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Open Educational Resources (OER) Project, Fall 2016 Final Dissemination Assessment Report

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University of New Hampshire

Open Educational Resources (OER) Project, Fall 2016

Final Dissemination Assessment Report

Assessments Conducted and Completed by

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Report Prepared by:

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Melissa D. Day, Open Education Support, CEITL

May 8, 2017

ASSESSMENTS TARGETED FOUR CENTRAL AREAS:

1. Textbook Cost Savings
2. Student Perceptions of the OER Materials
3. Student Learning Outcomes
4. Faculty Perceptions of the OER Materials

Textbook Cost Savings

Twelve faculty members at the UNH Durham campus and one at the UNH Manchester campus participated in the fall 2016 OER program. We asked faculty: “If you were to use a textbook in your course, which one would you use?” We used faculty’s responses to research the costs of the textbooks. We then multiplied the textbook cost by the courses’ student enrollments to obtain the maximum potential cost savings for each course.

The cost savings presented below reflect the assumption that all enrolled students would have purchased a hardcopy (e.g., new hardcover) of the required textbook. Given that we have no way of tracking:

- 1) whether students would have borrowed a text,
- 2.) whether students would have rented or purchased a text at all,
- 3) the format of a purchased textbook (i.e., hardcover, paperback, or online),
- 4) where students would have made a textbook purchase,
- 5) whether a selling agent negotiated a special price for a text for students or,
- 6) the fluctuation of textbook prices,

our cost savings is documented in terms of an estimation of the maximum amount of savings as of the date each textbook price was researched and recorded.

Across the 22 course sections, the adoption of OER materials saved 1,073 students up to \$133,881.43.

TEXTBOOK COST SAVINGS SUMMARY

Course	Textbook Cost	Enrollment	Maximum Total Cost Savings
Intro to Anthropology	\$130.66 (New Paperback)	330 (2 sections)	\$43,117.80
Intro to Anthropology	\$91.98 (New Paperback)	330 (2 sections)	\$30,353.40
Elementary French (same book)	\$237.60 (New Hardcover)	77 (4 sections)	\$18,295.20
Living in a Networked World	\$107.81 (New Paperback)	90 (3 sections)	\$9,702.90
Fossil Fuels & Renewable Energy Sources	\$275.00 (New Hardcover)	35	\$9,625.00
Intermediate French I & II (same book)	\$150.00 (New Paperback)	47 (4 sections)	\$7,050.00
Managing Healthcare Organizations	\$117.43 (New Hardcover)	42	\$4,932.06
Design of Experiments (math)	\$79.81 (New Hardcover)	49	\$3,910.69
Introduction to Numerical Methods I	\$163.34 (New Hardcover)	17	\$2,776.78
Excursions in Quantitative Reasoning	\$166.69 (New Hardcover)	15	\$2,500.35
Statistical Methods for QI & Design	\$43.55 (New Hardcover)	23	\$1,001.65
Entrepreneurial Journalism	\$34.20 (New Paperback)	18	\$615.60
TOTAL COST SAVINGS UP TO:			\$133,881.43

MARIEKA BROUWER-BURG

ANTH 411: Introduction to Anthropology

Mirror for Humanity: A Concise Introduction to Anthropology, 9th Ed. (2014)

ISBN-13: 978-0078035050

Price Source: www.amazon.com

Textbook Cost: \$130.66 (New Paperback)

Price Recorded: 9/19/2016

Enrollment: 330 (2 sections)

Course Cost Savings up to: \$43,117.80

SARA WITHERS

ANTH 411: Introduction to Anthropology

Cultural Anthropology: A Toolkit for a Global Age (2014)

ISBN-13: 978-0393929577

Price Source: www.amazon.com

Textbook Cost: \$91.98 (New Paperback)

Price Recorded: 9/19/2016

Enrollment: 330 (2 sections)

Course Cost Savings up to: \$30,353.40

CLAIRE-HELENE GAUDISSERT

FREN 401: Elementary French

Promenades, 2nd Ed. (2014)

ISBN-13: 978-1618570987

Price Source: <http://vistahigherlearning.com>

Textbook Cost: \$237.60 (New Hardcover)

Price Recorded: 3/8/2017

Enrollment: 37 (2 sections)

Course Cost Savings up to: \$8,791.20

ANNA SANDSTROM

FREN 401: Elementary French

Promenades, 2nd Ed. (2014)

ISBN-13: 978-1618570987

Price Source: <http://vistahigherlearning.com>

Textbook Cost: \$237.60 (New Hardcover)

Price Recorded: 3/8/2017

Enrollment: 40 (2 sections)

Course Cost Savings up to: \$9,504.00

SOPHIA LEMONS

CS 408: Living in a Networked World

A Gift of Fire: Social, Legal, and Ethical Issues for Computing and the Internet, 4th Ed. (2012)

ISBN-13: 978-0132492676

Price Source: www.amazon.com

Textbook Cost: \$107.81 (New Paperback)

Price Recorded: 9/8/2016

Enrollment: 90 (3 sections)

Course Cost Savings up to: \$9,702.90

NAN YI

CHE 705: Fossil Fuels & Renewable Energy Sources

Fundamentals of Petroleum Refining (2009)

ISBN-13: 978-0444527851

Price Source: <https://www.elsevier.com>

Textbook Cost: \$275.00 (New Hardcover)

Price Recorded: 10/7/2016

Enrollment: 35

Course Cost Savings up to: \$9,625.00

EMILIE TALPIN

FREN 503: Intermediate French I

Imaginez, 2nd Ed. (2012)

ISBN-13: 978-1605768793

Price Source: <http://vistahigherlearning.com>

Textbook Cost: \$150.00 (New Paperback)

Price Recorded: 9/14/2016

Enrollment: 36 (3 sections)

Course Cost Savings up to: \$5,400.00

ELIZABETH HEBBARD

FREN 504: Intermediate French II

Imaginez, 2nd Ed. (2012)

ISBN-13: 978-1605768793

Price Source: <http://vistahigherlearning.com>

Textbook Cost: \$150.00 (New Paperback)

Price Recorded: 9/14/2016

Enrollment: 11

Course Cost Savings up to: \$1,650.00

MARK BONICA

HMP 721: Managing Healthcare Organizations

The Well-Managed Healthcare Organization, 8th Ed. (2015)

ISBN-13: 978-1567937213

Price Source: www.amazon.com

Textbook Cost: \$117.43 (New Hardcover)

Price Recorded: 9/14/2016

Enrollment: 42

Course Cost Savings up to: \$4,932.06

PHIL RAMSEY

MATH 740/840: Design of Experiments

Optimal Design of Experiments (2011)

ISBN-13: 978-0470744611

Price Source: www.amazon.com

Textbook Cost: \$79.81 (New Hardcover)

Price Recorded: 1/13/2017

Enrollment: 49

Course Cost Savings up to: \$3,910.69

MATH 737: Statistical Methods for Quality Improvement & Design

Visual Six Sigma: Making Data Analysis Lean (2009)

ISBN-13: 978-0470506912

Price Source: www.amazon.com

Textbook Cost: \$43.55 (New Hardcover)

Price Recorded: 1/13/2017

Enrollment: 23

Course Cost Savings up to: \$1,001.65

JOHN GIBSON

MATH 753: Introduction to Numerical Methods I

Numerical Analysis, 2nd Ed. (2011)

ISBN-13: 978-0321783677

Price Source: www.amazon.com

Textbook Cost: \$163.34 (New Hardcover)

Price Recorded: 9/8/2016

Enrollment: 17

Course Cost Savings up to: \$2,776.78

DONALD PLANTE

MATH 444: Excursions in Quantitative Reasoning (UNHM)

Excursions in Modern Mathematics, 8th Ed. (2012)

ISBN-13: 978-0321825735

Price Source: www.amazon.com

Textbook Cost: \$166.69 (New Hardcover)

Price Recorded: 10/14/2016

Enrollment: 15

Course Cost Savings up to: \$2,500.35

MEGHAN HECKMAN

ENGL 735: Entrepreneurial Journalism

Entrepreneurial Journalism: How to Build What's Next for News (2011)

ISBN-13: 978-1608714209

Price Source: www.amazon.com

Textbook Cost: \$34.20 (New Paperback)

Price Recorded: 9/14/2016

Enrollment: 18

Course Cost Savings up to: \$615.60

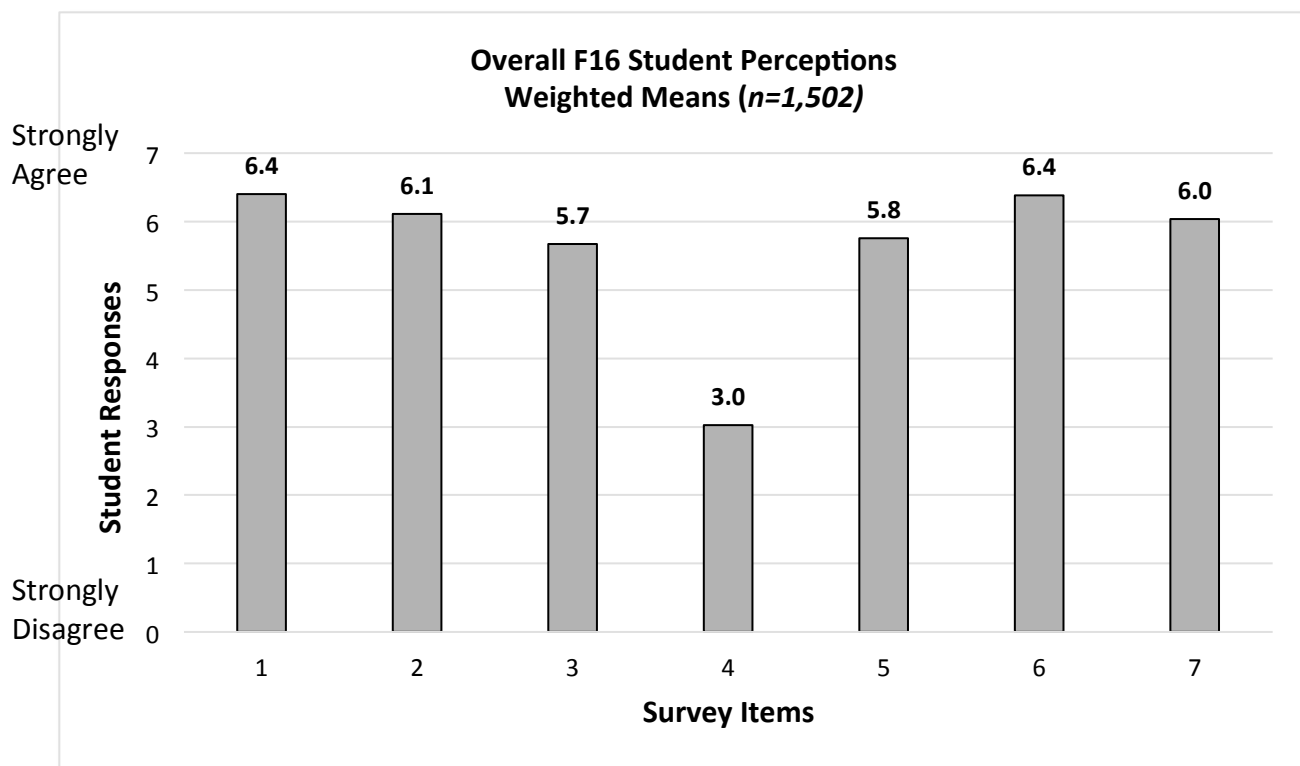
Student Perceptions of the OER Materials

CEITL staff worked with individual faculty members to develop surveys aimed at assessing students' perceptions of the OER materials used in the courses. The surveys were tailored to assess the frequency of use and helpfulness of individual OER materials used in the course leading up to each exam (when relevant). In addition to questions about specific OER course materials, eight faculty members elected to use a core set of seven questions that evaluated students' general perceptions of the ease of access, quality, helpfulness, and benefits of the OER resources.

To reduce bias, when possible and relevant, students responded to the surveys within 48 hours of taking an exam and prior to receiving their exam grades. Most student perception surveys were completed online via Qualtrics. Some courses administered paper and pencil surveys that students filled out immediately after they completed an exam. In courses that did not include exams, but used other forms of assessment such as projects, students completed a mid-semester and an end of semester survey.

Overall, students' perceptions of the OER materials were positive. In addition to the many positive comments about the cost savings, they generally had positive impressions of the accessibility, quality, and helpfulness of the OER materials. They also reported that accessing them was not overwhelming and that OER materials helped broaden their perspectives of course concepts.

In accordance with IRB guidelines, all data reported here, including perceptions, comments, and student grades, are omitted for those students who did not consent to have their information used for research purposes.



Of the 2166 responses to the surveys over the course of the semester, students who both responded to the surveys and consented to participate in this study contributed to the 1502 overall responses.

SURVEY ITEMS

Eight faculty used these common questions in their course assessments:

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broadier perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam/course assignments.

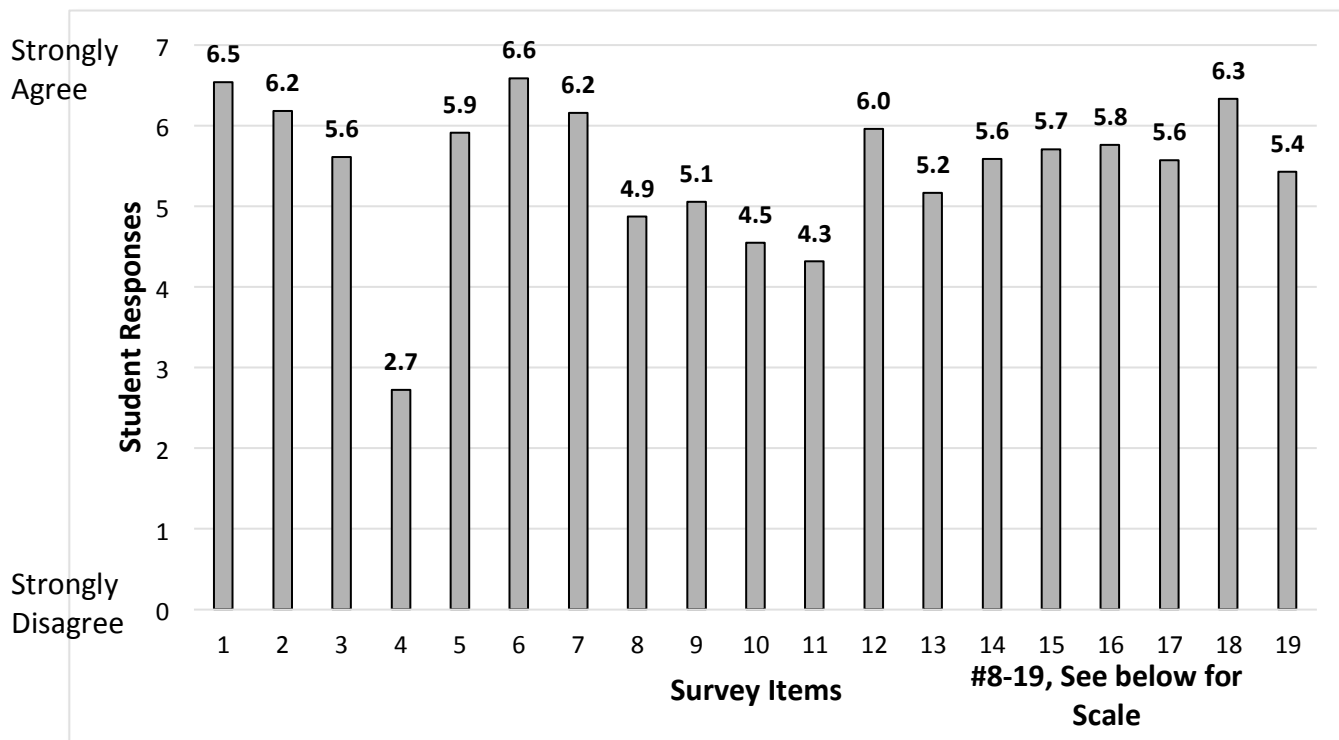
ANTH 411: Introduction to Anthropology

Exam 1 Comparisons:

Exam 1: Fall 2015		Exam 1: Fall 2016	
Count	323	Count	284
Average	79.4	Average	84.3
Median	80.4	Median	86.0
Mode	82.4	Mode	92.0
Standard Deviation	11.1	Standard Deviation	10.0
Minimum	23.5	Minimum	28.0
Maximum	98.0	Maximum	100.0

Exam 1 Student Perceptions:

Of the 330 students who took the exam, 284 students both responded to this survey and consented to participate in this study.



