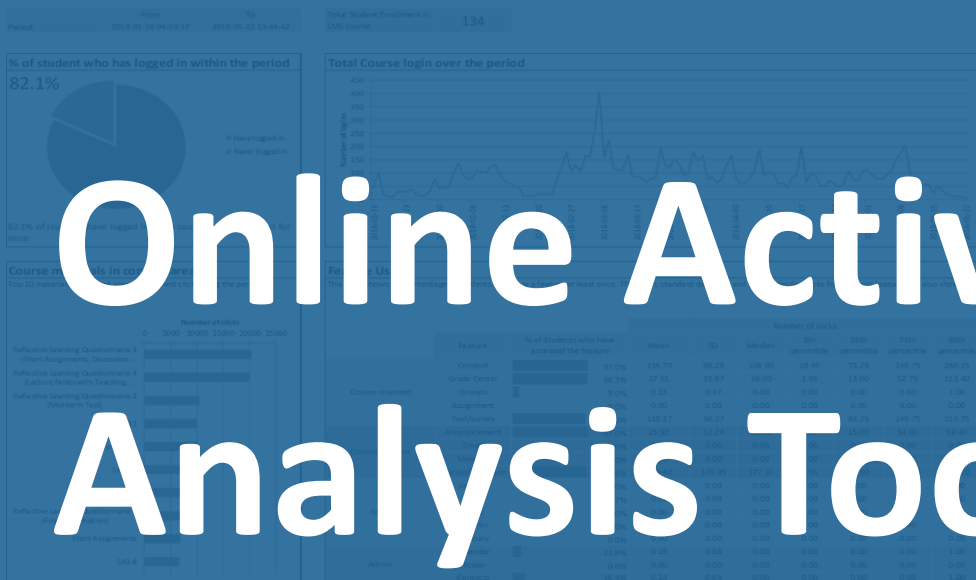


Online Activity Analysis Tool (OAAT)

Dashboard - Overview



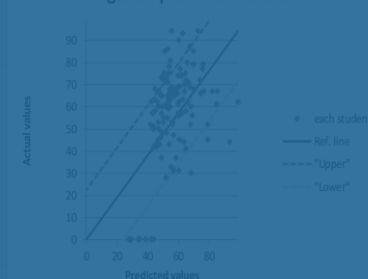
Prediction analysis (Model 1)

Dependent Variable (i.e., what you are predicting) =	59: FE-100				
Variance in students' performance explained by these factors (R-square) =	32.9%				
Number of students included in the analysis =	134				
Factors affecting dependent variable	Unstandardised Beta (B)	Standardised Beta (beta)	Significant Factors	Importance (Rank)	
Clicks in 86 features	1.5: Test/survey	0.20	0.51	Significant	1
Clicks in 86 features	1.6: Announcement	0.16	0.12		

Comparison of the predicted values of the dependent variable

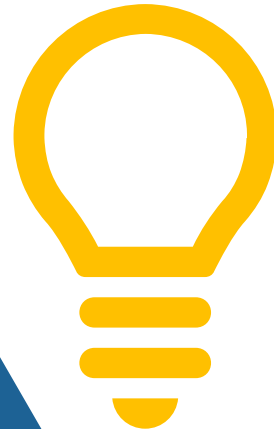


Scatter plot of the actual values against predicted values



About OAAT

- specifically designed for classroom teachers
- provides a quick, timely and easy way to access and analyse data related to students' online engagement in the Learning Management System (Blackboard)
- provides summary statistics, interpretation, analysis and suggestions about the students' online engagement
- puts the capability of using analytics to support learning and teaching into the hands of most teachers



Good things about OAAT

Easy to use –
You just
need Excel

Can be used at
any time you
like

You can specify
the period to
look at

You can get up-
to-date usage
information

Raw data can be
downloaded for
further analysis in
other applications

Includes
interpretation
insights

Developed with teachers and practical teaching practices

- Teachers are interviewed about their online teaching practices, course design, how they make use of data in their teaching and what other data or analysis helps review or enhance their teaching
- Teachers' teaching pedagogies and their opinion are used for enhancing the OAAT



Using OAAT can help teachers to



Understand
how the LMS is
being used by
students



Understand
students'
learning progress



Do simple
learning
analytics



Enhance
learning and
teaching



Get individual
student data for
further analysis or
research purposes

Just three steps are needed to use OAAT

1

Download the OAAT
(For 32bit or 62bit Excel)

