Chile - OER effectiveness in higher education mathematics skills 2014-2015, ROER4D Sub-project 9

Research on Open Educational Resources for Development (ROER4D) - University of Cape Town

Report generated on: August 17, 2016

Visit our data catalog at: https://www.datafirst.uct.ac.za/dataportal/index.php
Overview

Identification

**ID NUMBER**
zaf-roer4d-oehems-2014-2015-v1

Version

**VERSION DESCRIPTION**
v1: Edited, anonymised dataset for public distribution

**PRODUCTION DATE**
2016

**NOTES**
Version 1 of the dataset was deposited with DataFirst on 5 July 2016.

Overview

**ABSTRACT**
This study examines the effect of the use of two Open Educational Resources (OER) (a Khan Academy online tutorial and an open textbook hosted on Wikibooks) on logical-mathematical outcomes for first and second-year students in higher education institutions in Chile. It also investigates perceptions of instructors and students about the use of OER, in order to understand how these resources are used and valued. Quantitative and qualitative methods were used to collect student performance data via a student survey, student focus groups, interviews with instructors, and sourcing institutional records.

Only the institutional records, focus group data and interview data are included in the final dataset. Student survey data is not made available for confidentiality reasons. Findings indicate that students in a contact-study mathematics course who used a Khan Academy online mathematics tutorial obtained better examination results than students who did not use any additional resources, or those who used the open textbook. Moreover, it was also found that instructors and students have positive perceptions about the use of Khan Academy and Wikibooks materials. This study is Sub-project 9 of the Research on Open Educational Resources for Development (ROER4D) project, hosted by the Centre for Innovation in Learning and Teaching (CILT) at the University of Cape Town, South Africa, and Wawasan Open University, Malaysia.

**KIND OF DATA**
Focus group and survey data

**UNITS OF ANALYSIS**
Units of analysis were individuals

Scope

**NOTES**
The data covers perceptions of students and instructors of the value of OER materials over traditional teaching and learning materials. This was supplemented by record data from the institution on student performance.

**KEYWORDS**
Open textbooks, Open Educational Resources, Mathematics, Open Data

Coverage

**GEOGRAPHIC COVERAGE**
The interviews and survey data were conducted at one institution in Chile and are not representative of the country as a whole.
UNIVERSE
The survey covered students and instructors in the single institution involved in the study.

Producers and Sponsors

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Questionnaires

No content available
Data Collection

Data Collection Dates

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Data Collection Mode

Face-to-face and internet [f2f-int]

Data Collection Notes

The interviews were conducted with two instructors and three students, and comprised 20-30 (modal average 22) questions (1-1.5 hour interviews). An online survey was also administered to measure student perceptions of the use of OE (49 responses).
Data Processing

No content available
Data Appraisal

No content available
File Description
Variable List
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Student ID (id)
File: oehems-2014-2015-blended

Overview
Type: Continuous
Format: numeric
Width: 2
Decimals: 0
Range: 2-63
Valid cases: 62
Invalid: 0
Minimum: 0
Maximum: 63
Mean: 32.5
Standard deviation: 18

Comparison group (group)
File: oehems-2014-2015-blended

Overview
Type: Discrete
Format: numeric
Width: 1
Decimals: 0
Range: 1-4
Valid cases: 62
Invalid: 0

Gender (gender)
File: oehems-2014-2015-blended

Overview
Type: Discrete
Format: numeric
Width: 1
Decimals: 0
Range: 1-2
Valid cases: 62
Invalid: 0

Age (age)
File: oehems-2014-2015-blended

Overview
Type: Continuous
Format: numeric
Width: 2
Decimals: 0
Range: 19-65
Valid cases: 62
Invalid: 0
Minimum: 19
Maximum: 65
Mean: 33.3
Standard deviation: 10.1

Presentation mark - before the exam (p_m)
File: oehems-2014-2015-blended

Overview
Type: Continuous
Format: numeric
Width: 3
Decimals: 0
Range: 2.9-6.7
Valid cases: 57
Invalid: 5
Minimum: 2.9
Maximum: 6.7
Mean: 5.5
Standard deviation: 0.9
Exam mark (exam)
File: oehems-2014-2015-blended

Overview
Type: Continuous
Format: numeric
Width: 3
Decimals: 0
Range: 1.6-7
Valid cases: 57
Invalid: 5
Minimum: 1.6
Maximum: 7
Mean: 5.6
Standard deviation: 1.3

Final mark - after the exam (f_m)
File: oehems-2014-2015-blended

Overview
Type: Continuous
Format: numeric
Width: 3
Decimals: 0
Range: 2.7-6.6
Valid cases: 57
Invalid: 5
Minimum: 2.7
Maximum: 6.6
Mean: 5.5
Standard deviation: 0.9

student's household average monthly income (Chilean Pesos) (income)
File: oehems-2014-2015-blended

