"RM and RS":
The First QOU MOOCs

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ABSTRACT

The recent proliferation of massive open online courses (MOOCs) demonstrates that technology continues to transform education in both the traditional and online settings. In May 2014, Queen Rania Foundation (QRF) for Education and Development of Jordan launched a non-profit massive open online course portal, in the Arabic language, called Edraak to promote knowledge in the Arab world. The course portal is hosted by EdX-platform.

In 2016 Al-Quds Open University (QOU) introduced its first MOOCs called *Remedial Math (RM) and Remedial Statistics (RS)* through Edraak platform; the courses were designed in a simplified manner to provide learners with the fundamental math and statistical information. For almost 14 months, the courses teams had spent over 8000 working hours in designing and planning the MOOCs in a way to integrate technology and pedagogy.

The courses were sent out on weekly basis where learners watched short-video lectures online and completed the assignments that were automatically graded. Learners were also able to get immediate feedback if questions arose. Over 18,000 nationwide learners, with a variety of qualifications such as PhDs, Mas, BS, middle school education, etc., enrolled in the course from 10 different Arab countries. An official certificate from Edraak and QOU was issued to any learner upon request. A high 89% of learners declaredthat they achieved their goals of joining both courses.

Keywords: Massive Open Online Courses (MOOCs)

INTRODUCTION

MOOCs are a giant expanding phenomenon; they appear to be significant force within higher education. MOOCs were not known until few years ago, since then, millions of learners from around the globe have enrolled, thousands of courses have been offered, and hundreds of universities have lined up to participate (Solomon, 2013,). MOOCs are educational models that bring online learning content to any person willing to participate (Hoi, 2014). They are typically videos, and textual instructional modules delivered via the internet (Naaj et al., M. A., 2012).

99

There are more than 480,000 MOOCcourses. 35 million participants from 196 countries, University of Leiden 2015. Harvard and MIT have already developed EdX as their MOOCs platform while Stanford developed Coursera; these are the largest online MOOCs. By 2014, EdX and Coursera together claimed almost 14 million enrollees and crossed 24 million enrollees in 2015, The main course languages currently offered are English, Spanish, and French. Educators believe ThatMOOCs introduction to the higher education landscape has expanded the space for possible blended or hybrid course designs (Dereki and et al., 2013. &Kaletaoutline, greatdesigned MOOCs will lead to a greater realization among instructors, further promoting open opportunities for collegiality and collaboration among instructors and across disciplines (Aycock, et al. , 2002).

In June 2014, Queen Rania Foundation (QRF) for Education and Development launched the first non-profit Arabic massive open online course (MOOC) platform, *Edraak*, which was built on the Harvard-MIT consortium, EdX,QRF was established in 2013,it aims to push the boundaries of education across the region within and beyond the classroom, and to promote positive change and counter the stagnation and decline of quality education and learning outcomes (Queen Rania Foundation, 2013). Edraak makes quality education in Arabic accessible to millions of Arab learner around the globeand promotes lifelong learning, it provides a platform for a diverse range of free online courses, offered by top universities and entities, it offers Arabic translation to select courses from other universities that launch EdX, customizing them to Arabize and localize the content, it also develops its own courses in Arabic with leading Arab faculty as well as world renowned Arab professionals in a variety of fields, now, Edraak exceeds one million enrollees (Edaa, 2014).

In this study we apply a descriptive lens to the first two MOOCs offered by Al Quds Open University *"Remedial Math (RM)"* and *"Remedial Statistics(RS)"* launched by Edraak platform. These courses aimed to fill the gap between high school math and university math, both courses targeting the college learners while remaining available to anyone. The objective is to provide insights into QOU developed MOOCs and the demographics diversity and characteristics of the 18,000 Arab learners enrolled.

GENERAL STRUCTURE OF BOTH MOOCs

The fundamental components of RM and RS MOOCs are:

- ✓ **Weeks (modules):**
  The two MOOCs were made up of weeks. A week is a collection of lectures, it comprises a larger unit of learning. Both MOOCs lasted for 4 weeks. The weeks (modules) were delivered sequentially and asynchronously week by week. The contents were accessible 24 hours a day, 7 days a week. Learners usually didn't need to purchase books for these courses since all readings are provided by the MOOCs.
- ✓ **Lectures:**
  A MOOC lecture was a cohesive unit of contents regarding a subject it was organized in "sequences" of 5-15 minute videos, usually

featuring a professor writing on PowerPoint slides and marking up graphs and diagrams. Each lecture was structured around 1 to 2 clear learning objectives displayed in Arabic language to learners. On average, an hour of MOOC lecture was concluded with at least one assignment each week

Exercises:

✓ Lecture sequences were often sprinkled with short and simple comprehension questions that were usually not very time consuming if learners were paying attention to the videos. These questions were not intended to be challenging and did not count towards a grade.

