

RUTGERS

School of Public Affairs
and Administration | Newark

How to use the analytical mechanisms in online public administration courses to inform learner support

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Opening Questions

- How many teach online?
- How does your instructor-learner relationship differ in F2F vs. online courses?
- Are you aware of the analytical mechanism within the course delivery software?

Content

- Definitions
- Scholarship, research interests and related journals
- Potential benefits and inhibitors
- Personal experiences using LA
- Discussion

Learning Analytics (LA)

- LA is about discovering the “**unobservable patterns** and the information underlying the learning process.”

Agudo-Peregrina et al., 2014

- LA is the measurement, collection, analysis and reporting of data about learners and their context for the purposes of understanding and optimizing learning and the environments in which it occurs.

Baniff 2011, Long & Siemens, 2011, Society for Learning Analytics, 2012

- LA is the capture and processing of data that will be helpful for students and instructors at the course or individual level (Bias, 2011)

Closely Related Terms

- **Learning Management Systems (LMS)**

Mechanisms for online course delivery - Blackboard, Canvas, eCollege, moodle, Sakai

Data stored within LMS available for analysis. Needed to move from technical domain to practical use of readily available data (Stewart, 2013).

- **Education Data Mining***

Data mining seeks to discover novel and potentially useful information from large amount's of data

Educational data mining seeks to answer questions. E.g. how students choose to use educational software and how course design can improve

*National Center for Education Statistics (NCES)

Scholarship

- How students engage with/consume learning content/curricula
- How they approach learning, create learning goals (Gasevic et al. 2015).
- Student self-direction and self-regulation studies reveal differences in the number of tools and how they are utilized in facilitating learning (Winne, 2006)
- Student choice using tools based on both internal conditions and personal goals in their learning (Lust, Elen, & Clarebout, 2013)
- ‘Personalize’ learning processes

Scholarship cont'd

- Descriptive, without any use of theory
- Philosophical, reflection without any data or theory
- Theoretical, reflection on theory without empirical data
- **Theory use, application of theory/model as a framework for study (11%)**
- **Theory generating, systematic analysis toward building theory (26%)**
- Theory testing

Viberg, Hatakka, Balter & Mavroudi (2018)

Research Interests

- Comparative forms of engagement
- Levels of engagement
- Timeliness
- Correlations between engagement and performance
- Predictors of learning outcomes

Related Journals

- Computers in Human Behavior
- Journal on Empowering Teaching Excellence
- Journal of Interactive Online Learning
- Journal of Public Affairs Education
- Telematics and Informatics

Potential Benefits of LA

- Evidence Proof of practice (success or failure), justification, remove doubt or assumption
- Nimble quickly adjust practice, immediate feedback, walk informed steps
- Grounded make changes based on evidence rather than assumption or intuition
- Revealing provide information in areas we did not know or were not aware of / or potential

Potential Benefits of LA

- Student Centered inform learner experience, help guide the learner
- Predictive educated predictions based on preference, performance, and ability
- Change practice with evidence change what does not work, informed decisions

Benefits to Institutions

- Informs Academic Advising Processes - trends
- Informs necessary interventions e.g. plagiarism
- Provide better support to students
- Can inform on student satisfaction
- Can be used to predict college enrollment at middle schools
- Can be used to predict career success, informing alumni success

Inhibitors to using LA

- Lack of Training how / what to collect, process, and use the data
- Fear of Exposure peer will judge, reveal weakness
- Too Much Data overwhelming with amount of data to make sense
- Too Little Data (not really an issue) in a certain / meaningful area

