

# BUSINESS REQUIREMENTS DOCUMENT

**UAE- OPEN EDUCATIONAL RESOURCES** 

MINISTRY OF EDUCATION

# Submitted by

Verbanet Technologies LLC 24.02.19

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# **Table of Contents**

1	Executive Summary			Summary	4
2		Over	view		4
3		Proje	ect So	cope	4
	3.	1	In Sc	ope	4
	3.	2	Out	of Scope	4
4		Busi	ness	Goals & Objectives	5
5		Func	tiona	al Requirements	6
	5.	1	Role	s Definition	6
	5.	2	Role	s Matrix	6
	5.	3	Busi	ness Rules	7
	5.	4	Requ	uirements	8
		5.4.1	L	Administrative Modules	8
		5.4.2	2	User Account	8
		5.4.3		Web Content Management (WCM)	9
		5.4.4		General Functional (GF)	9
		5.4.5		Reports (RPT)1	0
		5.4.6		Email Notifications	0
6		Process F		low & Functions1	1
	6.	1	User	Management (UM)1	1
		6.1.1	L	User Management Flow (UM)1	1
		6.1.2	2	User Management Functions Narrative	2
	6.	2	Resc	ource Management (RM)1	3
		6.2.1	L	Resource Management (RM)	3
		6.2.2		Resource Management Functions Narrative	3
		6.2.3	3	Resource Attributes	4
	6.	3	Cour	rse Management (CM)1	6
		6.3.1	L	Course Management (CM)	6
		6.3.2	2	Course Management Functions Narrative	6
		6.3.3	3	Course Attributes	7



6.4	Qua	lity Review Committee1	7
6.5	Exte	rnal Users UI Wireframes1	9
6.5.	.1	Sign Up1	9
6.5.	.2	Setting the Password	0
6.5.	.3	Sign In2	1
6.5.	4	Make Profile	2
6.5.	.5	User Dashboard	3
6.5.	.6	User Content List	4
6.5.	.7	User QRC Request Management	5
6.5.	.8	Resource List	6
6.5.	.9	Resource Landing Page	7
6.5.	.10	Create Resource 2	8
6.5.	.11	Course List	9
6.5.	.12	Course Landing Page	0
6.5.	.13	Tests3	1
6.5.	.14	Create Course	2
6.5.	.15	Create Test	3
6.6	Inte	rnal Users UI Wireframes	4
6.6.	.1	${\sf Admin\ Landing\ Page-Pending\ Requests\ (User\ ,\ Resource,\ Course,\ Abuse\ Reports)\ .\ 3denotes the property of the pr$	4
6.6.	.2	Admin User Control Panel	5
6.6.	.3	Admin QRC Control Panel	6
6.6.	.4	External URL Management	8
6.6.	.5	Master Data Management	9
Nor	n-Fund	tional Requirements (NFR)4	1
Doc	umer	t Control	2
8.1	Doc	ument History	2
8.2	8.2 Document Approval		

7 8



# 1 Executive Summary

This document intendeds to outline the business requirement specifications of the proposed Open Educational Resources Platform for Ministry of Education, United Arab Emirates.

#### 2 Overview

UAE - OER is a digital library and network of individual and institutional contributors of educational resources that are freely accessible, openly licensed text, media, and other digital assets that are useful for teaching, learning, and assessing as well as for research purposes.

UAE-OER is a free, publicly accessible, openly-licensed digital resource that offers high-quality teaching and learning materials structured around courses and presented in an easily accessible format.

# 3 Project Scope

The scope of the project is to develop a platform for the users to access, create, import and download educational resources by the users. The proposed platform is to be hosted with in the country.

The users of the projects are classified into 1) internal users – Users to manage and maintain the platform and 2) external users – those who contribute, access the approved and published resource.

#### 3.1 In Scope

The following areas are in scope for this project:

- User Management
- Resource Management
  - o Resource Management
  - o Course Management
- Content Management System
- Reports
- Portal Admin Section

# 3.2 Out of Scope

The following areas are out of scope for this project:

- Payment Gateway Integration
- Adaptive Assessment of the users and the resources
- Content Generation and translations
- Infrastructure/Infrastructure Management



# 4 Business Goals & Objectives

The initiative by Ministry of Education, is to have an Open Educational Resources Platform, freely accessible by the public. The proposed platform intends to present the learning opportunity and to be part of the education reforms by enabling the open sharing of teaching/learning materials with educators, enrolled students, and self-learners around the world.

Below are the objectives of the initiative, but are not limited to:

- The platform will promote the individuals/ institutions of the region to offer original and authentic educational resources in Arabic/English to further enrich education.
- The initiative envisions the use of the platform to enhance the knowledge by promoting online courses by practitioners and professionals from a variety of fields spanning arts, sciences, commerce, etc.
- The MoE believes that the platform will promote the international community, interested in the regional development, to contribute and ensure the people to take advantage of the contributions



# 5 Functional Requirements

# 5.1 Roles Definition

ID	Role	Description
UT – U	Users	User(s) who are not content creators. This type of users enrols for the courses or refer, download resources
UT - C	Content Creators	Users who have permission to create content
UT - R	Reviewers	Internal user(s) responsible to approve/reject the resource(s), course(s), abuse report(s)
UT – G	Public/ Guest Users	Public/Guest users are those who are not authenticated. These types of users can only read resource(s) available to public
UT – PA	Portal Admin	Portal Admin(s) are technical people who are responsible for maintaining the application
UT - SA	Super Admin	Super Admin, the default user, has all the rights for the User, Approvers and Portal Admins. Additionally the SuperAdmin can Create Users