See Page 18 for list of Survey Items

Exam 1 Summary of Student Comments:

Appreciation for cost savings afforded to them because of using OER

Textbook is good quality, strait forward, helpful, and broadens the content of the course

Found online textbook practice quizzes helpful

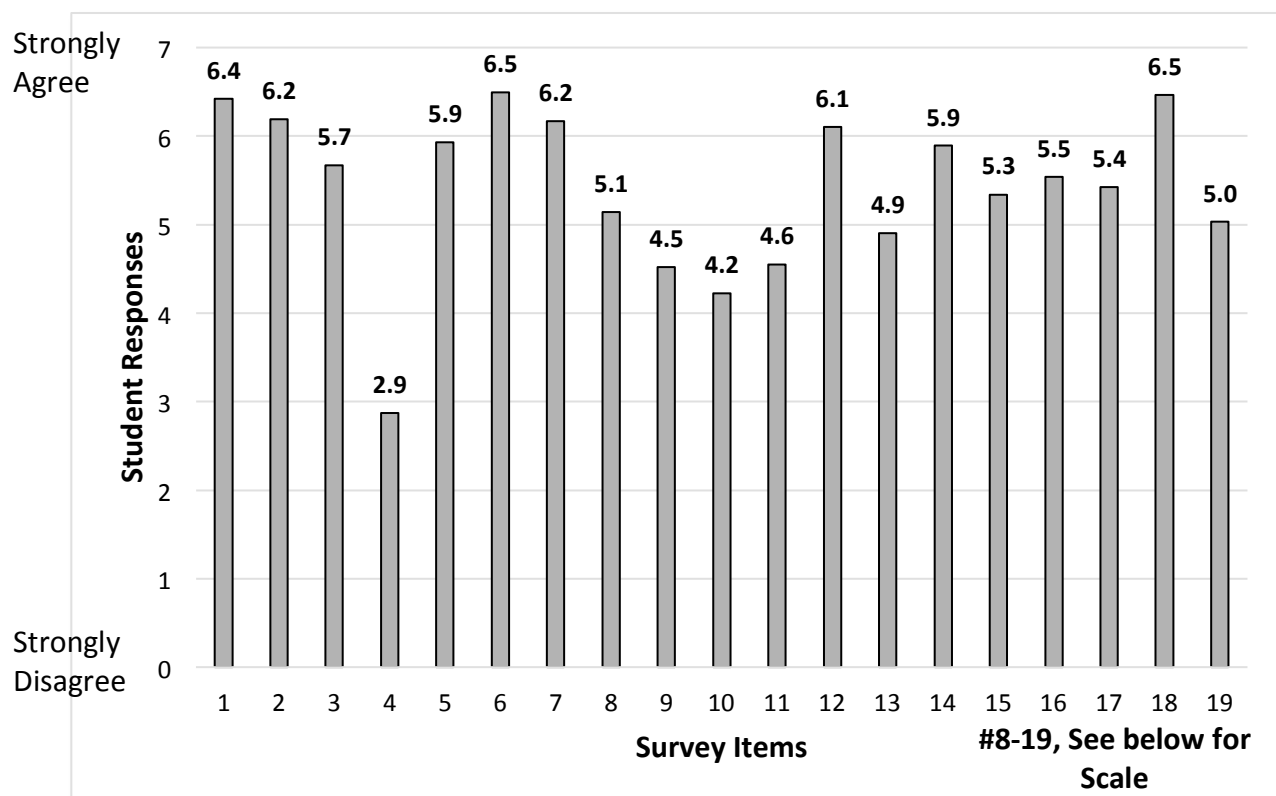
Would like more guidance on where to focus within content while reading

Exam 2 Comparisons:

Exam 2: Fall 2015		Exam 2: Fall 2016	
Count	321	Count	238
Average	77.6	Average	83.6
Median	80.4	Median	86.0
Mode	80.4	Mode	90.0
Standard Deviation	8.8	Standard Deviation	9.2
Minimum	50.9	Minimum	56.0
Maximum	96.1	Maximum	100

Exam 2 Student Perceptions:

Of the 333 students who took the exam, 238 students both responded to this survey and consented to participate in this study.



See Page 18 for list of Survey Items

Exam 2 Summary of Student Comments:

Appreciation for cost savings afforded to them because of using OER

Online textbook is easy to access, high quality, and convenient to use on a tablet or phone

Frustration with technical issues with online book occurred the day before the exam

Found online textbook practice quizzes helpful

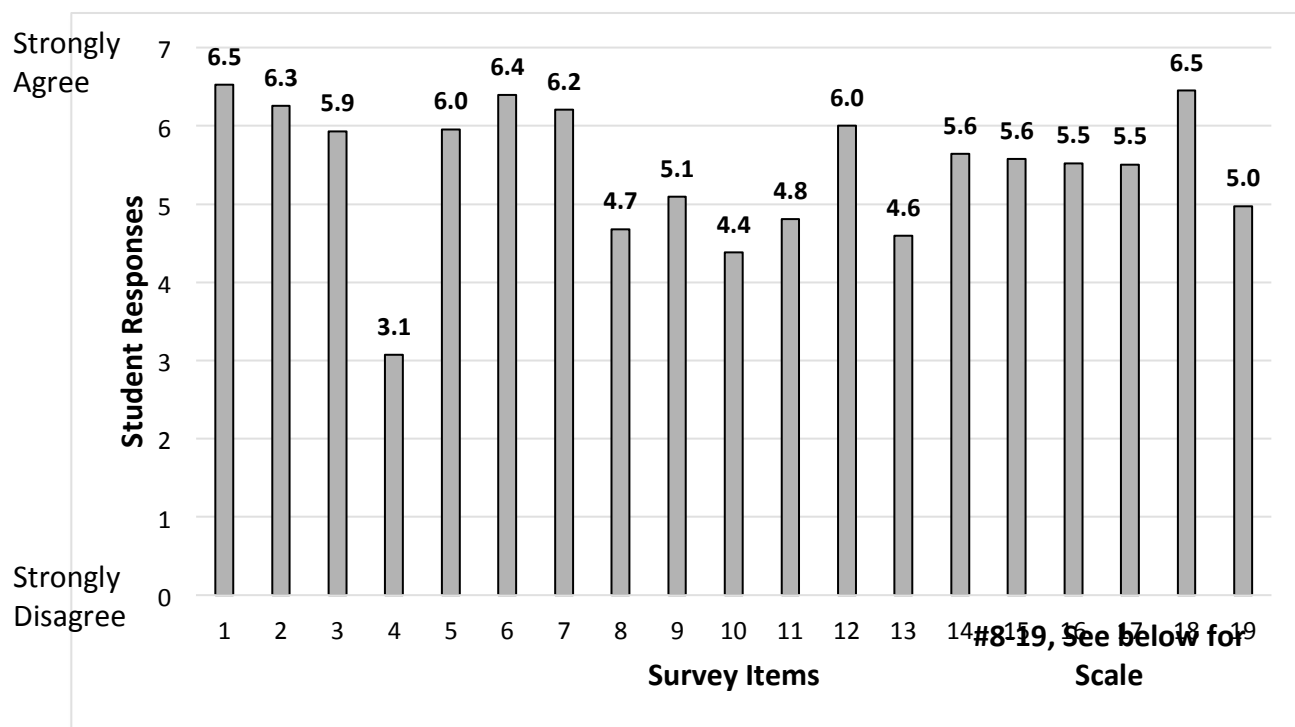
Appreciates the structure of the course and the clarity and reasonable length of readings

Exam 3 Comparisons:

Exam 3: Fall 2015		Exam 3: Fall 2016	
Count	334	Count	213
Average	79.8	Average	83.4
Median	81.0	Median	84.0
Mode	84.0	Mode	84.0
Standard Deviation	11.2	Standard Deviation	8.2
Minimum	0	Minimum	52
Maximum	100	Maximum	100

Exam 3 Student Perceptions:

Of the 328 students who took the exam, 213 students both responded to this survey and consented to participate in this study.



[See Page 18 for list of Survey Items](#)

Exam 3 Summary of Student Comments:

Appreciation for course structure and resources, such as the study guides and lecture slides
Enjoying course overall
Appreciation for cost savings afforded to them because of using OER
Frustration with technical issues related to university's learning platform

BROUWER-BURG SURVEY ITEMS

Used for all assessments in this course:

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam.
Q8	Frequency use of online textbook from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of articles from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of videos from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Frequency use of lab prep materials from 1 (Never Accessed) to 7 (More than 10 times)
Q12	Frequency use of myCourses from 1 (Never Accessed) to 7 (More than 10 times)
Q13	Frequency use of Socrative from 1 (Never Accessed) to 7 (More than 10 times)
Q14	Helpful in learning course material online textbook from 1 (Unacceptable) to 7 (Excellent)
Q15	Helpful in learning course material articles from 1 (Unacceptable) to 7 (Excellent)
Q16	Helpful in learning course material videos from 1 (Unacceptable) to 7 (Excellent)
Q17	Helpful in learning course material lab prep materials from 1 (Unacceptable) to 7 (Excellent)
Q18	Helpful in learning course material myCourses from 1 (Unacceptable) to 7 (Excellent)
Q19	Helpful in learning course material Socrative from 1 (Unacceptable) to 7 (Excellent)

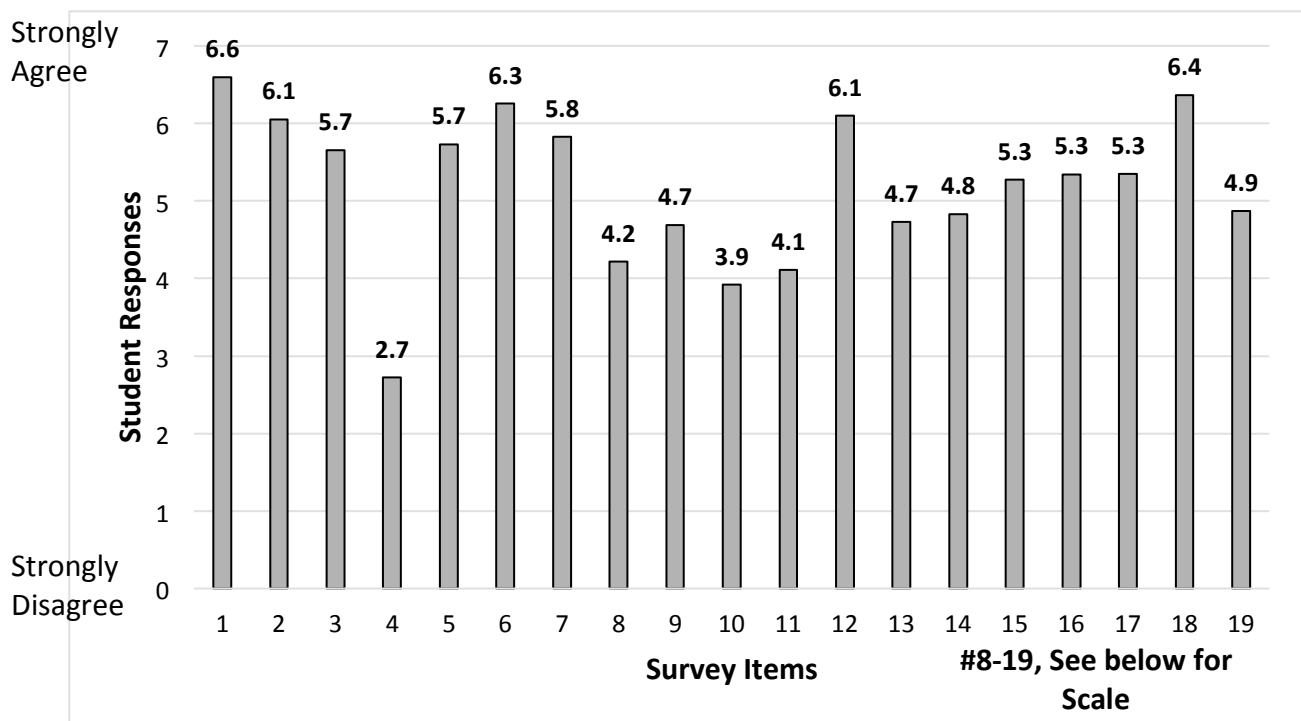
ANTH 411: Introduction to Anthropology

Exam 1 Comparisons:

Exam 1: Fall 2015		Exam 1: Fall 2016	
Count	322	Count	166
Average	80.5	Average	80.4
Median	82.0	Median	82.0
Mode	82	Mode	n/a
Standard Deviation	9.7	Standard Deviation	9.6
Minimum	42.0	Minimum	48.0
Maximum	100.0	Maximum	98.0

Exam 1 Student Perceptions:

Of the 327 students who took the exam, 166 students both responded to this survey and consented to participate in this study.



[See page 25 for a list of Survey Items](#)

Exam 1 Summary of Student Comments:

Online textbook is good quality, but somewhat difficult to navigate

Appreciation for cost savings afforded to them because of using OER

Enjoying course overall and find structure of the course helpful and enjoyable

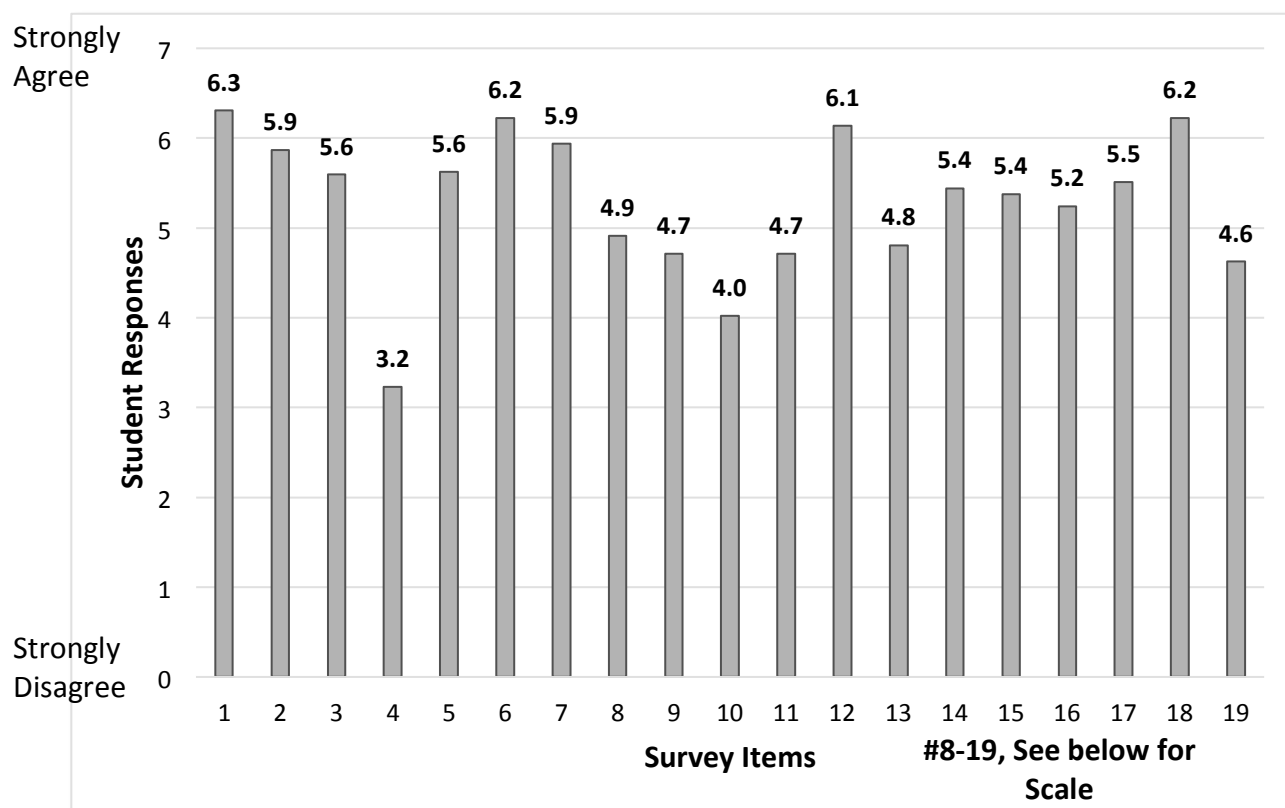
Appreciation that assigned resources are all used

Exam 2 Comparisons:

Exam 2: Fall 2015		Exam 2: Fall 2016	
Count	300	Count	227
Average	80.7	Average	82.2
Median	80.0	Median	84.0
Mode	78.0	Mode	88.0
Standard Deviation	8.4	Standard Deviation	9.8
Minimum	48.0	Minimum	30.0
Maximum	98.0	Maximum	98.0

Exam 2 Student Perceptions:

Of the 329 students who took the exam, 227 students both responded to this survey and consented to participate in this study.



[See page 25 for a list of Survey Items](#)

Exam 2 Summary of Student Comments:

Enjoying course overall and find structure of the course helpful and enjoyable

Appreciation for cost savings afforded to them because of using OER

Frustration with technical issues with online book occurred the day before the exam

Readings are difficult to navigate and there are too many

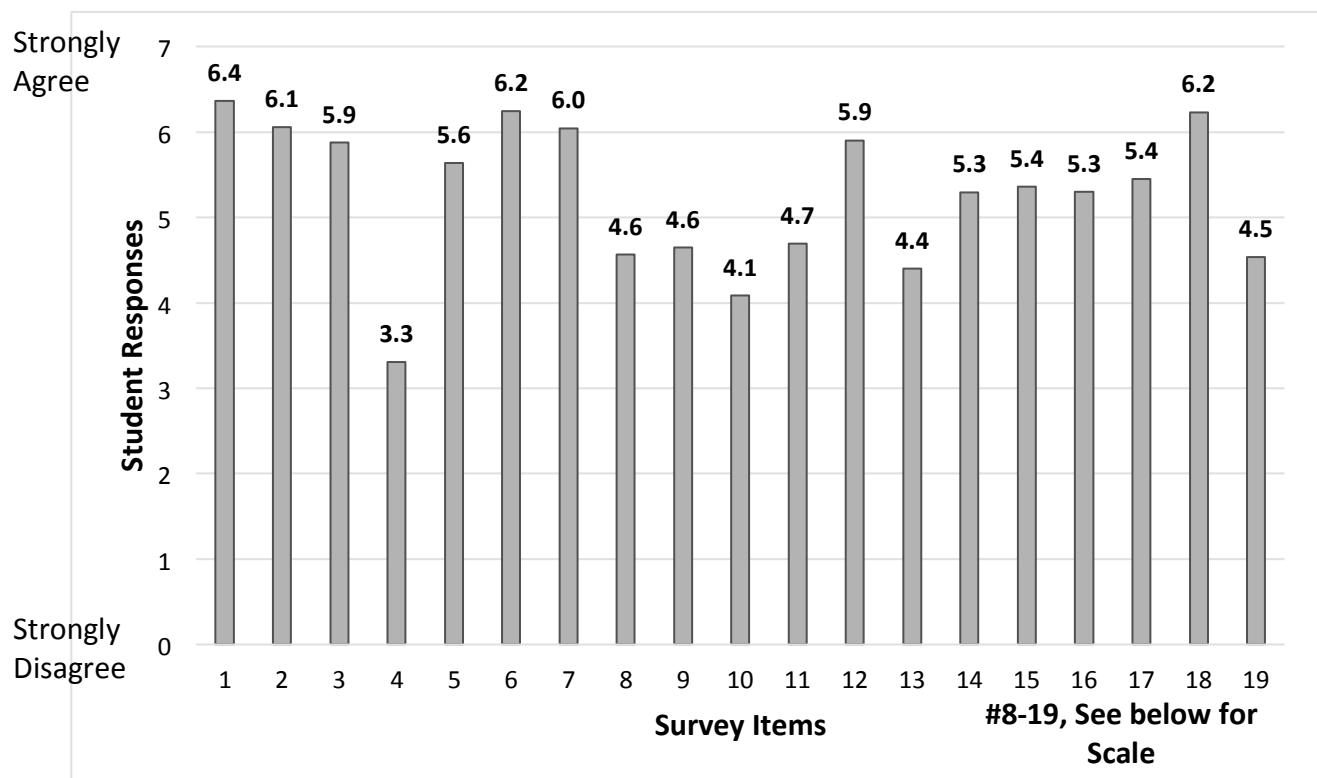
Lab exercises are too lengthy and not the most helpful resource, lecture slides are helpful

Exam 3 Comparisons:

Exam 3: Fall 2015		Exam 3: Fall 2016	
Count	334	Count	144
Average	79.8	Average	84.1
Median	81.0	Median	84.0
Mode	84.0	Mode	84.0
Standard Deviation	11.24	Standard Deviation	8.6
Minimum	0	Minimum	56.0
Maximum	100	Maximum	100

Exam 3 Student Perceptions:

Of the 328 students who took the exam, 144 students both responded to this survey and consented to participate in this study.