Stewart, 2016

Inhibitors to using LA

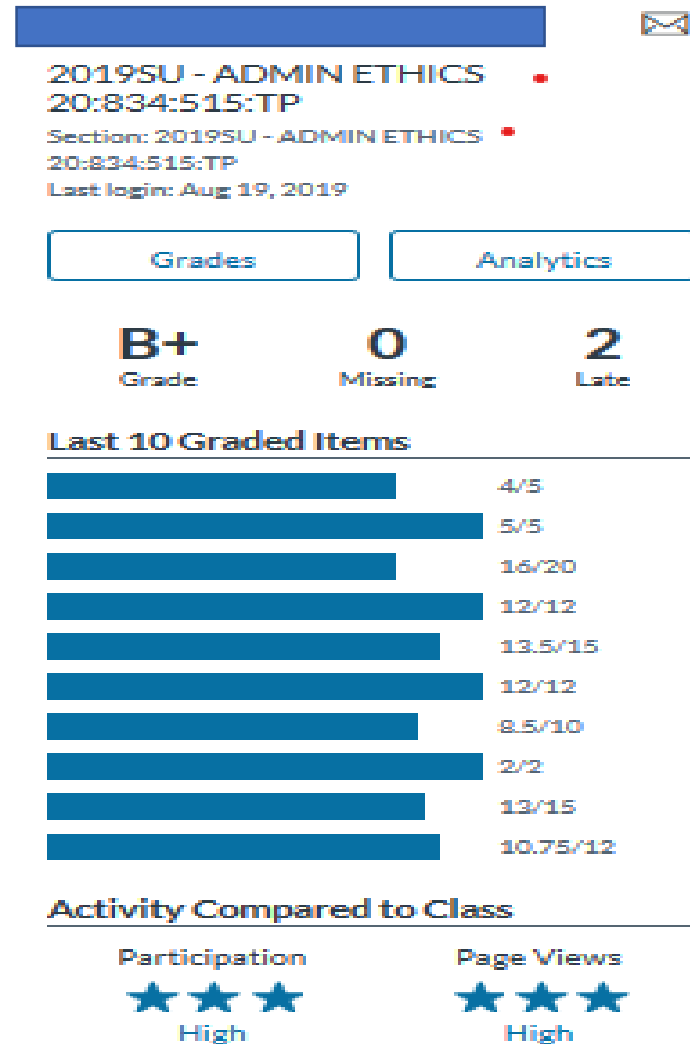
- Lack of Ability to enact changes based on data, knowledge
- Cultural vs. Procedural, data of a cultural norm, mechanics or behaviors of teacher, ethics
- Intentionality good empirical practices, data tied to research question
- Lack of Resources limited direction in the literature, examples, resources, time

Experiences using LA

- Predict learning outcomes
- Diagnose low performance
- Identify at risk students
- Inform course design

Predicting Outcomes

- Grade for last 10 graded items
- Grades overall
- Detailed Analytics



Predicting Outcomes

- [Home](#)
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- [Student Instructional Rating Survey](#)
- [Media Gallery](#)
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- [Settings](#)

Arrange By

Due Date

Name	Due	Score	Out of	
Discussion Forum 1 - Student Introductions	Jun 2 by 11:59pm	2	2	
Assignment 1 - Ethical Misconduct	Jun 10 by 11:59pm	1.5	3	
Discussion 3 - Personal Ethical Dilemmas	Jun 16 by 11:59pm	5	5	
Assignment 2 - Ethical Dilemma	Jun 17 by 11:59pm	3	3	
Discussion Forum 4 - Explanations for Ethical Misconduct - Major Contemporary Issues	Jun 23 by 11:59pm	2	2	
ASSIGNMENT - Contemporary Public Service/Sector Issue	Jun 24 by 11:59pm	7.5	8	
Discussion 5 - Corruption Control in the Toby Grove's case	Jun 30 by 11:59pm	3	3	
Assignment - Corruption Control	Jul 1 by 11:59pm	10.75	12	
Discussion 6 - Administrative Evil	Jul 7 by 11:59pm	13	15	
Discussion 7 - Selecting Organizations for an Ethics Audit	Jul 14 by 11:59pm	2	2	

