Evolution Of a truly open arithmetic MOOC

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One of 10 Colleges – Maricopa Community College District
MOOC
Massive Open Online Course

Every letter is negotiable.

2013 @mathplourde - digedcon moocposter
Who?
What?
When?
Where?
Why?

MOOC
Every letter is negotiable.

2013 @mathplourde - digedcon moocposter
This is a paid advertisement from The Bovine Community reminding you that they have feelings too.

Image Source: http://www.flickr.com/photos/tracy_n_brandon/346828878/
MOOC GROWTH RATE

Number of MOOCs offered vs. Year

- 2008: 1
- 2009: 2
- 2010: 1
- 2011: 18
- 2012: 55
- 2013 (Projected): 118

Image Source:
# Major MOOC Players

<table>
<thead>
<tr>
<th>Platform</th>
<th>Funding</th>
<th>Courses</th>
<th>Participating Schools</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coursera</td>
<td>$22 Million</td>
<td>210</td>
<td>37</td>
<td>Yes, signed by instructor, University name not included</td>
</tr>
<tr>
<td>Udacity</td>
<td>$15 Million</td>
<td>15</td>
<td>0</td>
<td>Yes, based on placement after testing</td>
</tr>
<tr>
<td>edX</td>
<td>$60 Million</td>
<td>9</td>
<td>6</td>
<td>Yes, edX and University name included</td>
</tr>
</tbody>
</table>

**NOTE:** Udemy and 2U are two other educational start-ups often associated with MOOCs, but since both charge for access to courses, they are not listed here as true MOOCs.

10,000
2300
160,000
500
Basic Arithmetic
Does this MOOC make my CLASS look BIG?
@donagee
Open

Image Source: http://www.flickr.com/photos/qcom/6872493830/
What does OPEN really mean?

Massively Open Online Course ≠ Open Educational Resources
Basic Arithmetic – The Start

Feb 4 – May 3, 2013
Registration Stats | Basic Arithmetic

Locations
500 Students from around the world!
What category below contains the highest level of education you have completed?

- Did not attend school
- Grade School (grades 1 - 6)
- Junior High (grades 7 - 9)
- High School (grades 10 - 11)
- Graduated from high school
- 1 year of college
- 2 years of college
- 3 years of college
- Graduated from college
- Some graduate school
- All Other Responses
What is your motivation for enrolling in this course? (Select all that apply)

- I want to learn arithmetic level content.
- I want to review arithmetic level content.
- I want to practice my English language skills.
- I am curious about MOOCs.
- I am curious about the design of online courses.
The content areas covered in this course include: Whole Numbers, Fractions, Decimals, Percents, Ratios & Proportions, Statistics, Measurement, Geometry, & Signed Numbers. Are you planning to:

- Complete the entire course
- Focus on a few lessons that I am interested in learning or reviewing
The C’s of MOOC Design

- Content
- Communication
- Checkup
- Certification
Structured
Structured Interactive
Structured
Interactive
Complete
Complete
12 Lessons covering all content for the course

Basic Arithmetic

Lesson 1 – Whole Numbers

MINILESSON

WHOLE NUMBERS, PLACE VALUE, AND ROUNDING

*Whole numbers* are often referred to as “the counting numbers plus the number 0”. The first few *whole numbers* are written as: 0, 1, 2, 3, 4, 5, 6, 7, ...

<table>
<thead>
<tr>
<th>BILLIONS</th>
<th>MILLIONS</th>
<th>THOUSANDS</th>
<th>ONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Example 1: Place each number in the chart above. What place value does the digit “0” occupy in each number?

a. 25,032  
b. 105,243  
c. 12,340,412
### Workbook with Interactive Videos

<table>
<thead>
<tr>
<th>BILLIONS</th>
<th>MILLIONS</th>
<th>THOUSANDS</th>
<th>ONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Place each number in the chart above. What place value does the digit “0” occupy in each number?

- a. 25,032
- b. 105,243
- c. 12,340,412

---

I want to identify then the place value occupied by the digit zero.
Consider the number 434,85

Write the digit for the given place value in the whole number above.

ten thousands:  

hundreds:  

ones:  

Get help: Worked Example 1

Points possible: 5
This is attempt 1 of 3.
Communication
Communication
Communication
Automatically Placed
Self-Enroll

Automatically Placed

Discuss MOOC Pedagogy

Students - Group
- Students - Group 1
- Students - Group 10
- Students - Group 2
- Students - Group 3
- Students - Group 4
- Students - Group 5
- Students - Group 6
- Students - Group 7
- Students - Group 8
- Students - Group 9
My role in this class is that of designer and coordinator. I am kind of like the person that takes care of, say, a soccer field and gets it ready for practice and play. I will not be able to respond to individual emails and messages about the class but I will be lurking around the discussion boards and participating there.
Auto or Self Grading
Auto or Self Grading

Score on last attempt: 3.3 out of 5 (parts: ✔ 1.67/1.67, ✔ 1.67/1.67, ✗ 0/1.66)
Score in gradebook: 3.3 out of 5 (parts: ✔ 1.67/1.67, ✔ 1.67/1.67, ✗ 0/1.66)

Reattempt last question
Try another similar question
Auto or Self Grading

Solution Files
Auto or Self Grading

Solution Files

<table>
<thead>
<tr>
<th>YOU TRY PROBLEMS - UPDATED ANSWERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Updated Answers - You Try Problems from Student Workbook Appendix A</td>
</tr>
<tr>
<td>ANSWERS TO END OF LESSON ASSESSMENTS</td>
</tr>
<tr>
<td>In the workbook, you will find a short assessment at the end of each lesson. Completion of these assessments is not part of the recommended lesson flow but is certainly an option for you if you so choose. The answers to these problems are below. Keep in mind that only the online tests in MathAS are counted toward your overall online percentage for the class.</td>
</tr>
<tr>
<td>Answers - End of Lesson Assessments from Student Workbook</td>
</tr>
</tbody>
</table>
Auto or Self Grading