# 5.2 Roles Matrix

Main Screen	Sub Activity	Guest User	Signed in User	Content Creators	Approvers	Admins
Home Page		Υ	Y	Y	Υ	
Sign Up		Υ	Υ	Υ	Υ	
Password setting			Υ	Υ	Υ	
Sign In			Υ	Υ	Υ	Υ
Make profile			Υ	Υ	Υ	
User Dashboard			Υ	Υ	Υ	
Resource List		Υ	Υ	Υ	Υ	
Resource Landing page		Υ	Υ	Υ	Υ	
	View Resource	Υ	Υ	Υ	Υ	
	Rate Resource		Υ	Υ	Υ	
	Post comment		Υ	Υ	Υ	
Approve / Reject Resource ( View Resource page with approve / reject buttons)					Y	Y
Create Resource				Y	Υ	
Course List		Υ	Υ	Y	Υ	
Course Landing Page		Y	Υ	Υ	Υ	
	View Course details	Y	Υ	Υ	Υ	
	View Author	Y	Υ	Υ	Υ	
	Enrol for course		Y	Y	Y	
	Take course		Υ	Υ	Υ	
	Rate course		Υ	Υ	Υ	
	Post comment		Υ	Υ	Υ	
Tests			Υ	Υ	Υ	



Create Course			Υ	Υ	
Create Test			Υ	Υ	
Approve / Reject Course (View Course page with approve / reject buttons)				Υ	Υ
Admin dashboard					Υ
	Create QRC				Υ
	Add users to QRC				Υ
	Whitelist URL				Υ
	Master Data				v
	Management				Į.
Admin Control Panel					Υ
	View Request List				Υ
	Approve Request				Υ

# 5.3 Business Rules

#	Rule Name	Rule Description	Source
BR01	Guest User - Comment	Guest users can only view content. To rate / comment / create you need to be signed in. Error message will be displayed.	
BR02	Create Resource	Only signed in users with create content permissions can create resources / courses. Request for content creation link will be displayed if un-permitted user clicks create.	
BR03	Create Course	Only signed in users with create content permissions can create courses. Request for content creation link will be displayed if un-permitted user clicks create.	
BR04	Content Approval	All created content will need to be approved by Quality Review Committee for publishing.	
BR05	URL whitelisting	Only approved URL can be published as a resource. Request can be raised for whitelisting URLs	
BR06	Reviewer access	Only approved users will have access to review and approve / reject content. Request for approver access link is provided in update profile page.	
BR07	Browsing	Any user can browse contents / view resources / search for content.	
BR08	Report abuse Signed in users can report abuse or inappropriate content		
BR09	Rating	Signed in users can rate content on a scale of 1-5. Only 1 rating per user per resource will be allowed. Average of all ratings will be displayed as rating of content.	
BR10	Edit Resource	Resource can be edited as long as it is in Draft status	
BR11	Submitted Resource	Submitted Resource cannot be modified	
BR12	QRC Approval	For a Resource to be approved more than half the committee should have approved it	
BR13`	QRC	No: of members in a Quality Review Committee should be odd and more than 1	
BR14	QRC modification	Admin shall not be able to modify QRC group in case there is assigned item for reviewing as it will impact BR12.	



# 5.4 Requirements

This section details the requirements of the proposed process

#### 5.4.1 Administrative Modules

#### RQ:1 - The application should support the following modules

ID	Requirement	Description
RQ:1.1	User Management	Create / Edit / Delete Users , Set Permissions
RQ:1.2	Resource Management	Create / Edit / Disable Resources
RQ:1.3	Course Management	Create / Edit / Disable Courses
RQ:1.4	Approval Management	Approvals for requests related to user permissions, resources, courses
RQ:1.5	Administration	Manage requests, create / edit committees, URL whitelisting, master data management (category, sub category, education, level, QRC)

#### 5.4.2 User Account

ID	Requirement	Description
RQ-2.1	User ID and Password	The users from MOE will be authenticated by OpenID access. All other users will go through the default sign up process.
RQ-2.2	New / Register	<ul> <li>Google reCAPTCHA before email validation</li> <li>Should send email notification with a validation link of 24 hours' validity of the link.</li> </ul>
RQ-2.3	Forgot Password	Should send email notification with a reset password link of 24 hours' validity of the link.
RQ-2.4	Change Password	<ul> <li>User should enter old password, new password and confirm new password. All the entered passwords should be validated.</li> <li>Password length should be minimum 8 characters</li> </ul>



#### 5.4.3 Web Content Management (WCM)

ID	Requirement	Description
WCM 1	Create/ Update/ Delete Content(s)	Admin can Create/ Update/ Delete the web contents(s) on the platform using the authoring tool
WCM 2	Announcement(s)	Admin can create announcements, which in turn is pushed as notifications to the users.
WCM 3	Contact Us Form	Admin can receive the forms submitted through 'Contact Us' form as notifications in the admin dashboard as well as email and can respond to the queries through the platform.
WCM 4	Knowledgebase/ FAQ	Admin can create, update and delete the contents under FAQs/ Knowledgebase
WCM5	URL whitelisting	Admin will manage whitelisting of URLs requested by user for linking to resource. Request will be raised through a link in create resource form pop up modal for Add URL function.
WCM6	Wall of Fame	Wall of Fame will be added which will indicate the top 10 contributors & top 10 reviewers. This will be a count of the number of reviews / contributions by user. The section of the home page to display the wall of fame is to be decided and will be indicated in the design phase by mutual agreement.

#### 5.4.4 General Functional (GF)

ID	Requirement	Description
GF 1	Global Search	User(s) can use the search function to search and find for a particular resource, course, user, community etc. The primary keys used for the search is Title, Tags, Interests (user profile) and Metatags given by the user(s) when creating resource, course, user, community etc. There will be provisions for basic search as well as an advanced search  Master data can be maintained in Arabic & English. Search will be language dependant (Result will be returned only if keyword maintained in particular language).  For resource search terms will include Title, Language, Category, Level, Keywords, File Type, copyright, Educational Standard, Material Type, Educational Use.
GF 2	Report Abuse	Any user can report a resource, user, course or a comment. The admin can then cross verify to take necessary actions.





#### 5.4.5 Reports (RPT)

ID	Requirement	Description
RPT 1	User reports	Report(s) pertaining to a particular user [accessible by the user], or overall user report to the admin
RPT 1.1 TBD the reports require		
RPT 2	Resource Reports	Reports pertaining to the resource(s)
RPT 2.1	TBD the reports required	
RPT 3	System Reports	Reports and analytics pertaining to the system performance, for the Admin. A third-party monitoring tool such as Prometheus is to be used
RPT 3.1	TBD the reports required	

#### 5.4.6 Email Notifications

ID	Requirement	Description
EN 1 Contributor Access		Notification on request receipt / approval / rejection
EN 2 Reviewer Access		Notification on request receipt / approval / rejection
EN 3	Publish Resource	Notification on request receipt / approval / rejection
EN 4	Publish Course	Notification on request receipt / approval / rejection
EN 5	URL whitelist request	Notification on request receipt / approval / rejection
EN 6	Reset Password	Reset password Link expiring in 24 hours
EN 7	Validate email	Confirm address link expiring in 24 hours
EN 8	Approve / Reject Request	Reviewer will get mail to approve / reject with link to respective display resource / course page.