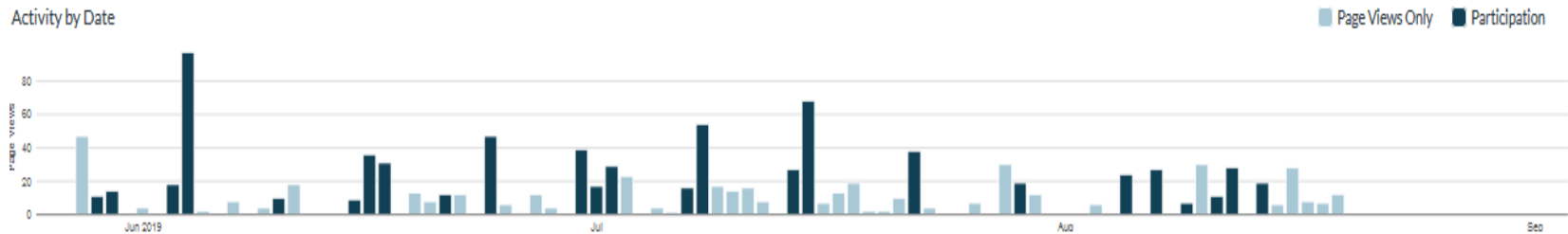
Show All Details

Assignments are weighted by group:

Group	Weight
Developmental Discussion	0%
Discussions	26%
Assignments	74%
Self-assessments	0%
Total	100%

Calculate based only on graded assignments

Diagnose Low Performance

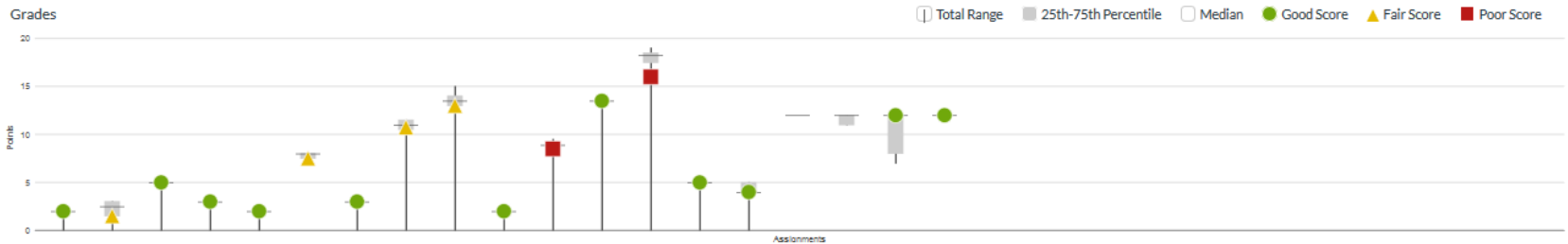
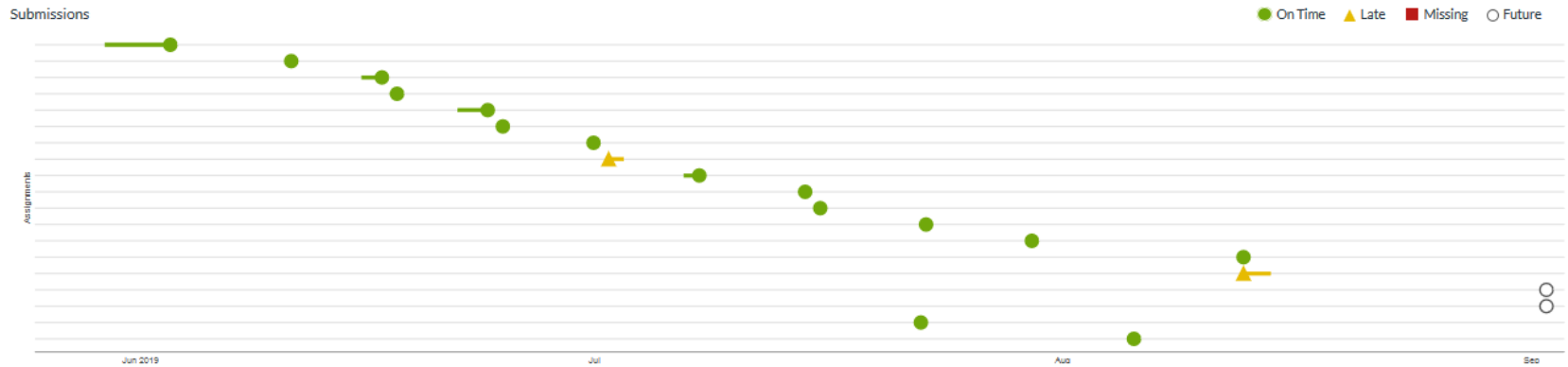


