

## Data Driven Pedagogy



- Peter Fulks, Faculty Administration of Justice
- Rebecca Pang, Director of Distance Education

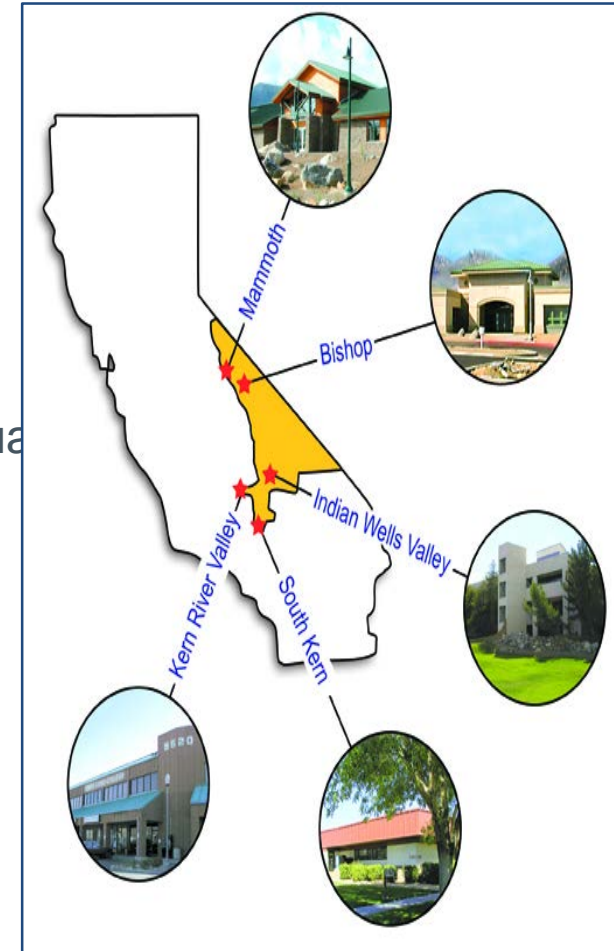
# OUTLINE



- College Overview
- College: Online Education and Its Data Culture Environment
- Finding Relevant Data and Statistics
  - Identification of Data Set for Analysis
  - Canvas Data
  - Organizing Canvas Data and Access Levels
  - Converting Canvas Data for Analysis
- Interpretation of Data for Pedagogical Changes
- Student Outcomes Results
- Next Steps
- Questions

# COLLEGE OVERVIEW canvas

- Location:
  - Kern County, CA
  - One of Three Colleges in the Kern Community College District
  - Serves the Eastern Sierra Nevada and Eastern Kern County Regions of the State of California
  - Seven Campuses Which Together Cover the Largest Geographical Service Area (18,200 square miles) of Any Community College in California
  - Serves a Population of Approximately 85,000
- College on Census Day for 2016-17
  - Headcount: 25,392
  - FTES: 2,743
  - Retention Rate: 88%
  - Success Rate: 72%



# COLLEGE: ONLINE EDUCATION AND THE DATA CULTURE ENVIRONMENT



- College's Mission, Vision & Value
  - Mission: "The mission of Cerro Coso Community College is to provide outstanding educational programs and services tailored to the students in the communities and rural areas we serve. We demonstrate a conscious effort to produce and support student success and achievement through traditional and **distance delivery**."
- Offerings – Started in 1997
  - 18 Accredited Online Associate Degrees
  - 17 Online Certificates
  - More Than 477 Online Courses Annually
- Online Education on Census Day for 2016-17
  - Headcount: 13,724
  - FTES: 1,438
  - More Than 52% of College Enrollment
- Retention Rate is **85%** for 2016-17
  - 8% Below Traditional Courses at the College
  - 3% Below College Average
- Success rate is **66%** for 2016-17
  - 13% Below Traditional Courses at the College
  - 6% Below College Average
- **COLLEGE DATA CULTURE**

