

Keene State College

Open Education (OE) Project, Academic Year 2016-2017

Final Dissemination Assessment Report

Assessments Conducted and Completed by

Center for Excellence and Innovation in Teaching and Learning (CEITL)

University of New Hampshire

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#### ASSESSMENTS TARGETED FOUR CENTRAL AREAS:

1. Textbook Cost Savings
2. Student Perceptions of the OE Projects
3. Student Learning Outcomes
4. Faculty Perceptions of the OE Experience

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## Textbook Cost Savings

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Ten faculty members at Keene State College (KSC) participated in the AY 2016-2017 Open Education (OE) program. Four faculty utilized open educational resources (OER), in place of traditional textbook materials, in their courses. We asked these four 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.

In other courses, faculty used an increased number of OERs and engaged students in open pedagogy practices that complemented, but did not entirely replace, the use of traditional textbooks. In one course, students were never required to purchase a traditional textbook in either the prior or the assessment semesters.

The cost savings presented below are for the four courses that entirely replaced traditional textbooks with OERs. The savings below also reflect the assumption that all enrolled students would have purchased a hardcopy (e.g., new hardcover), when available, 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 four OER courses, the adoption of OER materials saved 94 students up to \$3,776.14.**

**TEXTBOOK COST SAVINGS SUMMARY:**

Course	Textbook Cost	Enrollment	Maximum Total Cost Savings Up To
Plant Biology	\$93.93 (New Hardcover)	14	\$1,315.02
Endocrine Disruption (Biology)	\$90.35 (New Hardcover)	12	\$1,084.20
Ethics (Philosophy)	\$84.29 (New Paperback)	11	\$927.19
Introduction to Communication Studies	\$7.89 (New Paperback)	57 (2 sections)	\$449.73
TOTAL COST SAVINGS UP TO:			\$3,776.14

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CYNTHIA HAYS

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**BIO 363: Plant Biology**

*The Ecology of Plants*, 2<sup>nd</sup> Ed. (2006)

ISBN-13: 978-0878932948

Price Source: [www.amazon.com](http://www.amazon.com)

Textbook Cost: \$93.93 (New Hardcover)

Price Recorded: 4/21/2017

Enrollment: 14

Course Cost Savings up to: \$1,315.02

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SUSAN WHITTEMORE

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**BIO 380: Endocrine Disruption**

*Neuroscience: Exploring the Brain*, 4<sup>th</sup> Ed. (2015)

ISBN-13: 978-0781778176

Price Source: [www.amazon.com](http://www.amazon.com)

Textbook Cost: \$90.35 (New Hardcover)

Price Recorded: 4/21/2017

Enrollment: 12

Course Cost Savings up to: \$1,084.20

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EMILY MCGILL-RUTHERFORD

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**IHPHIL 220: Ethics**

*Ethics: History, Theory, and Contemporary Issues*, 6<sup>th</sup> Ed. (2015)

ISBN-13: 978-0190209803

Price Source: [www.amazon.com](http://www.amazon.com)

Textbook Cost: \$84.29 (New Paperback)

Price Recorded: 4/21/2017

Enrollment: 11

Course Cost Savings up to: \$927.19

**COMM 175: Introduction to Communication Studies**

*Phaedrus*, Revised Ed. (2005)

ISBN-13: 978-0140449747

Price Source: [www.amazon.com](http://www.amazon.com)

Textbook Cost: \$7.89 (New Paperback)

Price Recorded: 4/21/2017

Enrollment: 57 (2 sections)

Course Cost Savings up to: \$449.73

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## Student Perceptions of the OE Projects

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The overarching objective of this Open Education/Open Pedagogy Project (OPP) was to “facilitate students’ self-empowerment and foster meaningful learning.” CEITL staff worked with faculty and staff at KSC to develop an end-of-semester survey aimed at assessing students’ perceptions of the OPP. The 33-question survey measured the key objectives of the overall OPP:

“Through this project, the successful student should be able to:

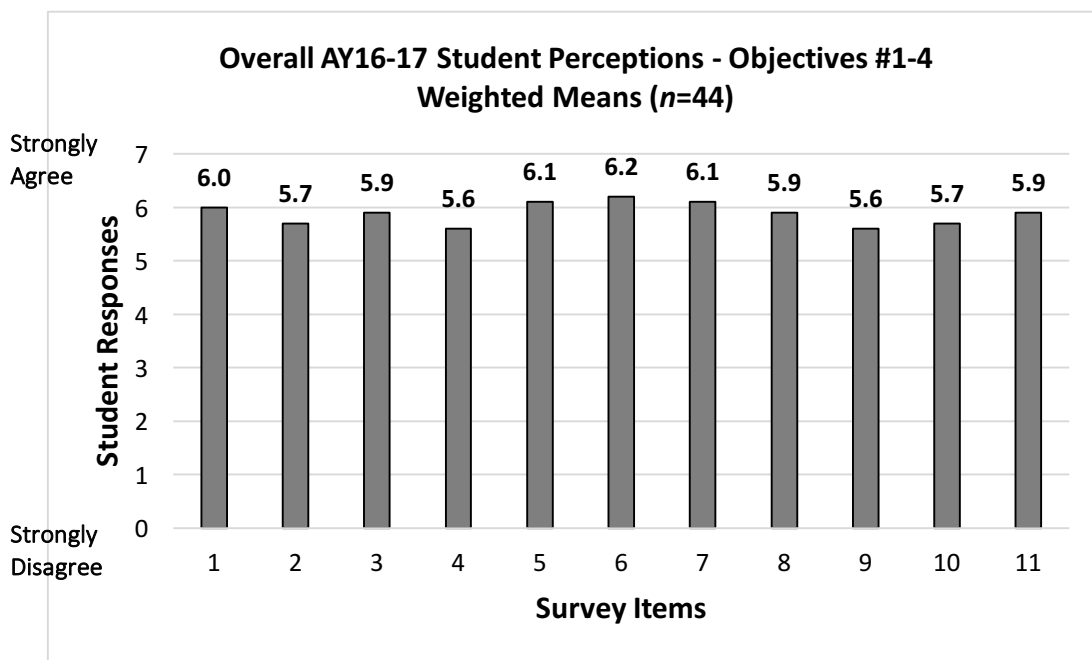
1. Manage their own learning through directed choices
2. Seek and critically evaluate multiple perspectives and sources of information
3. Design a project plan based on extant findings and current needs
4. Implement a project plan according to design, and modify as needed.
5. Contribute actively in collaborative environments
6. Describe how their final project contributes to the larger community
7. Disseminate information to peers and to the larger community through effective communication
8. Assess their learning through self-reflection
9. Demonstrate creative thinking and meaningful learning
10. Demonstrate self-empowerment through interaction and presentation of ideas”

To reduce bias, students responded to the surveys prior to receiving their final course grades. Perception surveys were completed online, via Qualtrics, during the last month of classes. Near the end of the fall 2016 semester, data were collected from three courses. Data were collected near the end of the spring 2017 term from five additional courses.

Overall, students’ perceptions of the OE project were positive. They enjoyed the opportunity to research topics of interest to them and described the range of open education approaches used in the courses as fun, enjoyable, and interesting. They cited some challenges regarding working in groups, but also cited challenges as opportunities to grow academically.

