



Show me the reports – How is Microsoft leveraging Power BI for Open edX Reporting?

Jhansi Reddy and Kunal Desai
May 31, 2018



Date

11/2/2016 2/28/2018

Course ID

Select All
AZURE214x

Course Name

Select All
(Blank)
[Adaptive Learning Pilot]Essential Statistics for Data Analysis using Excel
[DO NOT USE]Programming with R for Data Science
[Lab Only Prototype]
[Sample Only Course]
ADE Role 101 (Optimized for APJ)
ADE Role 101 (Optimized for EMEA Americas)
Application Monitoring and Feedback Loops

Education Level

Select All
(Blank)
Associate's Degree
Bachelor's Degree
Doctoral Degree
Master's or Professional Degree
Undisclosed

Gender

Select All
(Blank)
Female
Male
Undisclosed

Publisher

Select All
ELMS
Microsoft

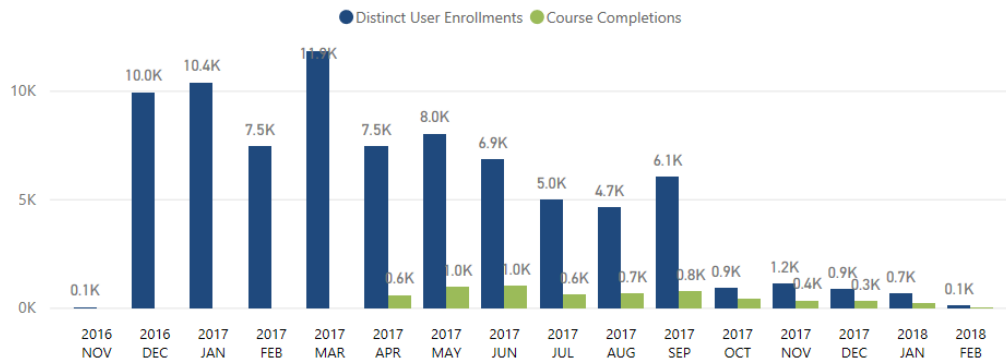
6
Total Courses

6
Active Courses

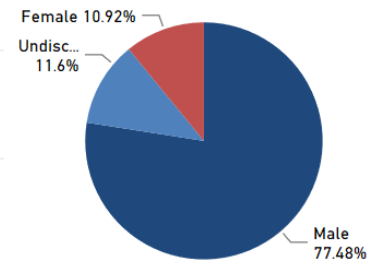
78,653
Distinct User Enrollments

6,181
Course Completions

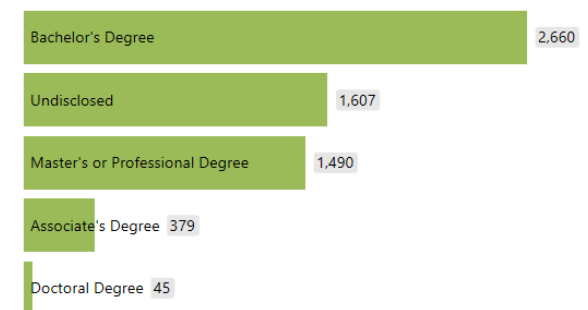
Distinct User Enrollments and Course Completions by Year and MonthName



Course Completions by _Gender



Course Completions by _EducationLevel



Reporting using PowerBI (Starter Template)



Overview



Date

11/7/2016 2/28/2018

Course ID

Select All

(Blank)

42527

81900

999990

999999

AZURE202x

AZURE202x_CHS

AZURE202x_CHT

Course Name

Select All

(Blank)

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Undisclosed

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Select All

(Blank)