## Finding Relevant Data & Statistics

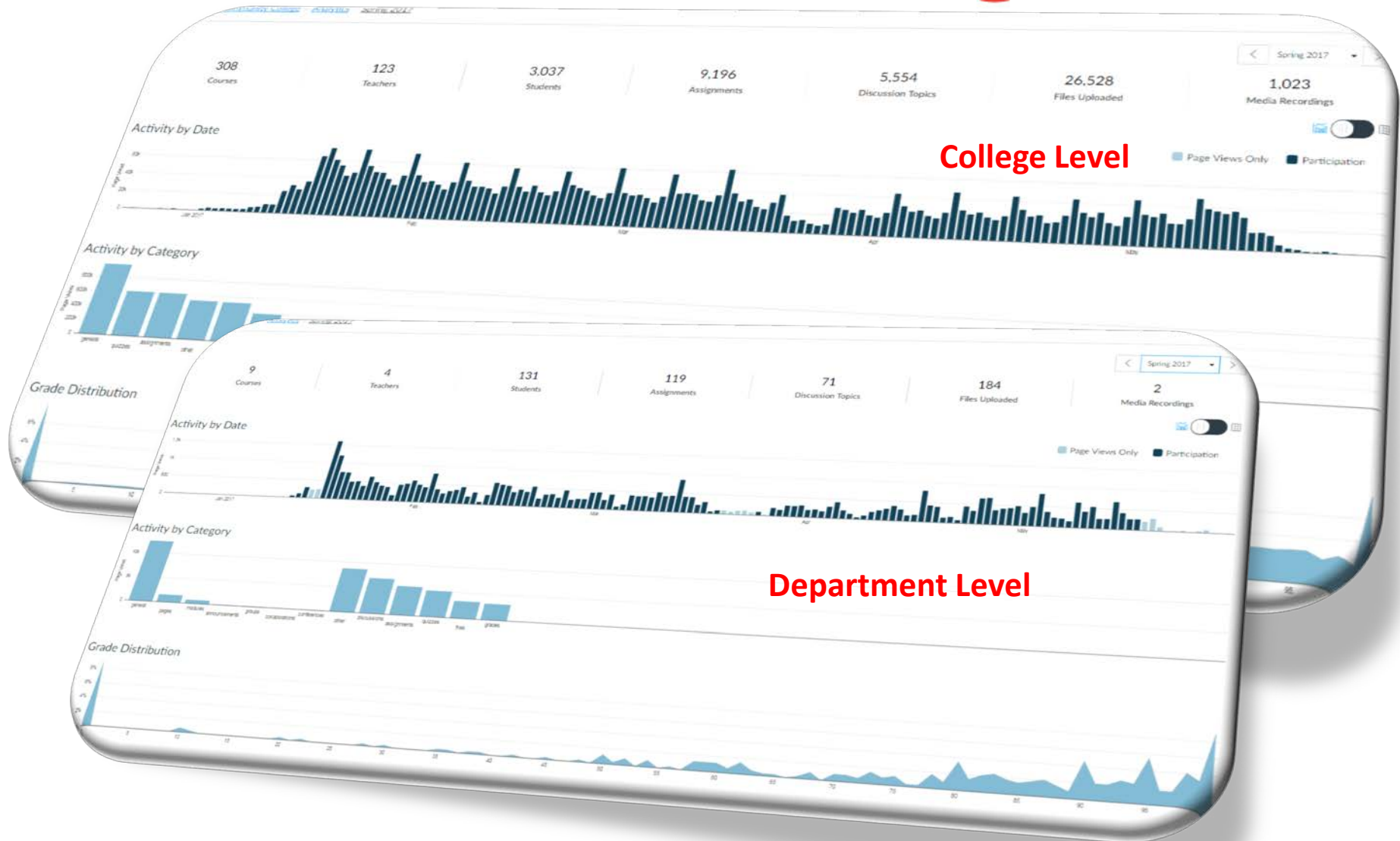


# IDENTIFICATION OF DATA SET FOR ANALYSIS



- Purpose of Analysis
  - Academic Affairs
    - Administrators
    - Faculty Chairs
    - Faculty
  - Student Services
- Complying with the Law
  - FERPA
- Faculty Rights
  - Academic Freedom
- Ownership, Location and Rights to Access of Data
  - Banner
  - Canvas (College, Department, Course and Individual Student)

