

Affordable Learning Georgia Textbook Transformation Grants

Final Report

Date: August 14, 2018

Grant Round: 10

Grant Number: 335

Institution Name(s): Clayton State University

Project Lead: Sheryne Southard, J.D.

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Course Name(s) and Course Numbers: Tech 3101, Supervision in the Workforce

Tech 3104, Ethics for Administrative and Technical Managers

Tech 3111, Applied Economics

Tech 4115, Global Technology

Semester Project Began: Fall 2017

Final Semester of Implementation: Summer 2018

Total Number of Students Affected During Project: 534 annually

1. Narrative

The goal of this project was to improve the success of the students in the Department of Interdisciplinary Studies by 1) offering no-cost and low cost books, and 2) enhancing the learning materials and curriculum to meet their individual needs. The team set forth three outcomes designed to accomplish this objective.

The first outcome was the adoption of OER textbooks to significantly reduce the textbook costs in Tech 3101 (Ethics for Administrative and Technical Managers); Tech 3104, Ethics for Administrative and Technical Managers; Tech 3111, Applied Economics; and Tech 4115, Global Technology. This measure was designed to 1) reduce students' financial burden to purchase textbooks which can hinder or delay student's ability to enroll in the course; and 2) ensure that all students have the textbook on the first day of class to increase student success. Last year 534 B.A.S. students enrolled in these classes and paid an aggregate cost of between \$69,960.75 (used books) to \$93,900.21 (new books) for four books in the program.

After the adoption of the OER textbooks identified for this grant, the textbook costs were reduced to 0. The following OER textbooks were adopted pursuant to the grant:

Tech 3101:

<http://ezproxy.clayton.edu:2048/login?url=https://ebookcentral.proquest.com/lib/claytonstate/detail.action?docID=1043637>

Tech 3104: The Business Ethics Workshop. (n.d.). Retrieved from https://saylordotorg.github.io/text_the-business-ethics-workshop/ and Frey, W., & Cruz-Cruz, J. A. (n.d.). Business Ethics Derived from Corporate Governance. Openstax CNX. <http://cnx.org/contents/3d8499e9-08c0-47dd-9482-7e8131ce99bc@11.15>

Tech 3111: <https://openstax.org/details/books/principles-economics-2e>

Tech 4115: <https://open.umn.edu/opentextbooks/BookDetail.aspx?bookId=72>

The second outcome was to develop or adopt audio-visual instructional content to align with the OER book. This measure was designed to improve student success by stimulating learning materials that encourage students to be active and engaged learners and improve student performance. Below is a summary of the multimedia development and adoptions in accordance with the grant (a detailed list of the links organized by subject matter is attached):

Tech 3101 - 15 video lectures were developed or adopted

Tech 3104 – 22 video lectures were developed or adopted

Tech 3111 - 54 video lectures were developed or adopted

Tech 4115, an orientation video lecture was created and 33 video lectures were developed or adopted

The third outcome was to expand the use of OER student resources at CSU by mentoring faculty members in Department of Interdisciplinary Studies and assisting other faculty with the adoption and creation of no-cost or low-cost textbooks for other upper-division courses. The department is reviewing additional courses that can be transformed with the use of OER textbooks in place of the fee-based textbooks in order to expand the cost-savings further.

B. Describe lessons learned, including any things you would do differently next time.

One member felt overwhelmed when trying to review the myriad resources available and then select ones to use in the course. She came to realization that the textbooks that she used all of these years were not just providing content but also a ready-made structure for the course. After spending the first couple of weeks searching through resources and not making much progress, she realized that she needed to take a more systematic approach.

She decided to go back to my old course content and evaluate what concepts and tools she wanted to use again. She ranked them as “definitely keep”, “maybe” and “replace.” This simple evaluation of my old resources helped me to be more focused (and less stressed) when she reviewed possible resources. The freedom to choose anything can be daunting so starting with some kind of plan is helpful.

Another member, noted that since the free textbook chosen had no teaching aides, he was forced to quickly create quizzes, exams, lectures and PowerPoints. In doing so, he found that the opportunity for typos and question/answer accuracy was less than perfect. He would suggest a graduate student be assigned to assist in this task. Perusing the online text and trying to create exam questions that were pertinent, accurate and in the proper context was a challenge. He has since re-written many of the exam questions for the new semester.

Another member, noted that she would extend the implementation and evaluation time frame to span several semesters. The grant work began at the end of Fall 2017, which left only the Spring of 2018 for planning and development since the implementation took place Summer 2018.

2. Quotes

- Provide three quotes from students evaluating their experience with the no-cost learning materials.

Thanks for looking into this. This option brings a lot of value to the student.

I greatly appreciate the use of open source and free texts for classes. The content is still very good and matches up well with the course learning objectives and assignments.

