impotent points:

Simplicity: we have to keep our design easy and not complicated, very clear and adaptable as a design, with complete details for the next step programming. Producing a high-fidelity wireframe in general, take time, need feedback and become hard to editing, enhancing and not to be baffling in the development process

Work in one color (grayscale) (without coloring): When producing the wireframe it's best to use a grayscale in order to increase the focus on the presentation style without being differed.

Use wireframes in tandem bicycle with a sitemap: A wireframe is a image of a good sitemap, not a substitute.

Development procedure

Development Architecture Design Development requires a hard programming task on how we can transform the design into a real MOOC system (MOOCART). The need of computation out an appropriate plan for the system, choosing the exact tools, programs, and the best languages that it will be good for the developer as well as it needs to contests the necessities of the proposed system (MOOCART).

Before starting there is a need to identify the main development Architecture components of the proposed MOOC system as it show in figure 8.
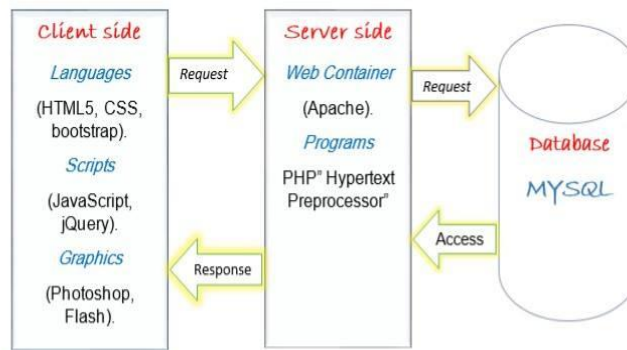
Figure 8: Development Architecture.

- (Mark up languages) it produces the building design to the MOOCART site. It demonstrates how words presented, structure the blocks, mainly defined the view and the touch of the MOOCART system.
- (HTML) Is the essential mark up for all MOOCART pages, once an HTML file is created other languages can be driven in into that mark up; a JavaScript can be inlaid within HTML to add the interactivity to the site pages.
- CSS also can be coupled to the HTML file for all the design aspects. So it's the backbone of the system.
- CSS (Cascading style sheets) is a visual language, and it was used to shows how HTML principles look for the user, from the background colors and text placement to steering bars and fonts. CSS allowed as to produce the style and design of a page that previously designed, and can be summing a global design to all site pages.
- (Client-side scripting) JS (JavaScript) will be implanted into our HTML mark up file to change it from a fixed page to interactive implementation, There is an amount of frameworks and libraries to support designers to add added workability. Like jQuery that captures a lot of collective activities that need many lines coding and perform them with a unique line of codes. After defining the front end development languages, we choose the appropriate framework. Bootstrap which is (a free and open source front end development framework), is constituted on HTML, CSS, and JavaScript (JS), the important explanation following using bootstrap is the flexible design that makes it possible for the web application to expose the user screen extent. This is genuinely applicable characteristic, if the user uses his phone or tablet as it present in Figure (9), in addition to a lot of considerable features with the framework.

Figure (9) Responsive Design.

2. Server-side scripting (PHP): the web application basic language that executes in the web server and how it works, and has the clear advantage compared to other's languages, when development of the web-based programs.

PDO (PHP Data Objects): is a database access layer that provides the same method of access to multiple and different databases, the source methods for prepared statements that use fewer resources and therefore, run faster also will support secure from SQL inoculation .

3. The technologies of the Database: in MOOCART we need to save all the data that is required retrieved, and emended. The system cannot run with the efficiently and professionally, and also without it. We cannot manage and maintenance our evolves MOOCART.

*. MySQL: is the most popular database management system (DBMS) that common used within PHP because it is speedy, certain and simple to use. The MySQL data are stored in matrix tables.

*. The sectional server and code editor used in the MOOCART are:

- XAMPP : an open-source web server which makes it very easy to provoke a local web server for specific and general demanding purposes, and changing from a local test server to a live server extremely mild, and the Dreamweaver was used as code editor of the MOOCART.