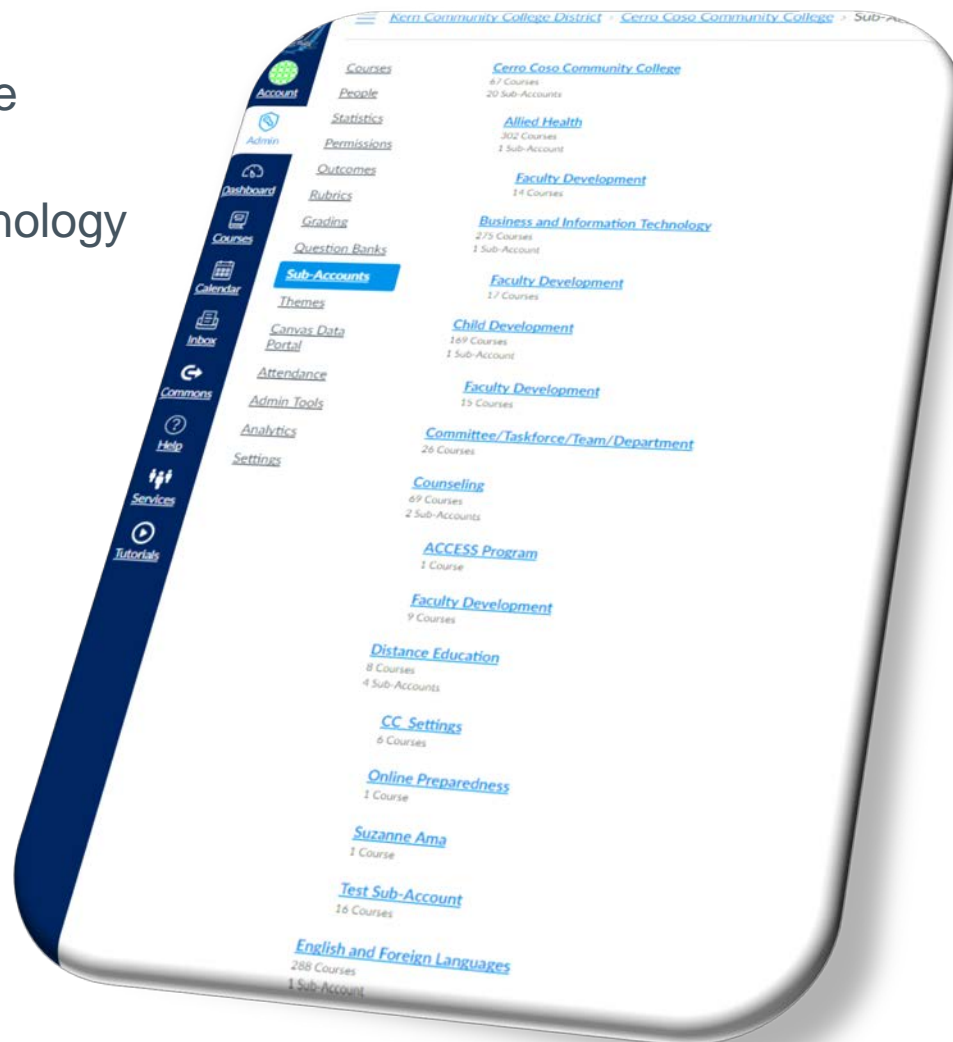
# CANVAS DATA @ COLLEGE LEVEL canvas



# ORGANIZING CANVAS AND ACCESS LEVELS



- Kern Community College District Level
  - Cerro Coso Community College
    - Allied Health
    - Business Information Technology
    - Child Development
    - Counseling
    - English
    - Library
    - Mathematics
    - Physical Education
    - Public Service
    - Science
    - Social Science
    - Visual & Performing Arts
    - Distance Education
    - Online Services





# CANVAS DATA @ COURSE LEVEL canvas

## Statistics for Online Preparedness Session - 2018 Spring

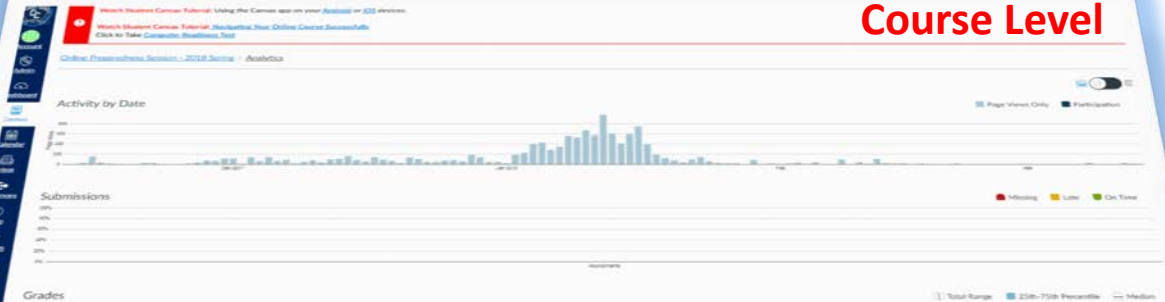
Totals Assignments Students File Storage

### Running Totals

Discussions	0
Discussion Posts	0
Assignments	0
Assignment Groups	1
Course Rubrics	0
All Rubrics	0
Active Students	465
Unaccepted Students	0
Quizzes	0
Quiz Questions	0
Quiz Submissions	0

Student Level

Course Level



## Alexandra Abney Access Report

Student Level

Content	Times Viewed	Times Participated	Last Viewed
ConferZoom	6		Jan 14, 2018 10:57am
Course Home	44		Jan 14, 2018 10:54am
WATCH VIDEO! Log in to Your Online Class	1		Jan 14, 2018 10:54am
Online Student Preparedness Session	4		Jan 9, 2018 7:48pm
What is SmarterMeasure?	1		Jan 5, 2018 10:33pm
Modules 1-3 Summary	4		Jan 5, 2018 10:20pm