[See page 25 for a list of Survey Items](#)

Exam 3 Summary of Student Comments:

Appreciation for cost savings afforded to them because of using OER

Mixed feelings about Socrative as a learning tool

Frustration with difficulty finding materials on university's learning platform

WITHERS SURVEY ITEMS

Used for all assessments in this course:

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam.
Q8	Frequency use of online textbook from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of articles from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of videos from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Frequency use of lab prep materials from 1 (Never Accessed) to 7 (More than 10 times)
Q12	Frequency use of myCourses from 1 (Never Accessed) to 7 (More than 10 times)
Q13	Frequency use of Socrative from 1 (Never Accessed) to 7 (More than 10 times)
Q14	Helpful in learning course material online textbook from 1 (Unacceptable) to 7 (Excellent)
Q15	Helpful in learning course material articles from 1 (Unacceptable) to 7 (Excellent)
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Q17	Helpful in learning course material lab prep materials from 1 (Unacceptable) to 7 (Excellent)
Q18	Helpful in learning course material myCourses from 1 (Unacceptable) to 7 (Excellent)
Q19	Helpful in learning course material Socrative from 1 (Unacceptable) to 7 (Excellent)

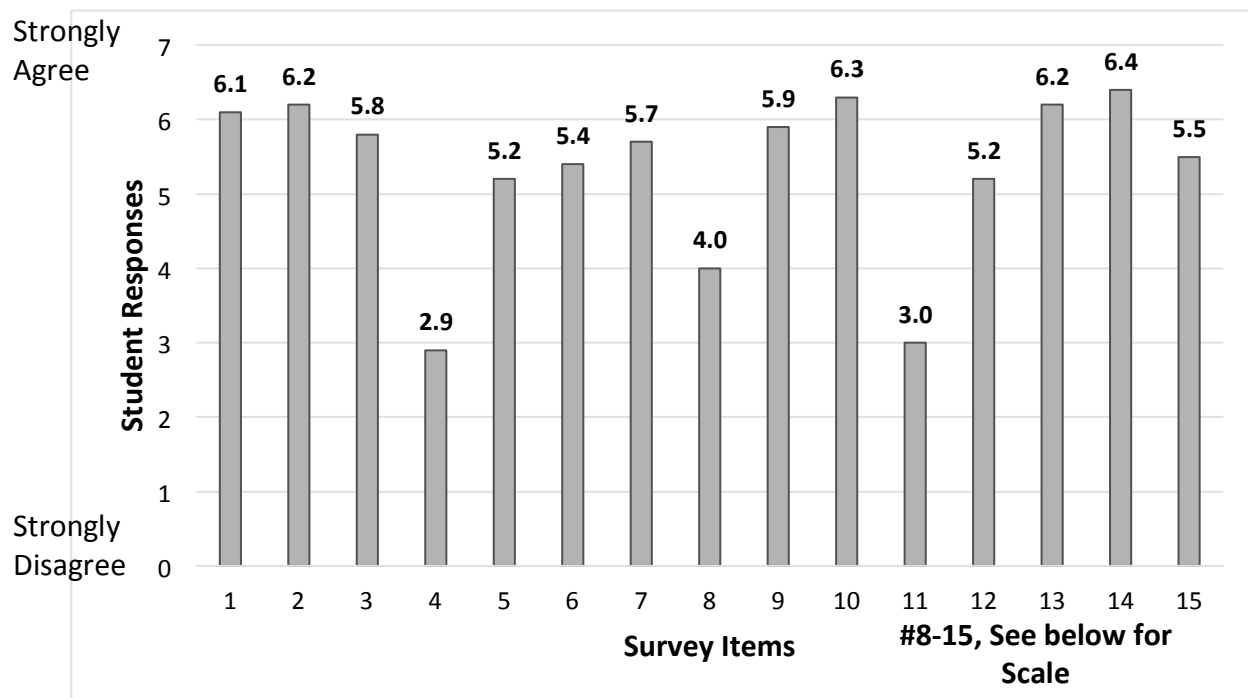
FREN 401: Elementary French

Exam 1 Comparisons:

Exam 1: Fall 2015		Exam 1: Fall 2016	
Count	43	Count	10
Average	88.0	Average	88.8
Median	91.2	Median	90.9
Mode	100	Mode	n/a
Standard Deviation	11.5	Standard Deviation	11.7
Minimum	57	Minimum	60.75
Maximum	100	Maximum	100.75

Exam 1 Student Perceptions:

Of the 36 students who took the exam, 10 students both responded to this survey and consented to participate in this study.



Exam 1 Summary of Student Comments:

Appreciates free textbook, but doesn't like that some sections have to be printed out

GAUDISSERT EXAM 1 SURVEY ITEMS

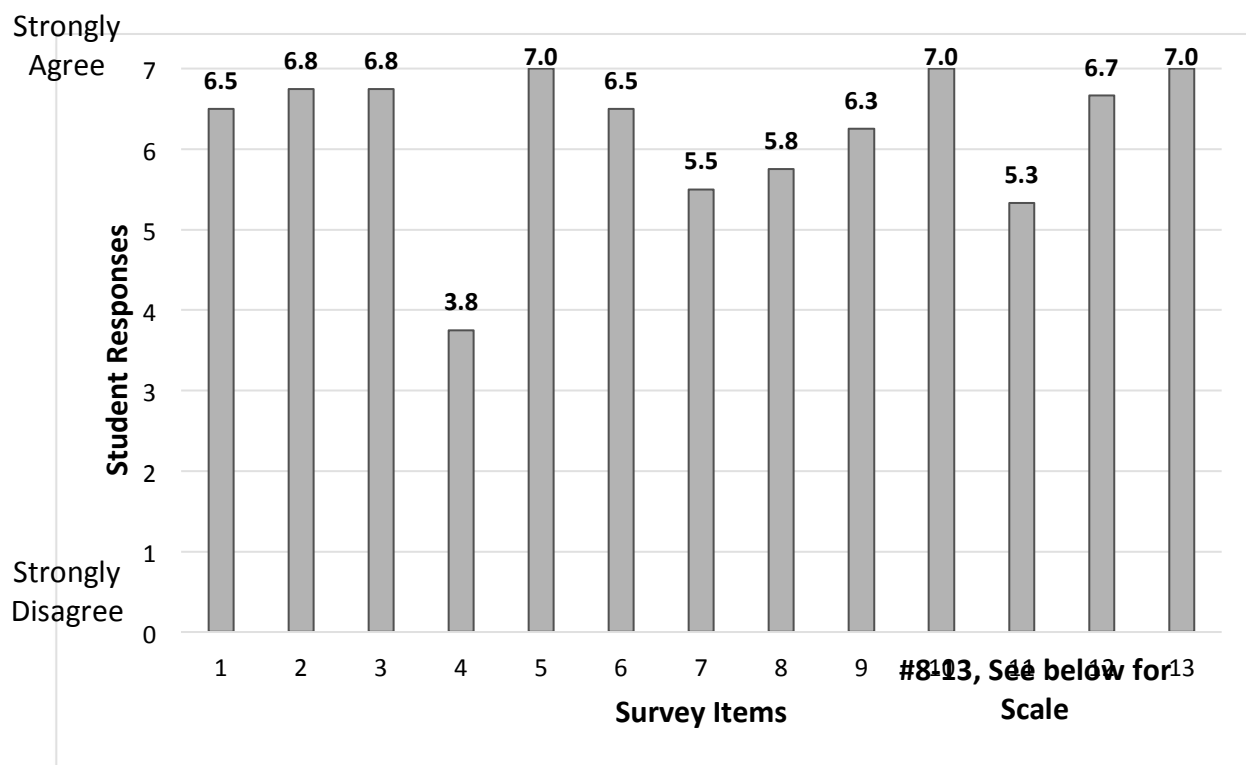
Q1	The videos and Online Canvas quizzes for this course were <i>easy to access</i> .
Q2	The chosen videos for this course are at least <i>as high in quality</i> as other videos I have viewed in other courses.
Q3	The videos in this course gave me a <i>broader perspective</i> of the material than I would have developed if I had not been provided access to any videos.
Q4	The number of videos I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open free video resources and a course offering no video resources, I would select the course offering the video resources because of the <i>quality of the videos</i> in this course.
Q6	The <i>videos were helpful</i> in my preparation for this exam.
Q7	The <i>online Canvas quizzes were helpful</i> in my preparation for this exam.
Q8	Frequency use of <i>Audio Clips</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of <i>Homework Modules</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of <i>Textbook</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Frequency use of <i>Film Links</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q12	Helpful in learning course material <i>Audio Clips</i> from 1 (Unacceptable) to 7 (Excellent)
Q13	Helpful in learning course material <i>Homework Modules</i> from 1 (Unacceptable) to 7 (Excellent)
Q14	Helpful in learning course material <i>Textbook</i> from 1 (Unacceptable) to 7 (Excellent)
Q15	Helpful in learning course material <i>Film Links</i> from 1 (Unacceptable) to 7 (Excellent)

Exam 2 Comparisons:

Exam 2: Fall 2015		Exam 2: Fall 2016	
Count	43	Count	3
Average	79.1	Average	94.5
Median	80.5	Median	100
Mode	n/a	Mode	n/a
Standard Deviation	2.1	Standard Deviation	11.7
Minimum	45	Minimum	81.05
Maximum	100	Maximum	102.5

Exam 2 Student Perceptions:

Of the 36 students who took the exam, 3 students both responded to this survey and consented to participate in this study.



Exam 2 Summary of Student Comments:

Free materials made course more enjoyable and easy to learn

GAUDISSERT EXAM 2 SURVEY ITEMS

Q1	THE VIDEOS AND ONLINE CANVAS QUIZZES FOR THIS COURSE WERE EASY TO ACCESS.
Q2	The free course materials for this course are at least <i>as high in quality</i> as course materials I have used in other courses.
Q3	The free course material gave me a <i>broader perspective</i> of the material than I would have developed if I had not been provided access to any online course material.
Q4	The amount of online content I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources and a course offering no open resources, I would select the course offering the open resources because of the <i>quality</i> of the open resources in this course.
Q6	The <i>online textbook and audio links were helpful</i> in my preparation for this exam.
Q7	The <i>self-recording exercises were helpful</i> in my preparation for this exam.
Q8	Frequency use of <i>Audio Clips</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of <i>Modules</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of <i>Textbook</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Helpful in learning course material <i>Audio Clips</i> from 1 (Unacceptable) to 7 (Excellent)
Q12	Helpful in learning course material <i>Modules</i> from 1 (Unacceptable) to 7 (Excellent)
Q13	Helpful in learning course material <i>Textbook</i> from 1 (Unacceptable) to 7 (Excellent)

FREN 401: Elementary French

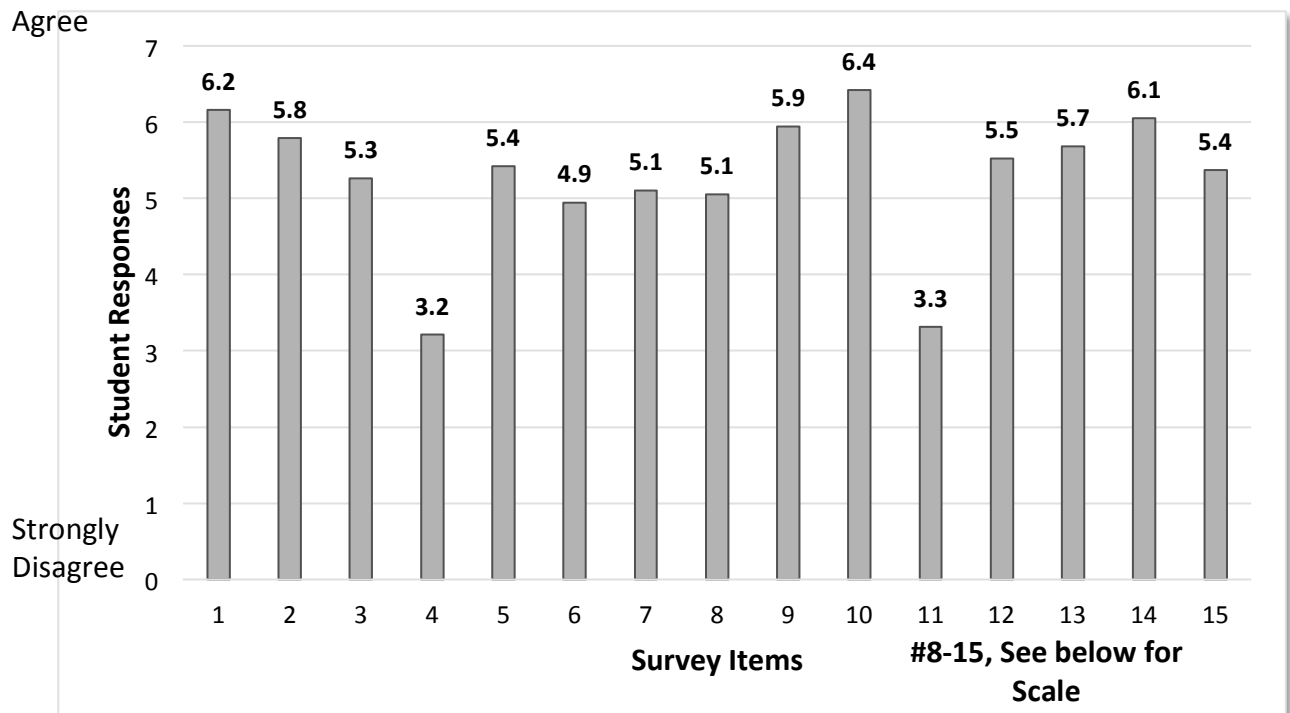
Exam 1 Comparisons:

Exam 1: Fall 2015		Exam 1: Fall 2016	
Count	39	Count	19
Average	84.3	Average	86.4
Median	84.0	Median	90.0
Mode	n/a	Mode	n/a
Standard Deviation	9.0	Standard Deviation	9.6
Minimum	65.0	Minimum	69.0
Maximum	100	Maximum	99.0

Exam 1 Student Perceptions:

Of the 38 students who took the exam, 19 students both responded to this survey and consented to participate in this study.

Strongly
Agree



Strongly
Disagree

SANDSTROM SURVEY ITEMS

Q1	The videos and Online Canvas quizzes for this course were <i>easy to access</i> .
Q2	The chosen videos for this course are at least <i>as high in quality</i> as other videos I have viewed in other courses.
Q3	The videos in this course gave me a <i>broader perspective</i> of the material than I would have developed if I had not been provided access to any videos.
Q4	The number of videos I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open free video resources and a course offering no video resources, I would select the course offering the video resources because of the <i>quality of the videos</i> in this course.
Q6	The <i>videos were helpful</i> in my preparation for this exam.
Q7	The <i>online Canvas quizzes were helpful</i> in my preparation for this exam.
Q8	Frequency use of <i>Audio Clips</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of <i>Homework Modules</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of <i>Textbook</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Frequency use of <i>Film Links</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q12	Helpful in learning course material <i>Audio Clips</i> from 1 (Unacceptable) to 7 (Excellent)
Q13	Helpful in learning course material <i>Homework Modules</i> from 1 (Unacceptable) to 7 (Excellent)
Q14	Helpful in learning course material <i>Textbook</i> from 1 (Unacceptable) to 7 (Excellent)
Q15	Helpful in learning course material <i>Film Links</i> from 1 (Unacceptable) to 7 (Excellent)

Exam 1 Summary of Student Comments:

Appreciates diversity of material and ease of access to course materials across devices
 Over-reliance on resources in course structure
 Would like more online quizzes to use for studying

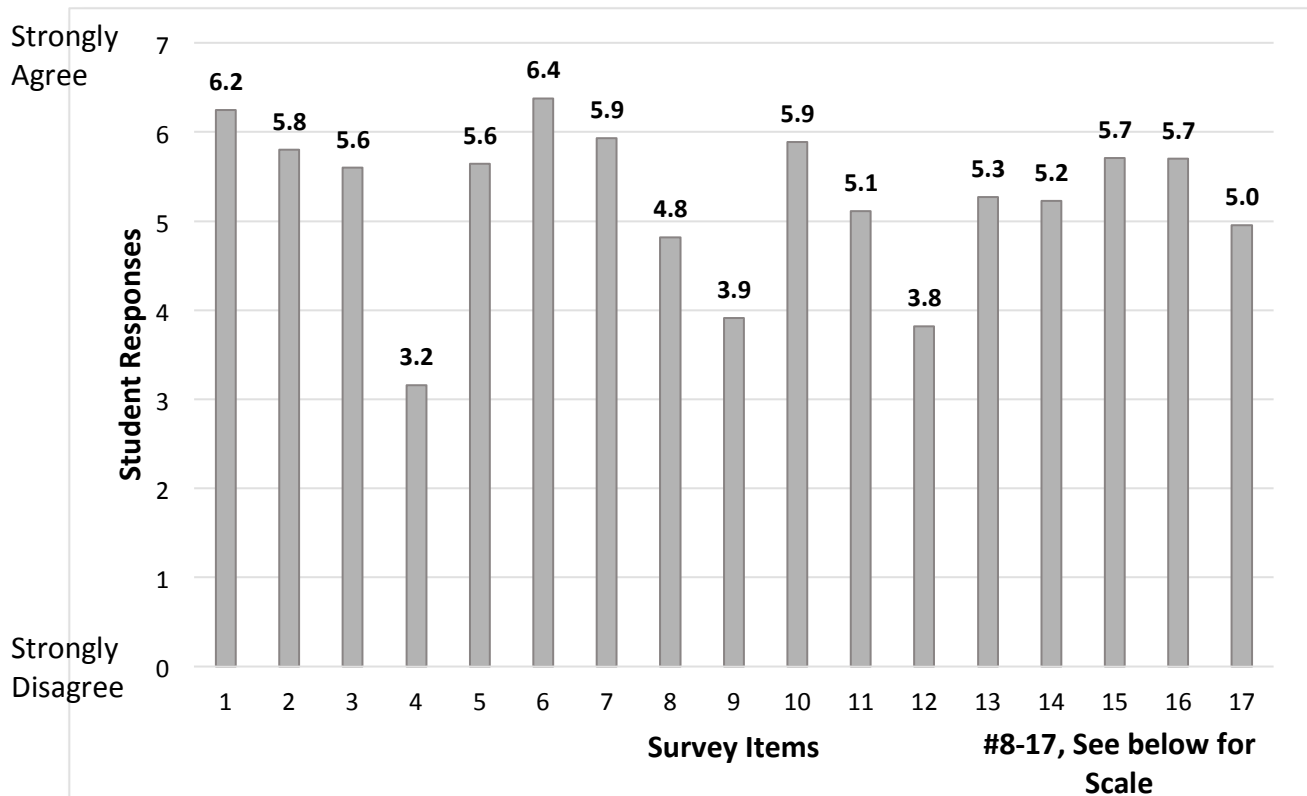
CS 408: Living in a Networked World

Semester Comparison:

Final Grades: Fall 2015		Final Grades: Fall 2016	
Count	79.0	Count	58
Average	80.0	Average	87.1
Median	82.0	Median	89.7
Mode	n/a	Mode	88.3
Standard Deviation	11.4	Standard Deviation	8.96
Minimum	14.4	Minimum	55.6
Maximum	92.1	Maximum	98.9

Mid-Semester Student Perceptions:

Of the 90 students enrolled in the course, 45 students both responded to this survey and consented to participate in this study.