2

Archive the Blackboard course

3

**Open OAAT and import archived
Blackboard course**

Features of OAAT

Overview
of course
usage

Can extract
marks for
each
assessment
by students

Usage of
course
features and
materials by
students

Analysis
periods can
be specified

Correlation
between
marks and
students'
usage

Summary of
students'
participation
in discussion
forum

Prediction of
student
achievement
from students'
usage

Ability to
export
forum
posts by
students

Teachers' Feedback

Analytics can be done to make better sense of how teaching and learning is going

The discussion report is useful for evaluating student engagement with discussion topics

The data can help me to design the course better

Use of the Excel is a good idea for a non-computer person

The prediction of teaching outcome is useful

Can use it to benefit my department's goals and needs



Used by **over 50** teachers

benefitting **3000+** students

Teachers' Feedback

How to use OAAT:

- *get individual students' usage about pre-class materials and video*
- *use prediction analysis to find significant factors that have impact on grades*

“ Useful, interactive; much better than Bb course report in terms of the efficiency of generating report. Able to check hypothesis about online teaching strategies ”

Health science teacher and her teaching team with class enrollment ~600

How to use OAAT:

- *get individual students' usage during different periods before assessment or tests*
- *use prediction analysis to examine which quiz(es) or what behaviour impacts on the final grade*

“ Convenient, easy to use; better than Bb course report. Get data at any time and combine with student survey to understand student learning ”

Finance teachers with class enrollment ~50

How to use OAAT:

- *Extract forum report and posts dataset to grade students' posts and conduct social network analysis to explore student interaction*

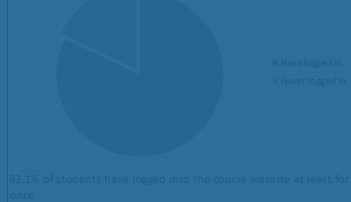
“ Useful for grading students. Able to carry out Social Network Analysis using the dataset generated by OAAT ”

Social science teacher and his teaching team with class enrollment ~600

Period: From 2018-01-18 00:13:57 To 2018-05-22 13:44:42

% of student who has logged in within the period

82.1%



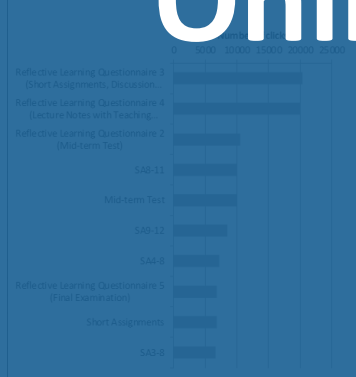
Total Student Enrollment in LMS course 134

Total Course login over the period



Course materials in course

Top 10 materials in content area



Feature Usage

Feature	% of Students who have accessed the feature	Mean	SD	Median	50th percentile	25th percentile	75th percentile	90th percentile
Course-oriented								
Content	97.0%	116.70	66.29	106.00	15.45	73.25	149.75	260.15
Grade Center	96.3%	37.00	23.97	33.00	0.00	0.00	17.50	1.90
Groups	95.5%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Assignment	94.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Test/survey	93.3%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Announcement	90.3%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Communication								
Email	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Message	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Discussion Forum	95.5%	199.42	173.36	177.50	5.56	76.50	263.00	561.20
Journals	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Blog	0.7%	0.01	0.03	0.00	0.00	0.00	0.00	0.00
Wiki	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Turnitin	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Glossary	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Calendar	12.5%	0.19	0.58	0.00	0.00	0.00	0.00	1.00
Roster	0.0%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Contacts	18.4%	0.24	0.64	0.00	0.00	0.00	0.00	1.00
Tools								
Admin								