## Online Preparedness Session - 2018 Spring

### Activity by Date

Date	Page Views	Actions Taken
2018-03-13	19	0
2018-03-12	30	0
2018-03-11	5	0
2018-03-10	12	0
2018-03-09	1	0

Course Level

# CONVERTING CANVAS DATA FOR ANALYSIS



canvas

Canvas Contents Created by Instructor  
Update on Wednesdays: 1/3/18

Public Serv

fall 2017 2nd week	fall 2017 3rd week	fall 2017 4th week	fall 2017 5th week	fall 2017 6th week	fall 2017 7th week	fall 2017 8th week	fall 2017 9th week
Retention for Online Courses - 1st Day to Census Day	86%	81%	80%	80%	80%	80%	80%
Retention for Online Courses - 1st Day to to Week	86%	79%	78%	78%	77%	76%	74%
Retention for Online Courses - Census Day to Week	100%	97%	97%	97%	97%	97%	97%
# of 1st Day Online Headcount Students	88	89	90	90	90	90	90
# of Census Online Headcount Students	76	72	72	72	72	72	72
# of Online Headcount Students by Week	76	70	70	70	70	70	70

Activities by Category of Canvas  
Update on Wednesdays: 1/3/18

Public Serv

fall 2017 2nd week	fall 2017 3rd week	fall 2017 4th week	fall 2017 5th week	fall 2017 6th week	fall 2017 7th week	fall 2017 8th week	fall 2017 9th week
Activity - General	1,699	2,533	3,266	3,900	4,630	5,228	5,673
Activity - Files	780	1,275	1,700	1,968	2,211	2,453	2,673
Activity - Assignments	673	974	1,250	1,541	2,029	2,313	2,554
Activity - Discussions	1,306	1,957	2,427	2,879	3,387	3,852	4,148
Activity - Pages	996	1,239	1,421	1,642	1,770	2,008	2,138
Activity - Quizzes	1,384	2,111	2,648	3,111	3,687	4,360	4,937
Activity - Modules	165	230	286	349	418	474	517
Activity - Grades	177	385	542	704	877	1,068	1,243
Activity - Announcements	-	-	-	-	-	-	-
Activity - Collaborations	-	-	-	-	-	-	-
Activity - Conferences	17	33	38	40	52	52	52
Activity - Groups	-	-	1	1	1	1	1
Activity - Others	70	104	134	156	186	187	191
Average Activity - General per Student	5.887	8.853	10.799	12.821	14.766	18.074	20.280
Average Activity - Files per Student	22.4	36.2	46.7	55.7	67.1	76.9	84.7
Average Activity - Assignments per Student	10.3	18.2	24.3	28.1	32.0	36.1	39.9
Average Activity - Discussions per Student	8.9	13.9	17.9	22.0	29.4	34.0	38.1
Average Activity - Pages per Student	17.2	28.0	34.7	41.1	49.1	56.6	61.9
Average Activity - Quizzes per Student	13.1	17.7	20.3	23.5	25.7	29.5	31.9
Average Activity - Modules per Student	18.2	30.2	37.8	44.4	53.4	64.1	73.7
Average Activity - Grades per Student	2.2	3.3	4.1	5.0	6.1	7.0	7.7
Average Activity - Announcements per Student	2.3	5.5	7.7	10.1	12.7	15.7	18.6
Average Activity - Collaborations per Student	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Activity - Conferences per Student	0.2	0.5	0.5	0.6	0.8	0.8	0.8
Average Activity - Groups per Student	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Activity - Others per Student	0.9	1.5	1.9	2.2	2.7	2.8	2.9
Average Activity - General per Course	77.5	126.5	154.3	183.2	214.0	265.8	302.7
Average Activity - Files per Course	566.3	844.3	1088.7	1300.0	1543.3	1742.7	1891.0
Average Activity - Assignments per Course	260.0	425.0	566.7	656.0	737.0	817.7	891.0
Average Activity - Discussions per Course	224.3	652.3	416.7	513.7	676.3	771.0	851.3
Average Activity - Pages per Course	435.3	652.3	809.0	959.7	1129.0	1284.0	1382.7
Average Activity - Quizzes per Course	332.0	413.0	473.7	547.3	590.0	669.3	712.7
Average Activity - Modules per Course	461.3	703.7	882.7	1037.0	1229.0	1453.3	1645.7
Average Activity - Grades per Course	55.0	76.7	95.3	116.3	139.3	158.0	172.3
Average Activity - Announcements per Course	59.0	128.3	180.7	234.7	292.3	356.0	414.3
Average Activity - Collaborations per Course	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Activity - Conferences per Course	5.7	11.0	12.7	13.3	17.3	17.3	17.3
Average Activity - Groups per Course	0.0	0.0	0.3	0.3	0.3	0.3	0.3