LEMONS MID-SEMESTER SURVEY ITEMS

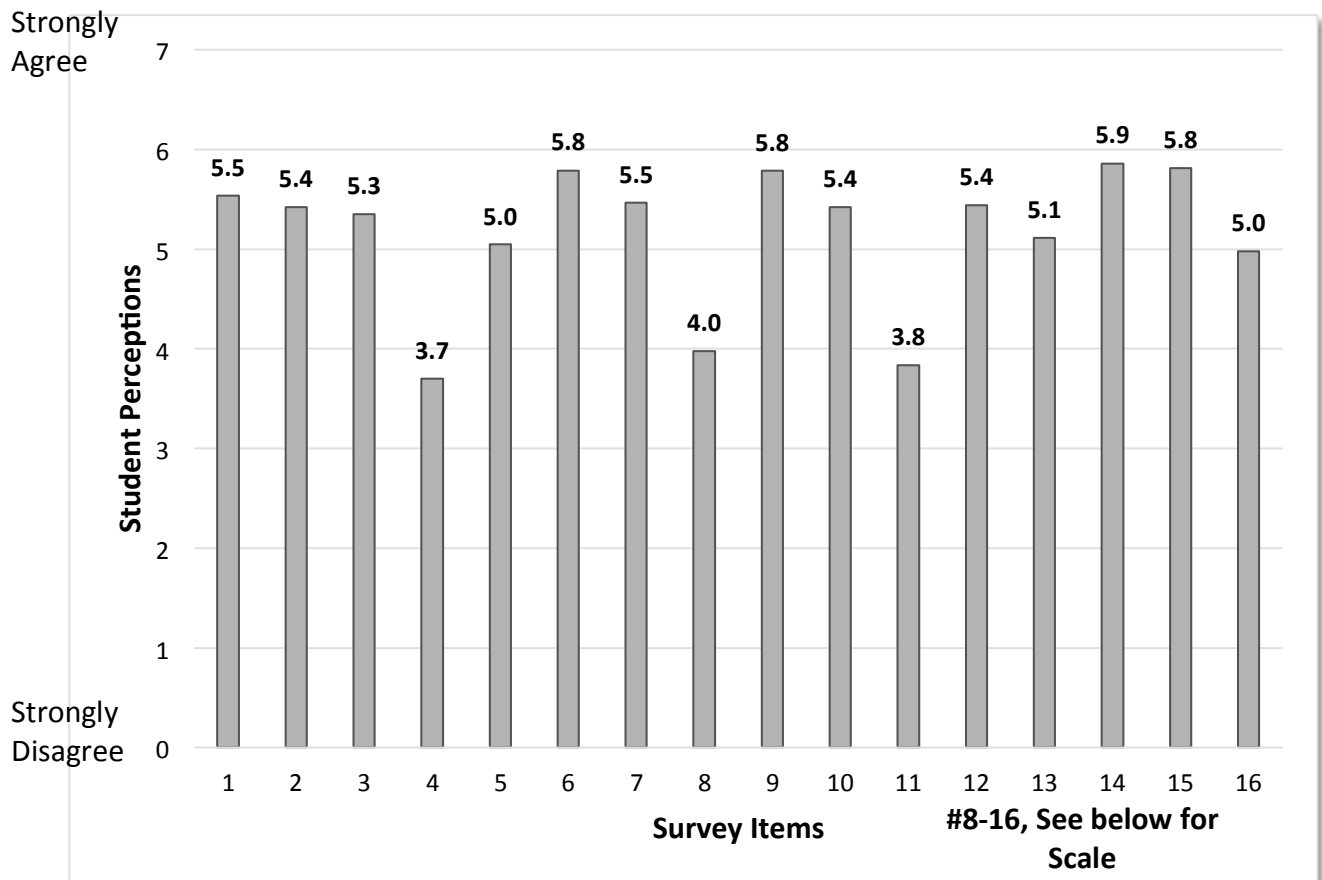
Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam.
Q8	Frequency use of Digital Textbook from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of Guide to Drupal from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of Articles from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Frequency use of Videos from 1 (Never Accessed) to 7 (More than 10 times)
Q12	Frequency use of Suggested Online Tools from 1 (Never Accessed) to 7 (More than 10 times)
Q13	Helpful in learning course material Digital Textbook from 1 (Unacceptable) to 7 (Excellent)
Q14	Helpful in learning course material Guide to Drupal from 1 (Unacceptable) to 7 (Excellent)
Q15	Helpful in learning course material Articles from 1 (Unacceptable) to 7 (Excellent)
Q16	Helpful in learning course material Videos from 1 (Unacceptable) to 7 (Excellent)
Q17	Helpful in learning course material Suggested Online Tools from 1 (Unacceptable) to 7 (Excellent)

Mid-Semester Summary of Student Comments:

Resources are good quality
 Appreciation for cost savings afforded to them because of using OER
 Articles and videos give a broader perspective of course material

End of Semester Perceptions:

Of the 90 students enrolled in the course, 43 students both responded to this survey and consented to participate in this study.



Summary of End of Semester Student Comments:

Open resources were high quality, accessible, and helpful for understanding course material
Appreciation for cost savings afforded to them because of using OER

LEMONS END OF SEMESTER SURVEY ITEMS

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam.
Q8	Frequency use of Guide to Drupal from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of Articles from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of Videos from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Frequency use of Suggested Online Tools from 1 (Never Accessed) to 7 (More than 10 times)
Q12	Helpful in learning course material Digital Textbook from 1 (Unacceptable) to 7 (Excellent)
Q13	Helpful in learning course material Guide to Drupal from 1 (Unacceptable) to 7 (Excellent)
Q14	Helpful in learning course material Articles from 1 (Unacceptable) to 7 (Excellent)
Q15	Helpful in learning course material Videos from 1 (Unacceptable) to 7 (Excellent)
Q16	Helpful in learning course material Suggested Online Tools from 1 (Unacceptable) to 7 (Excellent)

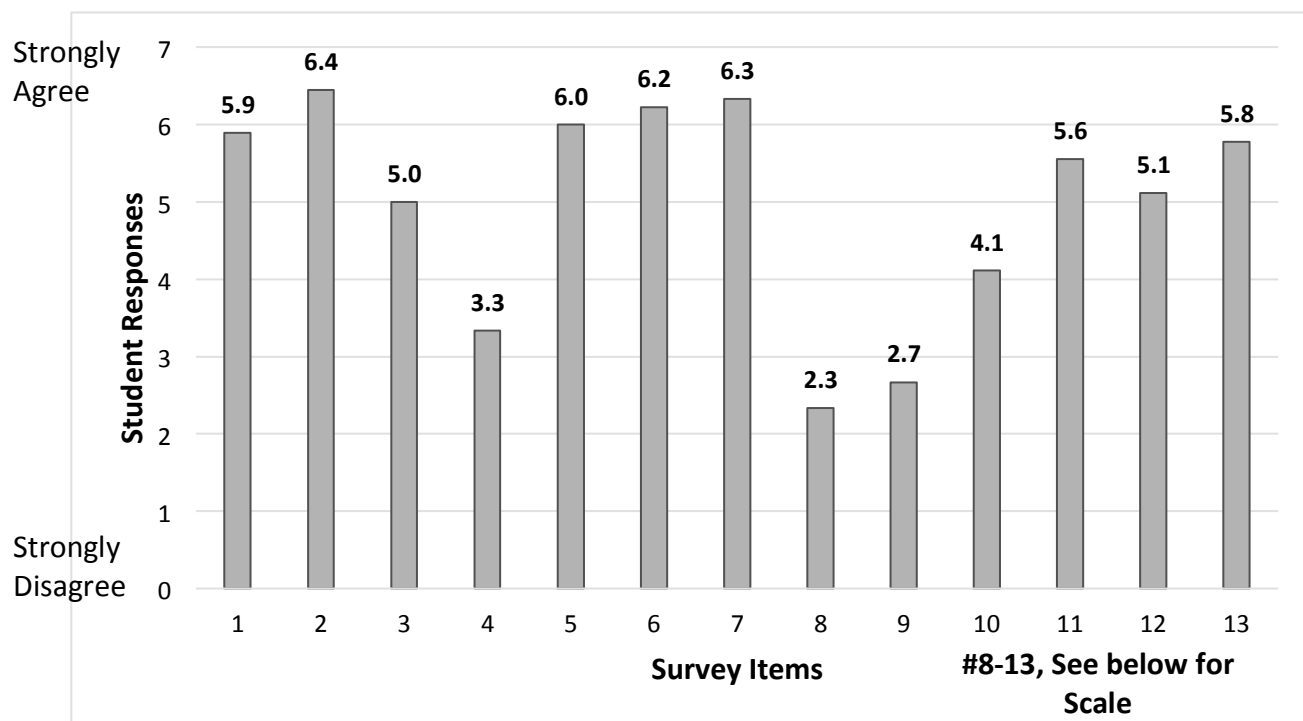
CHE 705: Fossil Fuels & Renewable Energy Sources

Exam 1 Comparisons:

Exam 1: Fall 2015		Exam 1: Fall 2016	
Count	53	Count	9
Average	81.3	Average	86.1
Median	82.0	Median	87.9
Mode	70.0	Mode	88.8
Standard Deviation	11.3	Standard Deviation	6.5
Minimum	60.0	Minimum	71.0
Maximum	99.0	Maximum	93.5

Exam 1 Student Perceptions:

Of the 35 students who took the exam, 9 students both responded to this survey and consented to participate in this study.



YI EXAM 1 SURVEY ITEMS

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam.
Q8	Frequency use of Videos from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of Lab Activities from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of Websites from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Helpful in learning course material Videos from 1 (Unacceptable) to 7 (Excellent)
Q12	Helpful in learning course material Lab Activities from 1 (Unacceptable) to 7 (Excellent)
Q13	Helpful in learning course material Websites from 1 (Unacceptable) to 7 (Excellent)

Exam 1 Summary of Student Comments:

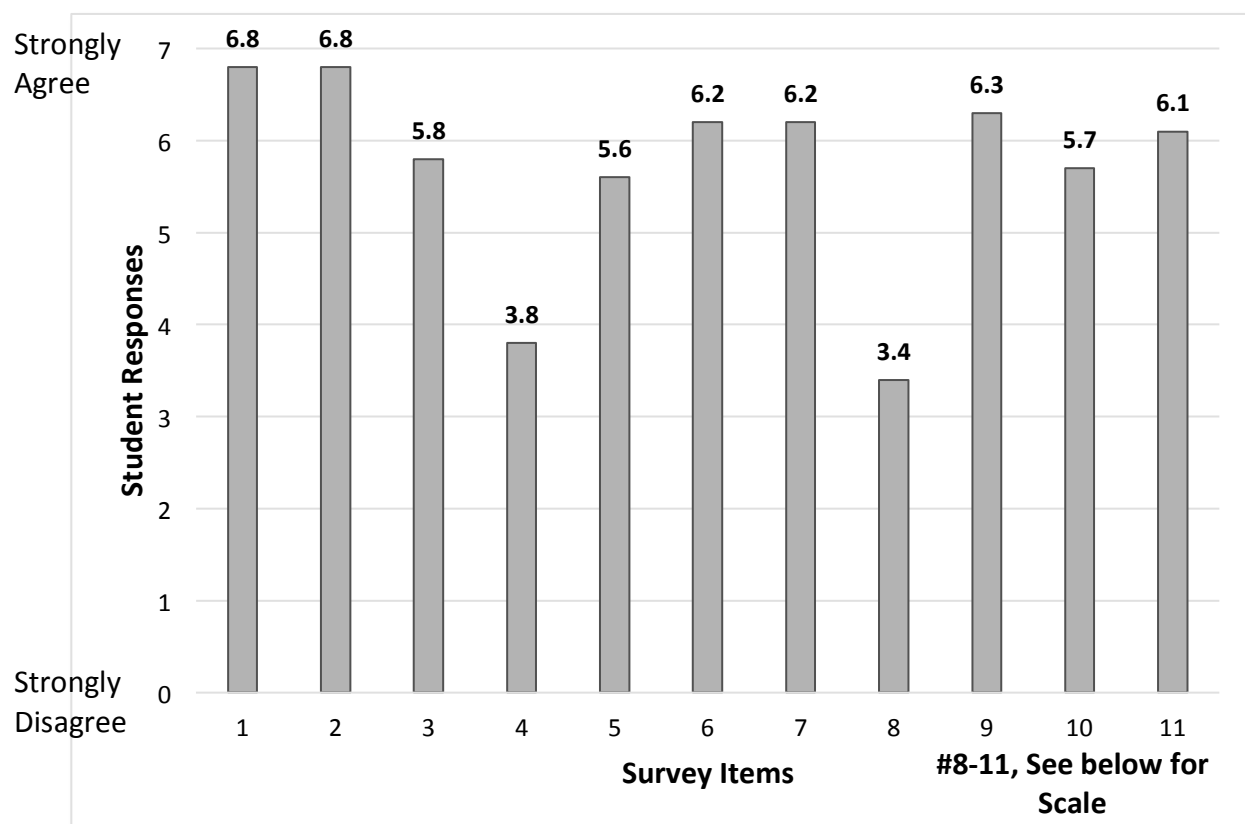
Appreciation for cost savings afforded to them because of using OER
 OER use should be expanded
 Organization of course content made materials difficult to access and follow

Exam 2 Comparisons:

Exam 2: Fall 2015		Exam 2: Fall 2016	
Count	53	Count	10
Average	88.2	Average	85.8
Median	89.0	Median	84.5
Mode	87.0	Mode	n/a
Standard Deviation	7.9	Standard Deviation	1.76
Minimum	70.0	Minimum	77.6
Maximum	108.0	Maximum	94.3

Exam 2 Student Perceptions:

Of the 36 students who took the exam, 10 students both responded to this survey and consented to participate in this study.