Student Usage on Blackboard features and course materials

User ID	User Name	Content	Grade Center	Groups	Assignment	Test/survey	Announcement	Blog	Wiki	Turnitin	Glossary	Calendar	Roster	Contacts
123456 Stud1		119	26	0	0	0	0	0	0	0	0	0	0	0
123457 Stud2		0	0	0	0	0	0	0	0	0	0	0	0	0
123458 Stud3		127	42	0	0	0	112	32	0	0	0	0	0	0
123459 Stud4		96	21	0	0	0	120	14	0	0	0	0	0	0
123460 Stud5		184	32	0	0	0	87	40	0	0	0	0	0	0
123461 Stud6		79	24	0	0	0	121	19	0	0	0	0	0	0
123462 Stud7		72	15	0	0	0	117	16	0	0	0	0	0	0
123463 Stud8		69	7	0	0	0	99	9	0	0	0	0	0	0
123464 Stud9		111	17	0	0	0	125	20	0	0	0	0	0	0
123465 Stud10		140	25	0	0	0	87	18	0	0	0	0	0	0
123466 Stud11		36	9	0	0	0	67	15	0	0	0	0	0	0
123467 Stud12		94	29	0	0	0	117	11	0	0	0	0	0	0
123468 Stud13		110	25	0	0	0	96	21	0	0	0	0	0	0
123469 Stud14		108	38	0	0	0	0	0	0	0	0	0	0	0
123470 Stud15		295	105	0	0	0	0	0	0	0	0	0	0	0
123471 Stud16		7	6	0	0	0	0	0	0	0	0	0	0	0
123472 Stud17		7	5	0	0	0	0	1	0	0	0	0	0	0
123473 Stud18		41	1	0	0	0	21	15	0	0	0	0	0	0
123474 Stud19		25	0	0	0	0	0	8	0	0	0	0	0	0
123475 Stud20		52	10	0	0	0	44	11	0	0	0	0	0	0
123476 Stud21		98	14	0	0	0	114	23	0	0	0	0	0	0
123477 Stud22		92	38	0	2	0	101	18	0	0	0	0	0	0

Prediction analysis (Model 1)

Dependent Variable (i.e., what you are predicting) =
Variance in students' performance explained by these factors (R-square) =
Number of students included in the analysis =

59: FE-100

32.9%

134

Factors affecting dependent variable

Unstandardised Beta

(B)

in Bb features

1.5: Test/survey

in Bb features

1.6: Announcement

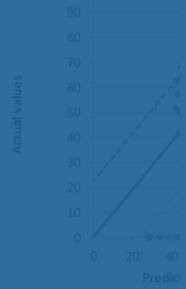
0.20

0.16

Comparison between the predicted and the actual values of the dependent variable



Scatter plot against



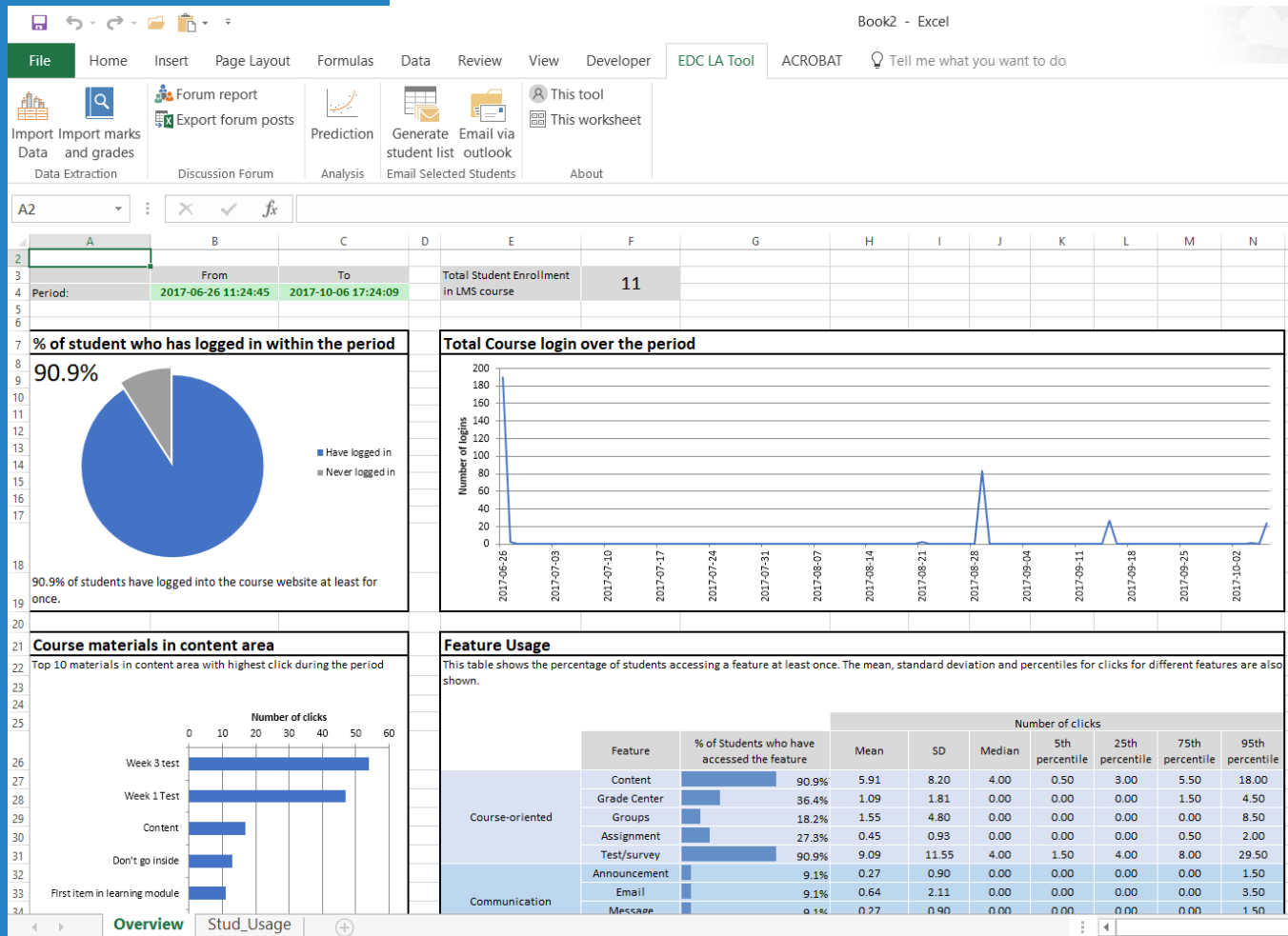
Version 2.03
For 32-bit and 64-bit Excel