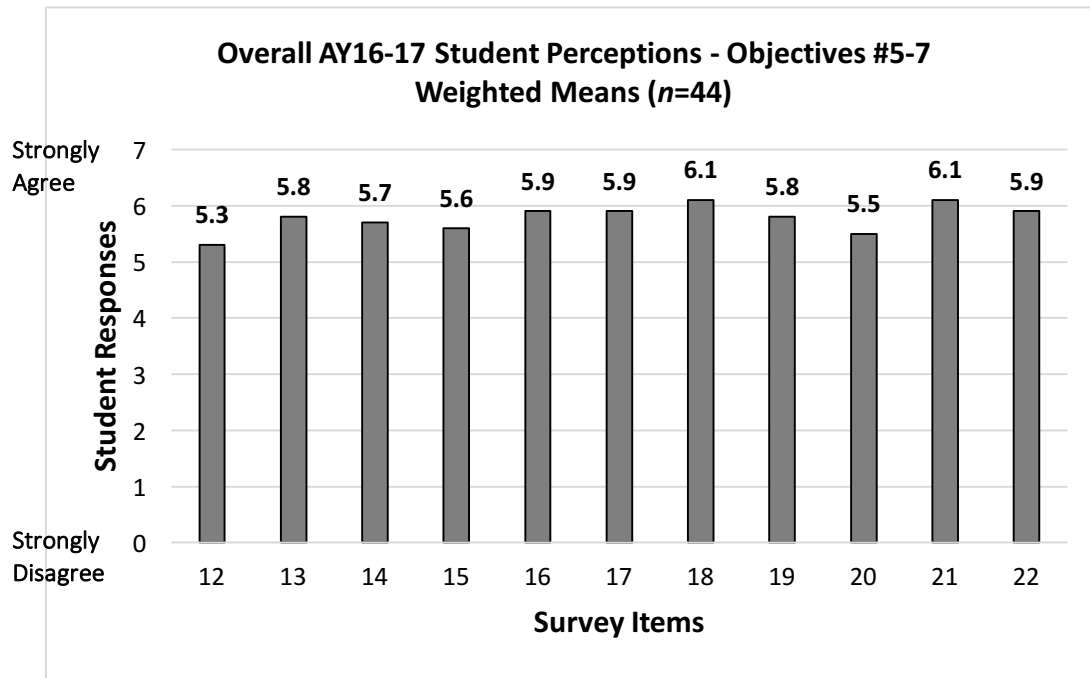
In accordance with IRB guidelines, all data reported in this document, including faculty information and students’ perceptions, comments, and grades, are from those faculty and students who consented to have their information used for research/dissemination purposes.

Of the 62 responses to the surveys over the semester, students who both responded to the surveys and consented to participate in this study comprise the sample of 44 responses presented below.

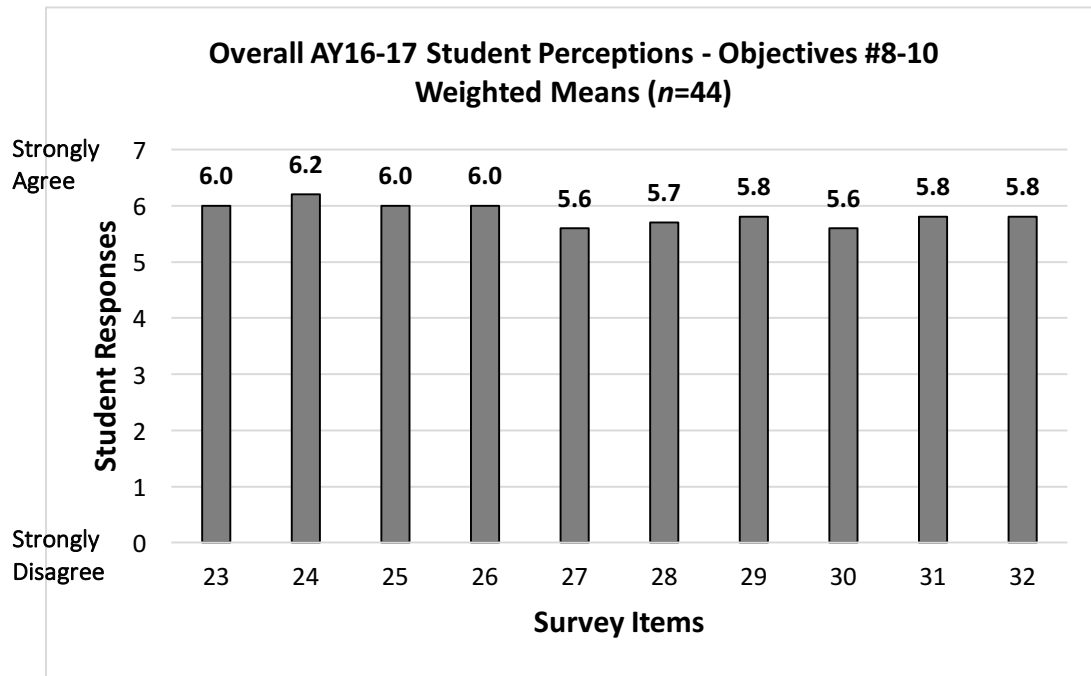


Objective 1: Manage their own learning through directed choices	
Q1	The opportunity to <i>make choices to direct my own learning</i> is important to me.
Q2	During this course/project, I <i>had opportunities to make choices</i> about what I learned.
Q3	<i>I took advantage of opportunities to make choices</i> to direct my own learning.
Q4	<i>I am likely to seek out other courses</i> that offer opportunities to make choices about my learning.
Objective 2: Seek and critically evaluate multiple perspectives and sources of information	
Q5	I am confident in my ability to <i>read and understand primary source material</i> in this discipline.
Q6	I have <i>strategies that I can use to find reliable information</i> on topics in this discipline.
Q7	I am able to <i>summarize</i> multiple primary source materials.
Q8	I am able to <i>synthesize</i> multiple primary source materials.
Objective 3: Design a project plan based on extant findings and current needs	
Q9	I am able to use source materials to <i>design a project plan</i> commensurate with current needs.
Objective 4: Contribute actively in collaborative environments	
Q10	I am able to <i>implement a project plan</i> according to my design.
Q11	I am willing to <i>modify my implementation plan</i> as needed.





Objective 5: Execute a project plan according to design, and modify as needed	
Q12	When I collaborated with other students, the work we produced <i>reflected the input</i> of all group members.
Q13	When I collaborated with other students, I <i>considered more ideas or perspectives</i> than I would have on my own.
Q14	Collaborating effectively with others <i>was important to my learning</i> in this course.
Q15	As a result of my work in this course/project, my <i>ability to work effectively in groups has improved</i> .
Objective 6: Describe how their final project contributes to the larger community	
Q16	I completed work or developed skills that are <i>applicable in my life outside of class</i> .
Q17	I can explain how the work I completed or skills I developed will <i>continue to be useful after the end of this course</i> .
Q18	The work I completed in this course/project is <i>meaningful outside of college and in the world</i> .
Objective 7: Disseminate information to peers and to the larger community through effective communication	
Q19	I am confident in my ability to effectively communicate information from this discipline to an audience of my <i>fellow students</i> .
Q20	I am confident in my ability to effectively communicate information from this discipline to a <i>public audience</i> .
Q21	I am confident in my ability to communicate information in this discipline in <i>writing</i> .
Q22	I am confident in my ability to communicate information in this discipline <i>orally</i> .