YI EXAM 2 SURVEY ITEMS

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam.
Q8	Frequency use of Gasifipedia Website from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Helpful in learning course material Biodiesel Lab Activity from 1 (Unacceptable) to 7 (Excellent)
Q10	Helpful in learning course material Gasifipedia Website from 1 (Unacceptable) to 7 (Excellent)
Q11	Helpful in learning course material Videos from 1 (Unacceptable) to 7 (Excellent)

Exam 2 Summary of Student Comments:

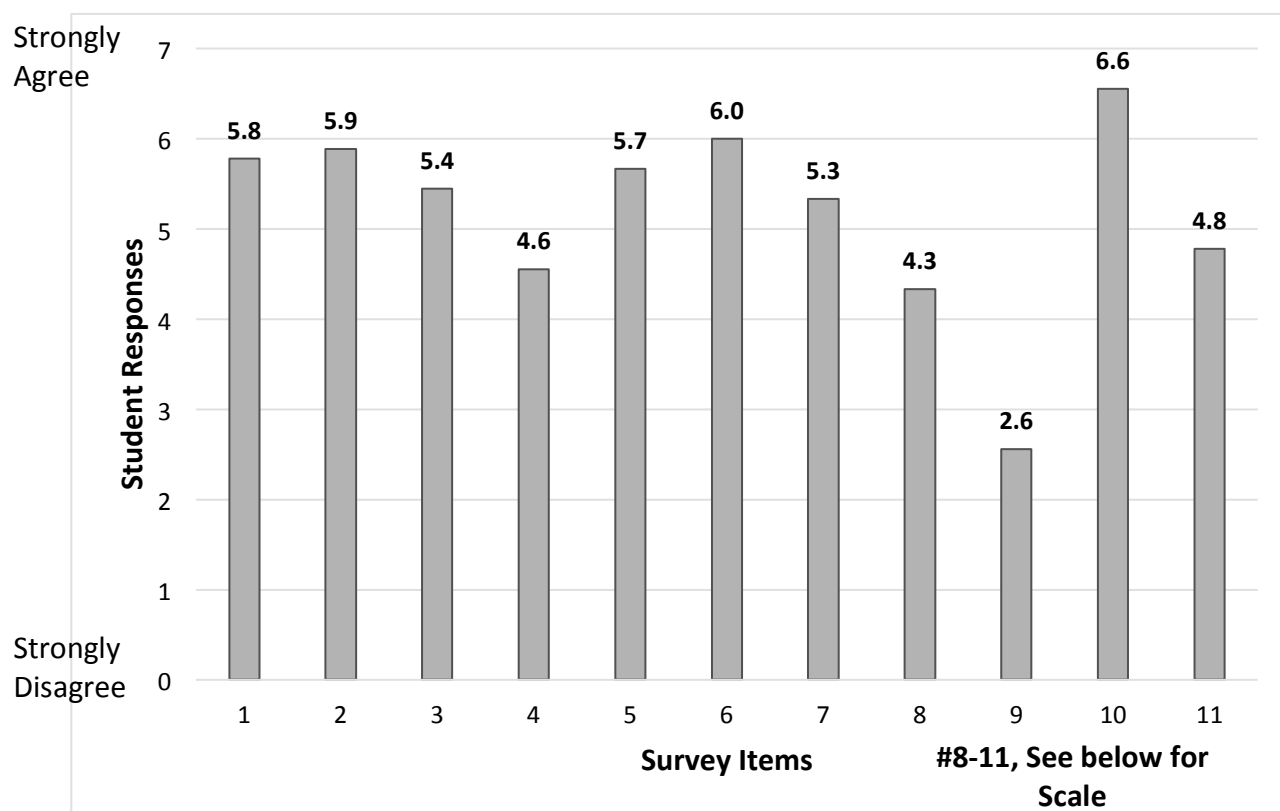
OER materials are helpful but students had technical issues accessing and using some
Appreciation for cost savings afforded to them because of using OER

Exam 3 Comparisons:

Exam 3: Fall 2015		Exam 3: Fall 2016	
Count	53	Count	9
Average	82.6	Average	93.1
Median	85.0	Median	93.6
Mode	85.0	Mode	95.5
Standard Deviation	8.75	Standard Deviation	1.2
Minimum	60.0	Minimum	85.5
Maximum	97.0	Maximum	97.3

Exam 3 Student Perceptions:

Of the 34 students who took the exam, 9 students both responded to this survey and consented to participate in this study.



YI EXAM 3 SURVEY ITEMS

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam.
Q8	Frequency use of Lecture Slides from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of Readings from Government Agencies from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Helpful in learning course material Lecture Slides from 1 (Unacceptable) to 7 (Excellent)
Q11	Helpful in learning course material Readings from Government Agencies from 1 (Unacceptable) to 7 (Excellent)

Exam 3 Summary of Student Comments:

Appreciates OER and cost savings associated with it
OER readings were helpful, but not completely necessary to understand course material

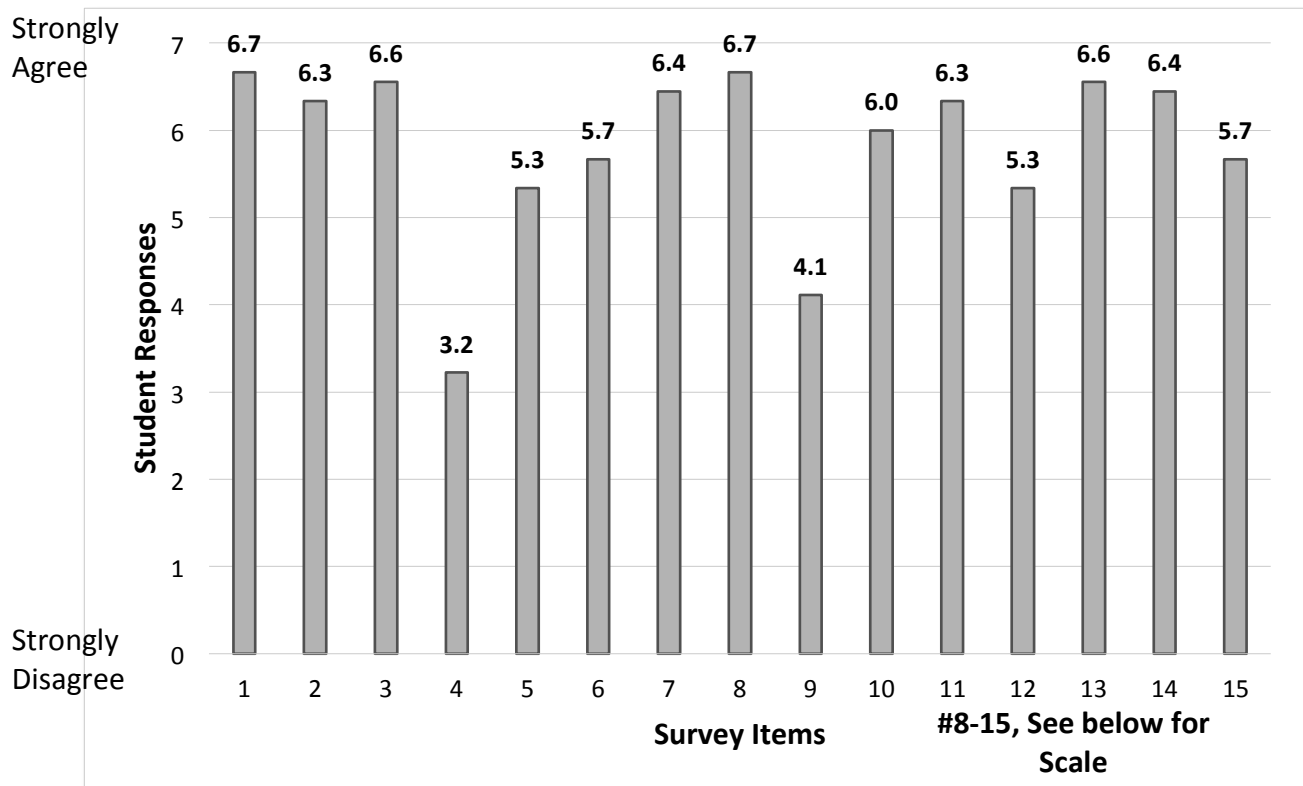
FREN 503: Intermediate French I

Grade Comparisons:

Exam 1: Data Not Available		Exam 1: Fall 2016	
Count		Count	9
Average		Average	73.4
Median		Median	86.5
Mode		Mode	n/a
Standard Deviation		Standard Deviation	29.9
Minimum		Minimum	0
Maximum		Maximum	98.8

Exam 1 Student Perceptions:

Of the 36 students who took the exam, 9 students both responded to this survey and consented to participate in this study.



TALPIN EXAM 1 SURVEY ITEMS

Q1	The videos and Online Canvas quizzes for this course were <i>easy to access</i> .
Q2	The chosen videos for this course are at least <i>as high in quality</i> as other videos I have viewed in other courses.
Q3	The videos in this course gave me a <i>broader perspective</i> of the material than I would have developed if I had not been provided access to any videos.
Q4	The number of videos I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open free video resources and a course offering no video resources, I would select the course offering the video resources because of the <i>quality of the videos</i> in this course.
Q6	The <i>videos were helpful</i> in my preparation for this exam.
Q7	The <i>online Canvas quizzes were helpful</i> in my preparation for this exam.
Q8	Frequency use of <i>Online Canvas Quizzes</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of <i>Videos</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of <i>Free Manual</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Helpful in learning course material <i>Online Canvas Quizzes</i> from 1 (Unacceptable) to 7 (Excellent)
Q12	Helpful in learning course material <i>Videos</i> from 1 (Unacceptable) to 7 (Excellent)
Q13	Helpful in learning course material <i>Free Manual</i> from 1 (Unacceptable) to 7 (Excellent)
Q14	Quality of <i>Free Manual</i> from 1 (Unacceptable) to 7 (Excellent)
Q15	Clarity of <i>Free Manual</i> from 1 (Unacceptable) to 7 (Excellent)

Summary of Exam 1 Student Comments:

Appreciation for the variety of OER resources used in the course
Length of exam was not well matched to the time limits to complete it

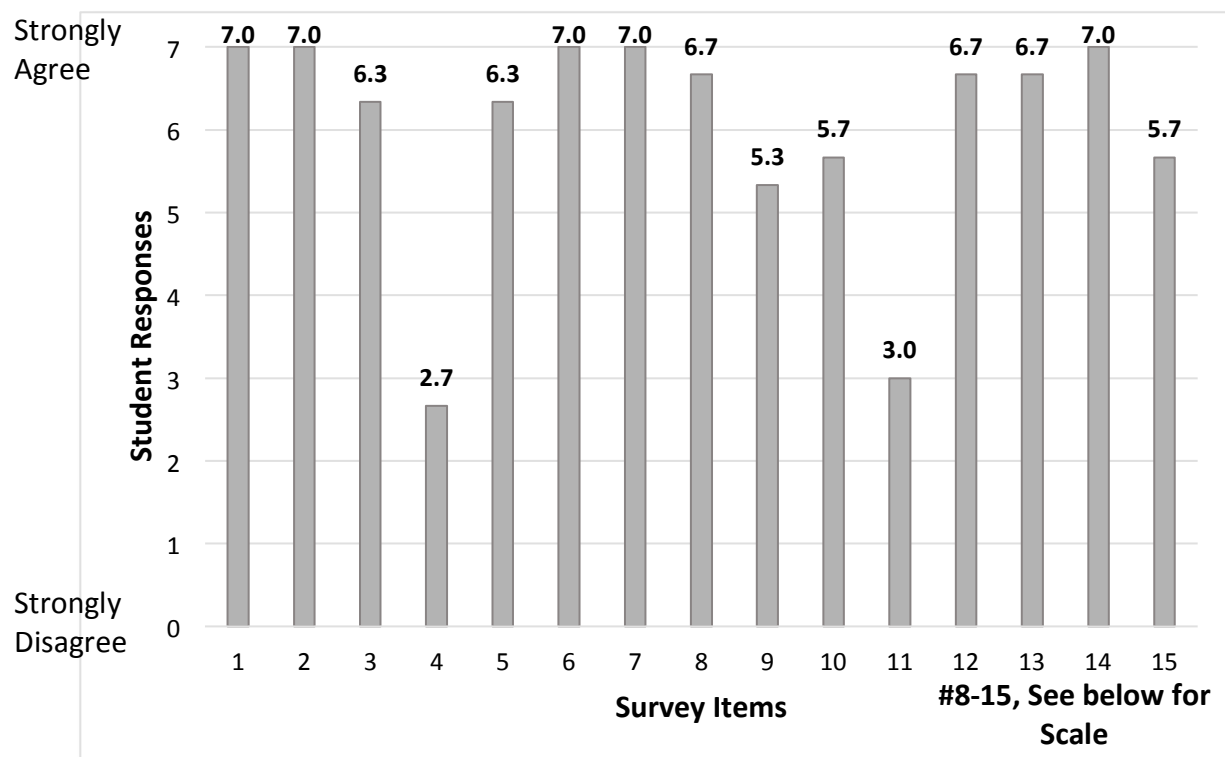
FREN 504: Intermediate French II

Grade Comparisons:

Exam 1: Spring 2016		Exam 1: Fall 2016	
Count	19	Count	3
Average	75.2	Average	85.8
Median	77.0	Median	87.0
Mode	78.0	Mode	n/a
Standard Deviation	9.07	Standard Deviation	11.3
Minimum	62.0	Minimum	74.9
Maximum	91.0	Maximum	96.5

Exam 1 Student Perceptions:

Of the 9 students who took the exam, 3 students both responded to this survey and consented to participate in this study.



[See page 53 for a list of Survey Items](#)

Exam 1 Summary of Student Comments:

Appreciates efficient use of Canvas and OER materials

Appreciation for cost savings afforded to them because of using OER

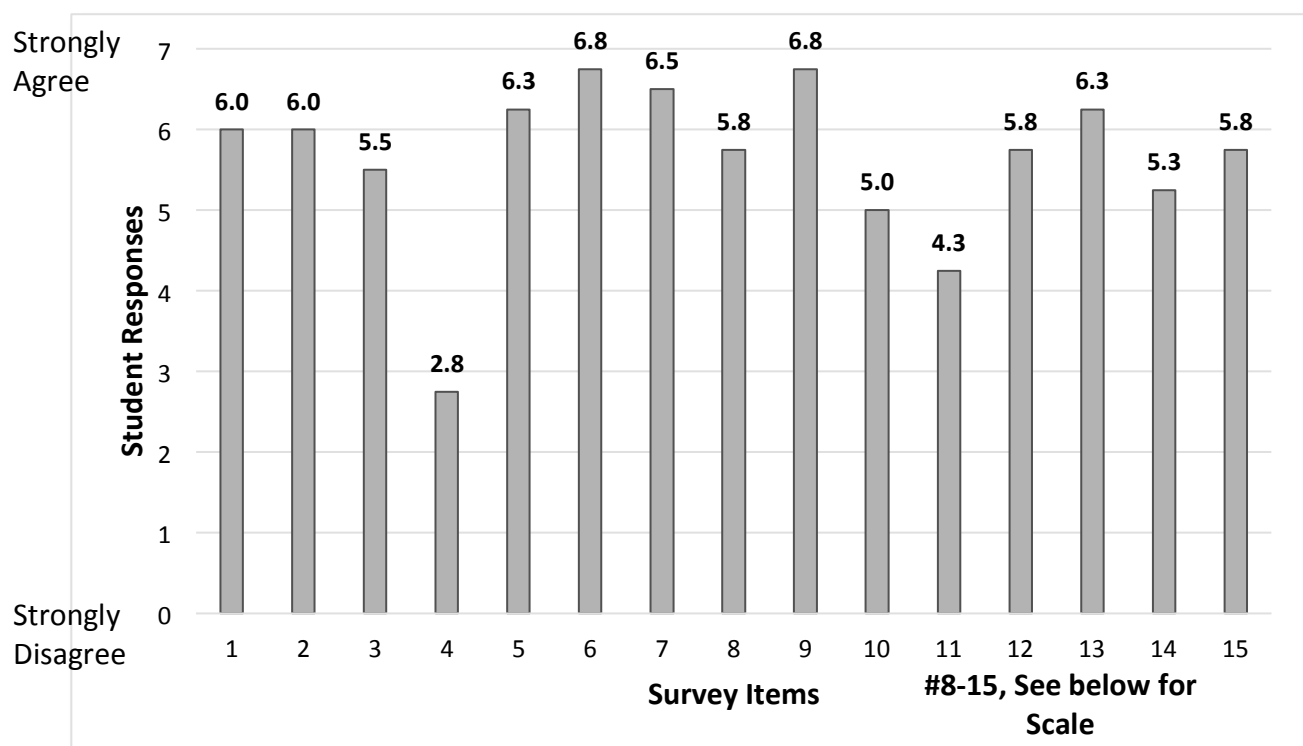
Use of Canvas and OER is excellent

Grade Comparisons:

Exam 2: Spring 2016		Exam 2: Fall 2016	
Count	19	Count	4
Average	77.3	Average	86.5
Median	78.5	Median	89.4
Mode	72.5	Mode	n/a
Standard Deviation	9.15	Standard Deviation	7.5
Minimum	60.5	Minimum	75.5
Maximum	93.5	Maximum	92.0

Exam 2 Student Perceptions:

Of the 9 students who took the exam, 4 students both responded to this survey and consented to participate in this study.