Moocart system working procedure

1-MOOCART LOGGED IN PROCEDURE

The flowchart to represent all the steps that the MOOCART user be supposed to finish it in order to correctly enter and log in to the MOOCART system. It will be directed to the instructor and learner as a conceptualization despite the diversities of data and information, forms and the way of the authentication procedure for each. As it presents in Figure (10).
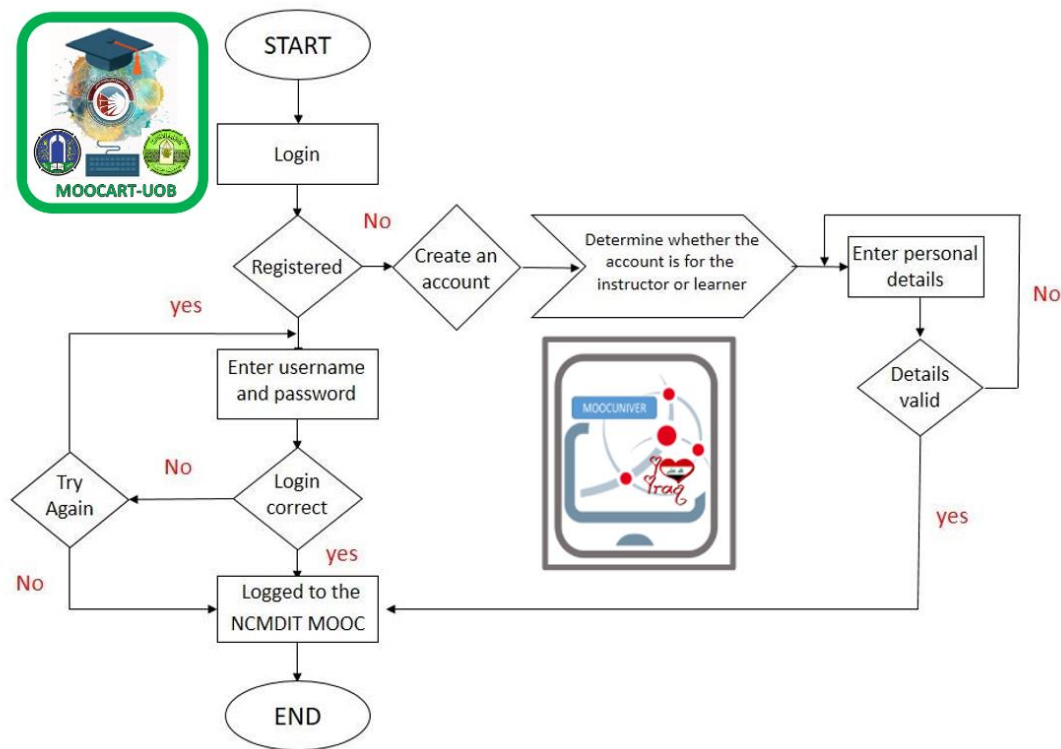
Figure (10) MOOCART Logged in Procedure

2-Moocart student enrollment procedure

The fundamental conception of the proposed MOOCART relay on how can it illustrate the courses to the learners, and from the MOOCART wireframe designed, the learner can approach to study the course information and if the learner finds it interesting and wants to study the lectures, he must enroll in the required course. If the learner doesn't have an account, the MOOCART system will take him to the registration page in order to enroll. The reason of this way of the design is to give the admin the complete control to verify the approved learners only whom can access to the tutorials of the course. As it represent in Figure (11).
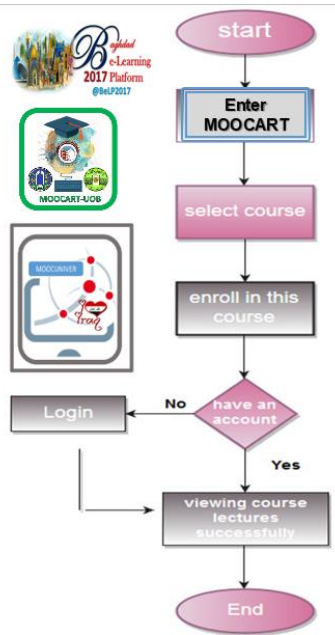
Figure (11) MOOCART Student Enrollment Procedure