Objective 8: Assess their learning through self-reflection	
Q23	I now think about how the <i>choices I make affect my learning</i> .
Q24	I can <i>summarize</i> what I learned during this course/project.
Q25	I can describe how <i>my understanding of the subject area changed</i> as a result of the work in I did in this course/project.
Q26	I can <i>identify strategies</i> I used that helped me to learn successfully.
Objective 9: Demonstrate creative thinking and meaningful learning	
Q27	In this Open Pedagogy Project, I <i>made choices</i> to explore areas that were particularly interesting to me in more depth.
Q28	The way that this course/project was structured offered opportunities to think and/or <i>express myself creatively</i> .
Q29	By helping me to think of concepts in new ways, the manner in which this course/project was structured helped me <i>learn more deeply</i> .
Objective 10: Demonstrate self-empowerment through interaction and presentation of ideas	
Q30	This Open Pedagogy project has enabled me to <i>better present an argument</i> about material from this course.
Q31	Because of this Open Pedagogy project, I am now able to <i>use evidence to effectively support an argument</i> about material from this course.
Q32	My experience through this Open Pedagogy project has qualified me to present a <i>unique personal perspective</i> on the material from this course.
Q33	Student Comments (see individual course reports below)

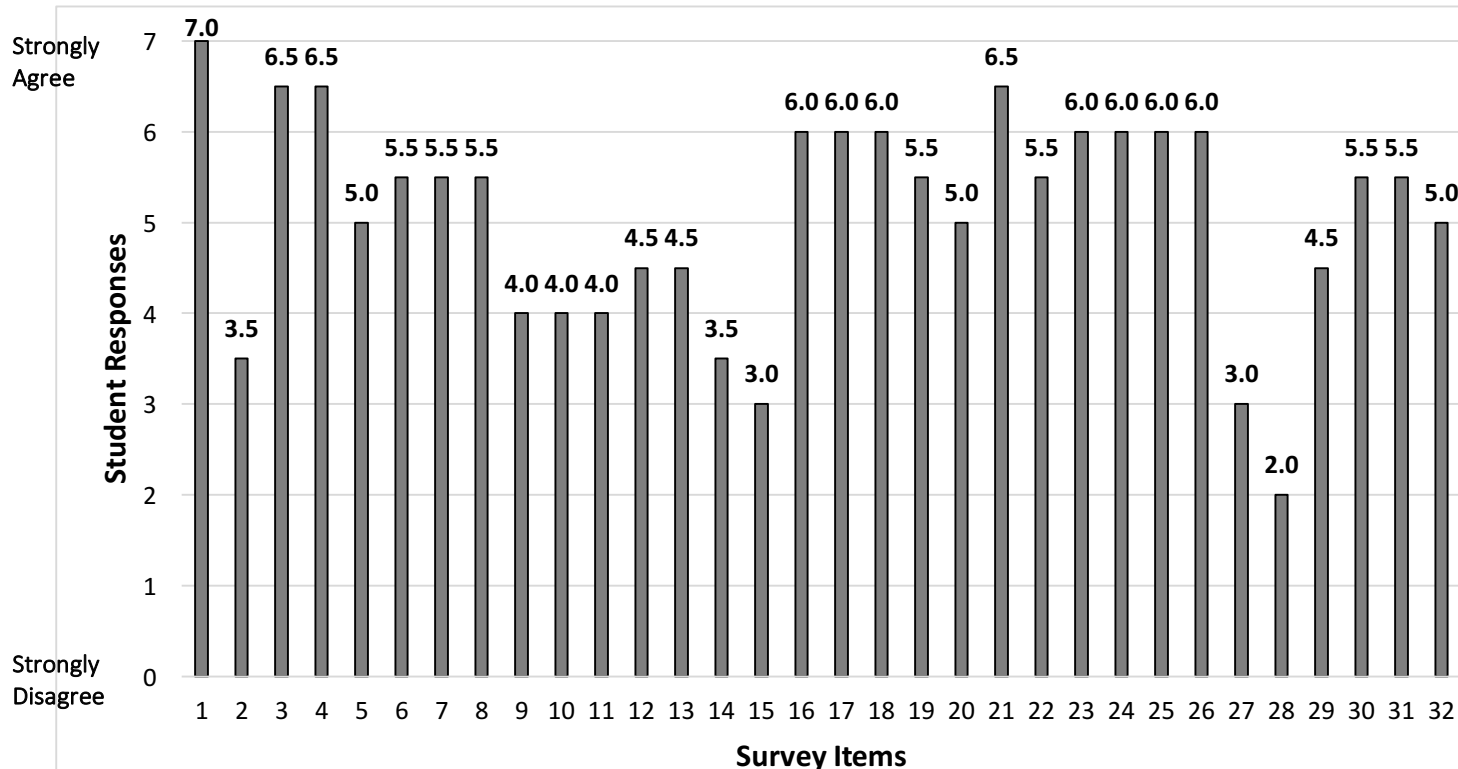
ISPOSC 210: U.S. Politics

Grade Comparisons:

Fall 2015 Assignment Grades		Fall 2016 Assignment Grades	
Count	23	Count	11
Average	79.1	Average	82.5
Median	84.0	Median	84.0
Mode	92.0	Mode	n/a
Standard Deviation	21.9	Standard Deviation	8.9
Minimum	0	Minimum	65.3
Maximum	100	Maximum	93.3

Student Perceptions:

Of the 33 Students enrolled in the course, 2 students both responded to survey and consented to participate in the study.



See Page 8 for list of Survey Questions

Summary of Student Comments: None

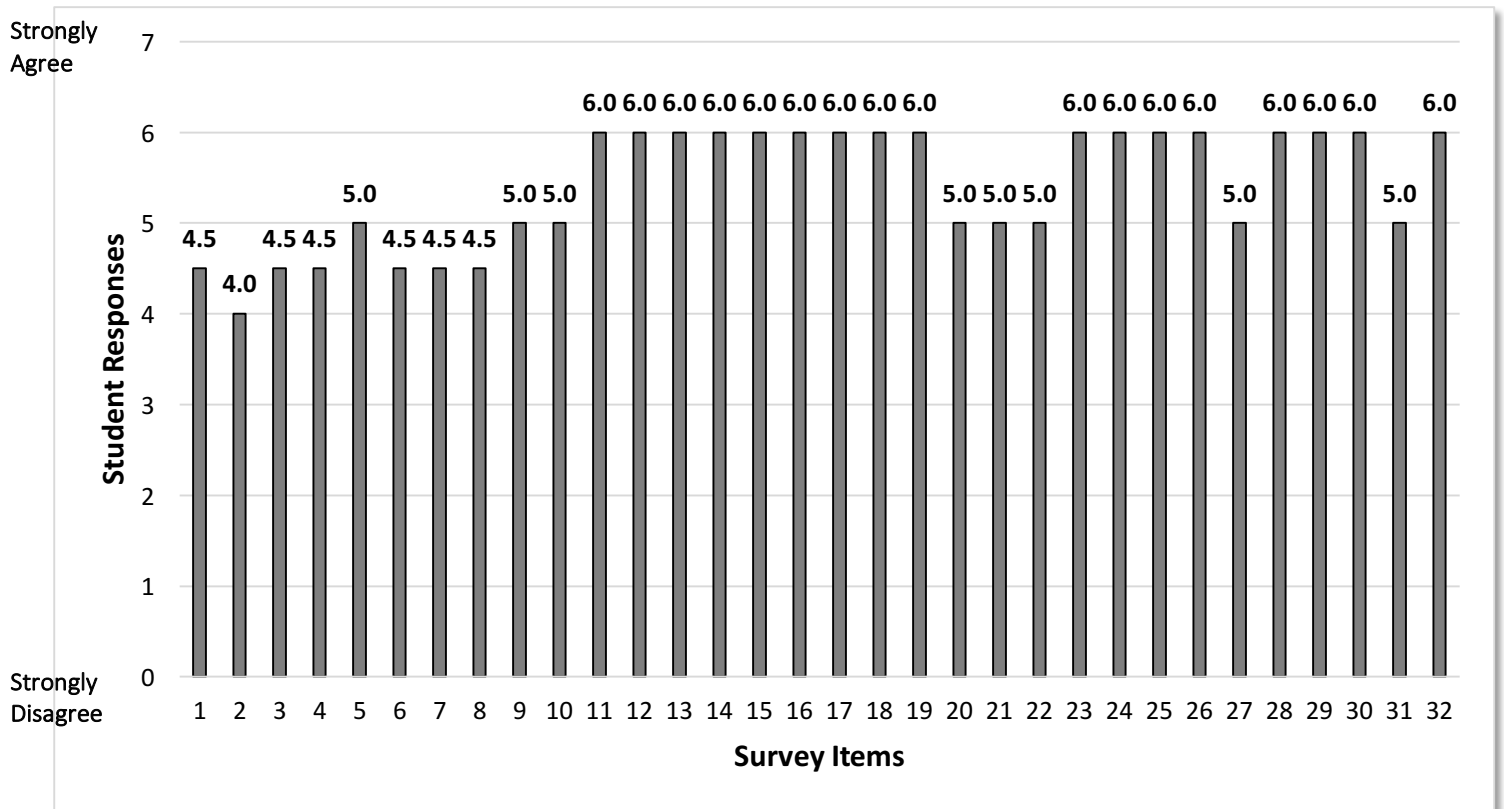
## PE 363: Assessment of K-12 PE Learners