# CONVERTING CANVAS DATA FOR ANALYSIS



canvas

## Public Services Department

### Attendance Frequency per Student

Division	2nd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	6	8	7	8	9	spring break	9	6	5	7	7	10	7
CTE - Online - Fall 2017	n/a	14	10	9	11	10	8	15	6	8	7	8	10	8	10	10

### Access of Grades Frequency per Student

Division	2nd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	2	2	2	2	3	spring break	2	1	1	2	1	3	2
CTE - Online - Fall 2017	n/a	3	2	2	3	3	3	4	2	3	2	2	3	2	4	3

### Discussion Frequency per Student

Division	2nd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	4	4	4	6	5	spring break	5	4	3	4	5	5	4
CTE - Online - Fall 2017	n/a	11	7	6	8	8	5	11	5	6	5	5	4	4	3	6

### Access to Quiz Frequency per Student

Division	2nd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	0	1	4	2	5	spring break	2	4	1	5	2	7	3
CTE - Online - Fall 2017	n/a	12	8	7	9	11	10	18	7	9	6	7	6	6	11	9

### Access of Assignment Frequency per Student

Division	3rd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	3	5	3	3	4	spring break	4	2	2	4	4	7	9
CTE - Online - Fall 2017	n/a	5	4	4	7	5	4	7	2	4	2	4	6	3	4	

# Interpretation of Data for Pedagogical Changes



# The 3 Essentials on Data Interpretation for Faculty



## 1. Culture – Establish a culture of Data competence and mapping

- What data exists
- Where to access data
- How some data influences other

## 2. Collaboration – Your story that is unveiled through data

- Understanding student needs (course surveys and mobile app)
- Developing partnerships with knowledgeable stakeholders to discover measurable areas beyond Scorecard metrics (i.e. success, retention, persistence)
- This is not a new initiative, it is a cohesive approach to transcend our fixed roles for student success

## 3. Integration – Implementing changes based on needs

- Innovation for areas that are typically not addressed
- Experimentation with the OEI Rubric
- Developing partnerships with knowledgeable stakeholders to discover measurable areas beyond Scorecard metrics (i.e. success, retention, persistence)
- This is not a new initiative, it is a cohesive approach to transcend our fixed roles for student success