Released in January 2019

Overview

The Overview worksheet shows the summary of course usage.

Teachers can specify the period that they are interested in looking at !



Student usage

This worksheet shows clicks on course features and materials for individual students within the specified period.

Teachers can make use of filters, or copy and paste the data to another file, for further exploration.

File Home Insert Page Layout Formulas Data Review View Developer

EDC LA Tool ACROBAT Tell me what you want to do

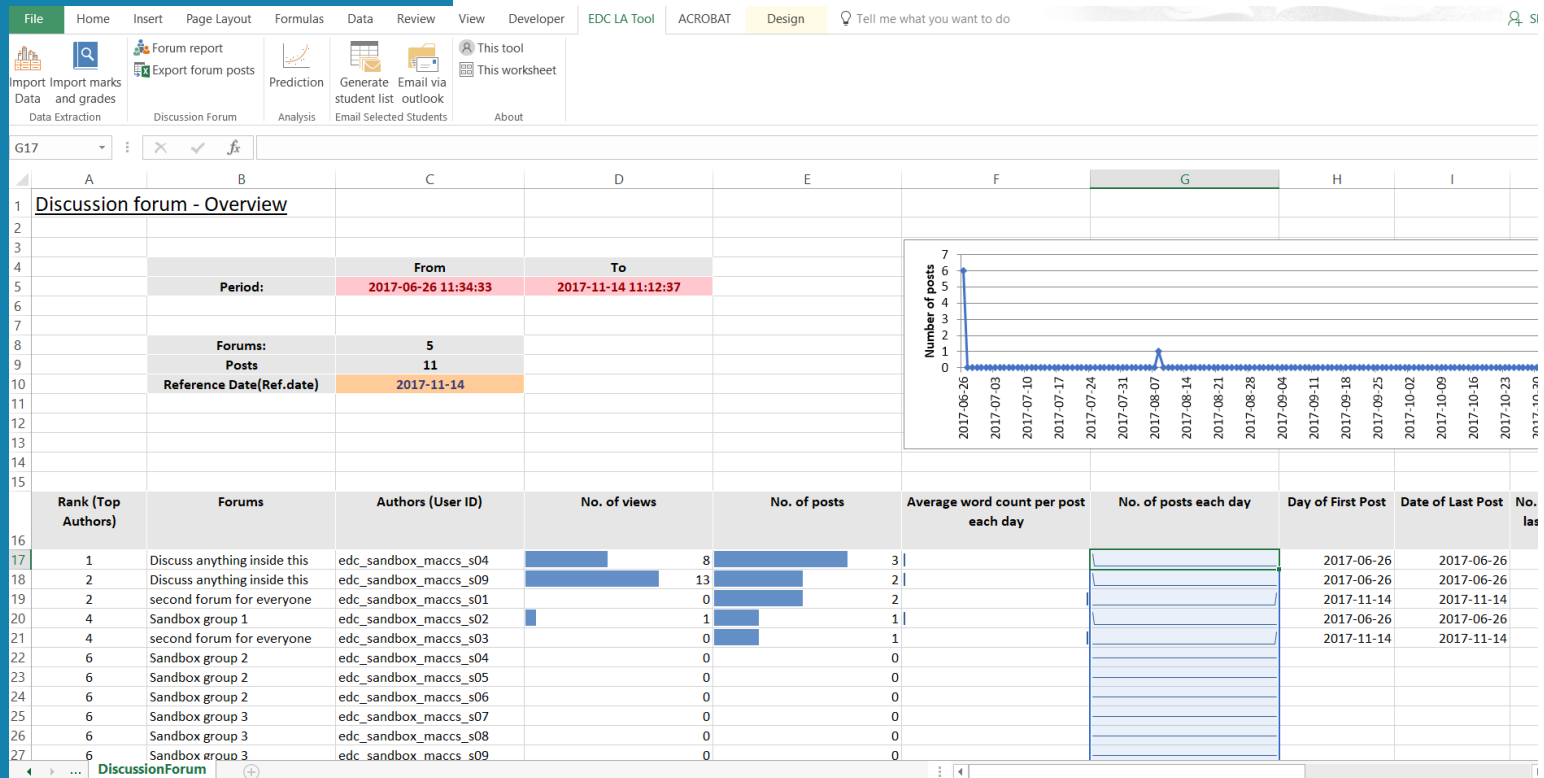
Data Extraction Discussion Forum Analysis Email Selected Students About