The course was cost effective. I appreciate the use on electronic materials because it not only saves money; it saves the planet!

3. Quantitative and Qualitative Measures

3a. Uniform Measurements Questions

Student Opinion of Materials

Was the overall student opinion about the materials used in the course positive, neutral, or negative?

Please note that the project was implemented during the summer semester. Enrollment is lower in the summer than other semesters. Significantly more students will be impacted in subsequent semesters.

Tech 3101: Total number of students affected in this project: 45 (Summer 2018 – Implementation Semester)

- Positive: 100 % of 20 number of respondents
- Neutral: 0 % of 20 number of respondents
- Negative: 0 % of 20 number of respondents

Tech 3104: Total number of students affected in this project: 13 (Summer 2018 – Implementation Semester)

- Positive: 100 % of 17 number of respondents
- Neutral: 0% of 17 number of respondents
- Negative: 0 % of 17 number of respondents

Tech 3111: Total number of students affected in this project: 25 (Summer 2018 – Implementation Semester)

- Positive: 96.87 % of 33 number of respondents

- Neutral: 0 % of 33 number of respondents
- Negative: 3.13 % of 33 number of respondents

Tech 4115: Total number of students affected in this project: 35 (Summer 2018 – Implementation Semester)

- Positive: 96.55 % of 29 number of respondents
- Neutral: 3.45 % of 29 number of respondents
- Negative: 0 % of 29 number of respondents

Student Learning Outcomes and Grades

Was the overall comparative impact on student performance in terms of learning outcomes and grades in the semester(s) of implementation over previous semesters positive, neutral, or negative?

Student outcomes should be described in detail in Section 3b.

Tech 3101 - Choose One:

- Positive: Higher performance outcomes measured over previous semester(s)
- Neutral: Same performance outcomes over previous semester(s)
- Negative: Lower performance outcomes over previous semester(s)

Using the D2L statistics reporting function, a comparison was made of student averages for quizzes and the final exam in SP18 section T1 to those in SU18 section 90. Note that the spring semester had six quizzes and the summer had eight.

assessment	SP18	SU18
Final exam	74.57	82.54
Quiz 1	82.3	88.13
Quiz 2	80.56	97.14
Quiz 3	77.64	86.72
Quiz 4	74.46	86.62
Quiz 5	79.14	89.71
Quiz 6	70	94.26
Quiz 7	Na	77.5
Quiz 8	Na	90.74

Tech 3104 - Choose One:

- Positive: Higher performance outcomes measured over previous semester(s)
- Neutral: Same performance outcomes over previous semester(s)
- Negative: Lower performance outcomes over previous semester(s)

Sp 18		Su 18	
A – 21	53.8%	A – 5	38.5%
B – 11	28.2%	B – 6	46.2%
C – 3	7.7%	C – 1	7.7%
D – 1	2.6%	D – 0	0%
F – 1	2.6%	F – 1	7.7%

The grade distribution data varied based upon the grade earned, therefore it was classified as neutral. A higher percentage of students earned an “A” in the pre-implementation semester (53.8% vs. 38.5%). However, a higher percentage of student earned a B in the post-implementation semester (46.2% vs. 28.2%). The percentage of students that earned a C are identical. There was a slightly lower percentage of students that earned a D in the post-implementation semester (0% vs. 2.6%). But, there was a higher percentage of students that earned an F in the post-implementation semester (7.7% vs. 2.6%).

Tech 3111 - Choose One:

- Positive: Higher performance outcomes measured over previous semester(s)
- Neutral: Same performance outcomes over previous semester(s)
- Negative: Lower performance outcomes over previous semester(s)

Summer semester is 10 weeks, shorter than the Fall and Spring semesters. Fall and Spring semesters are 16 or 17 weeks. The course setup is slightly different in the summer semester than in the Fall and Spring semesters. So I compare the learning outcomes of Summer 2017 before we adopted the free textbook with those of Summer 2018, the first semester that we adopted the free textbook.

The table below compares the pretest and posttest scores, chapter test scores and grade distribution between Summer 2017 and Summer 2018. The table shows that the test scores in Summer 2018 are higher than those of Summer 2017. The average pretest score in Summer 2018 is 55%, while the average pretest score in Summer 2017 is 48%. It indicates that students of Summer 2018 are better prepared for this course than students of Summer 2017. Unsurprisingly, the average test scores of Summer 2018 are higher than those of Summer 2017. With regards to grade distribution, higher percentage of students in Summer 2018 get A and B, and lower percentage of students get D, F, W or WF. Firstly, the average pretest score indicates that Summer 2018 students are better prepared for the course. Secondly, there are much fewer questions provided by the free textbook publisher, and the questions are slightly easier.