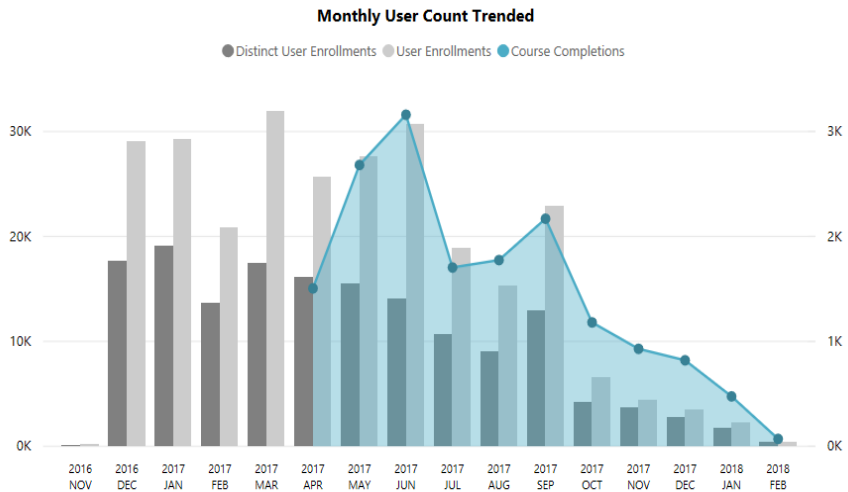
edX

ELMS

Microsoft

pdets

PdetsDev



Year	MonthName	Distinct User Enrollments	User Enrollments	Course Completions	% Change Course Completions	% Change Distinct User Enrollments	% Change User Enrollments
2016	NOV	121	258		-100%	-100%	-100%
	DEC	17,702	29,113		-100%	14530%	11184%
	Total	17,793	29,371		-100%	-100%	-100%
2017	JAN	19,155	29,237		-100%	8%	0%
	FEB	13,667	20,867		-100%	-29%	-29%
	MAR	17,462	31,938		-100%	28%	53%
	APR	16,167	25,702	1,505	-100%	-7%	-20%
	MAY	15,571	27,663	2,681	78%	-4%	8%
	JUN	14,076	30,741	3,160	18%	-10%	11%
	JUL	10,659	18,893	1,704	-46%	-24%	-39%
	AUG	9,085	15,344	1,775	4%	-15%	-19%
	SEP	12,993	22,905	2,169	22%	43%	49%
	OCT	4,282	6,623	1,181	-46%	-67%	-71%
	NOV	3,668	4,483	929	-21%	-14%	-32%
	DEC	2,813	3,559	820	-12%	-23%	-21%
	Total	121,670	237,955	15,924	-100%	587%	717%
2018	JAN	1,817	2,260	476	-42%	-35%	-36%
	FEB	416	454	71	-85%	-77%	-80%
	Total	2,215	2,714	547	-33%	-21%	-24%
Total		137,911	270,040	16,471	-100%	-100%	-100%

- Get up & running **within an hour** using a MySQL connection string
- Dashboard provides multi publisher views
- Working prototype leveraging the OpenEdx MySQL, easily extensible for additional reporting
- Provides slice and dice on user demographics, Courses and Publishers

Get started with PowerBI

- GitHub starter PowerBI Template
- Additional Documentation and Learning:
- Power BI Resources:
 - [Http://powerbi.microsoft.com/](http://powerbi.microsoft.com/)
 - PowerBI Starter Template for basic Open edX reporting: <https://github.com/kunaldms/LaaS-PowerBI-Template>

Open Edx Reporting and Analytics at Microsoft

Business Stakeholders

Content Publishers

Operational Support

Are the targeted programs successful?

Are we tracking to completion goals?

What's the sentiment on the forums?

What are the top courses?

Is there a lift in course completion in revised courses?

Did adoption have an impact on localized vs English courses in the same market?

*What's the forum sentiment?
Are questions being answered on Forums?*

Are course completions reported correctly and credited?

What % of users are in progress vs anticipated course end date?

Open EdX on Azure Reporting Pipeline



OPENedX
On Azure
Learning Site

Mongo DB

MySQL

VMSS

User Telemetry Logs

Azure Storage Blobs

Azure Data Lake (ADLS & ADLA)