G10 : =SUMIFS(Data_accTable!Q:Q,Data_accTable!C:C,Stud_Usage!A10,Data_accTable!I:I,">="&Overview!B4,Data_accTable!J:J,"<="&Overview!C4)

A	B	C	D	E	F	G	H	T	U	V	W	X	Y	Z
<u>Student Usage on Blackboard features and course materials</u>														
User ID	User Name	Content	Grade Center	Groups	Assignment	Test/survey	Communicatio Announcement	Materials in content area Content	Lesson plan	Learning object	Week 1	Week 1 item	Week 1 materials	Don't inside
edc_sandbox_maccs_s	Account GUEST	0	0	0	0	0	0	0	0	0	0	0	0	0
edc_sandbox_maccs_s01	Account GUEST	30	1	0	1	41	0	9	0	0	2	0	0	7
edc_sandbox_maccs_s02	Account GUEST	5	4	16	3	7	0	1	0	0	0	0	0	1
edc_sandbox_maccs_s03	Account GUEST	3	0	0	0	4	3	1	0	0	0	0	0	0
edc_sandbox_maccs_s04	Account GUEST	4	0	0	0	4	0	1	0	0	0	0	0	0
edc_sandbox_maccs_s05	Account GUEST	6	0	0	1	4	0	1	0	0	0	0	0	2
edc_sandbox_maccs_s06	Account GUEST	4	0	0	0	4	0	1	0	0	0	0	0	0
edc_sandbox_maccs_s07	Account GUEST	3	0	0	0	3	0	1	0	0	0	0	0	0
edc_sandbox_maccs_s08	Account GUEST	6	5	0	0	18	0	1	0	0	0	0	0	2
edc_sandbox_maccs_s09	Account GUEST	3	0	0	0	6	0	1	0	0	0	0	0	0
edc_sandbox_maccs_s10	Account GUEST	1	2	1	0	9	0	0	0	0	0	0	0	1
Column Total:		65	12	17	5	100	3	17	0	0	2	0	0	13

Students' forum participation

A summary of individual student participation in each forum is shown, including number of views, number of posts and word count for posts.



