

December 12, 2014

Relationship Between Grades and Learning Mode

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**RELATIONSHIP BETWEEN GRADES AND
LEARNING MODE**

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Introduction

- Course completion - Grades
- Hrastinski, Meta Analysis 535 studies, no difference (2008).
- ERAU study, 1,600 grades, differences based on mode – recommended larger sample Dunn, (2013).



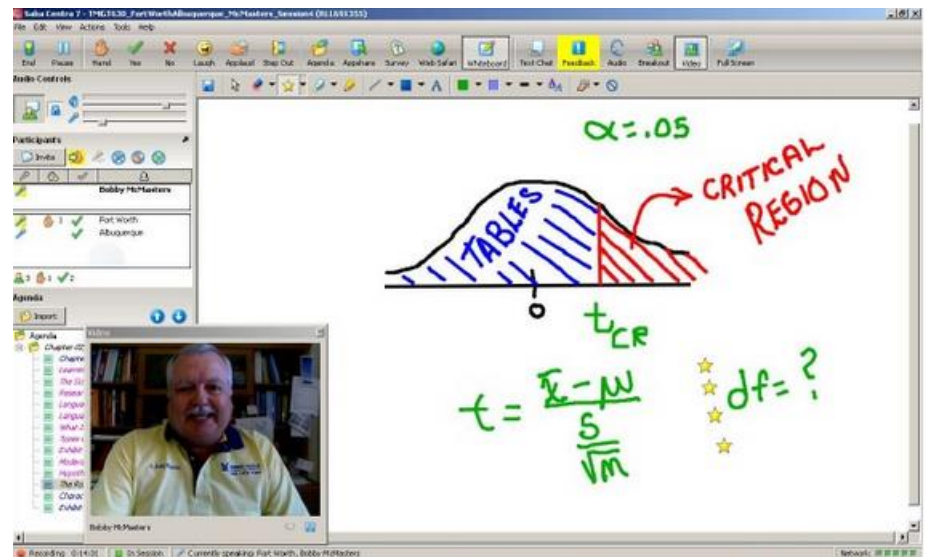
- n= 20,667 from 2013 grades



Introduction

Compared Mode:

- Classroom/Lecture
- Online
- EV Classroom
- EV Home



With Type of Class Taught

- Economics, English, Humanities, Math



Literature

- 1.6 million to 6.7 million from 2002-2011
- Online course 9% to 32%
- ERAU distance learning now at 59%
- “No Significant Difference” Russell (335 studies, 1999). Hrastinski, 535 studies, 2008).
- Differences based on mode Dunn (2013)



Previous ERAU Research

Dunn (2013) n=1,398

- Preference order
 - Classroom
 - Online
 - Synchronous Video Learning
- Differences noted between modes n=1600
- Student satisfaction
 - “No significant relationship between learning mode and quality of instruction ($p=.695$) or course content ($p=.9998$).



2014 ERAU Quantitative Study (n=2,400)

- Classroom, Online, EV-H, EV-C ($p=.000$)
- For those with EV Experience, EV-H was second, online was third ($F\ p=.0007$, $S\ p=.000$)
- Faculty and students believed instructors were technically competent ($p=.000$)

(Griffith & Schultz, 2014)



2014 ERAU Quantitative Study (n=2,400)

- EV-H more effective than EV-C (F $p=.0001$, S $p=.000$)
- Use of blended was effective ($p=0.000$)
- VA students would choose EV-C over EV-H due to increased VA benefits
 - (Undergraduate $p=.0358$, Graduate $p=.0001$)

(Griffith & Schultz, 2014)



Method/Treatment of Data

- Examined student grades in Campus Solutions (Aggregate Data)
 - $n = 20,667$
- Treatment of Data
 - $\alpha = .05$ χ^2
 - 2013 data



Example: Economics

Table 1: Economics Courses (Ha1 Difference in Failures between the Four Modes)

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	EV-H	EV-C	Online	Classroom	p=.0594
Pass	559	548	1604	843	
Fail	27	27	91	26	
% fail	5%	5%	5%	3%	
Direct Mode Comparison					
	EV-C	Online	Classroom		
EV-H	p=0.9432	p=0.4733	p=0.1067		
EV-C		p=0.5298	p=0.0919		
Online			p=0.0063*		



Example: Economics

Table 2: Economics Courses (Ha2 Differences in Grade Distribution between the Four Learning Modes)

	EV-H		EV-C		Online		Classroom	
Grade	n	%	n	%	n	%	n	%
A	312	53%	340	59%	802	47%	515	59%
B	164	28%	136	23%	546	32%	230	26%
C	71	12%	56	10%	201	12%	75	9%
D	12	2%	16	3%	55	3%	23	3%
F	27	5%	27	5%	91	5%	26	3%

p=.000*

Direct Mode Comparison

	EV-C	Online	Classroom	
EV-H	p=0.1951	p=0.0823	p=0.0440*	
EV-C		p=0.0001*	p=0.3654	
Online			p=0.0000*	



Findings – Failing Grades and Learning Environment

- Economics, ($p=.054$), English ($p=.001^*$), Humanities, ($p=.392$), Mathematics ($p=.000^*$)
- Online more failures
 - Economics, (5%), English (13%) ,and Mathematics (11%)
- Classroom Lecture, fewer failures
 - Economics, (3%), English (9%) , and Math (5%)



Findings – Grade Distribution and Learning Environment

- Economics, English, Humanities, and Mathematics (all $p=.000^*$)
- EV-Classroom, more “A”s,
 - Economics (59%), Humanities (68%), Math (57%)
- Online fewer “A”s,
 - Economics (47%), Humanities (48%), Math (40%)



Conclusions

- Failure rate and learning mode not related in Economics and Humanities (Hrastinski, 2008; Lou et al., 2006)
- Failure rate and learning mode related in English and Math (Bernard et al., 2004; Dunn, 2014)
- Grade distribution and mode were related in Economics, English, Humanities and Math courses
- Online, fewest “A”s and most “F”s in Economics, Humanities and Math
- Online highest proportion of “A”s in English



Recommendations

- Is face to face more personal while distance learning (standardized courses/delivery) provides a more clear cut objective grading system?
- Replicate as new technology emerges
- Include both quantitative and qualitative measures in assessing stakeholder perceptions with regard to learning modes

Questions?

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