# Culture Development of Data Interpretation

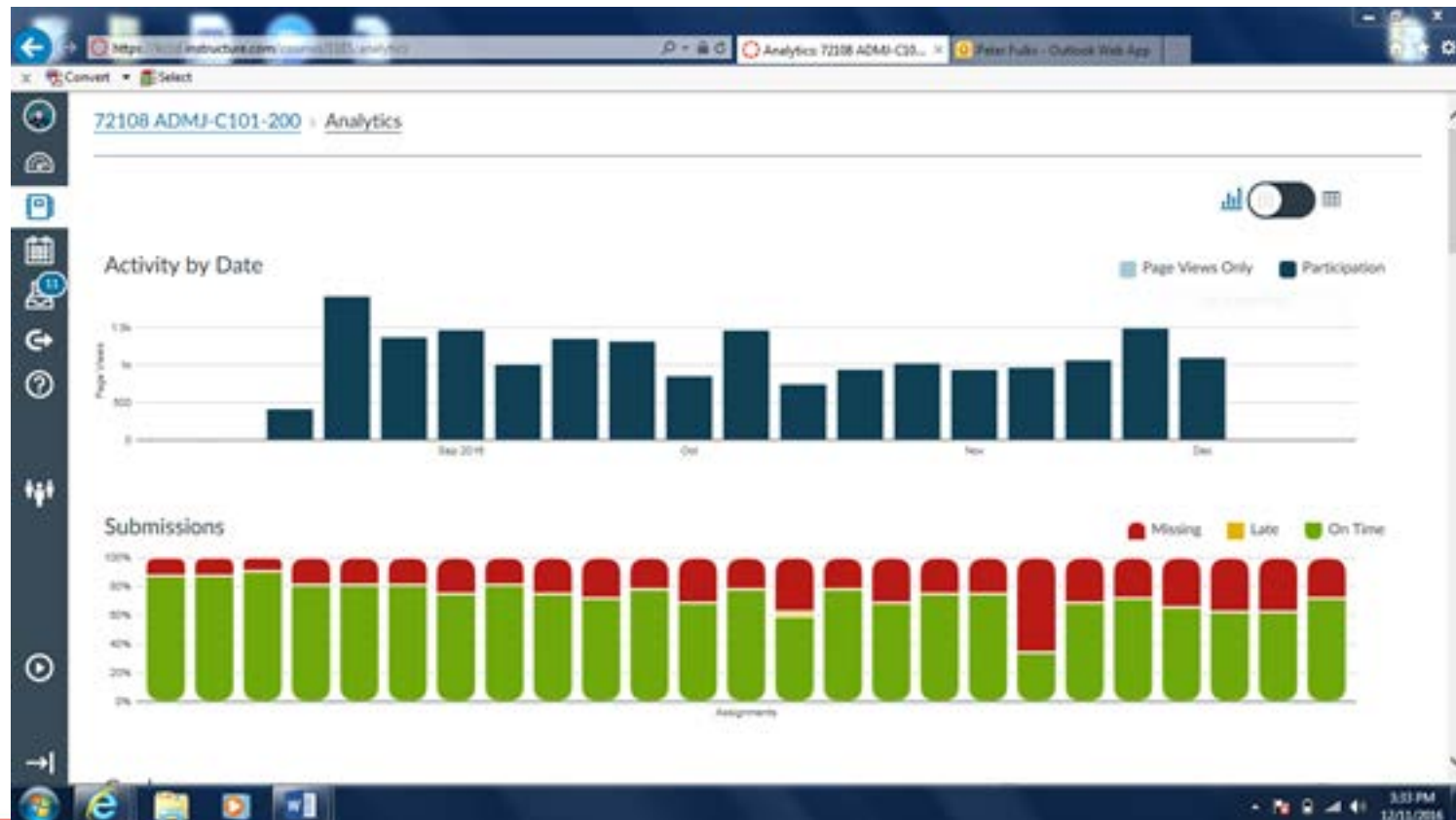


- Our Collective understanding of data before this Project was limited
  - Achieve The Dream drove a limited conversation
  - Enhanced by statewide adoption
  - Found on KCCD Website in a few clicks (District IR)
- What created this change and how do I find it?
- Was this happenstance or a change in my approach?

ADMJC105	Concepts of Criminal Law	2016-2017	Spring 2017	5	63	61	54	12	0	6.1	0.6	10.2	88.5%	59.0%
			Fall 2016	1	46	35	32	35	1	3.3	0.2	16.3	91.4%	71.4%
		2016-2017 - Total		6	109	96	86	16	1	9.4	0.8	11.7	89.6%	63.5%
		2015-2016	Spring 2016	1	45	31	23	31	0	2.9	0.2	14.4	74.2%	48.4%
			Fall 2015	1	45	30	28	30	0	2.8	0.2	14.0	93.3%	50.0%
		2015-2016 - Total		2	90	61	51	31	0	5.7	0.4	14.2	83.6%	49.2%
		2014-2015	Spring 2015	3	59	49	38	16	0	4.9	0.6	8.2	77.6%	59.2%
			Fall 2014	1	46	27	24	27	0	2.5	0.2	12.6	88.9%	63.0%
		2014-2015 - Total		4	105	76	62	19	0	7.4	0.8	9.3	81.6%	60.5%
		2013-2014	Spring 2014	2	54	42	31	21	0	4.0	0.4	10.1	73.8%	33.3%
			Fall 2013	1	52	29	20	29	0	2.7	0.2	13.5	69.0%	48.3%
			Summer 2013	1	37	26	18	26	0	2.4	0.2	12.1	69.2%	57.7%
		2013-2014 - Total		4	143	97	69	24	0	9.2	0.8	11.4	71.1%	44.3%
		2012-2013	Spring 2013	2	32	28	24	14	0	3.0	0.4	7.4	85.7%	67.9%
			Fall 2012	1	47	31	24	31	5	2.9	0.2	14.4	77.4%	61.3%
		2012-2013 - Total		3	79	59	48	20	5	5.8	0.6	9.7	81.4%	64.4%