# 6 Process Flow & Functions

The tables describe what functions are included in each module

#### 6.1 User Management (UM)

#### 6.1.1 User Management Flow (UM)

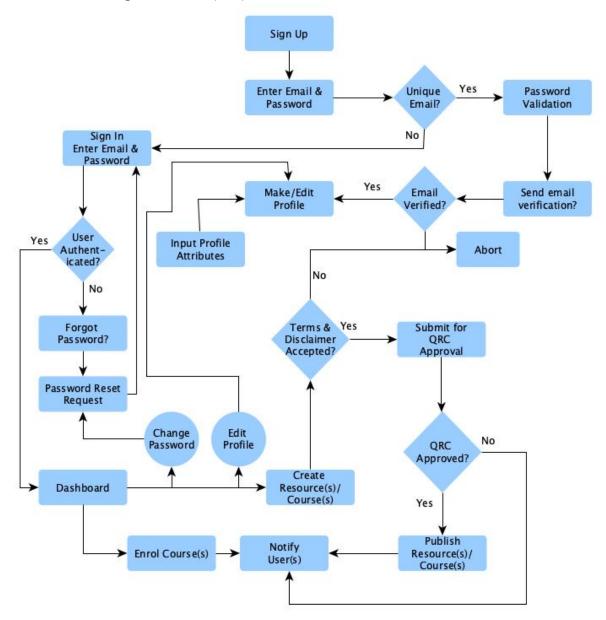


Figure 1 User Management Flow

The user management functions related to the flow diagram are explained in table below.



#### 6.1.2 User Management Functions Narrative

ID	Requirement	Description
UM 1	Signup/ Sign in	Signup or Sign in using email as the username and alpha-numerical password (8 characters minimum)
UM 2	Email Verification	Verification of the provided email while signing up using a unique verification URL sent to the user's registered email
UM 3	Reset Password	Provision to reset password in case of forgotten password. The passwords are reset (not retrieve) using an authenticated URL
UM 4	Make/Edit Profile	The verified users are requested to complete their user profile with further information
UM 5	Request for Content Creation	Those users who wish to publish contents (created or imported) can do so by accepting additional user content terms agreement. All created content will be subject to approval process by quality review committee assigned by MOE.
UM 6	Request for Approval Status	Those users who wish to be on the approval committee(s) can request for the permission to do so. The request can then be approved/rejected by the admin. Alternatively, the admin can invite users over mail.
UM 7	Create Resource(s)/ Course(s)	The users who has permission for content creation can bundle various published resources to a Course(s), which is in turn approved/rejected by the assigned QRC for publishing
UM 8	Enrol Course(s)	Any signed in user(s) can enrol to a published course



# 6.2 Resource Management (RM)

#### 6.2.1 Resource Management (RM)

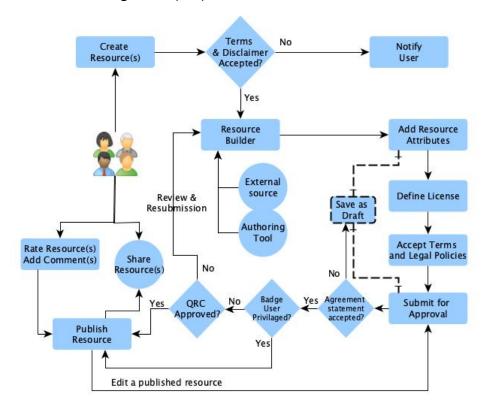


Figure 2 Resource Management Flow

#### 6.2.2 Resource Management Functions Narrative

ID	Requirement	Description
RM 1	Create Resource	Users can create resource(s) by using the authoring tool provided in the platform.
RM 1.1	Create/Edit Resource	Users can create resource(s) by uploading resources from other content sources
RM 2	Define License	The users are requested to select the copyright of the contents from a drop down list of available creative commons license types. Master data for licenses will be maintained by Administrator.
RM 3	Resources Approval	The created resources are submitted for approval before publishing. Only approved resources are published. If the resource is rejected, it is sent back to the author for Review and resubmission
RM 4	Rating the Resources	Users can rate the published content. The contents are rated on a scale of 5



RM 5	Commenting on the Resources	Users can add a comment as a feedback to the published resources. The comments can be hidden by the admin, if required
RM 6	Report Abuse	Any user in the system has an option to Report on the published resource(s) or the associated comment(s). Once reported, the respective resource/comment is sent to the admin for cross verification
RM 8	Download the Resources	A user can download the resources created using the platform (external sources excluded) as a PDF/ Zip(for media)
RM 9	Export/Import	A user can import/export resource(s) or course(s) using the platform as a Object package
RM 10	View Resource	Resource will be viewed in a frame with appropriate display functionality based on type of resource file.  • Audio - viewing screen Audio Player  • Video - viewing screen Video Player  • Images/PDF - viewing screen Image viewer as a modal popup  • Document- viewing screen Document Icon for downloading resource  • external links- viewing screen iFrame within OER
RM 11	Remix Resource	Resources can be remixed if copyright permits. Remix Button will open the create resource page with attributes and file of the current resource which user can modify and submit for approval as a new resource. Clicking the History button will open a pop up which shows the remixing history of resource.
RM 12	Resource alignment rating	Resources can be rated for alignment to current grade and subject. If user gives a rating below 3 then pop up window will be displayed where user can recommend appropriate grade and subject from drop down lists. This will trigger a request to administrator who can review and take manual corrective action if needed.

#### 6.2.3 Resource Attributes

The following attributes are to be given to resource(s) while submission for approval.