There were different types of questions, some asked forthe numerical answer to a computation, others were multiple-choice questions, and some were left open to allow room for simple answer research. Those exercises and their answers were often discussed in a special forum.

Activates:

✓ In both courses, activity questions offered after each lecture (video) were multiple-choice type questions. Activities often asked learners to implement a learning concept covered in the lecture, generally for no credit.

Exams:

✓ Both courses required learners to take multiple-choice question exams after completing each Module and a final exam at the end of each course which together accounted for the bulk of the final grade.

The tests had deadlines to complete and were automatically graded once the deadline was reached. Learners were allowed to retry review questions many times; however, exams could be submitted up to 3 times only.

Discussion Forums:

✓ MOOC experts say the interactive discussion forums are a big part of the online learning experience (Ethan, 2013). This is where learners go if they need a question or don't understand a concept. Course staff of the two MOOCs replied to questions posted on the boards and sometimes help came from other learners and peers. Feedback allowed learners to gauge their understanding and make changes accordingly (Hoi, 2014).

Educational Games:

✓ RM MOOCs educational games were integrated to allow participants to learn by doing. This helps with getting solid and fundamental knowledge they would need to continue in more advanced Math courses, figure 1 shows a snapshot of a part of the RM MOOC.

Certification:

✓ The two MOOCs - including all Edraak MOOCs - offered certificates of completion immediately after finishing the courses if a 50% or higher score was achieved. The certificates, issued by Edraak and QOU, only mean that a person who enrolled under the name on the issued certificate took the course. No steps were taken to confirm the course taker's identity.

101

DATA COLLECTION AND FINDINGS

Both MOOCs, the RM and the RS were in Arabic. The anticipated time spent on learning each course was one hour per week for the duration of 4 weeks per course. The table below summarizes the characteristics of both MOOCs.

Table 1.
The characteristics of RM and RS

	RM	RS
Start Date	19/07/2016	27/12/2016
End Date	16/08/2016	24/01/2017
Level	Remedial	Remedial
Length	4 Weeks	4 Weeks
Effort	1 hour/week	1 hour/week

The initial enrolment in the RM course was 10,090 learners with only 237 learner withdrawals. On the other hand, the initial RS course enrolment was 8,518 learners with only 100 learners' withdrawals.

The number of learners' enrolment is considered high compared to the enrolment on other scientific MOOCs.

The number of learning engagements, mainly through the discussion forums, in RM course was 1,084 (17%) while in RS course was 1,515 (18%).

These percentages are considerably high, even higher than some MOOCs offered by Stanford University where many courses have less than 10% of learning engagements, and in most courses the participation is less than 5%.

Table 2.
Number of learners enrolled in RM and RM

	RM	RS
Number of Learners Registered	10,090	8,518
Number of Withdrawals	237	100
Number of Engagements	1,084	1,515

We found that learners logged onto the site from nearly every country in the Arab world (see table below). The average enrollee age was 21.4 years. This is in line with educational research (Lori Breslow et al., 2013).

In addition, this achieves one major objective of the Queen Rania Foundation that was set when Edraak MOOC platform was launched, and that is to bring quality education to every Arab youth (Eraak: 2014).

Figure 1.
General Structure of a MOOC

The learners were asked to complete an entrance survey for each of the courses. The survey consisted of 14 questions relating to the respondent's demographic information. They also completed an exit survey that consisted of 11 questions.

Table 3.
Numbers of participating learners from Arab countries

Country	RM	RS
Egypt	1,703	2,548
Algeria	2,445	1,680
Jordan	901	862
Saudi Arabia	645	748
Palestine	1,062	698
Morocco	2,422	571
Syria	284	301
Yemen	130	226
Iraq	167	-
Tunisia	-	146
United Arab Emirates	-	285
Other	113	-
Sum	*9,479*	*8,065*

103

The number of learners who completed the surveys are given in the table below:

Table 4.
Number of learners completed the entrance and exit surveys

	RM	RS
Entrance Survey	988	790
Exit Survey	167	175

One of the entrance survey questions asked: "What is the highest degree you have completed?" Of the 10,743 RM survey responses and the 8,769 RS survey responses, 3,989 RM and 4,089 RS survey responses reported having a bachelor's degree. While 1,065 of RM learners and 2,111 of RS learners are reported having graduate degrees.