## Grade Comparisons:

Spring 2016 Final Course Grades		Fall 2016 Final Course Grades	
Count	6	Count	4
Average	78.5	Average	83.3
Median	77.5	Median	86.5
Mode	75.0	Mode	n/a
Standard Deviation	5.3	Standard Deviation	10.6
Minimum	72.0	Minimum	68.0
Maximum	85.0	Maximum	92.0

## Student Perceptions:

Of the 4 students enrolled in the course, 2 students both responded to survey and consented to participate in the study.



See Page 8 for list of Survey Questions

Summary of Student Comments: None

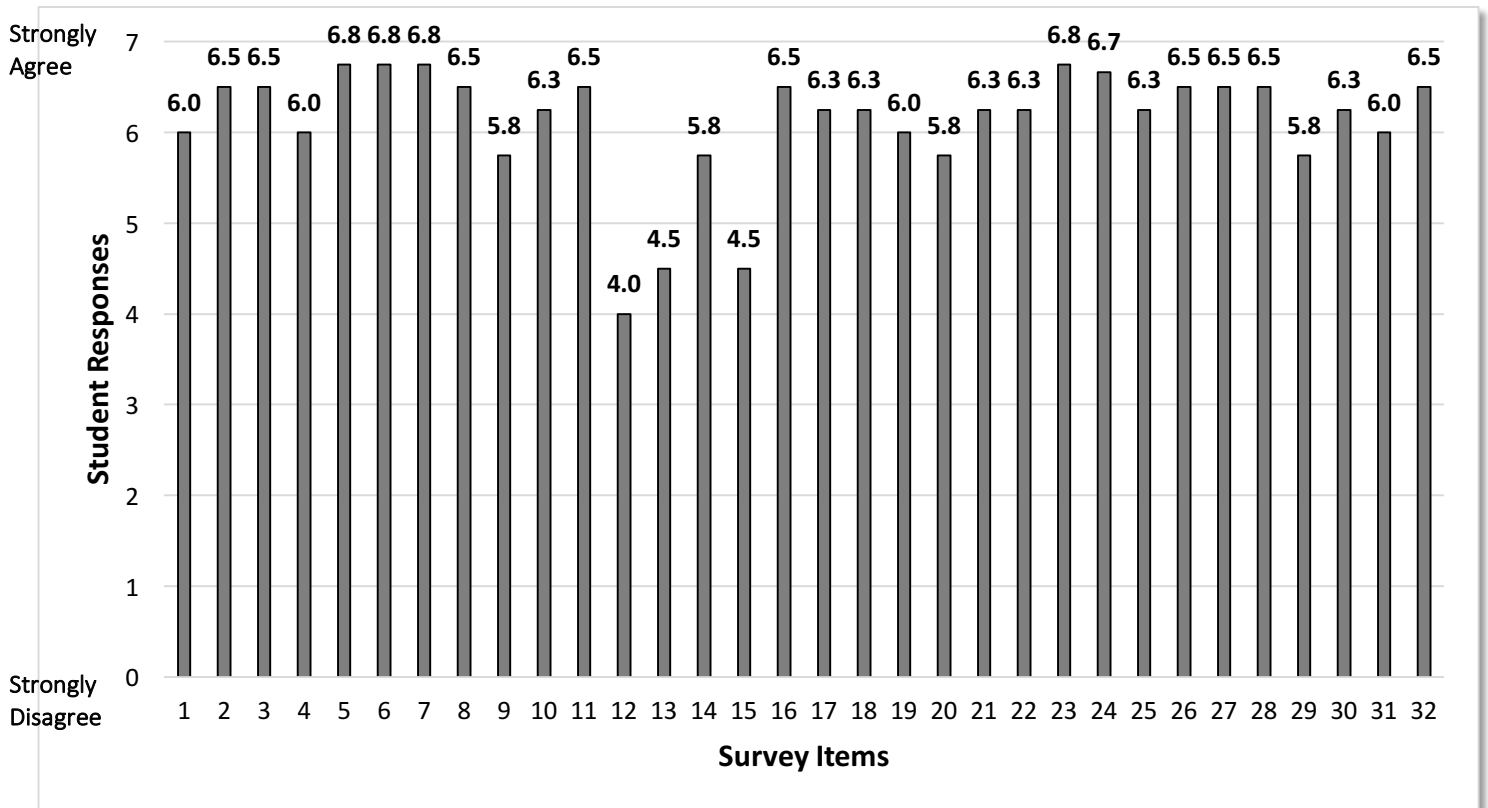
BIO 363: Plant Biology

Grade Comparisons:

Previous Semester Grades:		Fall 2016 Assignment Grades	
Count	n/a	Count	9
Average	n/a	Average	84.3
Median	n/a	Median	91.0
Mode	n/a	Mode	96.0
Standard Deviation	n/a	Standard Deviation	13.6
Minimum	n/a	Minimum	62.0
Maximum	n/a	Maximum	96.0

Student Perceptions:

Of the 14 students enrolled in the course, 4 students both responded to survey and consented to participate in the study



See Page 8 for list of Survey Questions

#### Summary of Student Comments:

Enjoyed the freedom to research something of personal interest.

More classes should adapt this approach, but approach is more appropriate in upper-level courses where students already have a foundation of disciplinary knowledge to draw from.