3-Courses publishing procedure

The approved instructors by the admin can do it after log in to the system, and they have the authority to publish a course. This admin here is the key factor because he will allow the only acceptable instructors whom can add courses, or publishing an article. Furthermore, the admin will not allow anything to happen only after checking all the course components, as well as course check-up must attempt finished by both instructor and admin to guarantee that all the information place in the correct way and place. As it present in Figure (12).
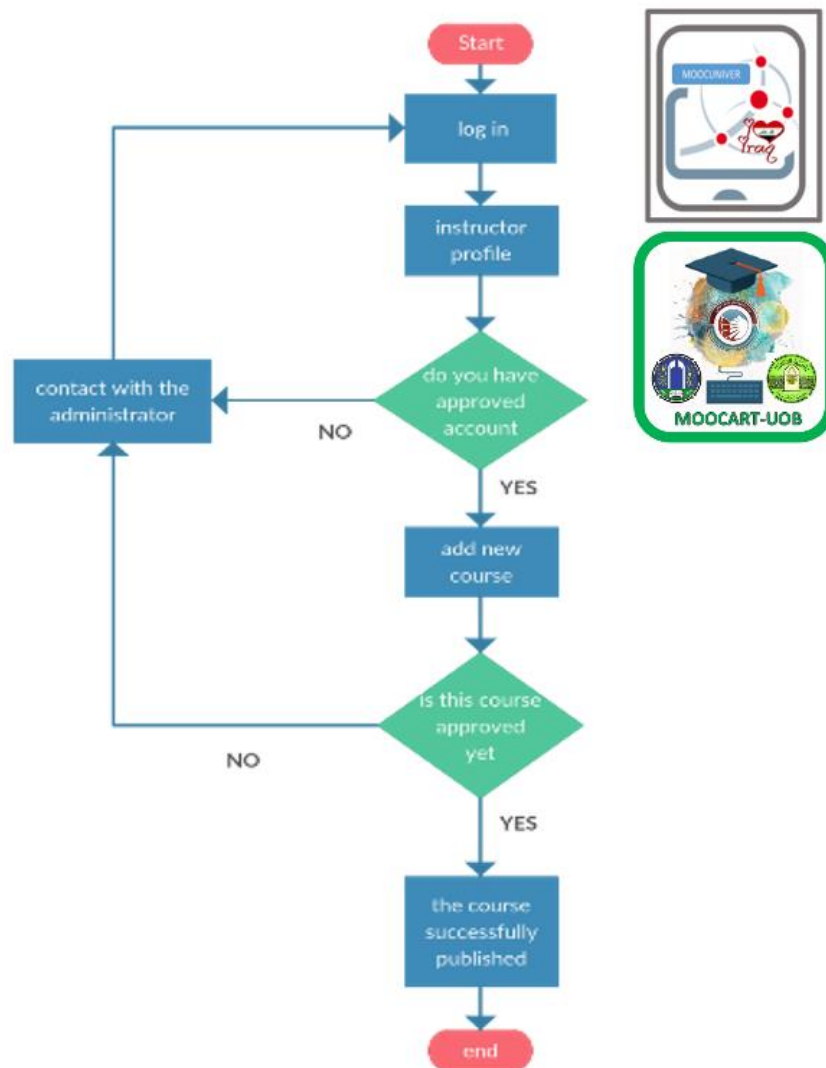
Figure (12) MOOCART Courses page and Publishing Procedure

4-USE CASE DIAGRAM

Case diagram will illustrate the course fundamental interactions between actors and the MOOCART system. The system MOOCART is treated as a black box, and the connections with the system, including system replies, therefore, use cases choose who does what (interaction) with the system for what goal so Figures (13,14,15) will present each space for the learner, instructor and the admin.

5-Moocart learner role

The user role explains the given approvals to execute a group of jobs within the MOOCART according to the orbital frame work. It's a illustration of learner interaction of the system display the connection between the user and the different use case in which the learner concerned.

6-Moocart instructor role

The instructor in MOOCART according to the orbital frame work is the leader and the learning process driver and has a complete unusual prepared set of tasks if we compare with admin and learner, having more authorities from the learner obviously, responsibility for adding courses, subject articles, and quiz and editing.