Tech 4115 - Choose One:

- Positive: Higher performance outcomes measured over previous semester(s)
- Neutral: Same performance outcomes over previous semester(s)
- Negative: Lower performance outcomes over previous semester(s)

Student grades differed from spring to summer. Grades were generally comparable between semesters, but the grades would be characterized negative: Lower Performance over previous semester (which was taught by another instructor @ 16 wks); and neutral: Same Performance over previous Summer semester (taught by me @ 9 wks).

Grade distribution comparison

Sp 18		Su 18		Su 17	
A - 20	51%	A - 17	52%	A - 5	25%
B - 18	46%	B - 12	36%	B - 12	60%
C - 1	3%	C - 2	6%	C - 2	10%
D - 0	0%	D - 0	0%	D - 0	0%
F - 0	0%	F - 2	6%	F - 1	5%

All three F grades were associated with lack of participation and had no bearing on the material (resource) used.

Exam grade comparison

Sp 18	Su 18	Su 17
UNK	77%	75%

Group Project Grade comparison

Sp 18	Su 18	Su 17
93%	90%	91%

Student Drop/Fail/Withdraw (DFW) Rates

Was the overall comparative impact on Drop/Fail/Withdraw (DFW) rates in the semester(s) of implementation over previous semesters positive, neutral, or negative?

Drop/Fail/Withdraw Rate:

Depending on what you and your institution can measure, this may also be known as a drop/failure rate or a withdraw/failure rate.

Tech 3101: 26.3% of students, out of a total 45 students affected, dropped/failed/withdrew from the course in the final semester of implementation. In the Spring of 2018 35.8% (14 out of 39) of the students received a D, F, W or W/F.

Choose One:

- Positive: This is a lower percentage of students with D/F/W than previous semester(s)
- Neutral: This is the same percentage of students with D/F/W than previous semester(s)
- Negative: This is a higher percentage of students with D/F/W than previous semester(s)

Tech 3104: 15.4 % of students, out of a total 13 students affected, dropped/failed/withdrew from the course in the final semester of implementation. For Tech 3104, the D/F/W rate was 7.7% (3 out of 39 total students) in the Spring of 2018, the pre-implementation semester. The D/F/W rates are typically higher in the summer due to the abbreviated schedule. The team attribute the negative D/F/W results to the rigors of the course within a shortened time frame and not the adoption of the OER resource.

Choose One:

- Positive: This is a lower percentage of students with D/F/W than previous semester(s)
- Neutral: This is the same percentage of students with D/F/W than previous semester(s)
- Negative: This is a higher percentage of students with D/F/W than previous semester(s)

Tech 3111: 12% of students, out of a total 25 students affected, dropped/failed/withdrew from the course in the final semester of implementation. The D/F/W rate of Summer 2018 is only 12%, while the D/F/W rate in Summer 2017 is as high as 25%. As mentioned previously, students of Summer 2018 are better prepared for the course and test questions are slightly easier than in Summer 2017. The data presented in the table shows evidence that lowering textbook cost seems to be effective in preventing students from withdrawing from the course or getting a failure grade.

Choose One:

- Positive: This is a lower percentage of students with D/F/W than previous semester(s)

- ___ Neutral: This is the same percentage of students with D/F/W than previous semester(s)
- ___ Negative: This is a higher percentage of students with D/F/W than previous semester(s)

Tech 4115: 6 % of students, out of a total 35 students affected, dropped/failed/withdrew from the course in the final semester of implementation. 6% of the students failed the course during the summer semester. Both failed due to lack of participation, not exam/assessment results. This level would be considered Negative when compared to the previous semester (16 wks with a different instructor) and Neutral when compared to the previous summer semester (9 wks with same instructor).

Choose One:

- ___ Positive: This is a lower percentage of students with D/F/W than previous semester(s)
- X Neutral: This is the same percentage of students with D/F/W than previous semester(s)
- X Negative: This is a higher percentage of students with D/F/W than previous semester(s)

3b. Measures Narrative

Student impression data collected in this project includes quantitative data from Likert-scale formatted questions and qualitative data from open-ended questions. For some classes, students were offered nominal extra credit to incentivize participation. The grade distributions data was collected each of the exams in the courses.

Value of OER Resources to Student Population

To confirm the value of the OER resource for the Clayton State University student population, students were asked three questions about the whether the students 1) take textbook cost into consideration when registering for a class; 2) expect instructor to take textbook costs into consideration; and 3) only buy or rent a textbook if it is absolutely necessary. The chart below summarizes the student response rate for these questions. The vast majority of the CSU students in the four courses take textbook costs into consideration when registering (64.4% to 75.9%); expect the instructor to take textbook costs into consideration (86.2% to 91.6%); and only purchase or rent a textbook if absolutely mandated (74% to 86.2%). These results confirmed the students’ textbook cost concerns and the need for the transformation project.