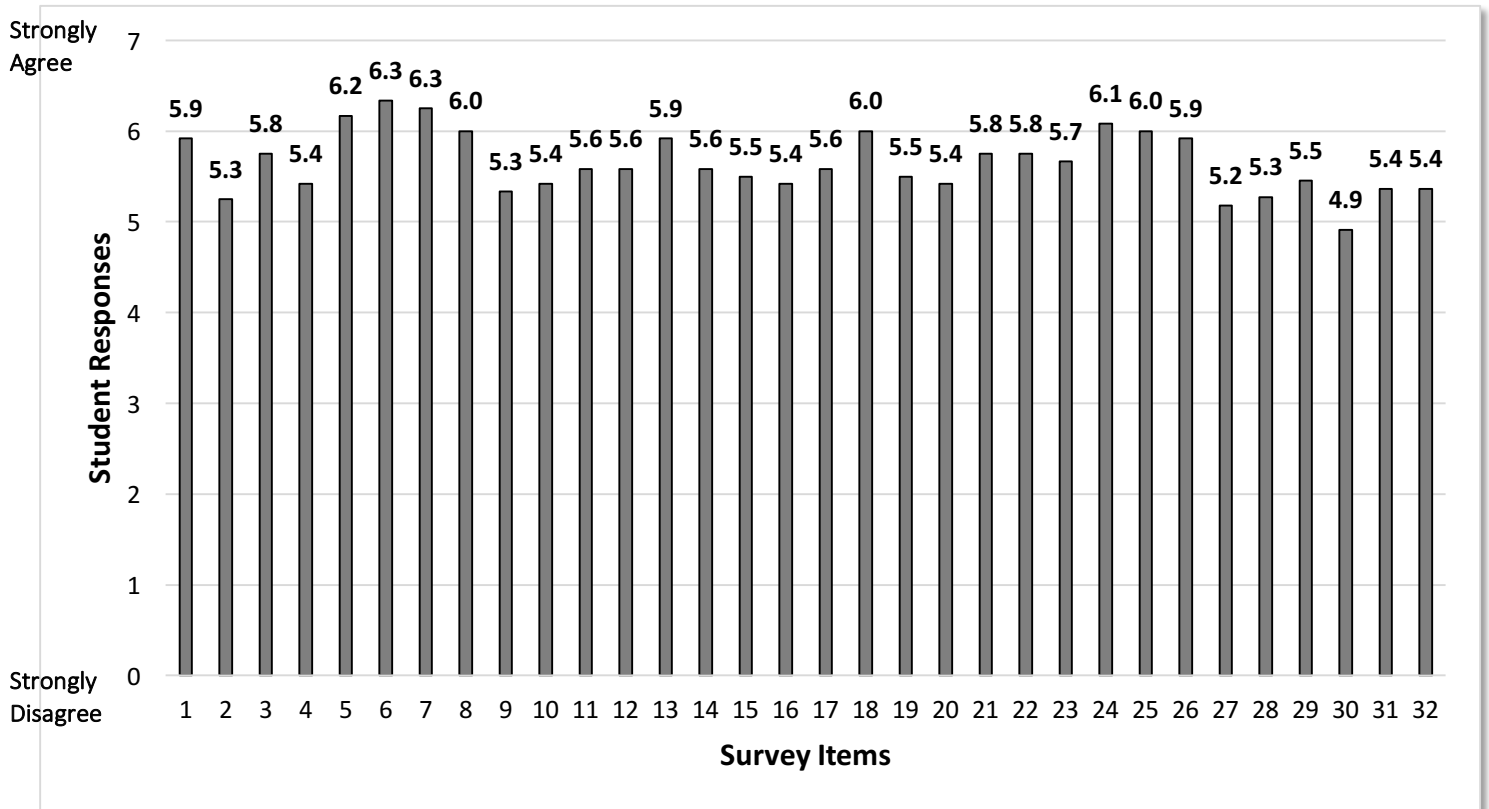
ISSOC 310: Social Problems

Grade Comparisons:

Spring 2016 Assignments Grades:		Spring 2017 Assignments Grades	
Count	33	Count	32
Average	88.0	Average	88.6
Median	88.5	Median	89.0
Mode	87.0	Mode	n/a
Standard Deviation	4.2	Standard Deviation	4.6
Minimum	76.0	Minimum	79.0
Maximum	94.5	Maximum	97.0

Student Perceptions:

Of the 60 students enrolled in two sections of the course, 13 students both responded to survey and consented to participate in the study.



[See Page 8 for list of Survey Questions](#)

Summary of Student Comments:

Enjoyed the project.



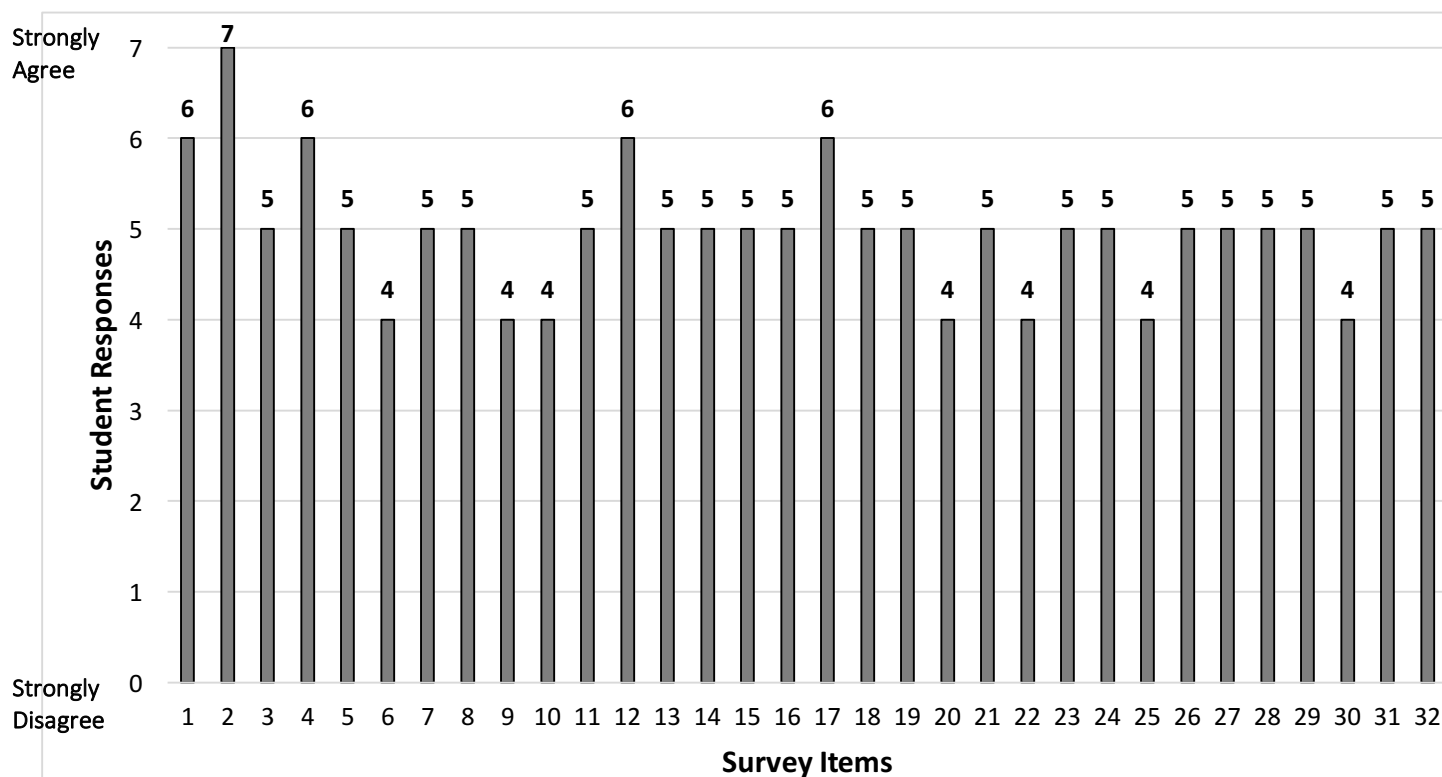
## PE 362: Organization &amp; Administration of PE Programs

## Grade Comparisons:

Spring 2016 Final Grades:		Spring 2017 Final Grades	
Count	6	Count	7
Average	86.0	Average	85.3
Median	86.3	Median	86.7
Mode	n/a	Mode	n/a
Standard Deviation	3.4	Standard Deviation	5.8
Minimum	75.5	Minimum	77.6
Maximum	96.0	Maximum	93.1

## Student Perceptions:

Of the 10 students enrolled in the course, 1 student both responded to survey and consented to participate in the study.