## Data Culture Starts With Access

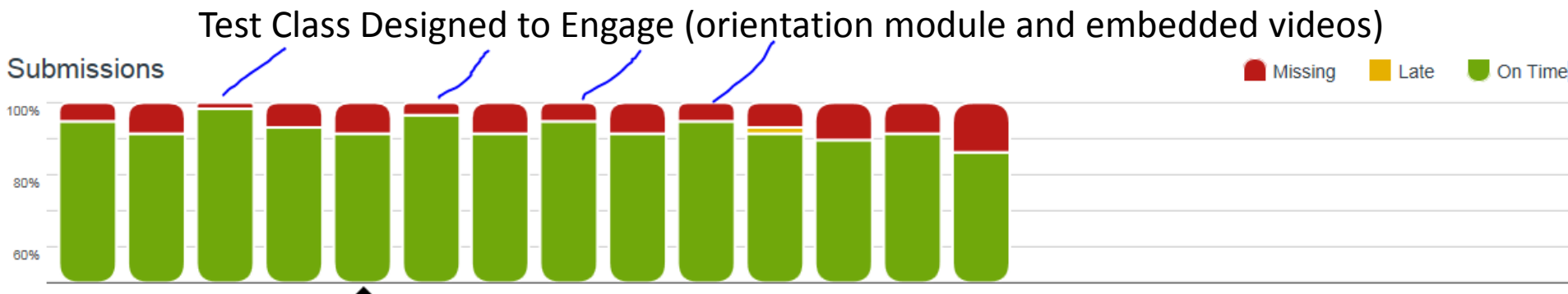
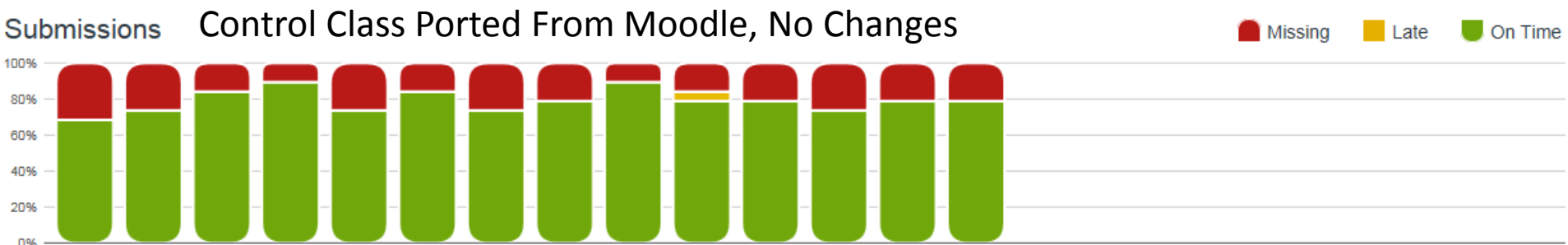
- Fall 2016 Public Services Dept. transitioned entirely to Canvas, what Canvas allowed us to understand at the course level
- Canvas Analytics ignited a concept of data mapping into the classroom
- How does this translate to Scorecard metrics (i.e. success, retention, etc)



## Culture and Collaboration



- Who is a partner, few had transitioned entirely?
  - Fellow Faculty, Faculty Chair, CTE Dean, Administration did not understand my questions
  - Director of Distance Education understood
- A pathology of pedagogy was needed, so I turned to data and partnerships
- Innovation of the Director was critical and a deeper dive was needed





# A Result of Collaboration and Innovation



## Public Services Department

### Attendance Frequency per Student

Division	2nd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	6	8	7	8	9	spring break	9	6	5	7	7	10	7
CTE - Online - Fall 2017	n/a	14	10	9	11	10	8	15	6	8	7	8	10	8	10	10

### Access of Grades Frequency per Student

Division	2nd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	2	2	2	2	3	spring break	2	1	1	2	1	3	2
CTE - Online - Fall 2017	n/a	3	2	2	3	3	3	4	2	3	2	2	3	2	4	3

### Discussion Frequency per Student

Division	2nd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	4	4	4	6	5	spring break	5	4	3	4	5	5	4
CTE - Online - Fall 2017	n/a	11	7	6	8	8	5	11	5	6	5	5	4	4	3	6

### Access to Quiz Frequency per Student

Division	2nd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	0	1	4	2	5	spring break	2	4	1	5	2	7	3
CTE - Online - Fall 2017	n/a	12	8	7	9	11	10	18	7	9	6	7	6	6	11	9

### Access of Assignment Frequency per Student

Division	3rd Week	3rd Week	4th Week	5th Week	6th Week	7th Week	8th Week	9th Week	10th Week	11th Week	12th Week	13th Week	14th Week	15th Week	16th Week	Average
CTE - Online - Spring 2017	n/a	n/a	n/a	3	5	3	3	4	spring break	4	2	2	4	4	7	3
CTE - Online - Fall 2017	n/a	5	4	4	7	5	4	7	2	4	2	4	6	3	4	4

# Integration of Data on Pedagogy



- This is a ported module from Spring 2016 Moodle to Fall 2016 Canvas
- What pedagogical changes could I add and track with data?
  - Enter OEI Rubric and POCR Certification influenced changes
  - Pushing mobile app
  - Addition of Chunked Lectures, Formative Assessments, Labeling and Videos

▼ Week 2

	<u>Week 2 Lecture</u>
	<u>Chapter 2 Power Point</u>
	<u>Week 2 Discussion Question</u> Sep 3, 2016   20 pts