Identify At Risk Students

Quizzes		People						
Name	Login ID	SIS ID	Section	Role	Last Activity	Total Activity		
[REDACTED]	pd394	pd394	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 19 at 1:49pm	31:45:48	⋮	
[REDACTED]	sah281	sah281	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 17 at 7:08pm	14:15:25	⋮	
[REDACTED]	jh1162	jh1162	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 30 at 11:17am	15:38:25	⋮	
[REDACTED]	mh1270	mh1270	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 17 at 5:26pm	20:46:25	⋮	
[REDACTED]	mjh299	mjh299	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 28 at 11:13am	34:25:34	⋮	
[REDACTED]	qj39	qj39	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 14 at 2:27am	28:30:06	⋮	
[REDACTED]	hk498	hk498	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 17 at 1:38am	34:03:41	⋮	
[REDACTED]	fak29	fak29	2019SU - ADMIN ETHICS 20:834:515:TP	Student	May 29 at 12:19pm	01:16:14	⋮	
[REDACTED]	kk984	kk984	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 19 at 7:01pm	36:37:52	⋮	
[REDACTED]	kcl68	kcl68	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Sep 3 at 10:58am	32:25:02	⋮	
[REDACTED]	swl45	swl45	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 21 at 10:55pm	29:17:10	⋮	
[REDACTED]	jcm354	jcm354	2019SU - ADMIN ETHICS 20:834:515:TP	Student	Aug 21 at 11:26pm	39:50:46	⋮	

- Quizzes
- People**
- Grades
- Google Drive
- Pages
- Files
- Outcomes
- Syllabus
- Collaborations
- Conferences
- LockDown
- Browser
- Rutgers Libraries
- Search
- Student
- Instructional
- Rating Survey

Identify At Risk Students



Inform Course Design

Quiz Summary

[Section Filter](#) [Student Analysis](#)

Average Score

90%

High Score

100%

Low Score

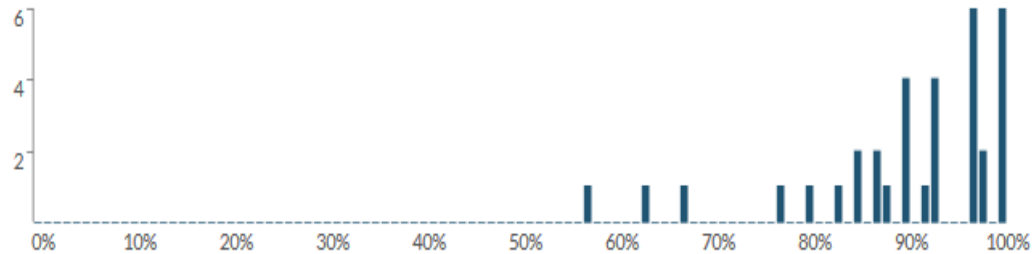
57%

Standard Deviation

3.18

Average Time

01:17:44



Inform Course Design




Question Breakdown

Attempts: 34 out of 34

Write a short essay of at least 250 words on **one** of the following topics. The essay should have an introduction, three main points and a conclusion. Given the narrow time-frame (approximately 15 minutes) and word requirements, your essay should be clear and succinct.

For 6 points

- Describe Birkland's Agenda Universe, identify one issue currently on the federal government's agenda and state its current status on the agenda.
- Explain what a symbolic public policy is, provide one example and explain why it exists.

Answers which scored in the top 27%	16 respondents	47%	 ✓
Answers which scored in the middle 46%	11 respondents	32%	
Answers which scored in the bottom 27%	7 respondents	21%	

Inform Course Design

Question Breakdown

Attempts: 34 out of 34

-0.02

Public policy is the sum of government activities, whether acting directly or through agents, as it has an influence on the life of citizens.

Discrimination Index (?)

True	32 respondents	94%	<div style="width: 94%;"></div> ✓
False	2 respondents	6%	<div style="width: 6%;"></div>

94% answered correctly

Discussion

Thank you!