

Affordable Learning Georgia Textbook Transformation Grants

Final Report

Grant #354

To submit your Final Report, go to the Final Report submission page on the ALG website:
http://affordablelearninggeorgia.org/site/final_report_submission

Final report submission requires four files:

- This completed narrative document
- Syllabus or syllabi
 - (if multiple files, compress into one .zip folder)
- Qualitative/Quantitative Measures data files
 - (if multiple files, compress into one .zip folder)
- Photo of your team or a class of your students w/ at least one team member, minimum resolution 800x600px
 - (nearly all smartphones take photos larger than this size by default)

Follow the instructions on the webpage for uploading your documents. Based on receipt of this report, ALG will process the final payment for your grant. ALG will follow up in the future with post-project grantee surveys and may also request your participation in a publication, presentation, or other event.

General Information

Date: 12/21/2018

Grant Round: 11

Grant Number: #354

Institution Name(s): Kennesaw State University

Project Lead: Rebecca Rutherford

Team Members (Name, Title, Department, Institutions if different, and email address for each):

- Rebecca Rutherford, Interim Assistant Dean, College of Computing and Software Engineering, Department Chair for Information Technology, and Professor of Information Technology, brutherf@kennesaw.edu.
- Dawn Tatum, Senior Lecturer, College of Computing & Software Engineering, Information Technology Department, dtatum7@kennesaw.edu
- Susan VandeVen, Senior Lecturer, College of Computing & Software Engineering, Information Technology Department, svandeve@kennesaw.edu

- Richard Halstead-Nussloch, Professor of Information Technology, College of Computing & Software Engineering, Information Technology Department, rhalstea@kennesaw.edu
- James Rutherford, Senior Lecturer, College of Computing & Software Engineering, Software Engineering & Game Design Department, jruther3@kennesaw.edu
- Zhigang Li, Assistant Professor of Information Technology, College of Computing & Software Engineering, Information Technology Department, zli8@kennesaw.edu

Course Name(s) and Course Numbers:

- IT 3123 Hardware/Software: Rebecca Rutherford
- IT 4723 IT Policy & Law: Dawn Tatum
- IT 4683 Management of IT: Richard Halstead-Nussloch
- IT 3223 Software Acquisition & Project Management: Susan VandeVen
- CSE 2300 Discrete Structures: James Rutherford

Semester Project Began: Spring 2018

Final Semester of Implementation: Fall 2018

Total Number of Students Affected During Project:

Course	Enrollment
IT 3123	112
IT 4723	15
IT 4683	92
IT 3223	78
CSE 2300	238
Total	535

1. Narrative

A. Describe the key outcomes, whether positive, negative, or interesting, of your project.

Include:

- Summary of your transformation experience, including challenges and accomplishments
- Transformative impacts on your instruction
- Transformative impacts on your students and their performance

Our transformation effort is a great success. We have developed and implemented no-cost-to-student learning material for the five proposed courses. The URLs of the learning material are

listed in table one. 126 students have been impacted by our efforts. As shown in table two, students' opinions on Learning material we created are overwhelmingly positive. Our assessment data shows that, the no-cost learning material we developed are as effectively as the textbooks used in the corresponding classes.

Table 1. URL of No-Cost Learning Material

Course	URL of No-Cost Learning Material	Developer
IT 3123 Hardware/Software	http://ksuweb.kennesaw.edu/~lli13/ALG364/IT3123	Dr. Rebecca Rutherford
IT 4723 IT Policy & Law	http://ksuweb.kennesaw.edu/~lli13/ALG364/IT4723/IT4723.htm	Prof. Dawn Tatum
IT 4683 Management of IT	http://ksuweb.kennesaw.edu/~rhalstea/ALG/IT4683/index.html	Dr. Richard Halstead-Nussloch
IT 3223 Software Acq & Proj Mgt		Prof. Susan VandeVen
CSE 2300 Discrete Structures	http://ksuweb.kennesaw.edu/~lli13/ALG364/CSE2300.html	Prof. James Rutherford

Table 2. Students' Opinion on No-Cost Learning Material

Statements	Score
In general, the learning modules were organized	4.13
The content, links and other leaning module materials were sufficient to help me learn.	4.22
I liked not having to buy a textbook and instead used the materials that were provided and free.	4.45
I prefer using selected open source/free learning materials rather than a paid textbook for this course.	4.47
Overall, compared to a potential paid textbook, open resource learning materials provided the necessary assistance to learn the material.	4.62
I would take another course that uses open/free learning materials.	4.74

Note: in the survey, students are asked to express their opinion on a list of question using a 5-points scale where 1 is mostly disagree, 3 is neutral, and 5 is mostly agree.

Our plan is to get many of our undergraduate Information Technology courses completed without a textbook. The volatile area of Information Technology makes a no-textbook course ideal! Our faculty are completely onboard with the no-cost course development that the ALG grants provide.

From the instructors' perspectives, collecting and organizing the learning material ourselves not only enable us to better respond to dynamic nature of the information technology field, but also give us the flexibility to customize the course content to better serve our students. On the other hand, the transformation activities require significant efforts and time commitment from the faculty to collect, organize, create, and maintain no-cost learning material that offers equivalent learning experience as the textbooks. Our transformative efforts in replacing textbooks in the proposed courses will not happen without the strong supports from the ALG grant.