See Page 8 for list of Survey Questions

Summary of Student Comments: None

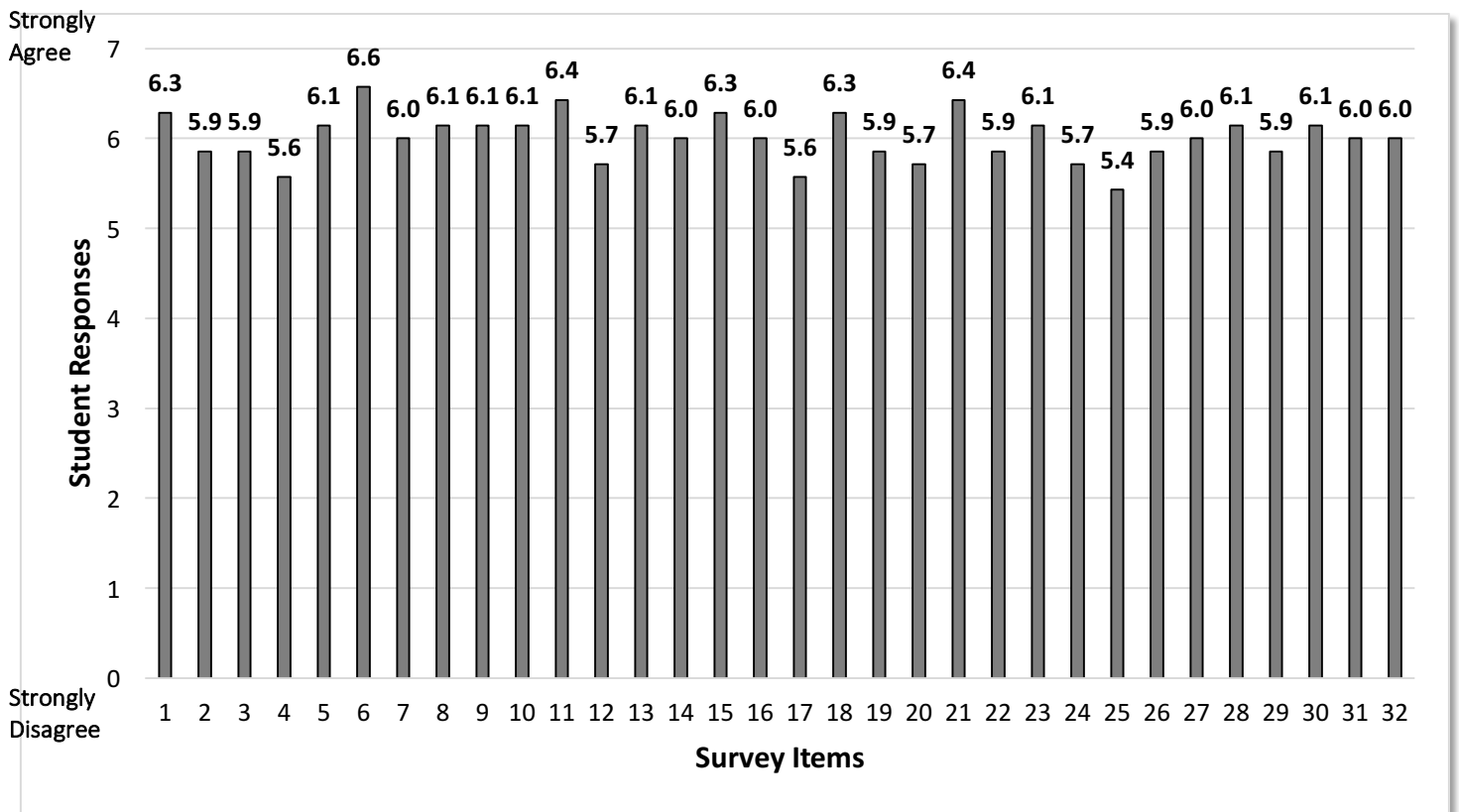
IIINFO 320: Participatory Cultures

Grade Comparisons:

Spring 2016 Final Grades:		Spring 2017 Final Grades	
Count	18	Count	9
Average	88.6	Average	88.6
Median	90.8	Median	95.3
Mode	n/a	Mode	98.0
Standard Deviation	2.1	Standard Deviation	16.3
Minimum	60.3	Minimum	48.5
Maximum	96.5	Maximum	100.0

Student Perceptions:

Of the 21 students enrolled in the course, 7 students both responded to survey and consented to participate in the study.



See Page 8 for list of Survey Questions

Summary of Student Comments:

Learning experience was new, interesting, and a good way to teach the subject matter of the course.

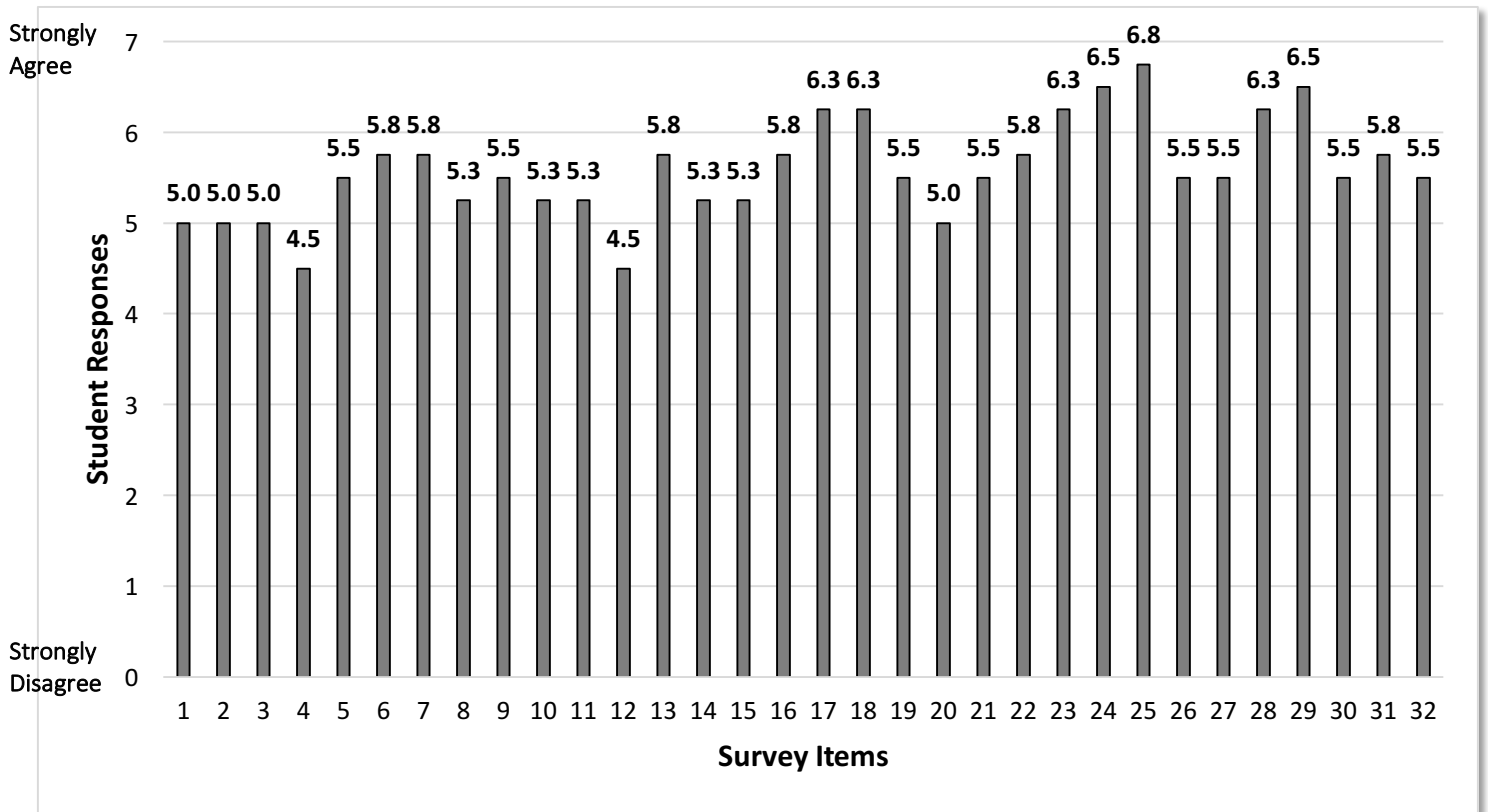
IHPIL 220: Ethics

Grade Comparisons:

Spring 2016 Final Grades:		Spring 2017 Final Grades	
Count	26	Count	6
Average	80.5	Average	81.3
Median	83.2	Median	80.8
Mode	n/a	Mode	n/a
Standard Deviation	8.7	Standard Deviation	9.5
Minimum	56.4	Minimum	68.8
Maximum	91.8	Maximum	94.0

Student Perceptions:

Of the 11 students enrolled in the course, 4 students both responded to survey and consented to participate in the study.