Table 5.
Number of respondents by educational attainment levels

Academic Levels:	RM	RS
Doctorate	78	231
Masters or Professional Degree	913	1,880
Associate Degree	212	193
Bachelor's Degree	3,989	4,089
Secondary/High School	2,991	1,785
Elementary/Primary School	92	36
Junior, Secondary/Junior, High/Middle School	1,296	288
Others	1,172	267
Sum	10,743	8,769

Even though, a statement on the courses sites recommended that learners should have prerequisite knowledge such as high school math, 128 of the surveyed learners of both MOOCs reported having only attained elementary/primary school. The table below shows the highest degree earned by all surveyed learners.

The number of learners who completed the MR course and got a certification of completion was 365 that's 5% of the enrolment number. On the other hand, only 544 RS learners (6%) asked for a certification after completing the course (see table below).

That's possibly due to 36.6% of the learners, as the entrance survey showed, registered for the MOOC to refresh their knowledgeThese percentages are considered competitive amongst other online courses, in fact it is higher than many other international MOOCs, such as The Terrorism and Counterterrorism MOOC offered by Leiden University in Netherlands in 2014 where only 410 out of 18,622 (2.2%) completed the course.

104

While 4% of Coursera users who watch at least one course lecture go on to complete the course and receive a credential (Zhenghao, el, at (2015).

Many Studies have pointed out that on average, the completion rate of any MOOC is below 13%, this might be due to the learner's specific interest in an element or topic of the course, or it could be due to the great variety in the learners' population and educational attainment levels.

Table 6.
Percentage of learners completed both MOOCs

	RM	RS
Percentage of Learners who Completed the Course	5%	6%
Certificates of Completion	365	544

The exit survey data indicated that almost 89% of learners achieved their goals of joining both courses. the survey also included the question: "To what extend did you benefit from the course?" the results indicated that about 58.7% of RM learners and 58.2% of RS learners benefited a great deal in both MOOCs, followed by some benefits to more than 30.9%, and no added knowledge to less than 3.6% of the learners, refer to the table below:
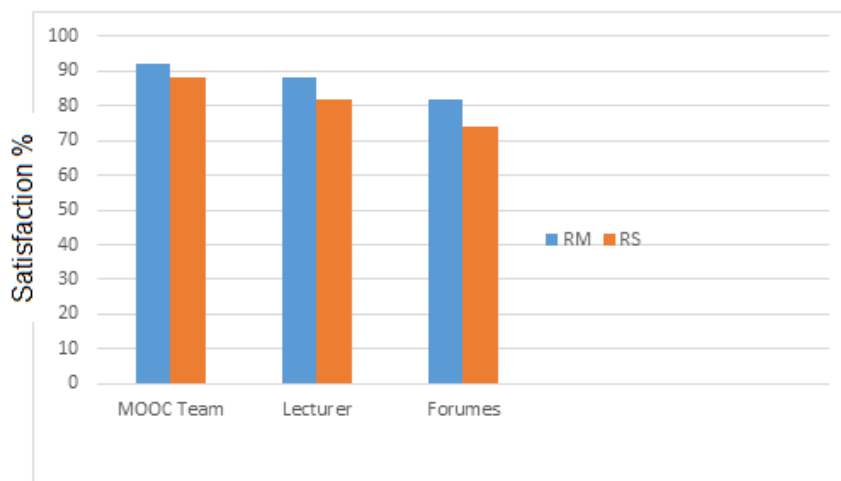
Table 7:
Proportion of respondents to the benefit of the courses

To what extend did you benefit from the course?	RM		RS	
	Response Percent	Response Count	Response Percent	Response Count
Responses				
Great deal	58.7%	97	58.2%	96
Some benefits	34.5%	57	30.9%	51
Little benefits	6.1%	10	7.3%	12
No benefits	0.6%	1	3.6%	6

More than 93% survey respondents of both MOOCs found the courses to be effective and indicated that they received a high quality of feedback when raising question through the discussion forums, they felt a great satisfaction with the MOOCs teams and lecturers.

The exit surveys indicated that the learners' overall satisfaction rates were 70.6%, and 72.0% for both RM and RS MOOCs respectively.

105

Learners' satisfaction in an online course is important because it can impact motivation and, therefore, learner success and completion rates.

Figure 2:
Satisfaction of MOOCs team,lecturer and forumes.