Export forum post

This function can export all the posts, including time, content, author and other information, to an Excel file for further exploration (e.g., social network analysis)

File Home Insert Page Layout Formulas Data Review View Developer EDC LA Tool ACROBAT Tell m											
<div> <div>Cut Copy Paste Format Painter Clipboard</div> <div>Calibri 11 A A B I U Font</div> <div>Alignment Merge & Center</div> <div>General Number Conditiona Formatting</div> </div>											
12 X ✓ fx <p>testing 11:36am</p>											
	A	B	C	D	E	F	G	H	I	J	K
	Group Name	Forum name	Published Date	Author name	Author netID	Thread title	Post id	Parent post id	content	content (without HTML tags)	post status
1											
2	Sandbox g	Sandbox g	#####	Account G	edc_sand	hello	468723	NULL	<p>te	testing 11:36a	PUBLISHED
3	-	Discuss an	#####	Account G	edc_sand	Hi	468732	NULL	<p>Th	This is student	PUBLISHED
4	-	Discuss an	#####	Account G	edc_sand	RE: Hi	468733	468732	<p>reply you	reply you alre	PUBLISHED
5	-	Discuss an	#####	Account G	edc_sand	RE: Hi	468735	468733	<p>Draft</p>	Draft	DRAFT
6	-	Discuss an	#####	Account G	edc_sand	RE: Hi	468736	NULL	<p>he	hello. i am Ad	PUBLISHED
7	-	Discuss an	#####	Account G	edc_sand	Homeworl	468737	NULL	<p>dc	do you know	PUBLISHED
8	-	Discuss an	#####	Account G	edc_sand	RE: Homev	468738	468737	<p>i don't kn	i don't know h	PUBLISHED
9	-	Discuss an	#####	Chun Sang	_21382_1	RE: Homev	474090	468738	<p>Not bad e	Not bad actua	PUBLISHED
10	-	second for	#####	Chun Sang	_21382_1	what do yo	492538	NULL	<p>tell me w	tell me what y	PUBLISHED
11	-	second for	#####	Account G	edc_sand	RE: what d	492540	492538	<p>GOod</p>	GOod	PUBLISHED
12	-	second for	#####	Account G	edc_sand	RE: what d	492542	NULL	<p>Saddddd	Saddddd	PUBLISHED
13	-	second for	#####	Account G	edc_sand	i don't kno	492539	NULL	<p>Hi everyo	Hi everyone	PUBLISHED

Correlation

The correlation between marks in the GradeCenter and student usage within the Bb course is shown in this worksheet. This can help teachers to understand what pairs of variables are related and how strong the relationship is.

Import Data

Import marks and grades

Forum report

Export forum posts

Prediction

Generate student list

Email via outlook

This tool

This worksheet

D20
✕ ✓ f_x

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	<u>Correlation between clicks on features and assessment grades</u>														
2															
3		Course-oriented					Communication				Tools				
4	Grade Center Items	Content	Grade Center	Groups	Assignment	Test/survey	Announcement	Email	Message	Discussion Forum	Journals	Blogs	Wikis	Turnitin Assignments	Glossar
5	Week 1 Test	-0.008	-0.380	0.718	0.755	-0.252							-0.907		
6	Manually created column	0.269	0.154	-0.808	-0.808	0.655	0.115	0.115					-0.078		
7	Week 3 test	0.027	0.037	-0.515	-0.446	0.123	-0.515	-0.515	-0.027	0.181	0.217	0.461	-0.250	0.217	0.461
8	Writing task 1	-1.000	1.000	1.000	1.000	1.000					-1.000			-1.000	

Prediction

Teachers can do prediction to find out what factors (variables about LMS usage or marks recorded in the GradeCenter) affecting student achievement

Prediction

Select One dependent variable (i.e., what you are predicting)

1: Week 1 Test
2: Manually created column
3: Week 3 test

Factors affecting dependent variable

Clicks in Bb features

1_1: Content
1_2: Grade Center
1_3: Groups
1_4: Assignment
1_5: Test/survey
1_6: Announcement

Select all
Add
Deselect all

Clicks in Content Materials

2_1: Content
2_2: Lesson plan
2_3: Learning object
2_4: Week 1

Add
Deselect all

Grades in Grade Center

3_1: Week 1 Test
3_2: Manually created column
3_3: Week 3 test
3_4: Writing task 1