7-Moocart admin role

The admin role in MOOCART according to the orbital frame work has the strongest level of controlling, monitoring and accessing in the system and can add, delete, edit, and any other management process that the courses, users, instructors, blog, quiz and give approvals for what is needed.
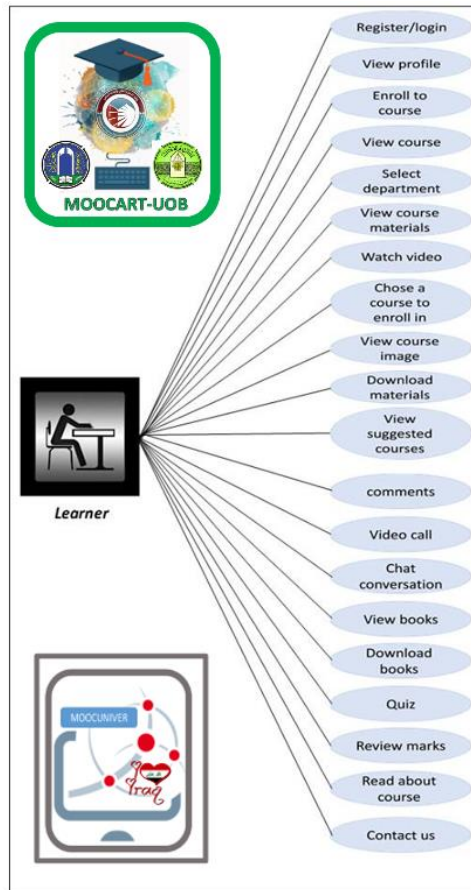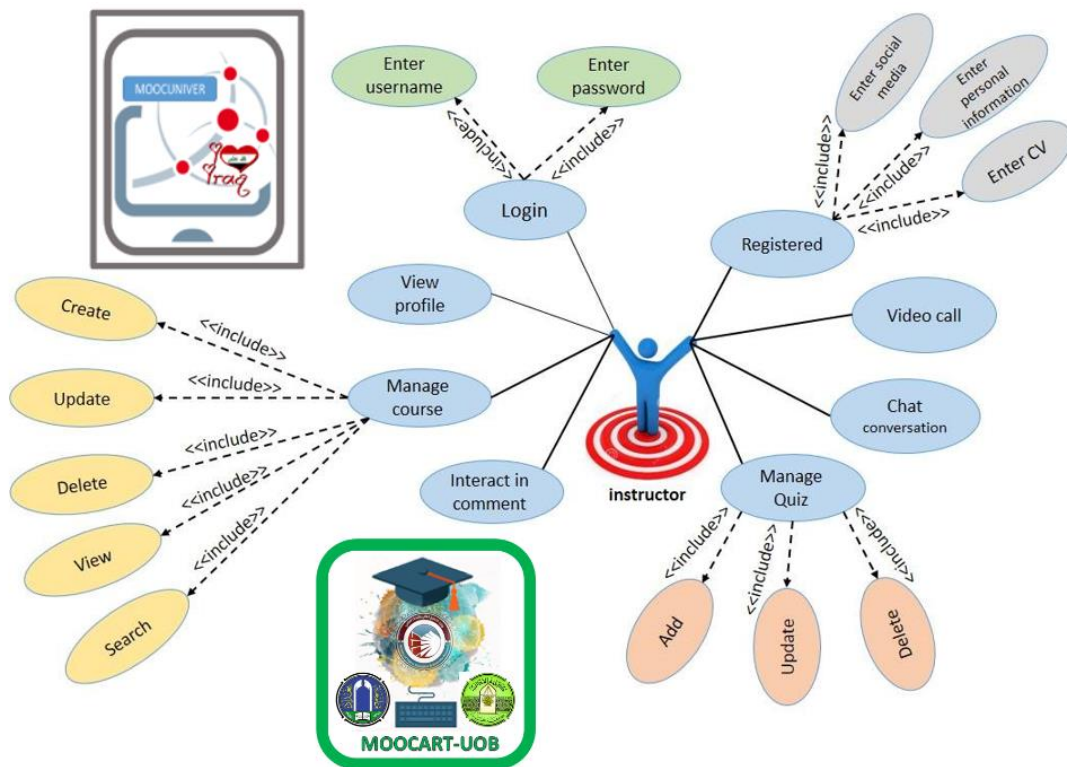