In the quantitative feedback, learners indicated high satisfaction rates (see table 8) with the quality of animations, games and activities implemented in the RM course. The games provided many of the learners with great benefit in constructing knowledge. This type of feedback was not applicable to the RScourse as the course did not include similar games and activities to the RM course.

Table 8.
Benefits and satisfaction of animations and educational games of RM course

To what extend are you satisfied with Course? Answer	Animations Percentage count		Educational games Percentage count		Benefits of educational games Percentage count	
Excellent	53.8%	85	40.8%	64	45.8%	71
Very good	32.3%	51	35%	55	49.0%	76
Good	12.7%	20	21%	34		
Satisfactory	1.3%	2	2.5%	4	3,9	6
unsatisfactory	0%	0	0%	0	1.3%	2
Counts sum		158		157		155

Based on the qualitative testimonials given by the learners through the courses' forums, we can confirm that most learners were optimistic and satisfied with the learning process in general.

Many learners indicated happiness and satisfaction with the lectures, quality of animations, games, and activities provided by MOOCs.

Appendix 1 and Appendix 2 show some of these testimonials from both courses.

CONCLUSIONS AND RECOMMENDATIONS

MOOCs have created wide interest as a change agent in higher education (13), Palestine's official position on MOOCs is not reflected in any academic literature we have been able to identify.

In response, QOU has made its first attempts to tackle this issue. Consortium led by Edraak, RM and RS were the first MOOCs recently designed and implemented by QOU.

Over 18,000 learners registered for the two math and statistical courses, which were composed of video lectures, interactive problems, online laboratories, and discussion forums.

Demographic investigations revealed that most learners came from over 10 Arabic countries mainly from Egypt, Algeria, Morocco, Jordan, and Palestine. It is not surprising the majority of the learners appeared to be in their 20s and 30s while the motivation behind enrolling in the courses varied.

The study revealed that learners reported a high level of satisfaction in both MOOCs.

On the other hand, the early impacts of MOOCs on higher education are a sign that this transitionis difficult, but entirely possible (Zhenghao, el, at (2015). MOOCs deeplyimpact of Arab universities is yet to be studied.

As we are confident that our findings are broadly generalizable, we recommended, similar studies to be conducted in different contexts. Meanwhile, innovation and research needs to focus on issues such as the impacts of MOOCs on higher education, learners' support towards the completion of MOOCs in order to secure educational benefits, the facilitation of learners' motivation during a MOOC course, and whether MOOCs improve learner achievement retention growth.

Finally, learning is not just about pure academics alone. Interacting with others learners with diverse cultural backgrounds is a part of the academic life and that was done effectively through these MOOCs.

107

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Remedial Math MOOC Testimonials:

شكر و امتنان

0 Vote

Discussion posted about 15 hours ago by ابراهيم بوجه

المناقشة منشور منذ يوم واحد من قِبل سجى خالد محمد ربيع

أودّ أن أشكر الدكتورة و طاقم المساق بالكامل على مجهودهم الرائع سائلين المولى عز وجل لهم بدوام التوفيق و النجاح

الأسبوع الرابع / الدرس السادس :Related to
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Figure 3.
Gratitude.

majed al - sawadi
منذ حوالي 5 ساعات

0 صوت

النسبة الذهبية أو الرقم الذهبي 1.618 رقم بسيط في شكله وللوهلة الأولى
يعتبر رقماً عادياً جداً، ولكن في حقيقة الأمـر يعتبر من أكثر الأرقام إثارة
للجدل على مر التاريخ فهي نسبة تُكسب كل عمـل نقوم به في شتي
مجالات الحياة -إذا ما استخدمناها- جمالاً وإتقاناً وتجعل منه عملاً إبداعياً.
(وهي إحدى مقاييس الجمال وأحد أسرار الجمال من حولنا في هذا الكون)

بعد ان قرأت اتيت بهذا الكلام وليس مني اي اني بفضل الله ثم فضلكم
عرفت ماهي النسبه الذهبيه

Figure 4.
The impact of content.

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واتمنى ان اري اشكال حيه للمنحيات اكثر حتي افهمه بتعمق

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كان درس مبسط وسلس 1 صوت
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شكرا جزيلا

متعلِّق بـ: الاسبوع الأول / الدرس الأول

شكر وتقدير 1 Vote
Discussion posted 2 days ago by سجى خالد محمد ربيع

أودّ ان اشكر طاقم المساق على الجهود الرائعة لقد استمتعت بهذا المساق جداً شكرًا لكم

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Figure 5.
Lecturers' satisfaction.