See page 53 for a list of Survey Items

Exam 2 Summary of Student Comments:

Supports continued use of OER

Would like to see an online list of useful cultural resources added to course materials

HEBBARD SURVEY ITEMS

Used for all assessments in this course:

Q1	The weekly workbooks, articles, videos, and quizzes for this course were <i>easy to access</i> .
Q2	The weekly workbooks, articles, videos, and quizzes are <i>at least as high in quality</i> as other videos I have viewed in other courses.
Q3	The weekly workbooks, articles, videos, and quizzes in this course <i>gave me a broader perspective</i> of the material than I would have developed if I had not been provided them.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the video resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials have been <i>helpful</i> to my learning in this course.
Q8	Frequency use of <i>Weekly Workbooks & Objectives</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of <i>Online Grammar Quizzes</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of <i>News Articles & Videos</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Frequency use of <i>Videos and Exercises on the "Extra Help" Canvas Page</i> from 1 (Never Accessed) to 7 (More than 10 times)
Q12	Helpful in learning course material <i>Weekly Workbooks & Objectives</i> from 1 (Unacceptable) to 7 (Excellent)
Q13	Helpful in learning course material <i>Online Grammar Quizzes</i> from 1 (Unacceptable) to 7 (Excellent)
Q14	Helpful in learning course material <i>News Articles & Videos</i> from 1 (Unacceptable) to 7 (Excellent)
Q15	Helpful in learning course material <i>Videos and Exercises on the "Extra Help" Canvas Page</i> from 1 (Unacceptable) to 7 (Excellent)

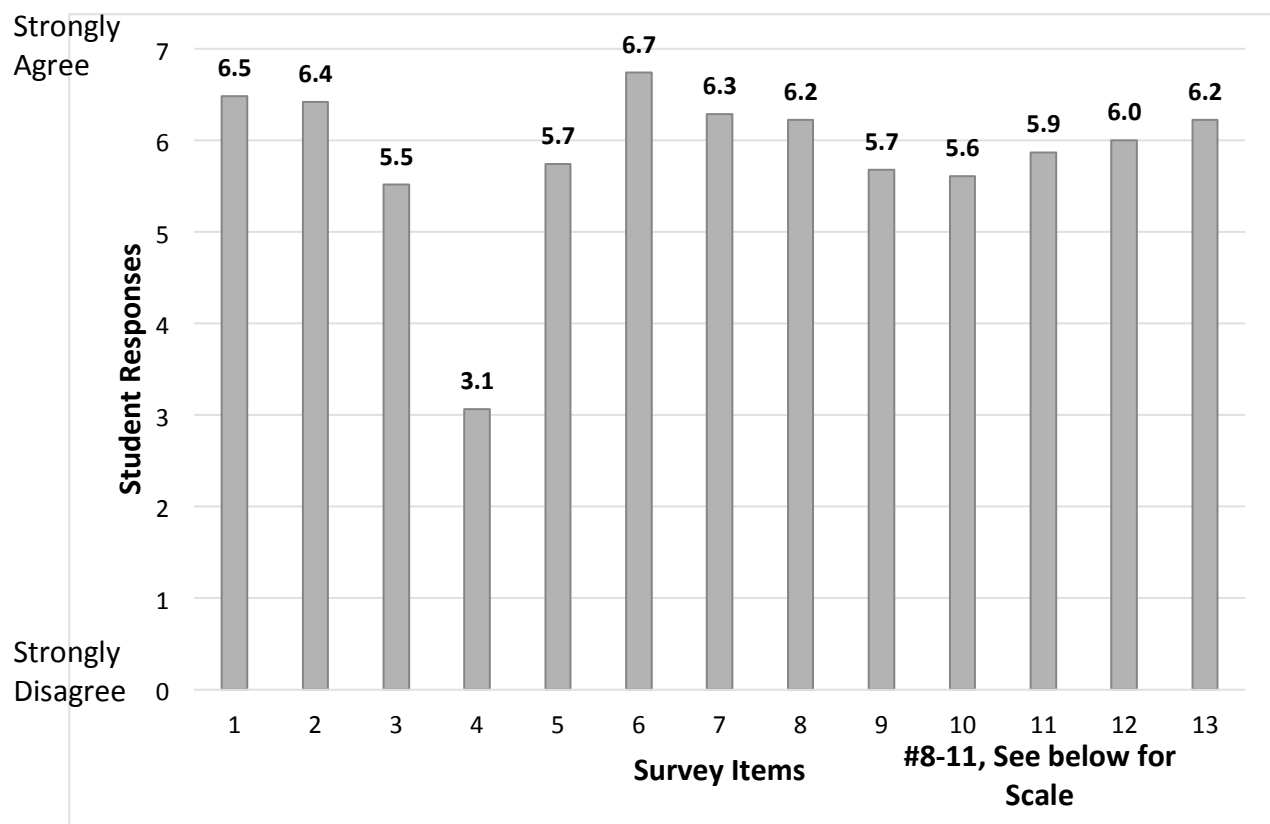
HMP 721: Managing Healthcare Organizations

Exam 1 Comparisons:

Exam 1: Spring 2016		Exam 1: Fall 2016	
Count	31	Count	29
Average	88.9	Average	86.5
Median	89.0	Median	85.8
Mode	n/a	Mode	n/a
Standard Deviation	4.95	Standard Deviation	2.27
Minimum	80.0	Minimum	82.3
Maximum	96.0	Maximum	90.0

Exam 1 Student Perceptions:

Of the 42 students who took the exam, 29 students both responded to this survey and consented to participate in this study.



BONICA EXAM 1 SURVEY ITEMS

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam.
Q8	Helpful in learning course material Textbook Chapters from 1 (Unacceptable) to 7 (Excellent)
Q9	Helpful in learning course material Supplemental Materials from 1 (Unacceptable) to 7 (Excellent)
Q10	Helpful in learning course material Podcasts from 1 (Unacceptable) to 7 (Excellent)
Q11	Helpful in learning course material Case-Study from 1 (Unacceptable) to 7 (Excellent)
Q12	The homework assignments helped me to integrate issues confronting the management and organization of healthcare facilities.
Q13	The online readings and homework assignments prior to the exam prepared me well for the midterm.

Summary of Student Comments:

Comments regarding the online textbook chapters used in this course.

Appreciation for cost savings afforded to them because of using OER
 Online text has chapters that are reasonable in length, informative, clear, and easy to follow
 Online text can be repetitive

Comments about what is working for you, what is not working for you, and any suggestions you may have for making this course a better learning experience.

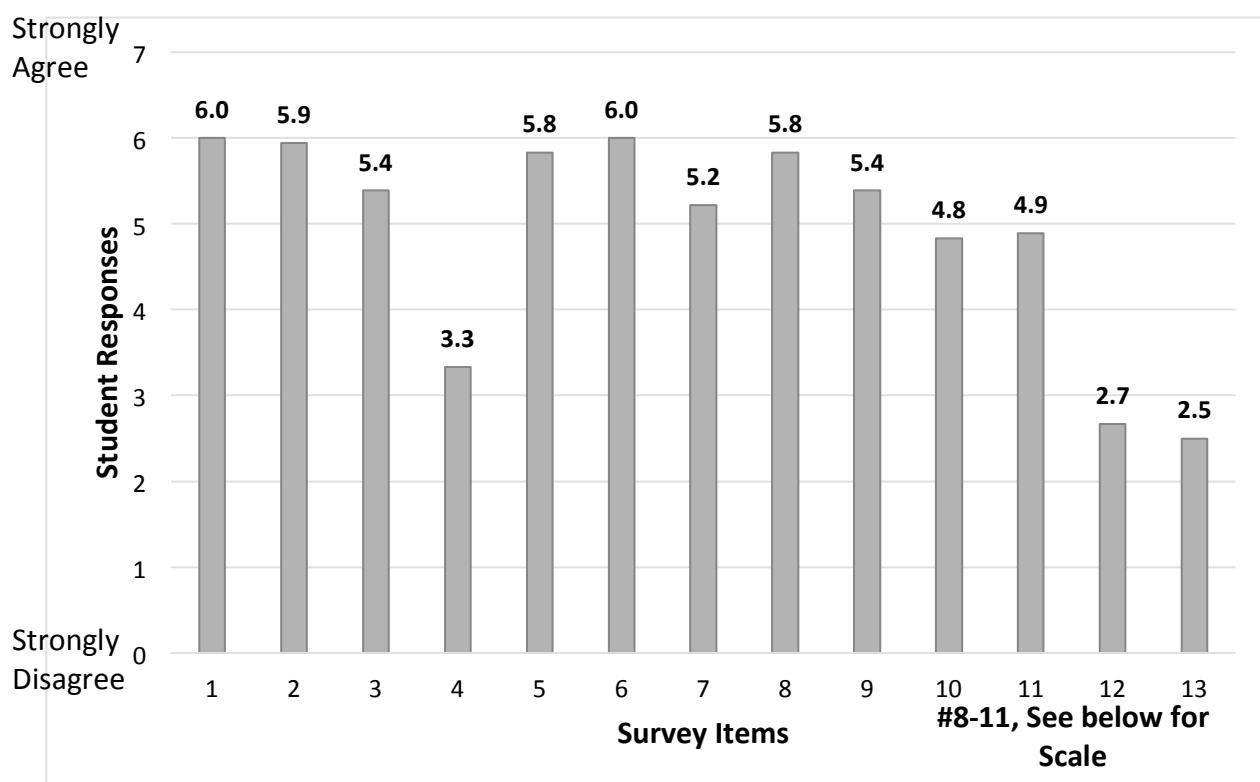
Group work broadens perspective of course materials
 Guest speakers, podcasts, and assignments with real world scenarios and examples are enjoyable and very valuable to learning
 Online textbook is helpful
 Fewer guest speakers and podcasts

Exam 2 Comparisons:

Exam 2: Spring 2016		Exam 2: Fall 2016	
Count	31	Count	17
Average	88.9	Average	89.1
Median	89.0	Median	90.0
Mode	n/a	Mode	90.0
Standard Deviation	4.95	Standard Deviation	1.83
Minimum	80.0	Minimum	85.5
Maximum	96.0	Maximum	91.0

Exam 2 Student Perceptions:

Of the 43 students who took the exam, 17 students both responded to this survey and consented to participate in this study.



BONICA EXAM 2 SURVEY ITEMS

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for this exam.
Q8	Helpful in learning course material Textbook Chapters from 1 (Unacceptable) to 7 (Excellent)
Q9	Helpful in learning course material Supplemental Readings & Videos from 1 (Unacceptable) to 7 (Excellent)
Q10	Helpful in learning course material Podcasts from 1 (Unacceptable) to 7 (Excellent)
Q11	Helpful in learning course material Case-Study from 1 (Unacceptable) to 7 (Excellent)
Q12	The homework assignments helped me to integrate issues confronting the management and organization of healthcare facilities.
Q13	The online readings and homework assignments prior to the exam prepared me well for the final.

Summary of Student Comments:

Comments regarding the online textbook chapters used in this course.

I really liked the textbook and thought it was very clear and easy to follow but I wish we had a physical book to read from. Overall, the textbook was excellent.

I liked how they were shorter and easier to read than normal text books. It helped me learn more.

Comments about what worked for you, what did not work for you, and any suggestions you may have for making this course a better learning experience for future students.

Fewer guest speakers and podcasts

Applied exercises and scenarios were helpful learning tools

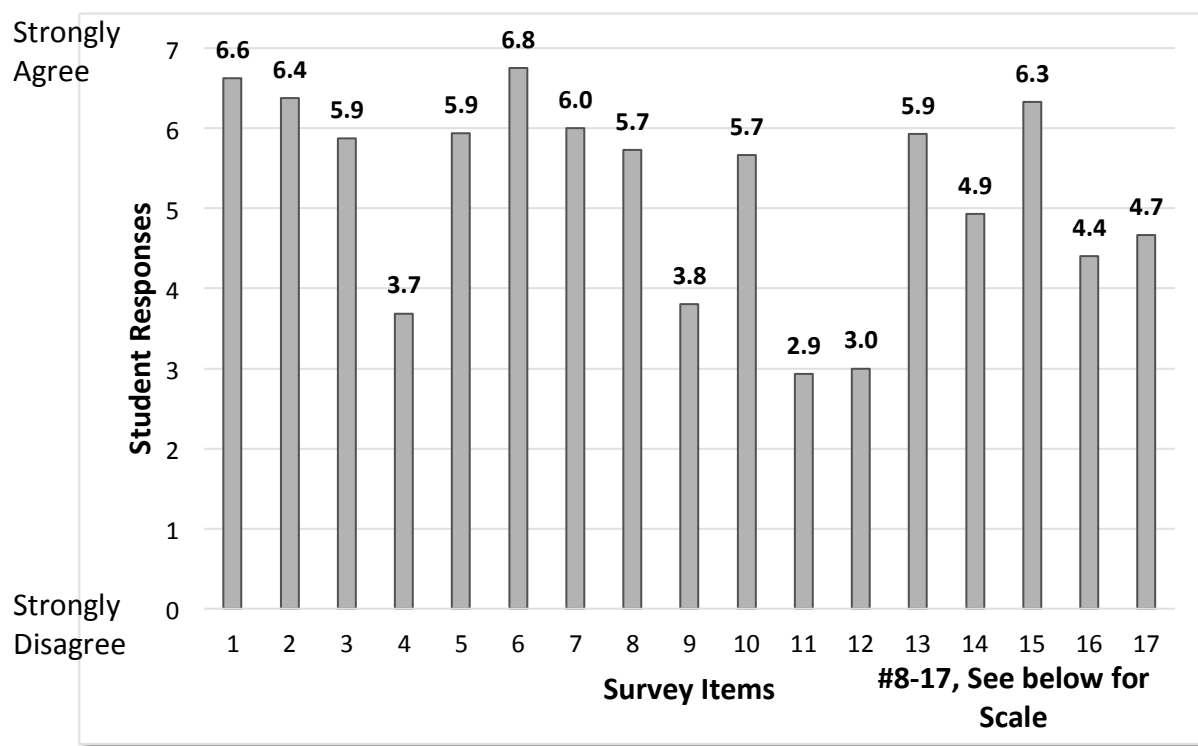
MATH 740/840: Design of Experiments

Semester Comparisons:

Final Grades: Previous Semester		Final Grades: Fall 2016	
Count	DATA UNAVAILABLE	Count	24
Average		Average	88.9
Median		Median	93.7
Mode		Mode	n/a
Standard Deviation		Standard Deviation	16.1
Minimum		Minimum	17.3
Maximum		Maximum	97.6

Mid-Semester Student Perceptions:

Of the 49 students enrolled in the course, 16 students both responded to this survey and consented to participate in this study.



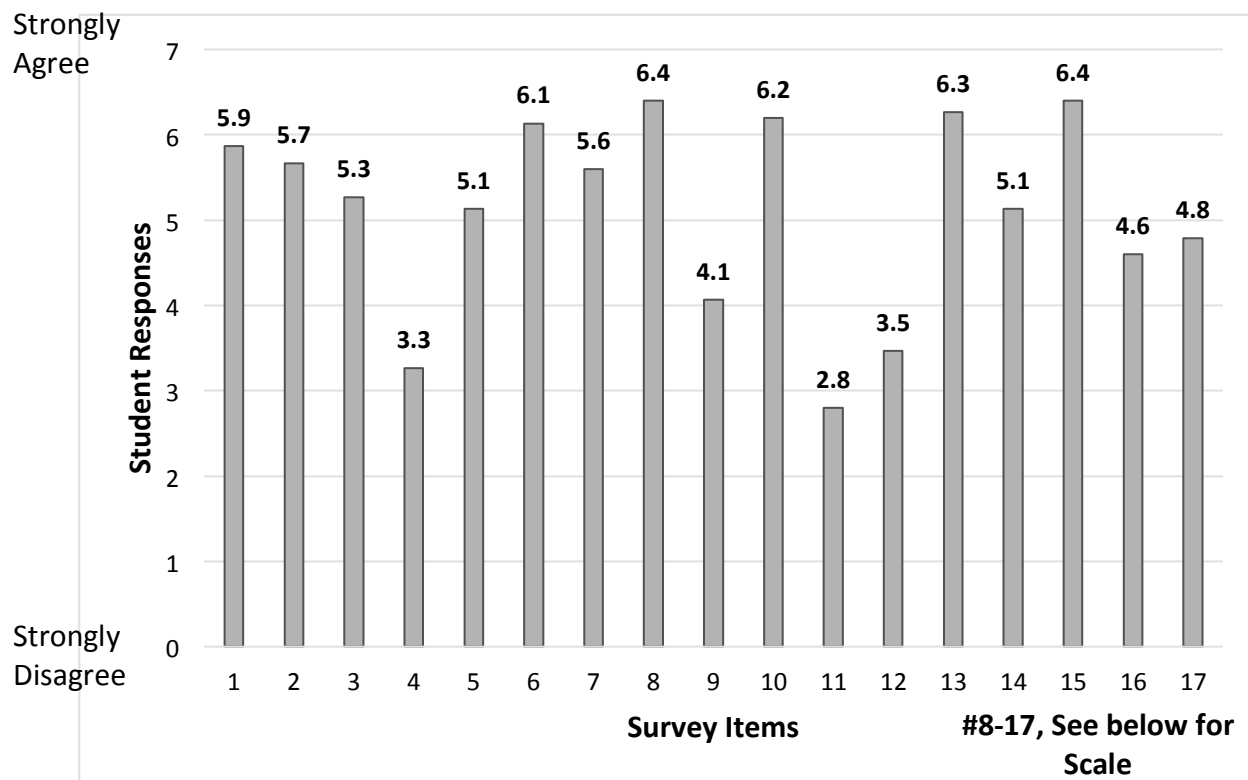
Summary of Mid-Semester Student Comments:

Online lectures are helpful to learning

OER makes course materials more widely accessible and cost effective for all students

End of Semester Student Perceptions:

Of the 49 students enrolled in the course, 15 students both responded to this survey and consented to participate in this study.



Summary of End of Semester Student Comments:

OER makes course materials more widely accessible and cost effective for all students

RAMSEY SURVEY ITEMS

Used for all assessments in this course:

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for course projects and assessments.
Q8	Frequency use of Class Notes from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of YouTube from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of Lectures from 1 (Never Accessed) to 7 (More than 10 times)
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Q15	Helpful in learning course material Lectures from 1 (Unacceptable) to 7 (Excellent)
Q16	Helpful in learning course material Discussion Forums from 1 (Unacceptable) to 7 (Excellent)
Q17	Helpful in learning course material Simulations from 1 (Unacceptable) to 7 (Excellent)

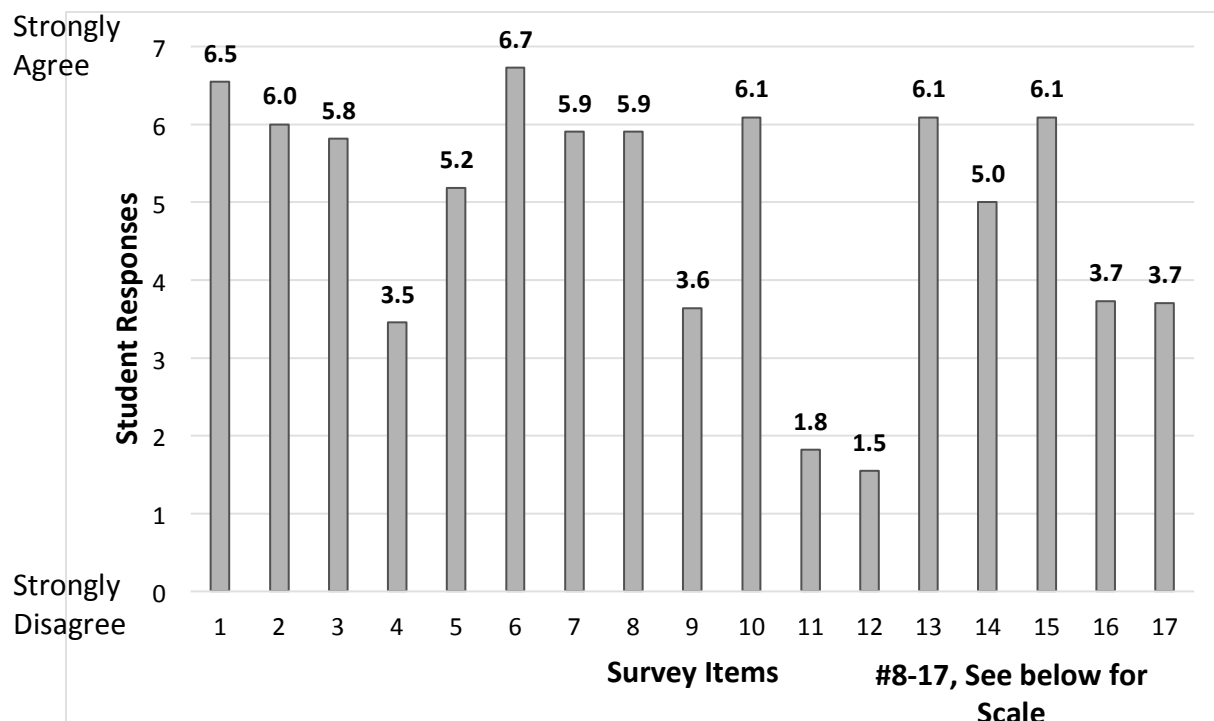
Phil Ramsey
MATH 737: Statistical Methods for Quality Improvement & Design

Semester Comparisons:

Final Grades: Previous Semester		Final Grades: Fall 2016	
Count	DATA UNAVAILABLE	Count	12
Average		Average	94.5
Median		Median	94.8
Mode		Mode	n/a
Standard Deviation		Standard Deviation	3.0
Minimum		Minimum	88.8
Maximum		Maximum	98.9

Mid-Semester Student Perceptions:

Of the 23 students enrolled in the course, 11 students both responded to this survey and consented to participate in this study.