Attributes	Description	Max Length
Title	The title of the content	192 chars
Category	This element is used as a way of categorizing the resource. The best analogy would be a university that categorizes its classes into departments (catalogs) and class numbers (entries) — History 101 for example.	192 chars



Level	An indication of targeted level of users; ex Beginner, Intermediate, advanced and general	
Description	A description of the resource	2000 chars
Keywords / Meta	Can use up to 10 Keyword elements. Keywords/Metadata description shall be available and bound to the page for SEO	10 blocks each consisting of 100 characters
Format	<ul> <li>Type of content. Supported types are</li> <li>Documents (doc, docx, xls, xlsx, ppt, pptx, odt, pdf)</li> <li>Images (jpg, png, bmp, tiff)</li> <li>Audio (wmv, mp3)</li> <li>Video (mpeg, mpg, avi, mov)</li> <li>External Links (whitelisted only)</li> <li>Not included- Scorm, XAPI, TIN CAN, LTI Will not be included</li> </ul>	48 chars
Copyright	Creative Commons License from provided drop down list detailing type of sharing and attribution permitted Name, Image and Description will be displayed.	N/A
Objective	The learning outcome of the resource	2000 char
Educational standard	Type of Educational Curriculum for eg: UAE National Curriculum, Central Board etc	2000 char
Material Type	Type of educational material such as Text book, Lesson, Diagram, Case study, Article etc	48 chars
Educational Use	Application of the resource such as Curriculum, Professional Development, Informal Education, Assessment etc	192 chars



# 6.3 Course Management (CM)

#### 6.3.1 Course Management (CM)

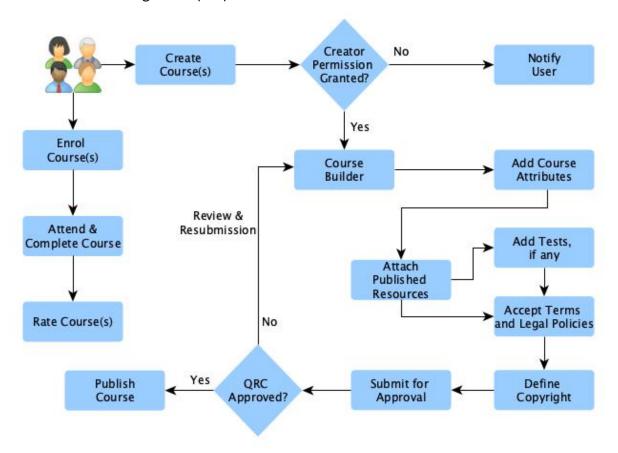


Figure 3 Course Management

#### 6.3.2 Course Management Functions Narrative

ID	Requirement	Description
CM 1	Create Course	Users can create Course(s) on the platform by combining various published resource(s)
CM 2	Create Sections	User can add sections to a course (Chapter / Lesson). Add Section button will open up a pop up where name of section can be defined along with buttons to attach a resource or create a resource.
CM 3	Course(s) Approval	The created course(s) are submitted for approval before publishing. Only approved courses are published. If the course is rejected, it is sent back to the author for Review and resubmission
CM 4	Course(s) Enrolment	Users can enrol themselves to the published course(s).
CM 5	Test(s) Creation	The course creator can create required test(s),



CM 6	Rating with comments on the Course(s)	Users can rate and add comment(s) to the published courses. The comments can be hidden by the author, if required
CM 7	View Course	Course will be viewed with course attributes in the form of a list of sections with option to click and display each resource

#### 6.3.3 Course Attributes

The following attributes are to be given to course(s) while submission for approval.

Attributes	Description	Max Length
Courseld	Globally unique identifier for the course	100 chars
CourseTitle	Title of the course as a whole	192 chars
CourseDescription	Description of the course as a whole.	2000 chars
RUId	unique identifier for the attached resource	1000 chars
ARTitle	Title of the Attached Resource	192 chars
AUDescription	Description of the Attached Resource Unit	2000 chars

# 6.4 Quality Review Committee

Quality Review committee is a group of users chosen to monitor and approve the authors (Content Creators) and contents (Resources).

Quality Review Committee plays the role of approving / rejecting any request such as

- User requests to be a contributor
- User requests to be a reviewer
- Resource submitted for publishing
- Course submitted for publishing
- The proposed process of QRC management is as follows,



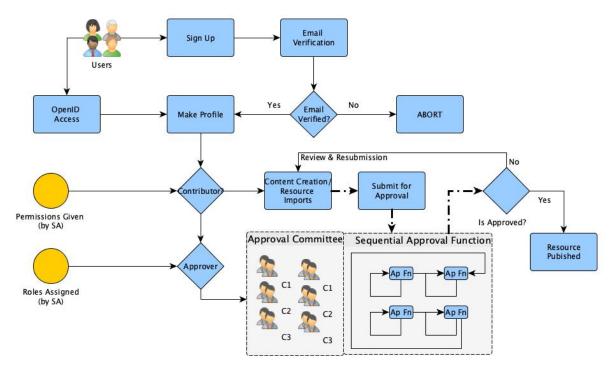


Figure 4: User Management & Fns

The committees are created by Administrator. The administrator has a QRC creation screen where master data for QRC committee can be maintained.

The QRC control panel screen is where Administrator can add users to each committee.

Sequence of request assignment to respective committee is automatically assigned by OER application on a sequential rotation basis.

Users can request to be contributors / reviewers by checking the respective radio button on their update profile page.

The admin can also assign manually permissions to contribute content or reviewer role. This request is then sequentially assigned by OER application to Approval Committee for approval.

Assignment of request to members within the committee will be concurrent.

Each reviewer in the committee will get a notification mail on a request to be approved / rejected.

The mail will contain a link to respective display course / resource page where they have approve / reject buttons and a comments box for reason.

The Administrator has a control panel to monitor and manage requests.

Administrator can approve / reject requests if needed.