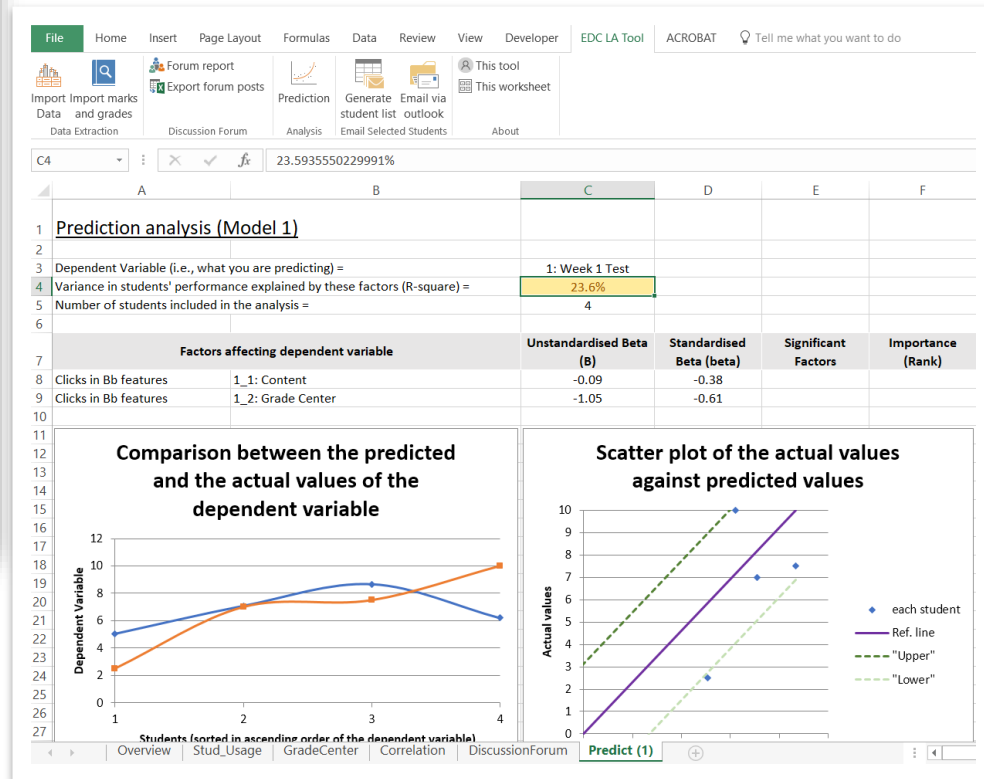
Add
Deselect all

Selected factor(s)

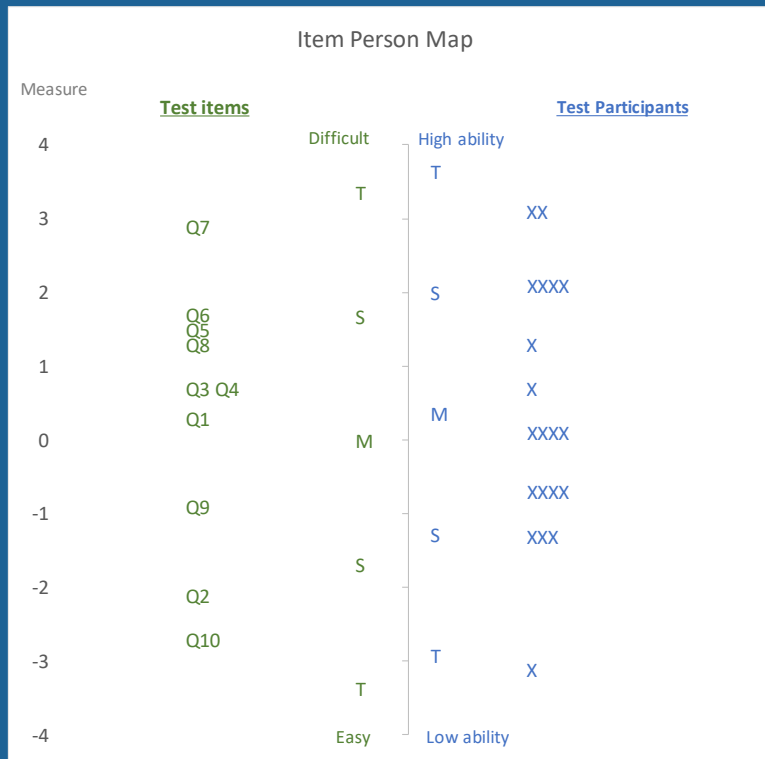
Remove selected factor(s)
Remove all factors

Run Prediction Cancel

This program uses multiple linear regress to analyse the data. However, model assumptions are not checked.



New feature coming soon



Online Test Analysis (using Rasch analysis)

- Provide individual students' test performance data to teachers
- Provide data and interpretation for teachers to evaluate the test instrument
- Help teachers review their students' abilities

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 POLYTECHNIC UNIVERSITY**
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**Educational
 Development
 Centre**

**For any questions,
please contact our team**