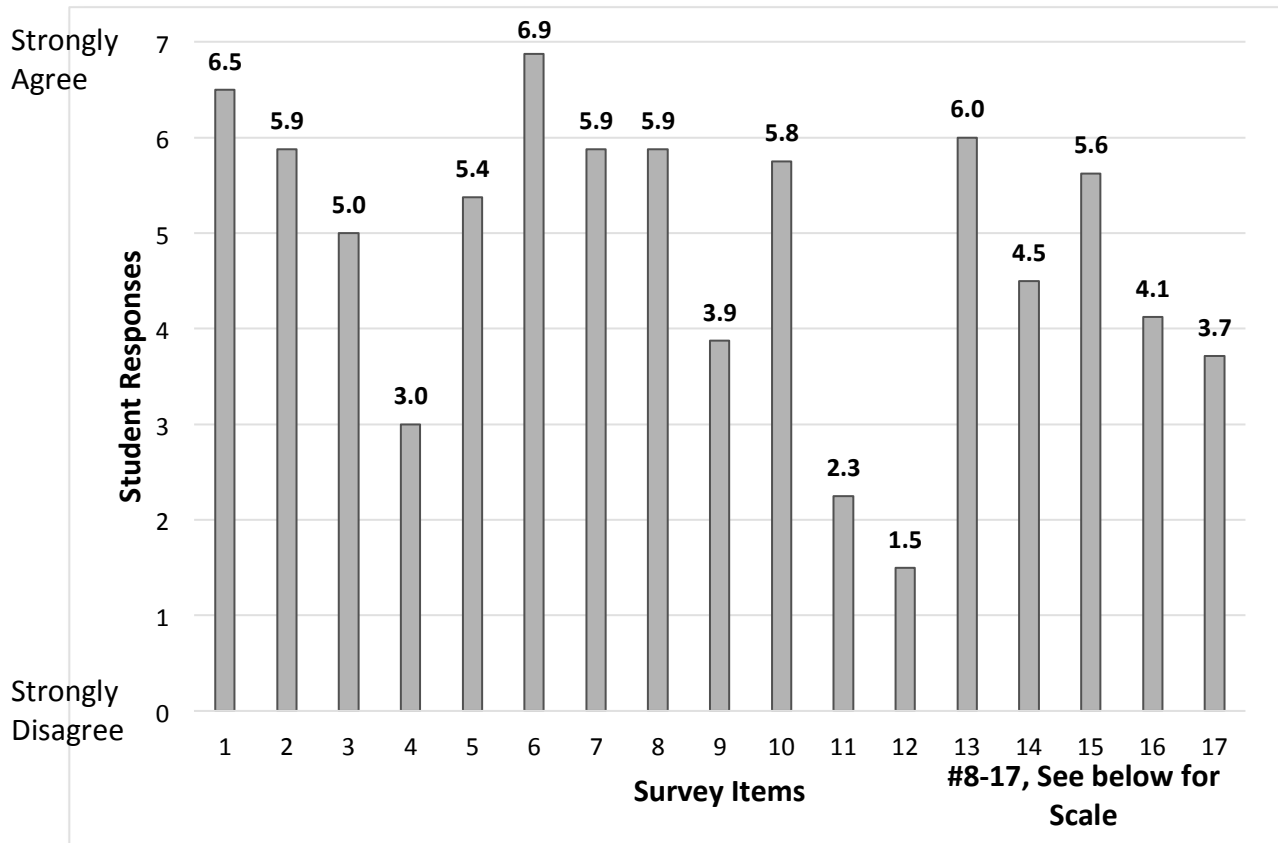


Mid-Semester Student Comments:

None provided.

End of Semester Student Perceptions:

Of the 23 students enrolled in the course, 8 students both responded to this survey and consented to participate in this study.



End of Semester Student Comments:

None provided.

RAMSEY SURVEY ITEMS

Used for all assessments in this course:

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
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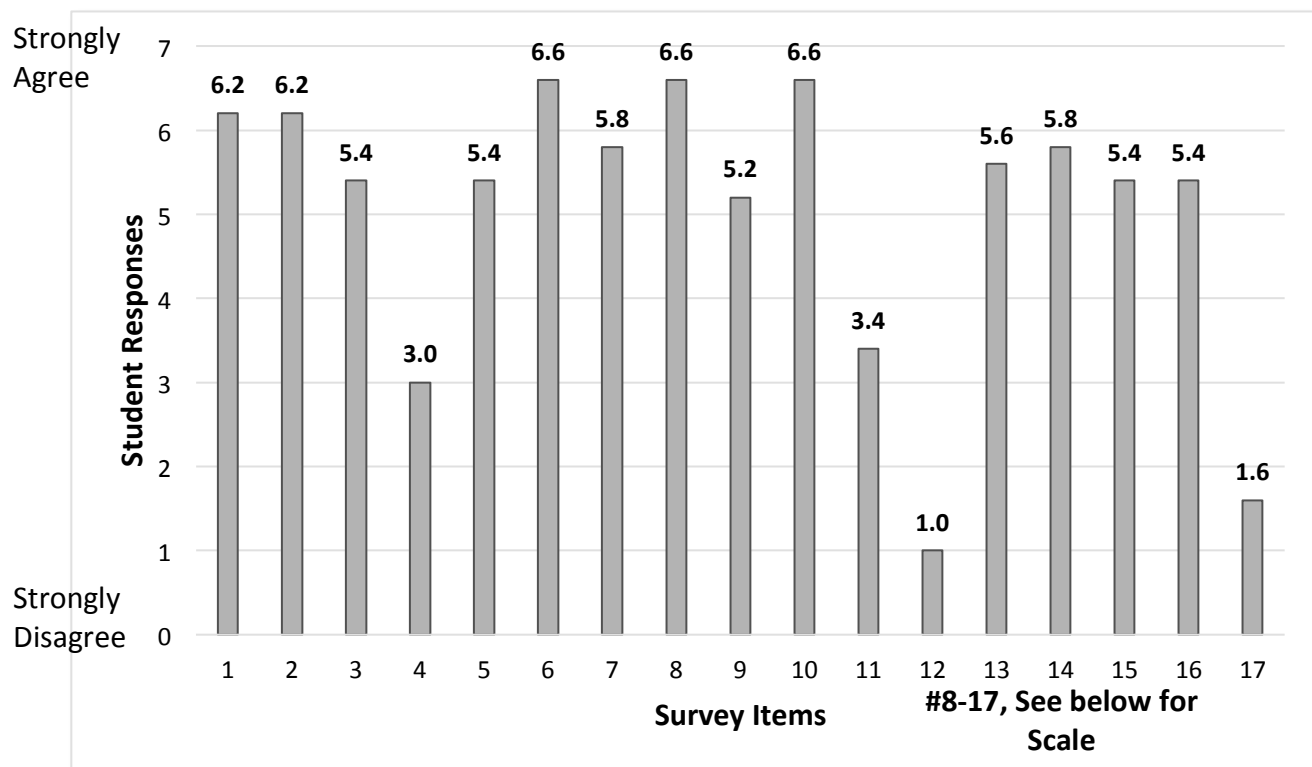
MATH 753: Introduction to Numerical Methods I

Exam 1 Comparisons:

Exam 1: Fall 2015		Exam 1: Fall 2016	
Count	DATA UNAVAILABLE	Count	DATA UNAVAILABLE
Average		Average	
Median		Median	
Mode		Mode	
Standard Deviation		Standard Deviation	
Minimum		Minimum	
Maximum		Maximum	

Exam 1 Student Perceptions:

Of the (DATA UNAVAILABLE) students who took the exam, 5 students both responded to this survey and consented to participate in this study.



GIBSON EXAM 1 SURVEY ITEMS

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
Q7	The open resource course materials were <i>helpful</i> in my preparation for course projects and assessments.
Q8	Frequency use of Julia Software from 1 (Never Accessed) to 7 (More than 10 times)
Q9	Frequency use of Julia Demos from 1 (Never Accessed) to 7 (More than 10 times)
Q10	Frequency use of Course Website from 1 (Never Accessed) to 7 (More than 10 times)
Q11	Frequency use of Online Problems from 1 (Never Accessed) to 7 (More than 10 times)
Q12	Frequency use of Textbook from 1 (Never Accessed) to 7 (More than 10 times)
Q13	Helpful in learning course material Julia Software from 1 (Unacceptable) to 7 (Excellent)
Q14	Helpful in learning course material Julia Demos from 1 (Unacceptable) to 7 (Excellent)
Q15	Helpful in learning course material Course Website from 1 (Unacceptable) to 7 (Excellent)
Q16	Helpful in learning course material Online Problems from 1 (Unacceptable) to 7 (Excellent)
Q17	Helpful in learning course material Textbook from 1 (Unacceptable) to 7 (Excellent)

Summary of Exam 1 Student Comments:

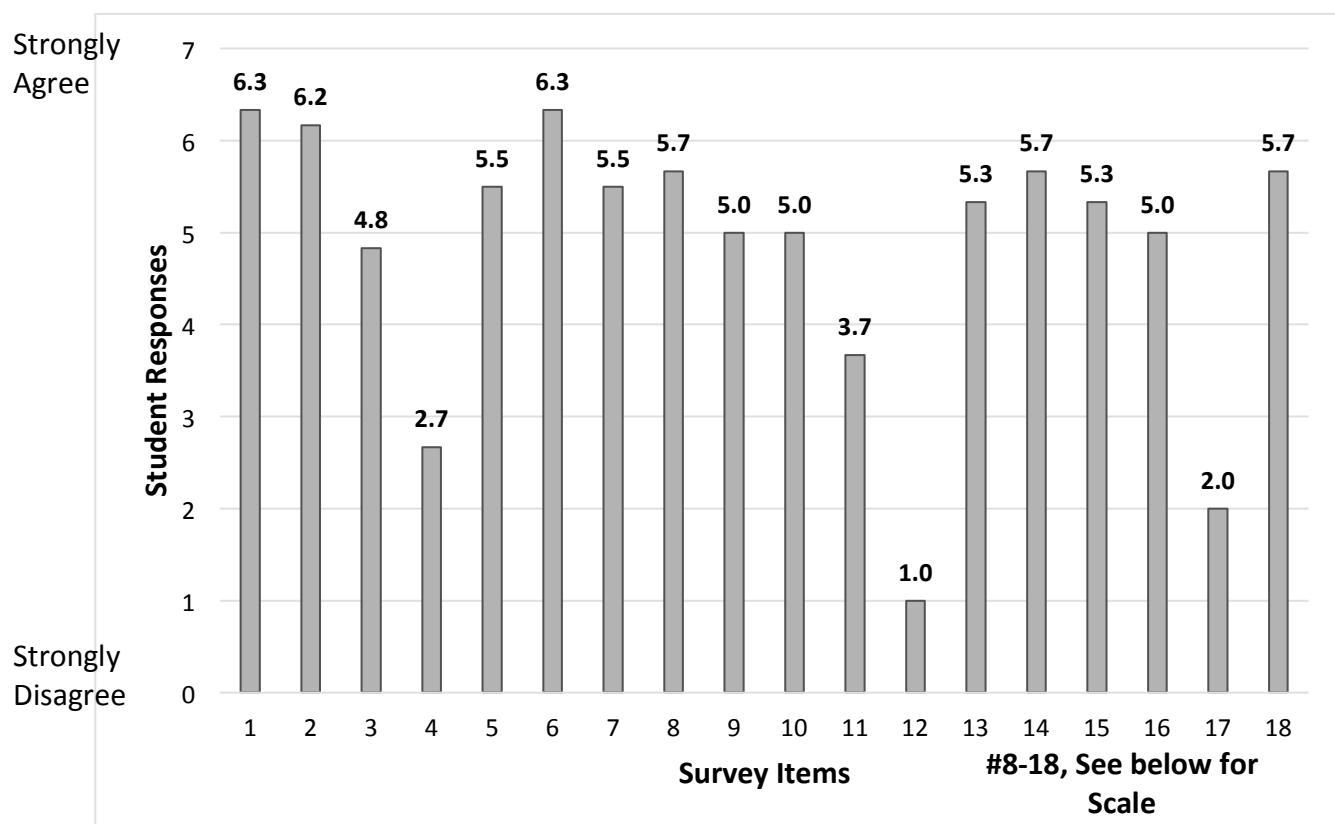
Appreciation for cost savings afforded to them because of using OER

Exam 2 Comparisons:

Exam 2: Fall 2015		Exam 2: Fall 2016	
Count	DATA UNAVAILABLE	Count	DATA UNAVAILABLE
Average		Average	
Median		Median	
Mode		Mode	
Standard Deviation		Standard Deviation	
Minimum		Minimum	
Maximum		Maximum	

Exam 2 Student Perceptions:

Of the (DATA UNAVAILABLE) students who took the exam, 6 students both responded to this survey and consented to participate in this study.



Summary of Exam 2 Student Comments:

Enjoyed OER in this course, would like more online resources

GIBSON EXAM 2 SURVEY ITEMS

Q1	The resources for this course were <i>easy to access</i> .
Q2	The open resources chosen for this course are <i>at least as high in quality</i> as textbooks I have purchased in other courses.
Q3	The open resources in this course gave me a <i>broader perspective</i> of the material than I would have developed from a purchased course textbook.
Q4	The number of materials I had to access was <i>overwhelming</i> .
Q5	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>quality</i> of the free materials.
Q6	If given a choice between a course offering open (free) resources (textbook, videos, etc.) and a course requiring purchased resources, I would select the course offering the open resources because of the <i>cost savings</i> of the free materials.
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Q16	Helpful in learning course material Online Problems from 1 (Unacceptable) to 7 (Excellent)
Q17	Helpful in learning course material Textbook from 1 (Unacceptable) to 7 (Excellent)
Q18	Helpful in learning course material Lectures from 1 (Unacceptable) to 7 (Excellent)

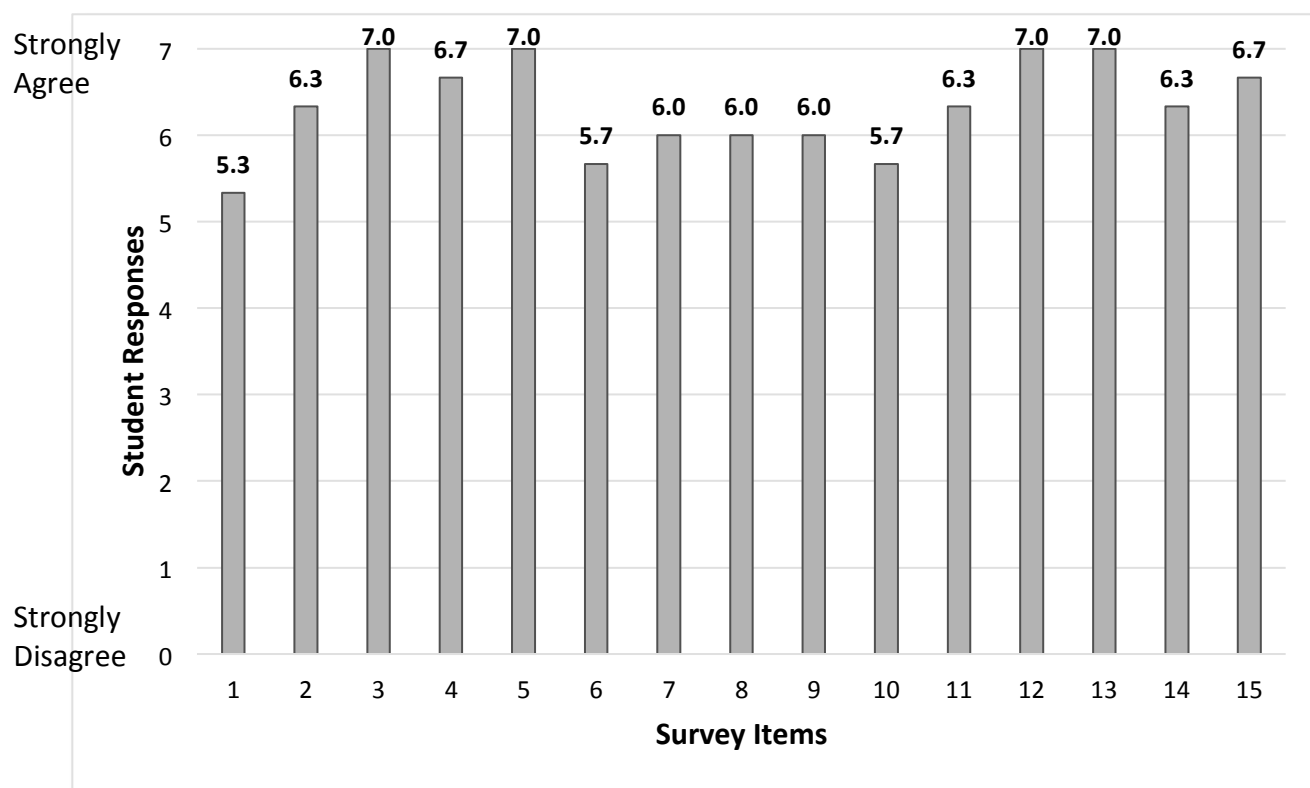
ENGL 735: Entrepreneurial Journalism

Grade Comparisons:

Prior Semester: Not Applicable		Final Grades: Fall 2016	
Count		Count	14
Average		Average	95.6
Median		Median	97.0
Mode		Mode	98.6
Standard Deviation		Standard Deviation	4.35
Minimum		Minimum	82.4
Maximum		Maximum	98.8

Mid-Semester Student Perceptions:

Of the 18 students enrolled in the course, 3 students both responded to this survey and consented to participate in this study.