111

.شكرا جزيلا، ننتظر المزيد

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0 صوت

رامي بن أحمد بن السيد
منذ حوالي 11 ساعة

أكرمك الله أيتها الدكتورة الفاضلة:

من الملاحظ أن الشكل متماثل وأن المثلث العلوي المتساوي الأضلاع واضح أن الخط ع الخارج من رأسه بامتداده يقطع قاعدة المثلث العلوي بزاوية قائمة في المنتصف تمامًا، إلى مثلثين متماثلين وتر كل منهما 100 سم وقاعدة كل منهما 50 سم، وعليه فإن (ع) من خلال فيثاغورس في أحد المثلثين = الجذر التربيعي لـ (مربع الوتر - مربع القاعدة) = الجذر التربيعي لـ [(100)^2 - (50)^2] = الجذر التربيعي لـ [10000 - 2500] = الجذر التربيعي لـ 7500 ع = 86.6 سم أي من دون معرفة مساحة المثلث الأكبر.

أشكر حضرتك كثيرًا على شرحك الجميل النافع الممتع، وفقك الله لكل خير، تحياتي.

Figure 6.
Complement to the lecturer.

NahedOmar
منذ يوم واحد

اللعبة الاولى ممتازة وتخدم بشكل جميل
اما اللعبة الثانية لم اجد لها اي فائدة
وهذا رأيي المتواضع
تقبلوا مروري

Figure 7.
Games' benefits and feedback.

اجتياز المساق مع الشكر والتقدير

حوار منشور منذ 3 أيام من قِبل Raed Basbous

كل الشكر والتقدير للقائمين على هذا المشروع خاصة طاقم المدربين المشرف على المساق. كان محتوى المساق ممتاز، ومطروح بإيجاز لأهم النقاط. كان الفائدة كبيرة، وساعدتني في عمل مراجعة لأهم المفاهيم في مادة الإحصاء الرياضي. تم اجتياز المساق بنجاح، وعلى أمل المشاركة في مساقات أخرى.

تشكر

حوار منشور منذ 12 يوم من قِبل **ماريا صهيب**

الحمد لله استفدت واستمتعت جدا في هذا المساق. اود شكرا الدكتورة وكل طاقم المساق جزيل الشكر. اسال الله ان يجعله في ميزان حسناتكم ويوفقنا اجمعين لما فيه خير.

اجتزت الامتحانات بنسبة 93% ;والحمد لله بانتظار الشهادة

متعلّق بـ: الأسبوع الرابع / الأسبوع الرابع-الدرس السادس
هذا المنشور مرئيّ للجميع.

الشكر والتقدر لدكتورة

حوار منشور منذ 11 يوم من قِبل **ميسون حكيم**

نعم المساق مفيد جدا وامال بي المزيد لنهو مبسط وممتع اقول انا تعليمي ادبي ولاكني استفدة الكتير منه ولكي الشكر والتقدير

متعلّق بـ: الأسبوع الرابع / الأسبوع الرابع-الدرس السادس
هذا المنشور مرئيّ للجميع.

مساق رائع

حوار منشور منذ 11 يوم من قِبل **هند آل سليم**

كل الشكر والتقدير للدكتورة على هذه المعلومات القيمة ونتمنى استمرارية هذه المنصة في تقديم مثل هذه المواد المفيدة

هذا المنشور مرئيٌ للجميع.

سؤال وشكر

سؤال منشور منذ 8 أيام من قِبل **محمود أحمد خطاب**

اولا نشكركم شكرا جزيلا لهذه المحاضرات الطيبة وهذا الشرح المبسط الممتاز

ثانيا لي سؤالين

1- كيف استمد الخبرة العملية في هذا المجال وهل يوجد مراكز لاستمداد الخبرة منها ام لا ؟

2 - هل يمكن ان اخذ شهادة بهذا المساق وكيف ؟

Figure 8.
The impact of the course and course team.

Remedial Statistics MOOC Testimonials:

جميييله

حوار منشور منذ 12 يوم من قِبل **يسرى العبد**

المحاضرة جميله جدا والطريقة شيقه وطريقة العرض ممتازة شكرا لكي استاذتنا

متعلّقٌ بـ **الأسبوع الثاني / الأسبوع الثاني-الدرس الثالث**
هذا المنشور مرئيٌ للجميع.

ماريا صهيب
منذ 8 أيام

بوركت دكتورة كفيت ووفيت في هذا المساق .سيكون لنا الشرف في حضور مساقات اخرى لحضرتك

Figure 9.
Lecturers' satisfaction.