Question: I take into consideration the cost of a course textbook and other class materials when I register for a class	Course	Strongly Agree or Agree	Neutral	Disagree or Strongly Disagree
	Tech 3101	64.4%	15.3%	20.3%
	Tech 3104	65%	20.5%	14.5%
	Tech 3111	85.6%	4.8%	9.6%
	Tech 4115	75.9%	10.3%	13.8%
Question: When an instructor develops a course, he or she should take into consideration the cost of a textbook and other course material	Tech 3101	86.2%	10.3%	3.5%

	Tech 3104	90.4%	4.8%	4.8%
	Tech 3111	91.6%	6.3%	2.1%
	Tech 4115	89.7%	6.9%	3.4%
Question: I will only buy or rent a textbook if it is absolutely necessary	Tech 3101	79.6%	11.9%	8.5%
	Tech 3104	85.6%	4.8%	9.6%
	Tech 3111	74%	4.17%	21.88%
	Tech 4115	86.2%	3.4%	10.34%

Student Impression of OER Resource

To evaluate whether the students were amenable to an alternative to the traditional (non-free) textbook, we compared student satisfaction with the textbook prior to the implementation with student satisfaction after the implementation. When surveyed about whether the OER book selected for the course was sufficient for their needs, the vast majority of the pre-implementation data pool agreed (76.92% to 92.5%). Although there was a high percentage of student satisfaction in the pre-OER phase, the satisfaction after the implementation was unanimous across three of the four courses (as indicated in the chart below) and 96.55% in the remaining course.

Question: The textbook used for this course was sufficient for my needs to successfully complete the course.	Course	Strongly Agree or Agree	Neutral	Disagree or Strongly Disagree
	Tech 3101 – Pre-OER Transformation	76.92%	23.09%	0 %
	Tech 3101 Post-OER Transformation	100%	0 %	0 %
	Tech 3104 Pre-OER Transformation	89.39%	4.55%	6.07 %
	Tech 3104 Post-OER Transformation	100 %	0 %	0 %
	Tech 3111 Pre-OER Transformation	90.47%	7.94%	1.59%

	Tech 3111 Post-OER Transformation	100%	0 %`	0 %
	Tech 4115 Pre-OER Transformation	92.5 %	2.5%	5%
	Tech 4115 Post-OER Transformation	96.55 %	6.9%	3.4%

Option for Print Version

Students were queried about whether they would also want the option to purchase a printed version of the OER resource. The student response rate varied by course. Approximately ¼ of the respondents indicated that they would avail themselves of this option in Tech 3101 and Tech 4115. The number of rate doubled in Tech 3104 and Tech 3111, 52.94% and 45.45%, respectively. This information was helpful to the team as it indicated the value of inquiring with the bookstore about offering a low cost print version of the EOR resource.

Question: If an instructor adopted a free online textbook, I would still want the option to buy a printed copy	Course	Strongly Agree or Agree	Neutral	Disagree or Strongly Disagree
	Tech 3101	25%	30%	45%
	Tech 3104	52.94%	5.88%	41.17%
	Tech 3111	45.45%	18.18%	36.36%
	Tech 4115	24.14%	24.14%	51.73%

Finally, the most important variable was the impact of the project on the student outcomes. The student outcomes in the courses varied between positive, neutral and negative. However, this team does not attribute the negative impact (when observed) to the adoption of the OER resource. Rather, it attributes any negative impact to the rigorous summer schedule. The same is true for the D/F/W rate. The impact varied between positive, neutral and negative across the four courses. The team concluded the summer schedule was the cause of the higher D/F/W rate. The team will evaluate this data in a subsequent full semester to make a more accurate assessment of the impact.

4. Sustainability Plan

Given the extremely favorable student feedback and positive student outcomes, the team is committed to continue using the OER resources selected for the courses. The instructors will regularly check with OpenStax to ensure that additional versions of their text are not available. For instance, during the timeframe of this transformation process the Tech 3111 OER textbook

was updated from edition 1 to edition 2. Updated editions will be used whenever available to ensure that the course is current. The textbooks will be regularly reviewed in accordance with the instructional matrix. The intention is to continuously monitor, assess and improve the materials to maximize their pedagogical benefit to the students.

5. Future Plans

The team plans to continue to seek out OER resources for other courses taught in the Department. Also, the team is planning to present a proposal to present its research findings at the International Society for Exploring Teaching and Learning to disseminate information about the grant and its impact of OER resources on the student population.

6. Description of Photograph

Top left Dr. Bryan LaBrecque, Associate Professor, and responsible for Tech 4115 course transformation

Top right: Christie Burton, Professor, and responsible for Tech 3101 course transformation

Bottom left: Sheryne Southard, Professor, team lead and taught implementation semester of Tech 3104

Bottom right: Xueyu Cheng, Associate Professor, responsible for Tech 3111 course transformation

Bottom middle: Elnora Farmer, Senior Lecturer, responsible for Tech 3104 course transformation