Summary of Mid-Semester Student Comments:

Please add any additional comments regarding your experiences in this course.

Has learned a lot in the course so far

Summary of Student Comments:

What is one thing you would change about the structure or content of this course?

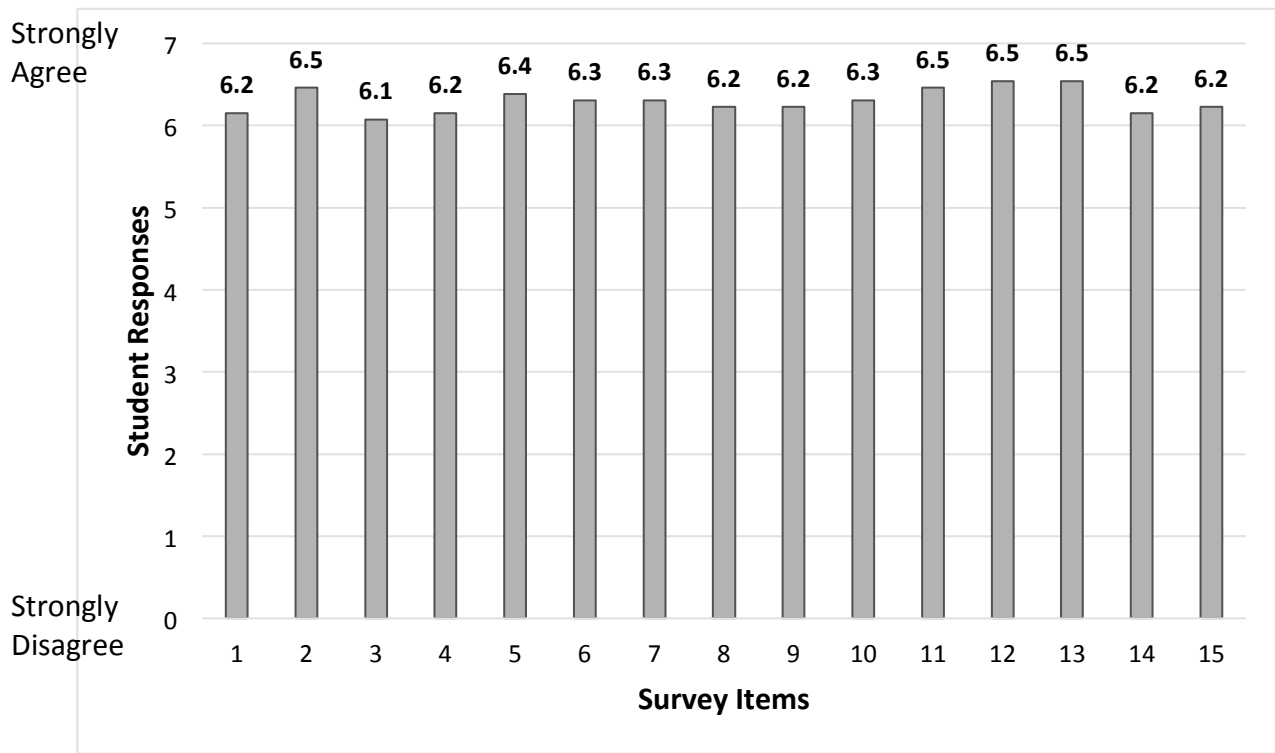
Would like to see less individual reading

More topic choices for projects

More time spent on how to use audacity and structure podcasts

End of Semester Student Perceptions:

Of the 18 students enrolled in the course, 14 students both responded and consented to participate in this study.



Summary of End of Semester Student Comments:

Please add any additional comments regarding your experiences in this course.

Course is well structured

Group work was frustrating at times, but also contributed to learning course material

Course materials were useful, practical, and interesting

Professor was excellent at facilitating class discussions and supporting group work/learning

HECKMAN SURVEY ITEMS

Used for all assessments in this course:

Q1	I have opportunities in this course to <i>make choices</i> about my own learning.
Q2	This course offers me opportunities to think and/or express myself <i>creatively</i> .
Q3	The work I complete in this course is <i>meaningful in the real world</i> .
Q4	I can identify <i>strategies</i> I use in this course that help me learn successfully.
Q5	I am an <i>active contributor</i> to group work environments in this class.
Q6	As a result of my work in this course, my ability to <i>work effectively in groups</i> has improved.
Q7	Collaborating with others is <i>important to my learning</i> in this course.
Q8	This course has given me tools to <i>find reliable information</i> on topics in this discipline.
Q9	This course has helped me to better <i>synthesize</i> multiple primary source materials.
Q10	This course has helped me to better <i>summarize</i> multiple primary source materials.
Q11	As a result of my work in this class, I am confident in my ability to effectively communicate information from this discipline to a <i>public audience</i> .
Q12	I am confident in my ability to <i>modify</i> a project plan I have designed.
Q13	I am confident in my ability to <i>implement</i> a project plan I have designed.
Q14	This course has improved my confidence in my ability to <i>effectively support an argument</i> .
Q15	This course has improved my confidence in my ability to present a unique <i>personal perspective</i> on issues to an audience.

Student Learning Outcomes

Many of the faculty ambassadors taught the same course as their fall 2016 OER course using traditional textbooks and materials within the prior two semesters. Exceptions to this are marked with n/a on the table below. Faculty reported that although some exam questions or assignments necessarily differed this semester corresponding to OER content, exams or other course assessments, and their rigor, remained relatively constant.

Descriptive statistics of student performance for the prior section with traditional texts and the fall 2016 section with OER materials were calculated. Mean grades for students' exams were calculated when possible. If no exams were administered, final mean course grades were used for comparison.

In accordance with IRB guidelines, data reported here omit the grades of students who did not consent to have their information used for research purposes.

Mean exam scores and mean final course grades were generally comparable (± 7 points) between each course's sections. There were a few exceptions to this trend. In one course, Fossil Fuels & Renewable Energy Sources, mean exam scores for one of the course's three exams were lower in the OER course, but the overall course grades were still comparable between the OER and traditional semester.

Another exception is observed in one of the French courses. Mean exam scores for the OER semester of Intermediate French I were 9 and 12 points lower than they were in a prior semester with traditional materials.

STUDENT LEARNING OUTCOMES (MEAN SCORES)

COURSE	EXAM 1		EXAM 2		EXAM 3		FINAL GRADE	
	Prior	F16	Prior	F16	Prior	F16	Prior	F16
Intro to Anthropology (sections 1 & 2)	80.5	80.4	80.7	82.2	80.5	84.1		
Intro to Anthropology (sections 3 & 4)	79.4	84.3	77.6	83.6	n/a	83.4		
Elementary French (sections 1 & 2)	87.9	88.9	78.8	85.7			-	87.0
Elementary French (sections 3 & 4)	84.3	84.1	78.9	80.4			-	83.1
Living in a Networked World							80.0	87.1
Fossil Fuels & Renewable Energy Sources	81.1	86.1	88.2	85.8	82.6	93.1	86.8	90.6
Intermediate French I	87.1	78.1	85.0	73.9			-	79.5
Intermediate French II	75.2	82.3	77.7	80.0			-	-
Managing Healthcare Organizations	88.9	86.5	85.9	88.4				
Design of Experiments (math)							-	88.9
Introduction to Numerical Methods	-	-	-	-			-	-
Statistical Methods for QI & Design							-	94.5
Entrepreneurial Journalism							n/a	95.6

“-“ missing data

n/a = first time teaching course – no comparison data available

Faculty Perceptions of the OER Experience

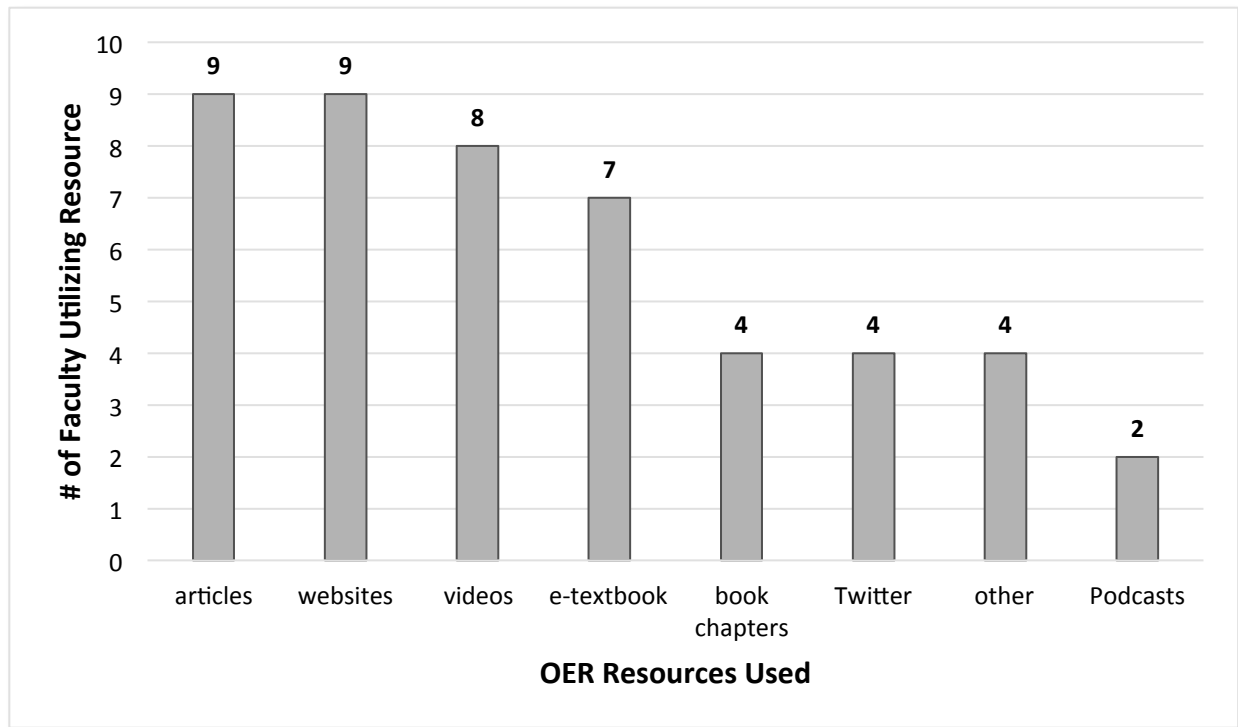
At the conclusion of the fall 2016 semester, faculty ambassadors were asked to reflect on their experiences incorporating and using OER in their courses. Ten faculty members both responded to the survey and consented to participate in this study.

Faculty used a variety of open materials, most frequently these included articles, websites, videos, and e-textbooks.

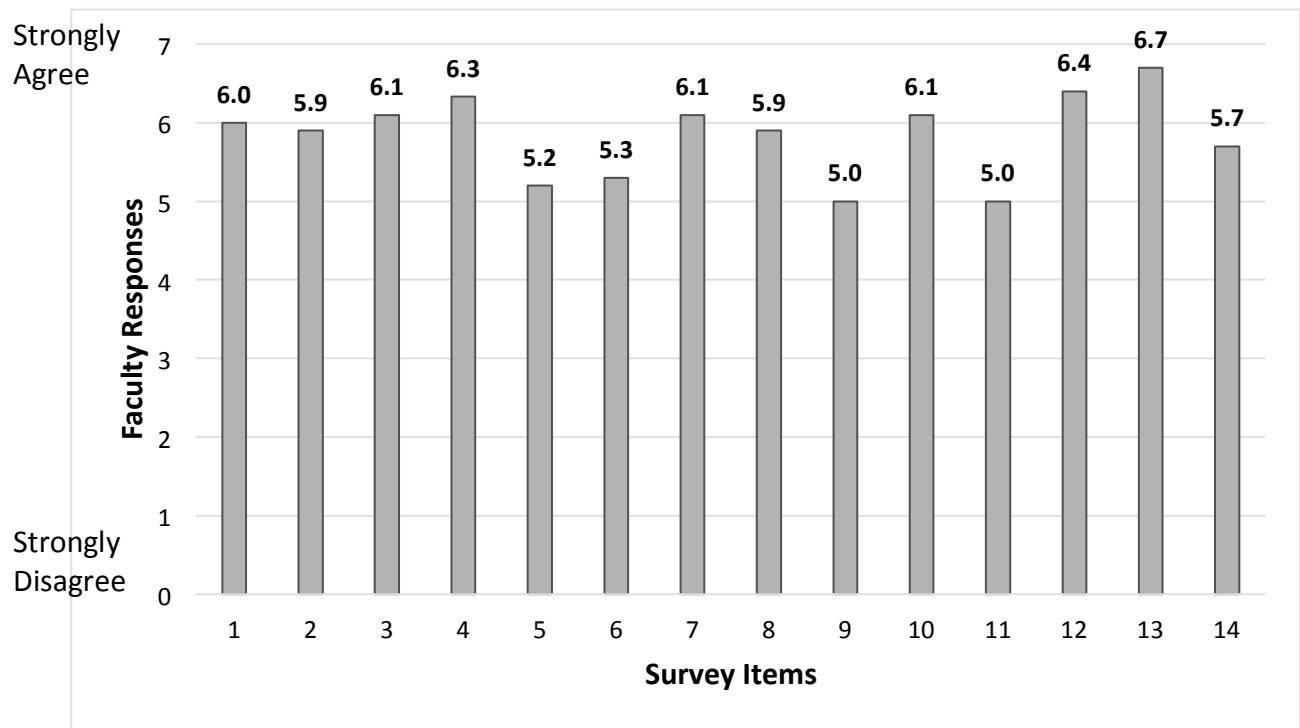
Faculty reported that a comprehensive range of high quality, up to date resources to use in their courses were generally easy to find. When compared to previous courses taught with traditional materials, faculty were left with an impression that students' engagement with the course, the facilitation of students' exposure to elements beyond the classroom, and that students' performance was better/richer because of OER. The faculty also reported that the various support staff were helpful in locating materials to use and in the assessment of these resources in their courses.

In addition, faculty reported that although the amount of associated work to develop and adapt their courses was considerable, they viewed it as an investment with generally positive returns regarding pedagogy and student feedback. Faculty also reflected on the ways that incorporating OER into courses energized and prompted self-reflection of their teaching. Overall, the faculty ambassadors reported that they would continue to use, and further adapt, OER resources in their courses to better meet their course and students' needs.

OER Materials Used:



Faculty Perceptions:



Survey Items

Q1	<i>Students' performance was, on average, better/richer</i> because of OER when compared to previous courses I have taught using traditional materials.
Q2	<i>Students were more engaged in this course</i> because of OER when compared to previous courses I have taught using traditional materials.
Q3	<i>Students' exposure to elements beyond the classroom was better facilitated</i> because of OER when compared to previous courses I have taught using traditional materials.
Q4	It was <i>easy to find</i> open resources that were mapped to the learning outcomes for the course.
Q5	I was able to find a <i>comprehensive range</i> of OER materials for my course.
Q6	The <i>library staff was helpful</i> in locating open resources for my course.
Q7	The <i>academic technology staff was helpful</i> in locating open resources for my course.
Q8	The <i>cost of a textbook is something I consider</i> when choosing a text for courses I teach.
Q9	The open resources used for my course are at least <i>as high in quality</i> as textbooks I have used for this course in the past.
Q10	The open resources I used in my course were <i>up to date</i> .
Q11	My <i>course was enhanced</i> by the incorporation of open resource materials.
Q12	The <i>amount of work</i> necessary to update my course with open resources was manageable.
Q13	I will <i>continue to use</i> open resources in future semesters.
Q14	The Center for Excellence in Teaching and Learning (CETL) <i>staff were helpful in identifying areas for student assessment</i> of OER materials in my course.

SUMMARIES OF FACULTY COMMENTS

Please comment on the time involved in preparing your course to incorporate open resource materials this semester.

Time committed to redesigning courses was intensive, but will be more manageable over time
Substantial time was spent before the semester on course redesign, plus several hours per week during the semester

ATI support and stipend helped offset the cost of the time associated with course redesign

Finding appropriate and then sometimes further adapting OER materials for a course was time consuming

Finding and creating materials encouraged engagement with course material

What do you feel worked well this semester in regards to using open resources in your course?

Students appreciated costs savings afforded to them because of OER

Students were engaged with course

OER materials were highly accessible to students; students had flexible access to materials

OER resources changed the flow of information and balance of power (for the better) in class

What do you feel did not work well this semester in regards to using open resources in your course?

Some group assignments were difficult to manage

Adjusting to new models of course organization and technologies can pose frustration and inefficient use of time for students and faculty members

Technology mishaps can be inconvenient (e.g., online textbook or other resources crashing before exams or when assignments are due)

Stressing to students that OER materials are just as important as traditional materials

How did the incorporation of open resources impact your teaching this semester?

OER materials encouraged teaching a wider range of topics and current events

Energized my teaching and helped me evaluate/affirm pedagogical practices

Heightened my own engagement and awareness of students' needs

Challenged me to have better time management

Please describe any notable interactions or personal feedback given from students regarding the open resource materials in your course this semester.

More continuity between students' work and lectures
Students expressed learning a lot in the course, especially in regards to professional skills
Students appreciated cost savings afforded to them because of OER
Students seemed motivated and empowered to choose their own learning paths in the course

What, if anything, would you change about your use of open resources in the future?

Adjust the structure of some assignments
Continue to refine and improve the organization of course materials
Time investment was worthwhile
Adopt a "less is more" strategy in terms of content one can reasonably cover in a semester
Further adapt the OER materials to meet needs of students and specific course
Work out ways to have printed/bound copies of main text available to students ahead of time
Find/create new and replace some OER materials