Overview
Type: Continuous
Format: numeric
Width: 7
Decimals: 0
Range: 80000-3000000
Valid cases: 62
Invalid: 0
Minimum: 80000
Maximum: 3000000
Mean: 723741.9
Standard deviation: 649457.2

Mother's education level (mot_ed)
File: oehems-2014-2015-blended

Overview
Type: Discrete
Format: numeric
Width: 2
Decimals: 0
Range: 0-18
Valid cases: 60
Invalid: 2

Mother's education years (mot_ed_y)
File: oehems-2014-2015-blended

Overview
Type: Discrete
Format: numeric
Width: 2
Decimals: 0
Range: 4-17
Valid cases: 60
Invalid: 2
## Student ID (id)
**File:** oehems-2014-2015-contact

### Overview
- **Type:** Continuous
- **Format:** numeric
- **Width:** 3
- **Decimals:** 0
- **Range:** 1-106

- **Valid cases:** 96
- **Invalid:** 0
- **Minimum:** 1
- **Maximum:** 106
- **Mean:** 53.7
- **Standard deviation:** 30.3

## Comparison group (group)
**File:** oehems-2014-2015-contact

### Overview
- **Type:** Discrete
- **Format:** numeric
- **Width:** 1
- **Decimals:** 0
- **Range:** 1-3

- **Valid cases:** 96
- **Invalid:** 0

## Gender (gender)
**File:** oehems-2014-2015-contact

### Overview
- **Type:** Discrete
- **Format:** numeric
- **Width:** 1
- **Decimals:** 0
- **Range:** 1-2

- **Valid cases:** 96
- **Invalid:** 0

## Age (age)
**File:** oehems-2014-2015-contact

### Overview
- **Type:** Continuous
- **Format:** numeric
- **Width:** 2
- **Decimals:** 0
- **Range:** 18-54

- **Valid cases:** 83
- **Invalid:** 13
- **Minimum:** 18
- **Maximum:** 54
- **Mean:** 26.7
- **Standard deviation:** 8.2

## Region of origin (region)
**File:** oehems-2014-2015-contact

### Overview
- **Type:** Discrete
- **Format:** numeric
- **Width:** 1
- **Decimals:** 0
- **Range:** 1-9

- **Valid cases:** 96
- **Invalid:** 0
Percentage of attendance of the student during the term (attendance)
File: oehems-2014-2015-contact

Overview
Type: Continuous
Format: numeric
Width: 3
Decimals: 0
Range: 61-100
Valid cases: 96
Invalid: 0
Minimum: 61
Maximum: 100
Mean: 84.5
Standard deviation: 10.2

Presentation mark - before the exam (p_m)
File: oehems-2014-2015-contact

Overview
Type: Continuous
Format: numeric
Width: 3
Decimals: 0
Range: 2.8-6.8
Valid cases: 96
Invalid: 0
Minimum: 2.8
Maximum: 6.8
Mean: 4.8
Standard deviation: 0.9

Exam mark (exam)
File: oehems-2014-2015-contact

Overview
Type: Continuous
Format: numeric
Width: 1
Decimals: 0
Range: 1-8
Valid cases: 84
Invalid: 12
Minimum: 1
Maximum: 8
Mean: 5.2
Standard deviation: 1.2

Final mark - after the exam (f_m)
File: oehems-2014-2015-contact

Overview
Type: Continuous
Format: numeric
Width: 3
Decimals: 0
Range: 2.5-6.8
Valid cases: 96
Invalid: 0
Minimum: 2.5
Maximum: 6.8
Mean: 5
Standard deviation: 0.8

Student's householderage monthly income (Chilean Pesos) (income)
File: oehems-2014-2015-contact

Overview
Student's householderage monthly income (Chilean Pesos) (income)
File: oehems-2014-2015-contact

- Type: Continuous
- Format: numeric
- Width: 6
- Decimals: 0
- Range: 50000-900000

Valid cases: 83
Invalid: 13
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Mean: 364216.9
Standard deviation: 171912.6

Mother's education level (mot_ed)
File: oehems-2014-2015-contact

- Type: Discrete
- Format: numeric
- Width: 2
- Decimals: 0
- Range: 0-18

Valid cases: 80
Invalid: 16

Mother's education years (mot_ed_y)
File: oehems-2014-2015-contact

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- Decimals: 0
- Range: 2-17

Valid cases: 80
Invalid: 16

Region of the student (recoded) (reg_rec)
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- Range: 0-1

Valid cases: 83
Invalid: 13
## Documentation

### Technical documents

#### The effectiveness of OER use in developing students’ mathematical skills

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