Azure Data Factory



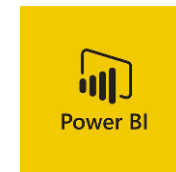
Data Modeling



Azure SQL Databases

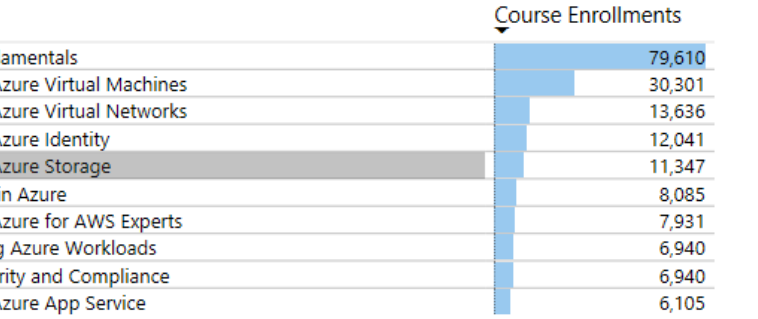
Reporting

Dashboards

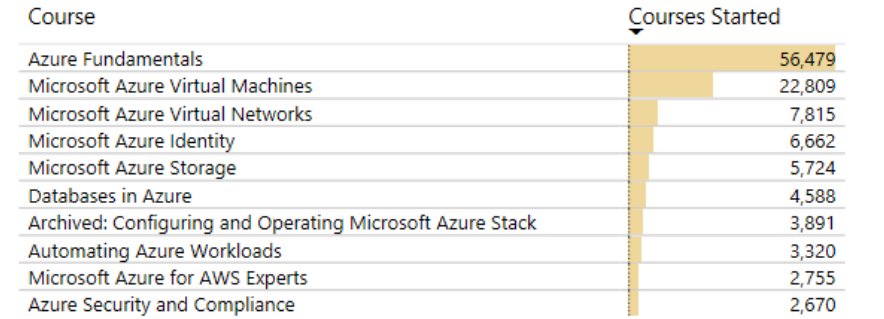




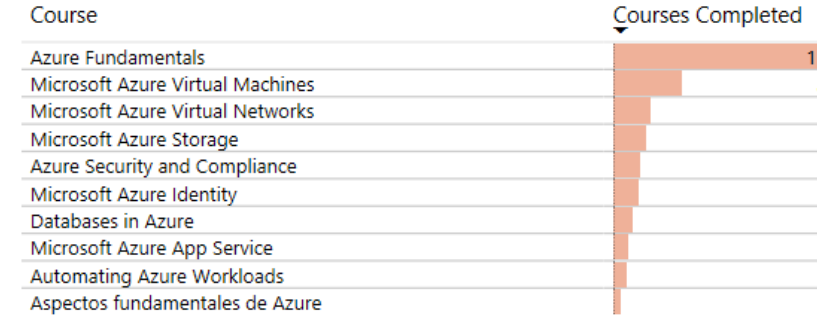
ENROLLMENTS - TOP 10



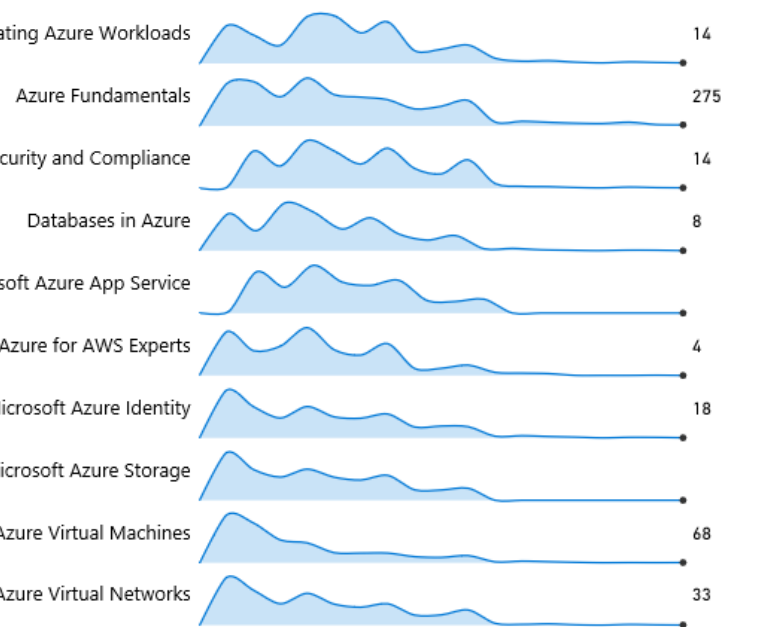
COURSE STARTS - TOP 10



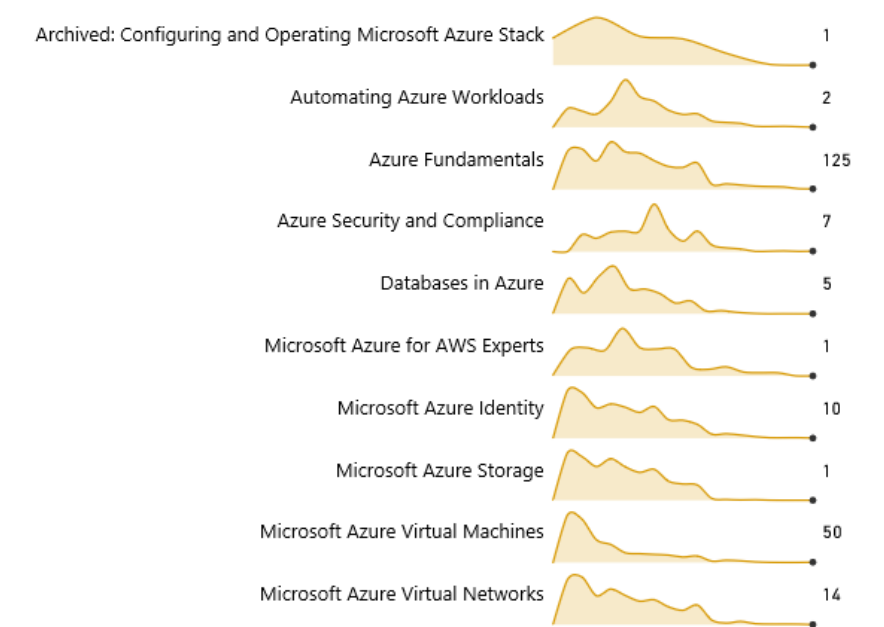
COURSE COMPLETES - TOP 10



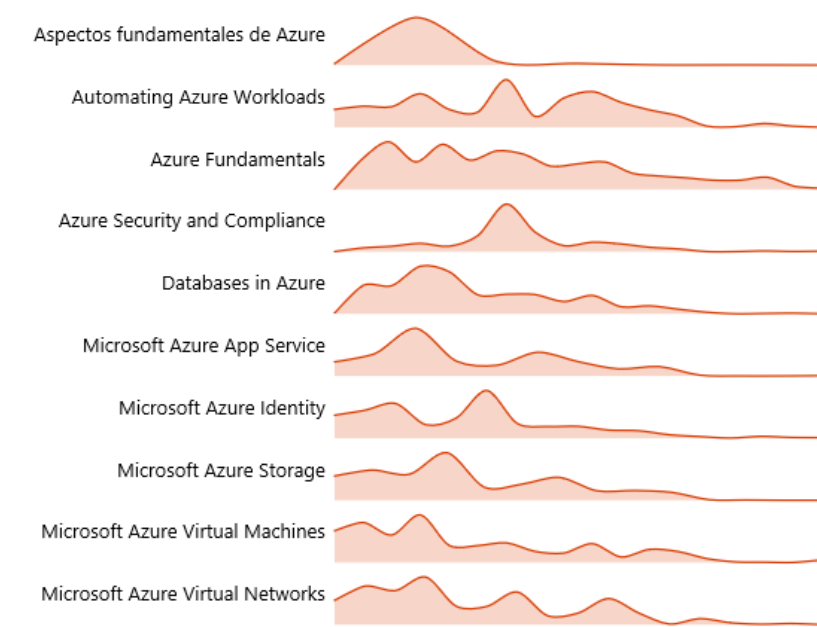
ENROLLMENTS - TOP 10 TRENDED



COURSE STARTS - TOP 10 TRENDED



COURSE COMPLETES - TOP 10 TRENDED



Course Publisher

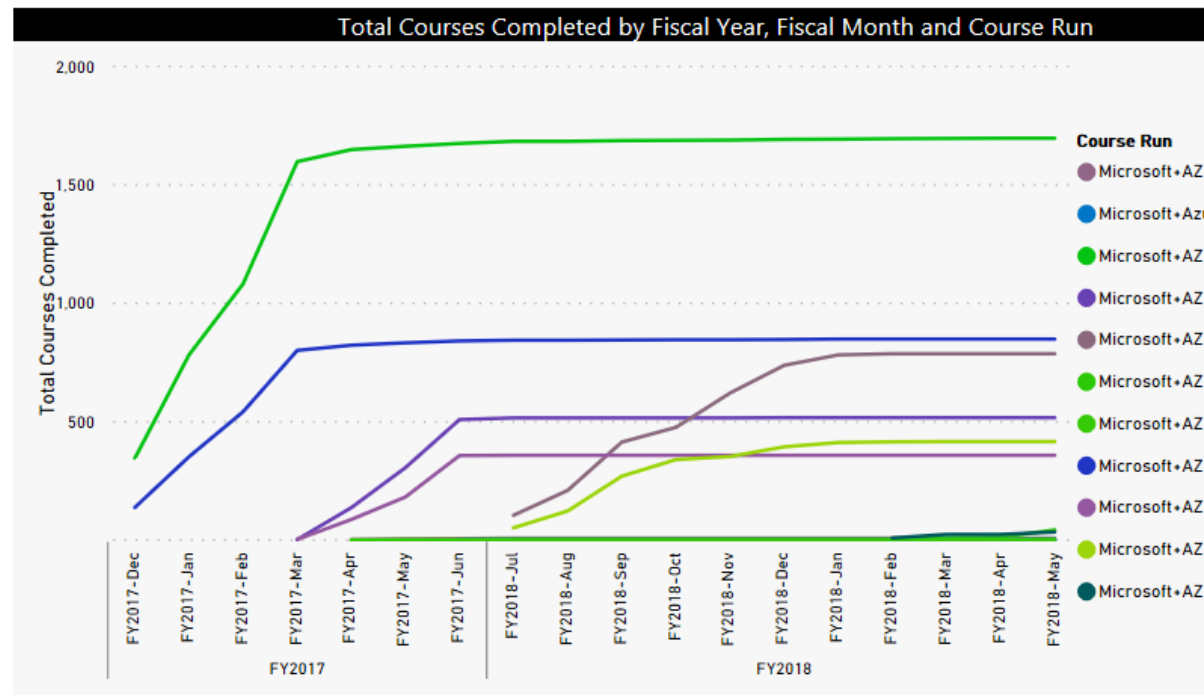
- Microsoft
- Undisclosed

Course

- Microsoft Azure Virt
- Microsoft Azure Virtual Machines
- Microsoft Azure Virtual Machines (バーチャルマシン)