See Page 8 for list of Survey Questions

Summary of Student Comments:

Enjoyed the learning experience afforded by this course.

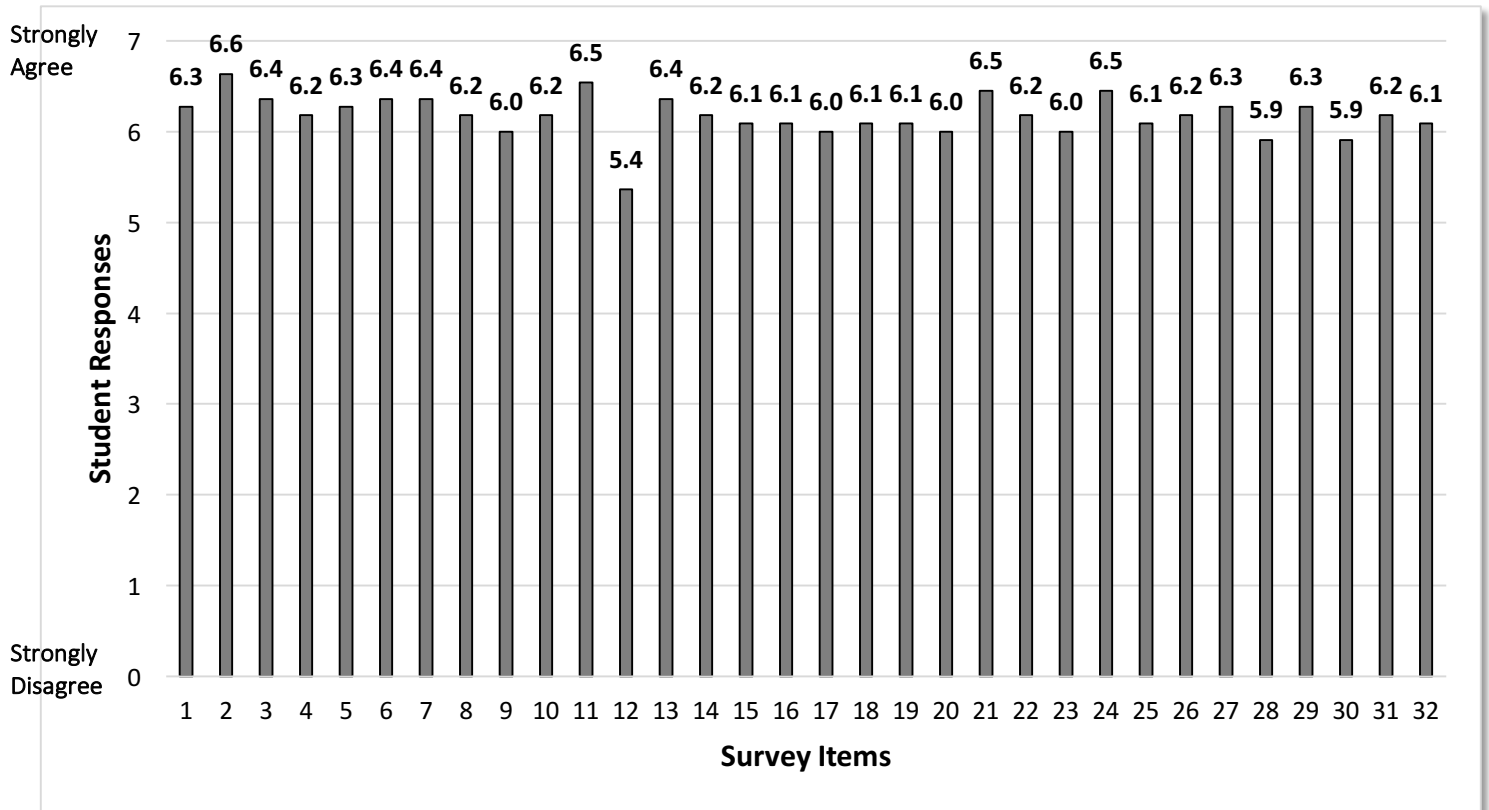
BIO 380: Endocrine Disruption

Grade Comparisons:

Spring 2014 Final Grades:		Spring 2017 Final Grades	
Count	17	Count	11
Average	84.3	Average	88.1
Median	81.2	Median	91.2
Mode	86.0	Mode	n/a
Standard Deviation	6.0	Standard Deviation	13.6
Minimum	70.1	Minimum	49.2
Maximum	93.3	Maximum	99.4

Student Perceptions:

Of the 12 students enrolled in the course, 11 students both responded to the survey and consented to participate in the study.



See Page 8 for list of Survey Questions

#### Summary of Student Comments:

Group work, where students are assigned partners that have mixed abilities and dedication to producing high-quality work, can be frustrating.

Course was a good experience, but traditional learning is good too.

Approach to learning was challenging, but encouraged student learning.

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## Student Learning Outcomes

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Most of the faculty ambassadors taught the same course in recent semesters as their AY 2016-2017 open education (OE) course using traditional textbooks, materials, and pedagogical approaches. Exceptions to this are marked with n/a on the table below. Faculty reported that although some assignments necessarily differed this AY corresponding to OE content, exams or other course assessments, and their rigor, remained relatively constant.

Descriptive statistics of student performance for the prior section with traditional textbooks, materials, and pedagogical approaches and the AY 2016-2017 section using OE were calculated. Mean grades for students' grades on specific assignments were calculated or, when more appropriate, final mean course grades were used for comparison.

Mean assignment scores and mean final course grades were generally comparable ( $\pm 5$  points) between each course's sections.



### STUDENT LEARNING OUTCOMES (MEAN SCORES)

COURSE	FALL 16 COURSES		SPRING 17 COURSES	
	Prior	F16	Prior	S17
ISPOSC 210: U.S. Politics	79.1	82.5		
PE 363: Assessment of K-12 PE Learners	78.5	83.3		
BIO 363: Plant Biology	n/a	84.3		
ISSOC 310: Social Problems (2 sections)			88.0	88.6
PE 362: Organization & Administration of PE Programs			86.0	85.3
IIINFO 320: Participatory Cultures			88.6	88.6
IHPIL 220: Ethics			80.5	81.3
BIO 380: Endocrine Disruption			84.3	88.1
COMM 175: Introduction to Communication Studies			-	-

“-“ missing data

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

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## Faculty Perceptions of the OE Experience

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At the conclusion of the fall 2016 and spring 2017 semesters, faculty ambassadors were asked to reflect on their experiences incorporating and using OE in their courses. Eight faculty responded to this survey.