#### 6.5 External Users UI Wireframes

6.5.1 Sign Up

		ı
First Name	e, Last Name	
Email	Address	
Captcha		
	Submit	
Please check the mail. An activa	ation link has been mailed to you.	
Terms of Use Privacy Policy	FAQ Support Center	



#### 6.5.2 Setting the Password

	hank you for registering with UAE-OER. Your account has been	
a	ctivated. Please set a password to continue  Enter the password	
	Re-enter the password	
	Submit	
	erms of Use FAQ rivacy Policy Support Center	



#### 6.5.3 Sign In

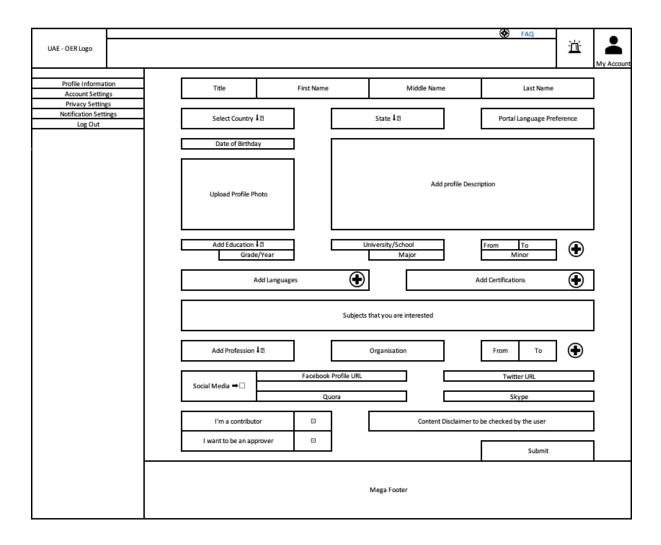
	Email Address	
	Password	
□ Remember Me		Signup
	Sign In	
Terms of Use Privacy Policy		FAQ Support Center

#### Additional Note:

- 1. Sign In button will function as follows
  - a. Sign In (regular users)
  - b. Sign In using MOE credentials (for MOE users authenticating through OpenId)

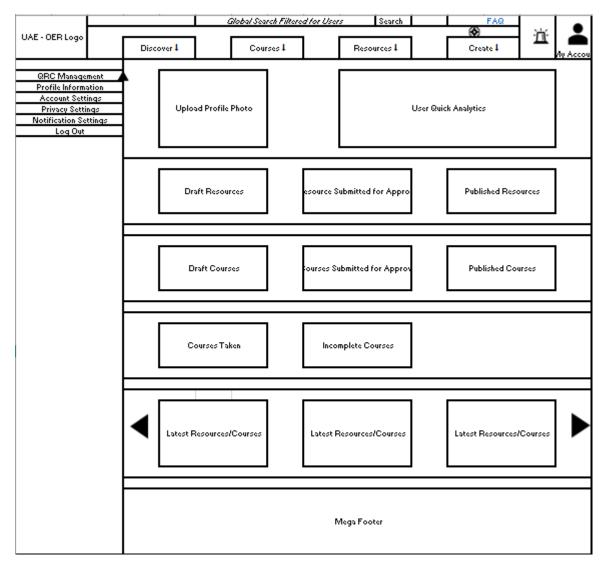


#### 6.5.4 Make Profile





#### 6.5.5 User Dashboard



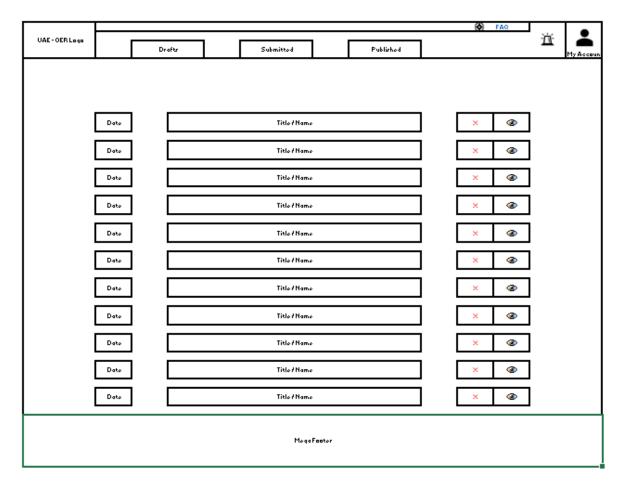
#### Additional Notes:

QRC Management link will redirect to User QRC Request page

Clicking on the Drafts / Submitted / Published cards will redirect to User Content List page



#### 6.5.6 User Content List

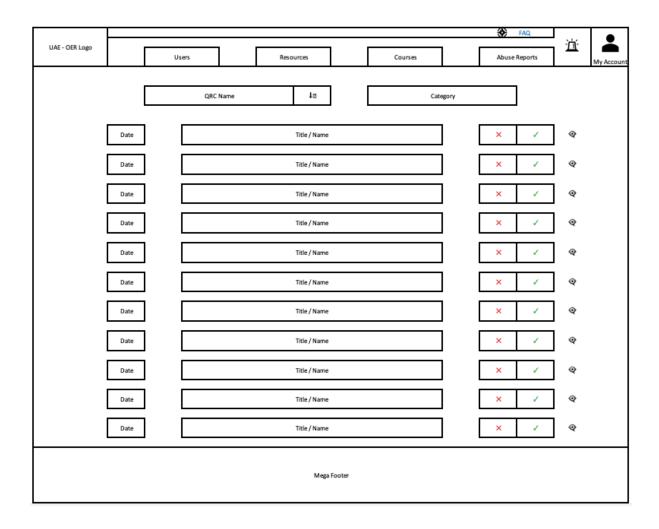


#### **Additional Notes**

- 1. Each Tab (Draft / Submitted / Published) is a list of resources / courses.
- 2. Each resource / course listed will have 2 actions buttons
  - a. Draft View Resource & Delete Resource
  - b. Submitted View & Withdraw (in case no QRC member has taken action)
  - c. Approved View & Request for Disable