With our sustainability plan, the no-cost learning material will be continually used and hundreds and thousands of students from the Information Technology undergraduate degree Kennesaw State University will enjoy the cost savings and enhanced learning experience in the future.

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

IT3123

What worked well: The newly designed instructor created content, along with an online free textbook assisted the students in learning the material. All of the links and videos were also important for up-to-date material for the course.

What needs to be done still: New labs will need to be added to the course when the newly created Information Technology lab goes into effect fall 2019.

IT 4683

What worked well: taking our the ISACA materials and replacing them with online links and videos for the course outcomes.

IT 4723

What worked well: creating new content for the course, updating links and videos and creating new labs for the course allowed the students to have several types of ways to learn the material.

IT 3223

What worked well: Being able to replace two books for this course saved the students quite a lot of money. Since this course looks at two major areas – software acquisition & software life cycle, and then project management, the instructor was able to find up-to-date material for both major areas of the course. Creating new course content, providing links and videos has given the students current material to meet the course outcomes.

2. Quotes

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

“The IT3123 course has changed quite a bit from the previous version. I really liked having everything online (including a free textbook), and felt that all of the modules contained enough material for me to learn the outcomes of each module. I liked not having to buy a textbook.” – an IT 3123 student

“I had heard from previous students that we had to buy two books for this course, so I was surprised when we didn’t have to buy any books. This really saved me money and I still felt I could learn everything I needed to from the materials provided.” – an IT 3223 student

“The IT 4683 course seemed fine without having a textbook. I didn’t have any trouble learning the material for the course.” – an IT 4683 student

3. Quantitative and Qualitative Measures

3a. Uniform Measurements Questions

The following are uniform questions asked to all grant teams. Please answer these to the best of your knowledge.

Student Opinion of Materials

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

Total number of students affected in this project: 535

1. Positive: 91.1 % of 102 number of respondents
2. Neutral: 6.45 % of 102 number of respondents
3. Negative: 2.45 % of 102 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.

Course	Enrollment	Student average GPA	
		Semester with no-cost material	Semester with textbooks
IT 3123	112	2.89	2.23
IT 4723	15	2.98	2.96
IT 4683	92	3.73	3.70
IT 3223	78	3.03	3.2
IT 2300	238	3.72	3.68

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 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.

Course	Enrollment	Drop/Fail/Withdraw Rate Comparison	
		Current semester	Previous semester
IT 3123	112	5%	15%
IT 4723	15	8%	8%
IT 4683	92	5%	0%
IT 3223	78	12%	11%
CSE 2300	238	5%	8%

35 % of students, out of a total 535 students affected, dropped/failed/withdrew from the course in the summer and fall semesters of implementation.

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)

3b. Measures Narrative

In this section, summarize the supporting impact data that you are submitting, including all quantitative and qualitative measures of impact on student success and experience. Include all measures as described in your proposal, along with any measures developed after the proposal submission.

For this ALG proposal, we proposed to use multiple data collection methods to measure the success of our creating our no-cost courses. We looked at both quantitative and qualitative measures.

Quantitatively, we compared students' DFW rates, grades, and success in course learning outcomes. The DFW rates are taken from student registration system. The student grades and success in course learning outcomes are assessed Faculty Course Assessment Report (FCAR). Faculty in IT department at Kennesaw State University are required to create a FCAR for every course they teach for each semester. The FCAR includes students' grade and success in achieving the course learning outcomes.

Qualitatively, we developed a survey to collect students' opinion on the learning material used in the courses. Students rated their experience using a 5 points scale. Students also give the opportunities to enter comments they may have. Based on the assessment data we collected, the learning material we created offer the same level of the learning effectiveness as the textbook. Some no-cost percentages were higher than textbook courses, and some were lower. Students' performance outcomes and DFW in generally stay the same pre-implementation and post-implementation.

4. Sustainability Plan

- *Describe how your project team or department will offer the materials in the course(s) in the future, including the maintenance and updating of course materials.*

The IT department at KSU has an individual course architect architect for all courses. A course architect develops, updates and maintains course content based on research, publications and feedback from students and alumni. He/she also teaches the course at least once a year to make sure all resources are valid and make necessary changes. This makes sure all no-cost materials and resources are highly sustainable in the future offerings of this course.

5. Future Plans

- *Describe any impacts or influences this project has had on your thinking about or selection of learning materials in this and other courses that you will teach in the future.*
- *Describe any planned or actual papers, presentations, publications, or other professional activities that you expect to produce that reflect your work on this project.*

Information technology is dynamic field where existing technology frequently get updated and new technology constantly comes out. Due to this reason, the no-cost learning material model naturally fits better for IT curriculum than the traditional textbook models. The faculty in the IT department already completed several individual and transform-at-scale grants. The positive feedback from the students and our own development and implementation process inspire more faculty in the IT to get involved with developing no cost learning material for their courses.

A panel was presented at SIGITE 2018 on developing No-cost Materials for STEM fields by all of the ALG participants. Dr. Rebecca Rutherford and Prof. James Rutherford also presented a paper at the EDSIG 2018 conference on Creating No-Cost Materials for STEM Courses.

6. Description of Photograph

- *On the Final Report Submission page, you will be submitting a photo. In this document, list the names of the people shown in this separately uploaded photograph, along with their roles.*



From Left: Dr. Richard Halstead-Nussloch, Dr. Rebecca Rutherford, Prof. Datn Tatum, Professor Susan VandeVen