# Data Integration, Experiment, Pedagogy



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▼ Week 2

Prerequisites: Week 1, Lets Begin! 8/21/17

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<div>⋮</div>	<div><div>📄</div><div><u>Week 2 Lecture 1 of 3</u></div></div>	<div><div>🌱</div><div>⚙️</div></div>
<div>⋮</div>	<div><div>📄</div><div><u>Week 2 Lecture 2 of 3</u></div></div>	<div><div>🌱</div><div>⚙️</div></div>
<div>⋮</div>	<div><div>📄</div><div><u>Week 2 Lecture 3 of 3</u></div></div>	<div><div>🌱</div><div>⚙️</div></div>
<div>⋮</div>	<div><div>💬</div><div><u>Week 2 Discussion Question</u></div><div>Sep 2   20 pts</div></div>	<div><div>🌱</div><div>⚙️</div></div>
<div>⋮</div>	<div><div>↓</div><div><u>Chapter 2 Power Point File for Reference</u></div></div>	<div><div>🌱</div><div>⚙️</div></div>
<div>⋮</div>	<div><div>🚀</div><div><u>Knowledge Assessment Chapter 2</u></div><div>Sep 2   5 pts</div></div>	<div><div>🌱</div><div>⚙️</div></div>

# Experimentation With Chunked Media

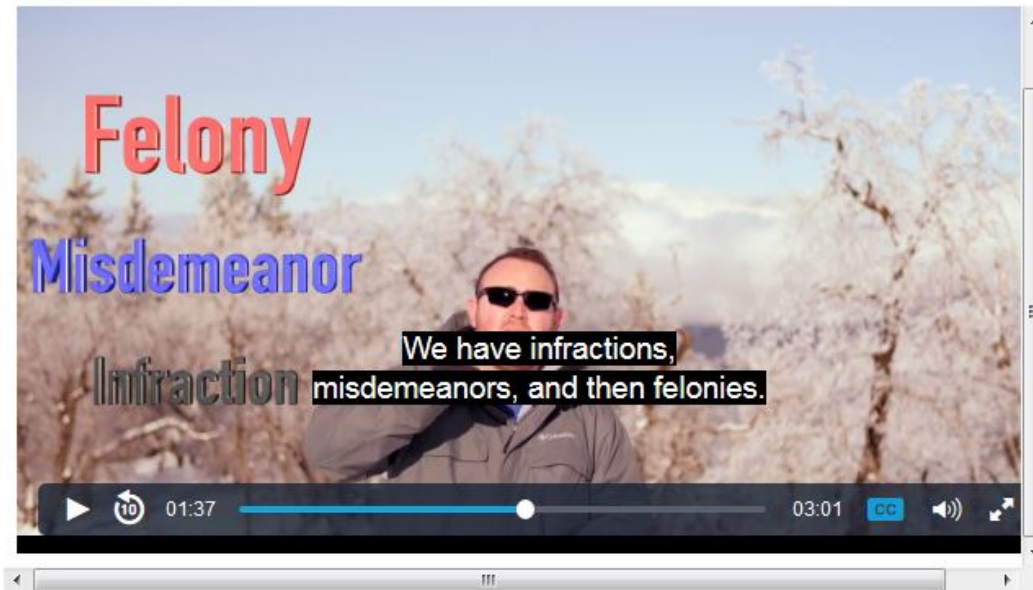


## Week 2 Lecture 1 of 3

Lets recap and reinforce a little bit first:

I will be communicating with you in a few ways throughout the course, but most importantly **IT IS YOUR RESPONSIBILITY TO CHECK YOUR COLLEGE EMAIL and SET YOUR CANVAS NOTIFICATIONS**, to be correctly informed during this course.

It is important we don't let last week's discussion topic linger in uncertainty. Please watch this 3 minute video for closure on the topic and solidifying foundations for Week 2 and the future. Also, I love to travel, so hopefully these unique locations are an added bonus for you.



Ok, lets take what we know and move on. Click "next" to the bottom right.

# Student Outcomes And Results



- Scorecard Metrics are really not accurate at this level
- Instructors have anecdotal stories of students doing better, or what does and does not work inside the classroom
- Data is normalized for students who do not finish the course (covered under success data also)
- Average GPA of the class allows a better understanding of students inside my class
- Similar amounts of students in upper 10% of class
- This is truly the struggling students who are succeeding better (\*not grade inflation)

## GPA Results ADMJ 101 Professor Fulks

Fall 2016	Spring 2017	Fall 2017
61.75%	71.11%	72.94%

# NEXT STEPS



- Develop Canvas Data LTI
- Professional Development Training
- Scale Data Partnerships
- Apply to More Courses/Department/Faculty



# Questions?

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