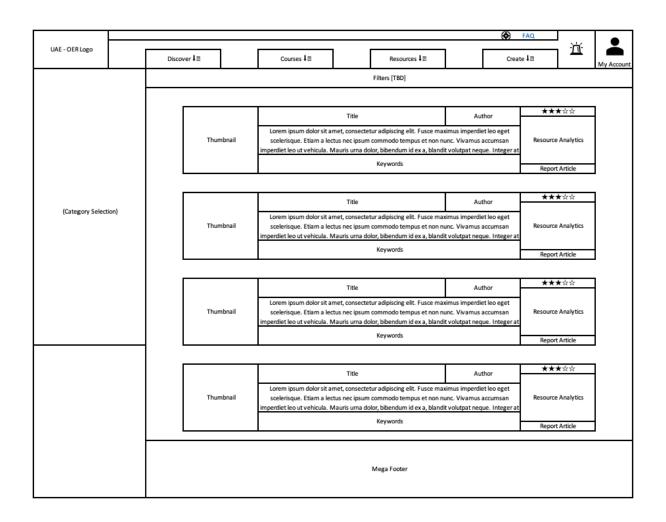


#### 6.5.7 User QRC Request Management



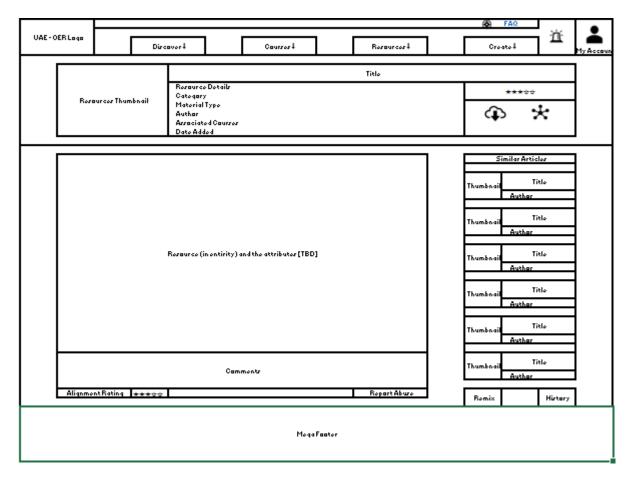


#### 6.5.8 Resource List





#### 6.5.9 Resource Landing Page



#### Additional Notes:

Resource will be viewed in a frame with appropriate display functionality based on type of resource file. The user experience will be the same irrespective of file type.

Clicking the Remix Button will open the create resource page with attributes and file of the current resource which user can modify and submit for approval as a new resource.

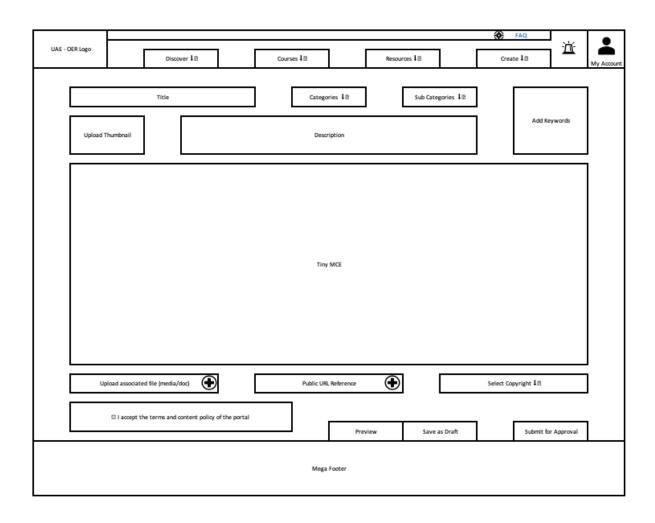
Clicking the History button will open a pop up which shows the remixing history of resource.

Remix and History buttons will be disabled if copyright does not permit remixing.

If Alignment rating is below "3" pop up window will ask for preferred grade & subject from drop down lists. This will trigger request for realignment to administrator.