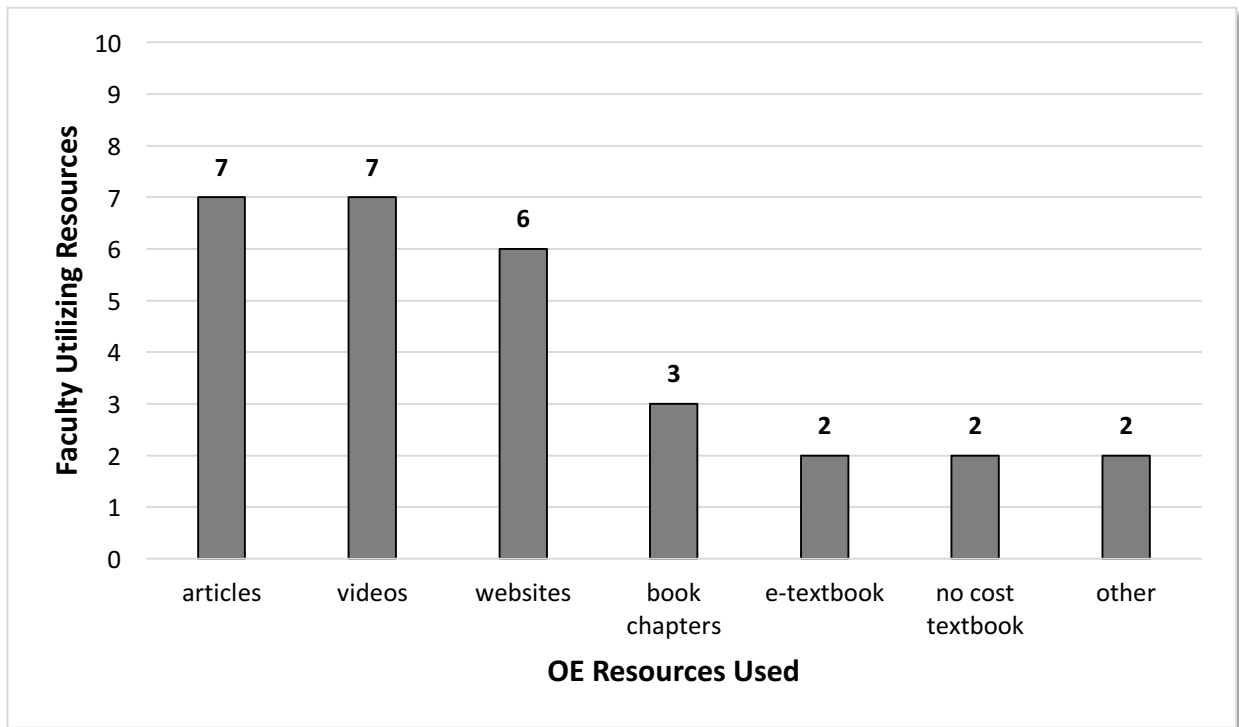
Faculty used a variety of open materials, most frequently these included articles, videos, and websites.

Faculty generally agreed 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 reported that their courses were enhanced and that students' exposure to elements beyond the classroom was better/richer because of OER/OA/OP. They also reported that support staff were helpful in locating materials to use in their courses.

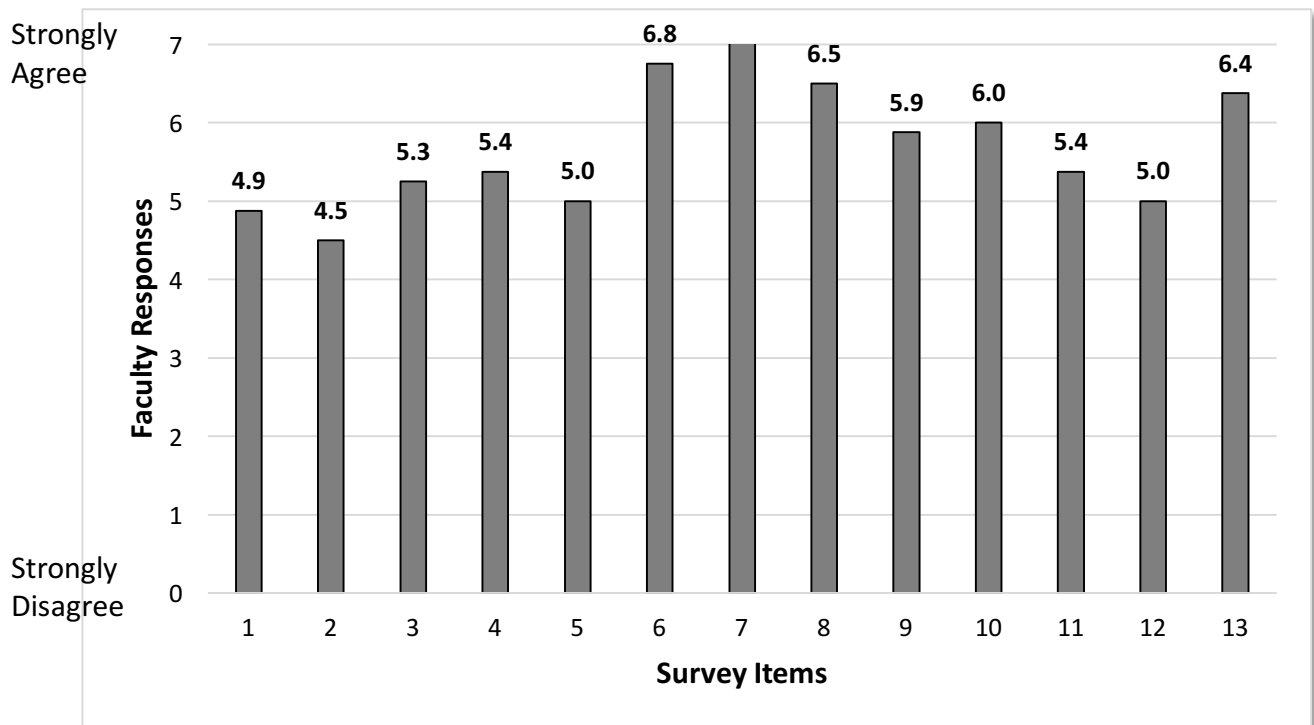
Faculty reported that the amount of associated work to develop and adapt their courses was in some cases considerable, but also expected and manageable. In some cases, they reported that the quality and changing availability of open resources presented some challenges during the semester.

Faculty viewed their efforts as contributing to positive changes in their pedagogy and in the classroom – for example, integrating current events and the most recent scholarly commentary and debate available. They also reflected on the ways that revamping their courses energized and prompted self-reflection of their teaching; faculty felt more interactive, engaging, and student-centered teaching the courses with an open education approach. Overall, the faculty ambassadors reported that they would continue to use open resources in their courses.

## OE Resources Used:



## Faculty Perceptions:



## Survey Items

Q1	<i>Students' performance was, on average, better/richer</i> because of OER/OA/OP when compared to previous courses I have taught using traditional materials.
Q2	<i>Students were more engaged in this course</i> because of OER/OA/OP 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/OA/OP 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>open education support team 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.

## SUMMARIES OF FACULTY COMMENTS:

Please comment on the time involved in preparing your course to incorporate OER/OA/OP materials this semester.

Initial time commitment to locate open resources and/or redesign courses was substantial, but was not overly difficult or burdensome.

In addition to time spent revamping courses before the semester started, some additional time was spent during the semester to find materials to replace broken links or unavailable content initially assigned.

Open resources were livelier and more current than textbook material.

What do you feel worked well this semester in regards to using OER/OA/OP in your course?

Students enjoyed the interactive nature of the redesigned courses.

Quality of student work was improved.

Students appreciated the cost savings afforded to them because of OER

Student engagement seemed to improve in self-directed learning environments.

Encouraged student reading.

What do you feel did not work well this semester in regards to using OER/OA/OP materials in your course?

Increased time was spent on grading assignments.

In some cases, open resources were a compromise – some were too simple, others too sophisticated for the course.

Students took online readings less seriously than they would reading assignments from a traditional textbook.

Quality of some students' work was low.

Having to replace online resources that were no longer available was difficult, but also presented opportunities for students to do research and find new resources to use during class time.

How did the incorporation of OER/OA/OP impact your teaching this semester?

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

Energized my teaching to engage students in development of course materials.

Heightened my own engagement and willingness to try something new.

Approach was a positive addition to the classroom and more collaborative.

Increased prep time.

Please describe any notable interactions or personal feedback given from students regarding the OER/OA/OP materials in your course this semester.

Overall, student feedback was positive.

Students were engaged in the course and, in some cases, motivated to produce high quality work.

Students seemed to appreciate the friendly, open, collaborative, and self-directed learning environment in the course.