Figure (13) MOOCART learner Role.
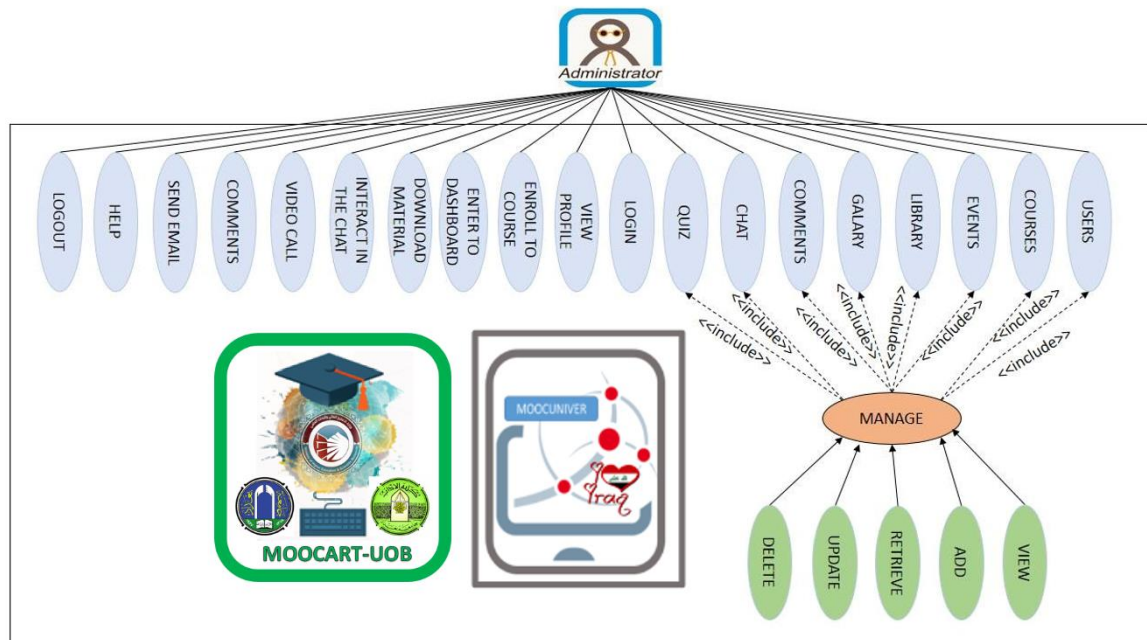
Figure (14) MOOCART Instructor Role.

Figure (15) MOOCART Admin Role.

All these roles and approvals are key elements of MOOCART system security. It defines how the MOOC behaves, how the users interact with it. Therefore, the whole development procedure will fundamentally depend on the orbital framework to identify the given roles.

8-Moocart implementation

The MOOCART execution process, starts after completing the need of preparing MOOCART platform for public college using taken into consideration the speed and reliability, security, customer support, control panel, backup, and all other design subjects that are related to the web hosting.

9- Moocart recommender system

The proposed recommender system (RS) follows the hybrid approach (CB and CF) of the recommendation system to recommend resources for users based on their preferences and previous ratings. The proposed RS system employs the KNN algorithm to be performed but since it works in a hybrid manner the algorithm needs to be modified to be compatible with the system.
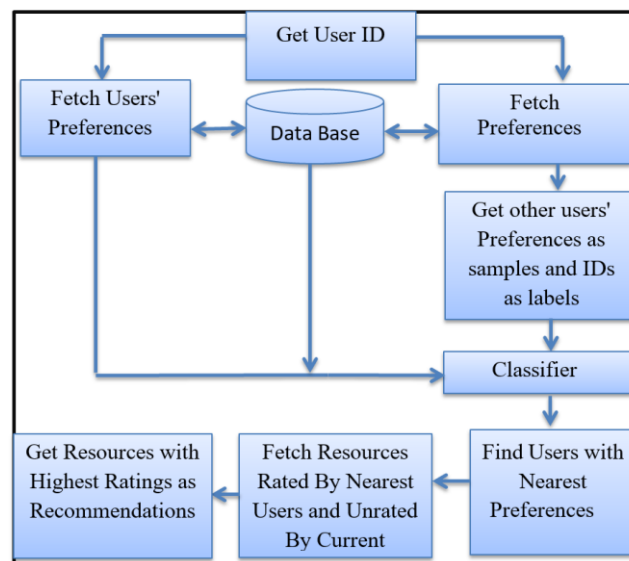

Figure .16: MOOCART Recommender Algorithm Diagram

10- Moocart evaluation

Any final and last critical step in any system building is the evaluation process, and according to the ADDIE roadmap used, evaluation achieved formatively and summative in order to degree the efficiency and proficiency of the MOOCART system. The summative evaluation was obtained also by presenting the MOOCART to some international experts in Malaysia and Iraq, and was kind of qualities' evaluation, and we get analyzing the traffic, getting feedback from the users, usability testing and correct the MOOCART system according to the evaluation remarks.

5.CONCLUSIONS

The MOOCART system was designed and builds according to the international MOOCs system designs, taken into consideration it is only five years since the MOOC world start working around the world. The MOOCART is a university and college MOOC and not a company MOOC and this made a big difference in the design and building philosophy. University of Baghdad aimed to enter the world of MOOCs by adopting it and the designed MOOCART will raise the university ranking after adopting and working through a complete plan in the university academic plan. It is a first trial at this level in Iraq in Baghdad university,

and it will be used in Blended learning and lifelong learning.

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