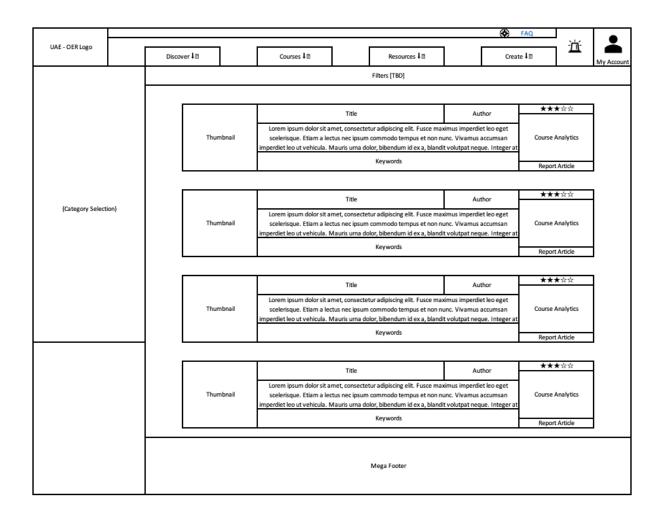


#### 6.5.10 Create Resource



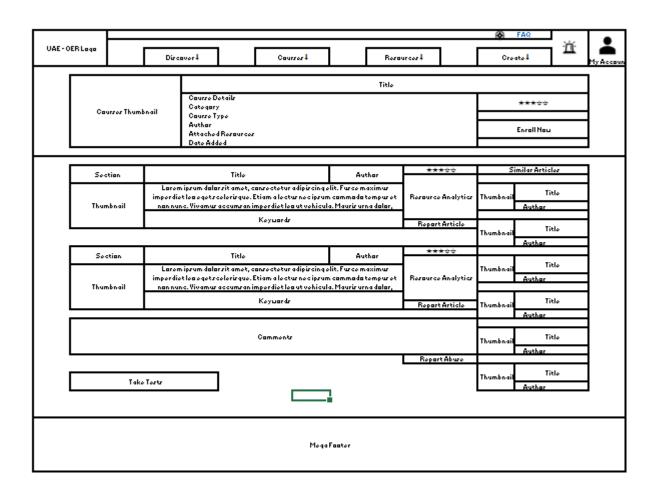


#### 6.5.11 Course List



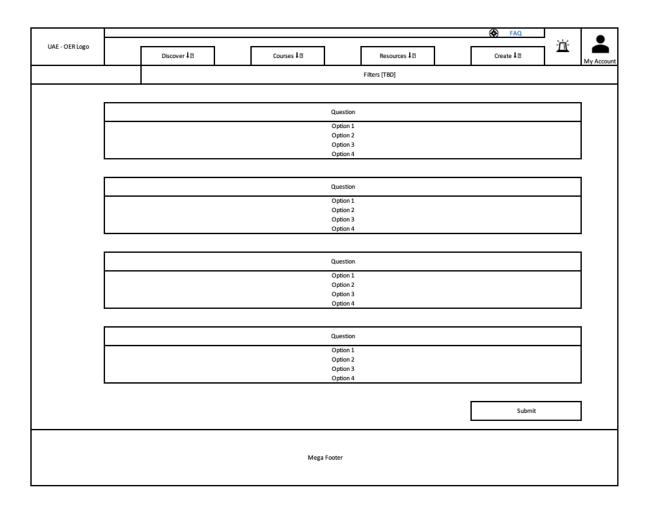


#### 6.5.12 Course Landing Page



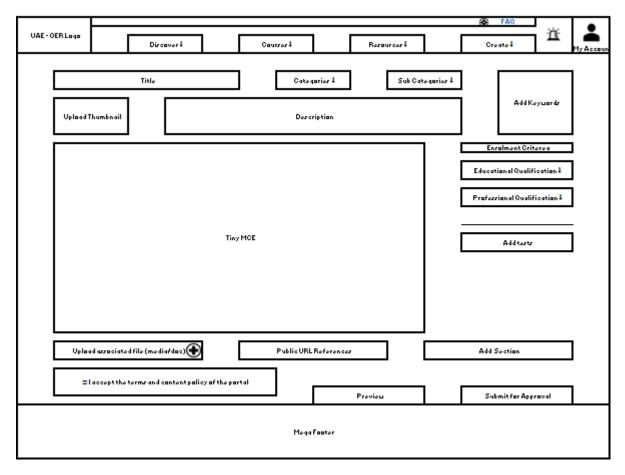


#### 6.5.13 Tests





#### 6.5.14 Create Course



#### Additional Notes:

Add Section Button opens up the create resource page where you can maintain title such as Chapter / Lesson no: etc , add a description and attach file or create text in the online text editor.

There is a preview button to see the course contents. This opens up a preview of the course landing page which displays the various sections of this course.



#### 6.5.15 Create Test

						�	FAQ		
UAE - OER Logo	Discover <b>I</b> ⊞	1	Courses ↓ 🗈		Resources ↓ 🗈	Cro	eate I 🛭	Д	My Account
		· · · · · ·			Filters [TBD]				,
	I								
			Add a Question	1			Upload N	Лedia	1
	Option 1						Right Answer	0	-
							Right Answer	0	
							Right Answer	0	
			Option 4				Right Answer	0	J
									_
			Add a Question	١			Upload N	Лedia	]
			Option 1				Right Answer	0	1
			Option 2				Right Answer	0	
			Option 3				Right Answer	0	
			Option 4				Right Answer	0	J
									,
			Add a Question	1			Upload N		
							Right Answer	0	1
							Right Answer	0	
	Option 3 Option 4						Right Answer Right Answer	0	
			Орионч				NgitAliswei		
			Add a Question	1			Upload N	Лedia	1
			Option 1				Right Answer	0	-
			Option 2				Right Answer	0	
			Option 3				Right Answer	0	
			Option 4				Right Answer	0	J
							Submit		]
			Mega I	Footer					



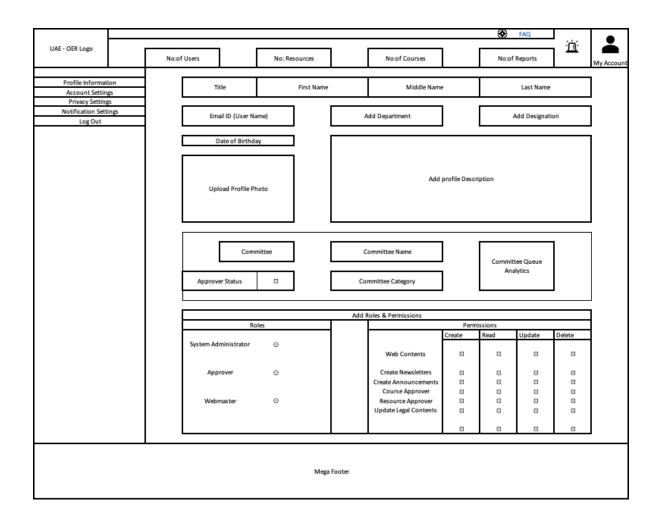
#### 6.6 Internal Users UI Wireframes

6.6.1 Admin Landing Page – Pending Requests (User, Resource, Course, Abuse Reports)

							<b>♦</b> FAQ			•	
UAE - OER Logo		Users (No	s)	Resources (Nos)	1	Courses (Nos)		Abuse Re	ports (Nos)	Δ	My Account
	Date			Title / Nam				×	/	Q	
	Date			Title / Nam				×	/	Q	
	Date			Title / Nam	:			×	/	Q	
	Date			Title / Nam	:			×	/	Q	
	Date			Title / Nam	:			×	/	Q	
	Date			Title / Nam	:			×	/	Q	
	Date			Title / Nam	:			×	1	Q	
	Date			Title / Nam				×	/	Q	
	Date			Title / Nam				×	/	Q	
	Date			Title / Nam				×	/	Q	
	Date			Title / Nam				×	/	Q	
	Date			Title / Nam				×	/	Q	
Mega Footer											

