

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

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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

PRIMARY INVESTIGATOR(S)

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

OTHER PRODUCER(S)

Name	Affiliation	Role

FUNDING

Name	Abbreviation	Role
International Development Research Centre	IDRC	Funder

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
DataFirst		University of Cape Town	Metadata producer

DATE OF METADATA PRODUCTION

2016-08-16

DDI DOCUMENT VERSION

Version 5

Sampling

No content available

Questionnaires

No content available

Data Collection

Data Collection Dates

Start	End	Cycle
2014-07	2015-07	N/A

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

oehems-2014-2015-blended

Content

Cases 62

Variable(s) 10

Structure Type:
Keys: ()

Version

Producer

Missing Data

Variables

ID	Name	Label	Type	Format	Question
V156	id	Student ID	contin	numeric	
V157	group	Comparison group	discrete	numeric	
V158	gender	Gender	discrete	numeric	
V159	age	Age	contin	numeric	
V160	p_m	Presentation mark - before the exam	contin	numeric	
V161	exam	Exam mark	contin	numeric	
V162	f_m	Final mark - after the exam	contin	numeric	
V163	income	student's household average monthly income (Chilean Pesos)	contin	numeric	
V164	mot_ed	Mother's education level	discrete	numeric	
V165	mot_ed_y	Mother's education years	discrete	numeric	

oehems-2014-2015-contact

Content

Cases 96

Variable(s) 13

Structure
Type:
Keys: ()

Version

Producer

Missing Data

Variables

ID	Name	Label	Type	Format	Question
V166	id	Student ID	contin	numeric	
V167	group	Comparison group	discrete	numeric	
V168	gender	Gender	discrete	numeric	
V169	age	Age	contin	numeric	
V170	region	Region of origin	discrete	numeric	
V171	attendance	Percentage of attendance of the student during the term	contin	numeric	
V172	p_m	Presentation mark - before the exam	contin	numeric	
V173	exam	Exam mark	contin	numeric	
V174	f_m	Final mark - after the exam	contin	numeric	
V175	income	Student's householdage monthly income (Chilean Pesos)	contin	numeric	
V176	mot_ed	Mother's education level	discrete	numeric	
V177	mot_ed_y	Mother's education years	discrete	numeric	
V178	reg_rec	Region of the student (recoded)	discrete	numeric	

Student ID (id)

File: oehems-2014-2015-blended

Overview

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

Comparison group (group)

File: oehems-2014-2015-blended

Overview

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

Gender (gender)

File: oehems-2014-2015-blended

Overview

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

Age (age)

File: oehems-2014-2015-blended

Overview

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

Presentation mark - before the exam (p_m)

File: oehems-2014-2015-blended

Overview

Type: Continuous	Valid cases: 57
Format: numeric	Invalid: 5
Width: 3	Minimum: 2.9
Decimals: 0	Maximum: 6.7
Range: 2.9-6.7	Mean: 5.5
	Standard deviation: 0.9

Exam mark (exam)

File: oehems-2014-2015-blended

Overview

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

Final mark - after the exam (f_m)

File: oehems-2014-2015-blended

Overview

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

student's household average monthly income (Chilean Pesos) (income)

File: oehems-2014-2015-blended

Overview

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

Mother's education level (mot_ed)

File: oehems-2014-2015-blended

Overview

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

Mother's education years (mot_ed_y)

File: oehems-2014-2015-blended

Overview

Type: Discrete	Valid cases: 60
Format: numeric	Invalid: 2
Width: 2	
Decimals: 0	
Range: 4-17	

Student ID (id)

File: oehems-2014-2015-contact

Overview

Type: Continuous	Valid cases: 96
Format: numeric	Invalid: 0
Width: 3	Minimum: 1
Decimals: 0	Maximum: 106
Range: 1-106	Mean: 53.7
	Standard deviation: 30.3

Comparison group (group)

File: oehems-2014-2015-contact

Overview

Type: Discrete	Valid cases: 96
Format: numeric	Invalid: 0
Width: 1	
Decimals: 0	
Range: 1-3	

Gender (gender)

File: oehems-2014-2015-contact

Overview

Type: Discrete	Valid cases: 96
Format: numeric	Invalid: 0
Width: 1	
Decimals: 0	
Range: 1-2	

Age (age)

File: oehems-2014-2015-contact

Overview

Type: Continuous	Valid cases: 83
Format: numeric	Invalid: 13
Width: 2	Minimum: 18
Decimals: 0	Maximum: 54
Range: 18-54	Mean: 26.7
	Standard deviation: 8.2

Region of origin (region)

File: oehems-2014-2015-contact

Overview

Type: Discrete	Valid cases: 96
Format: numeric	Invalid: 0
Width: 1	
Decimals: 0	
Range: 1-9	

Percentage of attendance of the student during the term (attendance)

File: oehems-2014-2015-contact

Overview

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

Presentation mark - before the exam (p_m)

File: oehems-2014-2015-contact

Overview

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

Exam mark (exam)

File: oehems-2014-2015-contact

Overview

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

Final mark - after the exam (f_m)

File: oehems-2014-2015-contact

Overview

Type: Continuous	Valid cases: 96
Format: numeric	Invalid: 0
Width: 3	Minimum: 2.5
Decimals: 0	Maximum: 6.8
Range: 2.5-6.8	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	Valid cases: 83
Format: numeric	Invalid: 13
Width: 6	Minimum: 50000
Decimals: 0	Maximum: 900000
Range: 50000-900000	Mean: 364216.9
	Standard deviation: 171912.6

Mother's education level (mot_ed)

File: oehems-2014-2015-contact

Overview

Type: Discrete	Valid cases: 80
Format: numeric	Invalid: 16
Width: 2	
Decimals: 0	
Range: 0-18	

Mother's education years (mot_ed_y)

File: oehems-2014-2015-contact

Overview

Type: Discrete	Valid cases: 80
Format: numeric	Invalid: 16
Width: 2	
Decimals: 0	
Range: 2-17	

Region of the student (recoded) (reg_rec)

File: oehems-2014-2015-contact

Overview

Type: Discrete	Valid cases: 83
Format: numeric	Invalid: 13
Width: 1	
Decimals: 0	
Range: 0-1	

Documentation

Technical documents

The effectiveness of OER use in developing students' mathematical skills

Title The effectiveness of OER use in developing students' mathematical skills
 Author(s) Werner Westermann
 Date 2015-01-01
 Country Chile
 Language English
 Contributor(s) This is the technical report on the study
 Filename roer4d-dataset-description.pdf

Variable description of the impact analysis database: Blended students

Title Variable description of the impact analysis database: Blended students
 Country Chile
 Language English
 Filename oehems-2014-2015-variables-blended.pdf

Variable description of the impact analysis database: Contact students

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OER effectiveness in higher education mathematics skills

Title OER effectiveness in higher education mathematics skills
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 Date 2015-01-01
 Country Chile
 Language English
 Contributor(s) This is the technical report on the study
 Filename X:/Datasets/Research on Open Educational Resources for Development - ROER4D/OER effectiveness in higher education mathematics skills/Documentation/roer4d-dataset-description.pdf

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