- Microsoft Azure Virtual Networks
- Microsoft Azure Virtual Networks (バーチャルネットワーク)

* Click Individual Course Box to see run detail.

Course	Course Run	Course Start Date	Course Enrollments	Courses Started	Courses Completed	Course Completion %
Microsoft Azure Virtual Machines	Microsoft+AZURE202x+2016_T1	11/29/2016	21,099	16,373	1,697	10.36 %
	Microsoft+AZURE202x+2017_T2	4/1/2017	4,985	3,218	517	16.07 %
	Microsoft+AZURE202x+2017_T3	7/1/2017	3,901	3,053	787	25.78 %
	Microsoft+AZURE202x+2018_T1	1/19/2018	262	136	43	31.62 %
	Microsoft+AZURE202x_DEU+2017_T2	3/23/2017	49	29	8	27.59 %
Total			30,296	22,809	3,052	13.38 %
Microsoft Azure Virtual Networks	Microsoft+AZURE203x+2016_T4	11/29/2016	7,528	4,187	849	20.28 %
	Microsoft+AZURE203x+2017_T2	4/1/2017	3,512	1,958	358	18.28 %
	Microsoft+AZURE203x+2017_T3	7/1/2017	2,367	1,566	416	26.56 %
	Microsoft+AZURE203x+2018_T1	1/19/2018	188	86	34	39.53 %
	Microsoft+AZURE203x_DEU+2017_T2	3/23/2017	35	15	3	20.00 %
Total			13,630	7,812	1,660	21.25 %
Microsoft Azure Virtual Machines (バーチャルマシン)	Microsoft+Azure202x_JPN+2017_T2	3/23/2017	47	28	2	7.14 %
Total			47	28	2	7.14 %
Microsoft Azure Virtual Networks (バーチャルネットワーク)	Microsoft+AZURE203x_JPN+2017_T2	3/23/2017	43	25		
Total			43	25		
Total			44,016	30,674	4,714	15.37 %



Advanced Analytics

- Learner Churn Model
- Forum Sentiment Analysis
- Gender Bias on course structure vs Consumption

Thank you!

Open edX Reporting with Power BI

Quick and
easy reporting

Customizable
to fit your
needs

Extensible