Solution Files

Final results
Auto or Self Grading

Solution Files

Final Grade Book Student Detail

<table>
<thead>
<tr>
<th>Item</th>
<th>Possible</th>
<th>Grade</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1 - HW</td>
<td>200 (Not Counted)</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>L1 - QUIZ</td>
<td>100 (Not Counted)</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>L1 - TEST</td>
<td>75 pts</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>L2 - HW</td>
<td>200 (Not Counted)</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>L2 - QUIZ</td>
<td>100 (Not Counted)</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>L2 - TEST</td>
<td>75 pts</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>L3 - HW</td>
<td>200 (Not Counted)</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>L3 - QUIZ</td>
<td>100 (Not Counted)</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>L3 - TEST</td>
<td></td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
Auto or Self Grading

Solution Files

Final results
Certification

Basic Arithmetic

*Completion Statement

May 1, 2013

Student Name:

Student Email:

Congratulations on successful completion of the Massively Open Online Course: Basic Arithmetic offered from February 4 – May 3, 2013. In order to complete the course, students were asked to watch videos, complete exercises both online and in a workbook, and take 12 lesson tests and one final test.

My records show that you earned the scores below on graded assignments:
Basic Arithmetic

Scottsdale Community College

Feb 4, 2013 to May 3, 2013

⚠ Class Full

Mailing List

Provides video lectures

Provides opportunities to interact with the instructor or students

Uses discussion forums

You will not be given a final grade in this course

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Basic Arithmetic - Results
The Potential...500 Students!

Registration Stats | Basic Arithmetic

Locations
The Reality...

<table>
<thead>
<tr>
<th>Activity</th>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signed up</td>
<td>512</td>
</tr>
<tr>
<td>Orientation Quiz</td>
<td>103</td>
</tr>
<tr>
<td>Created MathAS Account</td>
<td>75</td>
</tr>
<tr>
<td>Completed Lesson 1</td>
<td>53</td>
</tr>
</tbody>
</table>

![Page Views Chart](chart.png)
The Final Stats...Lesson Completion

# of Lessons Completed (75 students)

<table>
<thead>
<tr>
<th># of Lessons Completed</th>
<th># of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>22</td>
</tr>
<tr>
<td>1-3</td>
<td>53</td>
</tr>
<tr>
<td>4-6</td>
<td>27</td>
</tr>
<tr>
<td>7-9</td>
<td>20</td>
</tr>
<tr>
<td>10-12</td>
<td>16</td>
</tr>
<tr>
<td>Final Test</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>%</th>
<th>29</th>
<th>71</th>
<th>36</th>
<th>27</th>
<th>21</th>
<th>17</th>
</tr>
</thead>
</table>

0 1-3 4-6 7-9 10-12 Final Test
The Final Stats...Course Completion

<table>
<thead>
<tr>
<th>Course Completion Out of Those Who...</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signed up</td>
<td>2.5%</td>
</tr>
<tr>
<td>Completed the orientation quiz</td>
<td>12.6%</td>
</tr>
<tr>
<td>Created a MathAS account</td>
<td>17.3%</td>
</tr>
<tr>
<td>Completed Lesson 1</td>
<td>24.5%</td>
</tr>
</tbody>
</table>
Lessons Learned...Future Offerings
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• Enrollment Size – increase to 1000
Lessons Learned...Future Offerings

• Enrollment Size – increase to 1000
• Decrease duration of class (13 weeks to 6 weeks)
Lessons Learned...Future Offerings

• Enrollment Size – increase to 1000
• Decrease duration of class (13 weeks to 6 weeks)
• Advertise Certificate of Completion early on
Lessons Learned...Future Offerings

• Enrollment Size – increase to 1000
• Decrease duration of class (13 weeks to 6 weeks)
• Advertise Certificate of Completion early on
• Leave discussion groups all together to promote more interaction and sense of community
Course Completion...after changes

<table>
<thead>
<tr>
<th>Cohort</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer 2013</td>
<td>19/350 = 5.4%</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>41/727 = 5.6%</td>
</tr>
</tbody>
</table>

Including at least 4 current SCC students in the Fall Cohort...
Och, aye...

MOOC
1. Help Students learn arithmetic
1. Help Students learn arithmetic

2. SCC Enrollment Potential
1. Help Students learn arithmetic

2. SCC Enrollment Potential

3. Learn about & investigate MOOCs
What about all the MOOC hype and hoopla over the past year?
The King of MOOCs Abdicates the Throne

Sebastian Thrun and Udacity’s “pivot” toward corporate training.

By Rebecca Schuman


Photo by Johannes Simon/Getty Images

Image
Source:http://www.slate.com/articles/life/education/2013/11/sebastian_thrun_and_udacity_distance_learning_is_unsuccessful_for_most_students.html
Are MOOCs Really A Failure?

That’s what The New York Times suggested today, drawing on new research from the University of Pennsylvania. But as the Times also acknowledged, in some ways MOOCs (short for massive open online courses) show great promise.

According to the research, conducted by Penn’s Graduate School of Education, only about half of the people who register for MOOCs even look at a single lecture, and an average of just 4% of enrollees complete the courses. In some classes, just 2% of students finish. The Penn
The Promise of MOOCs for CC’s?

• Still early...not many CC’s in the MOOC space
• Completion numbers are not encouraging
• May be some potential for a hybrid MOOC (online option with in-person, regular instructor support)
MOOCS ...the beginning of a MOOvement to unbundle educational goods and services and rethink traditional education @donagee
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Scottsdale Community College
Arizona, USA

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@donagee