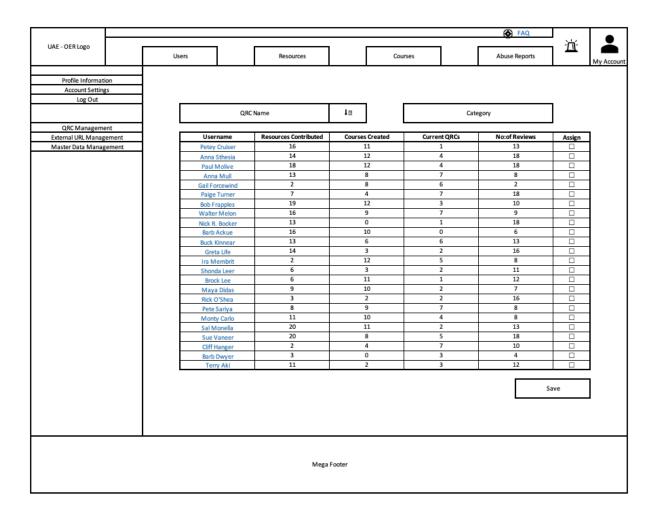


#### 6.6.2 Admin User Control Panel



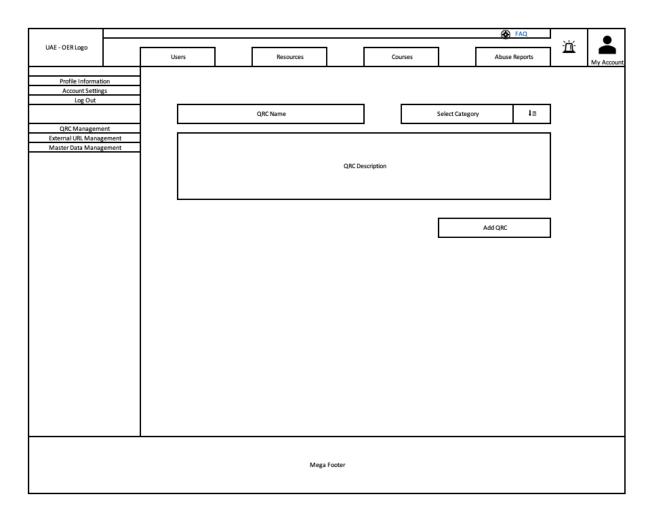


#### 6.6.3 Admin QRC Control Panel



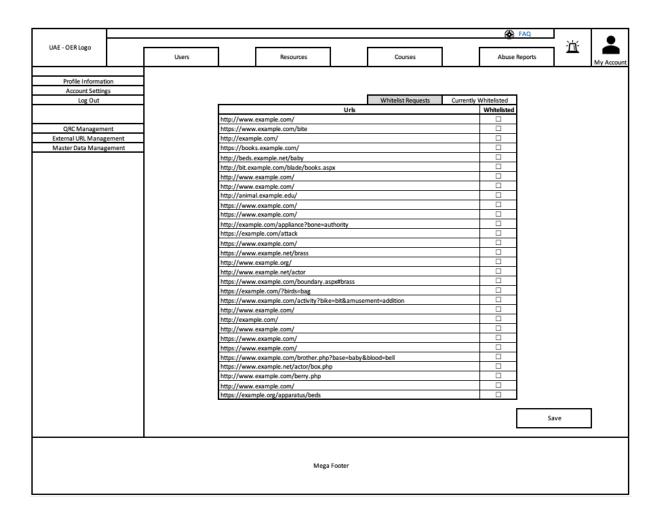


#### 6.6.3.1 Add QRC



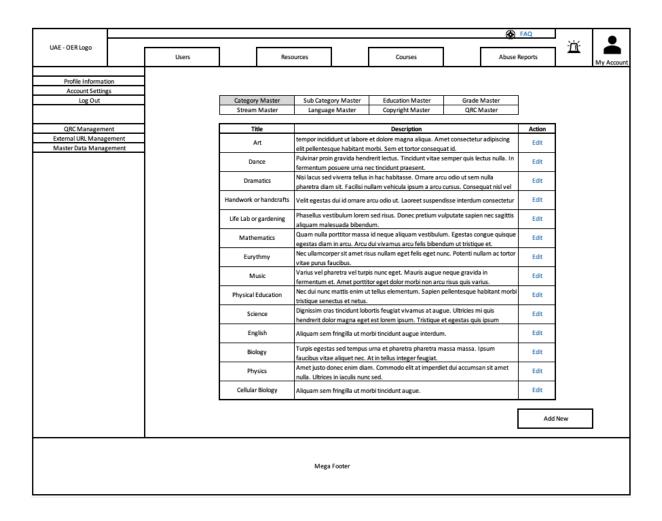


#### 6.6.4 External URL Management



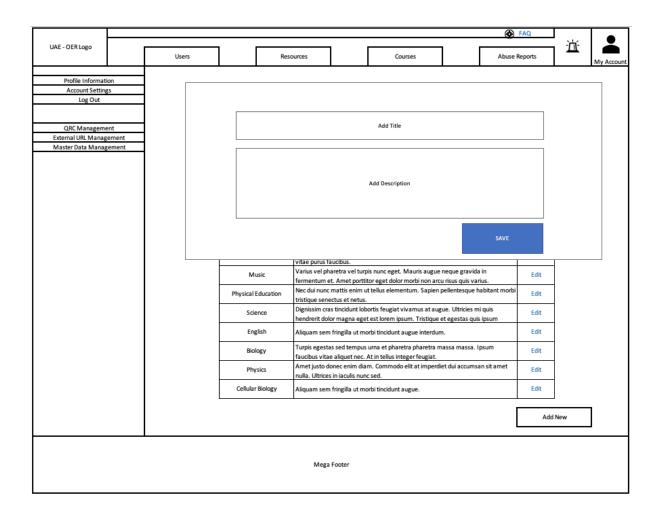


#### 6.6.5 Master Data Management





#### 6.6.5.1 Add Entry





# 7 Non-Functional Requirements (NFR)

ID	Requirement			
NFR 1	The system should be able to operate with concurrent users upto 10,000			
NFR 2	The application is to be of a Single Page Application			
NFR 3	Presentation Layer on Angular 6, .Net Core to be used on server side and the suggested DB is MS SQL Enterprise 2017			
NFR 4	The platform to be multi-lingual (English and Arabic)			
NFR 5	Access and activity logs for all users are to be maintained			



# 8 Document Control

# 8.1 Document History

Version	Date	Changes	Author
1.0	4/2/2019		Hashim Haleem
1.1	20/2/2019	Points from BRD Review	Hashim Haleem
1.2	24/2/2019	Feedback from Revised BRD Review	Hashim Haleem

# 8.2 Document Approval

Ver	Date	Approvers	Business Unit	Signature
1.2		Mahinour Izzat	Senior Specialist, Professional Development Teaching and Learning	
1.2		Shadi Orsan Ayoub	Senior Director, Educational Resources	
1.2		Mohamed Abdelhamid	Director of transformation and change	
1.2		Amr Jaber Ahamed	Advisor, Information Technology	



# WITH OUR SINCERE THANKS.

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