

GuanAffordable Learning Georgia Textbook Transformation Grants

Final Report

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: 12/18/2018

Grant Round: 11

Grant Number: #365

Institution Name(s): Kennesaw State University

Project Lead: Lei Li

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

- Lei Li, Professor of Information Technology, lli13@kennesaw.edu
- Rebecca Rutherford, Interim Assistant Dean, College of Computing and Software Engineering, Department Chair for Information Technology, and Professor of Information Technology, brutherf@kennesaw.edu.
- Svetlana Peltsverger, Associate Dean of the College of Computing and Software Engineering and Professor of Information Technology, speltsve@kennesaw.edu.
- Richard Halstead-Nussloch, Professor of Information Technology, rhalstea@kennesaw.edu.

- Guangzhi Zheng, Associate Professor of Information Technology, gzheng@kennesaw.edu.
- Zhigang Li, Assistant Professor of Information Technology, zli8@kennesaw.edu

Course Name(s) and Course Numbers:

- IT 6103 IT Policy and Law: Rebecca Rutherford
- IT 6413 IT Service Delivery: Lei Li
- IT 6423 IT System Acquisition and Integration: Richard Halstead-Nussloch
- IT 6863 Database Security & Auditing: Svetlana Peltsverger
- IT 7113 Data Visualization: Guangzhi Zheng
- General instructional support: Zhigang Li

Semester Project Began: Spring 2018

Final Semester of Implementation: Fall 2018

Total Number of Students Affected During Project:

Course	Enrollment
IT 6103	13
IT 6413	15
IT 6423	42
IT 6863	18
IT 7113	38
Total	126

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 the learning materials we created are overwhelmingly positive. Our

assessment data shows that, the no-cost learning materials we developed are as effective as the textbooks used previously in the corresponding courses.

Table 1. URL of No-Cost Learning Material

Course	URL of No-Cost Learning Material	Developer
IT 6103 IT Policy and Law	http://ksuweb.kennesaw.edu/~lli13/6103/IT6103.html	Dr. Rebecca Rutherford
IT 6413 IT Service Delivery	http://ksuweb.kennesaw.edu/~lli13/IT6413.html	Dr. Lei Li
IT 6423 IT System Acquisition and Integration	http://ksuweb.kennesaw.edu/~rhalstea/ALG/IT6423/	Dr. Richard Halstead-Nussloch
IT 6863 Database Security & Auditing	http://ksuweb.kennesaw.edu/~speltsve/alg/IT6863_alg.html	Dr. Svetlana Peltsverger
IT 7113 Data Visualization	http://idi.kennesaw.edu/it7113/	Dr. Gugangzhi Zheng

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

Statements	Score
In general, the learning modules were organized	4.60
The content, links and other leaning module materials were sufficient to help me learn.	4.55
I liked not having to buy a textbook and instead used the materials that were provided and free.	4.64
I prefer using selected open source/free learning materials rather than a paid textbook for this course.	4.58
Overall, compared to a potential paid textbook, open resource learning materials provided the necessary assistance to learn the material.	4.60
I would take another course that uses open/free learning materials.	4.69

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

From the instructors' perspectives, collecting and organizing the learning materials ourselves not only enable us to better respond to the 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 materials that offer equivalent or better learning experience as the textbooks. Our transformative efforts in replacing textbooks in the proposed courses will not happen without the strong support from the ALG grant.

With our sustainability plan, the no-cost learning material will be continually used and hundreds and thousands of students from 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.

IT6863

What worked well: Adding points to a lab grade for proactive posting questions about reading. It helped to find additional resources in timely manner.

What could have worked better: Some vendor provided tutorials even the simple ones need to be adapted to the level of the students. For example, <https://docs.microsoft.com/en-us/sql/relational-databases/security/auditing/write-sql-server-audit-events-to-the-security-log-required-additional-two-pages-of-instruction>.

IT 6103 IT Policy and Law

What worked well: The links and videos seemed to work well with the students. The instructor created content also provided additional material for them to use. The discussions were quite interesting from the students and provided additional ideas for students to respond to.

General comments:

Another constant feedback from students is the availability of some web resources. Web resources URLs are constantly changing. This requires the developer to monitor these resources and update them on a regular basis. Our course architect/coordinator model works very well to sustain these open source materials used in our courses.

2. Quotes

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

"I think the ever evolving nature of technology warrants using current documentation, papers, and articles for technical Computer Science related courses rather than textbooks, which are often many years old. I'm all for the cost savings of open source no-cost learning material for the fiscal benefit as well as the fact that they are often more contemporary and relevant than textbooks". – an IT 6863 student.

“Rather than textbook, sometimes the materials helps us a lot. Also we gain much knowledge by researching rather than just following the textbook”. – an IT 6423 student.

“The no-cost learning material plan is working. It has been a pleasure not having the cost of text books and still receiving a valuable learning experience. I would prefer a textbook just because. I still purchase books and send post cards. I can not say that digital content impact my learning experience at all. Thank you”. – an IT 6103 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: 126

1. Positive: 93.15 % of 73 number of respondents
2. Neutral: 4.11 % of 73 number of respondents
3. Negative: 2.74 % of 73 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 6103	13	3.76	3.74
IT 6413	15	3.73	3.75
IT 6423	42	3.76	3.53
IT 6863	18	3.4	3.2
IT 7113	38	3.68	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 6103	13	0%	1%
IT 6413	15	0%	3%
IT 6423	42	4%	5%
IT 6863	18	23%	16%
IT 7113	38	0%	0%

_____ % of students, out of a total _____ students affected, dropped/failed/withdrew from the course in the final semester 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.

In this project, we used multiple channels of data to measure the success of our transformative efforts.

Quantitatively, we compared students' DFW rates, grades, and success in learning objectives. The DFW rates are taken from student registration system. The student grades and success in learning objectives 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 learning outcomes.

Qualitatively, we developed a survey to collect students' opinion on the learning materials used in the courses. Students rated their experience using a 5-point Likert scale. Students were also given the opportunity to enter any comments they may have. A copy of the survey results is attached separately.

Based on the assessment data we collected, the learning materials we created offered the same level of the learning effectiveness as the textbooks. Students' performance outcomes and DFW in general stayed 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 implemented a course architect system for all courses. A course architect updates course content based on research, publications and feedback from students and alumni. Each instructor of record is a course architecture for the corresponding courses. A course architect develops and maintains the course materials and teaching plans. 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

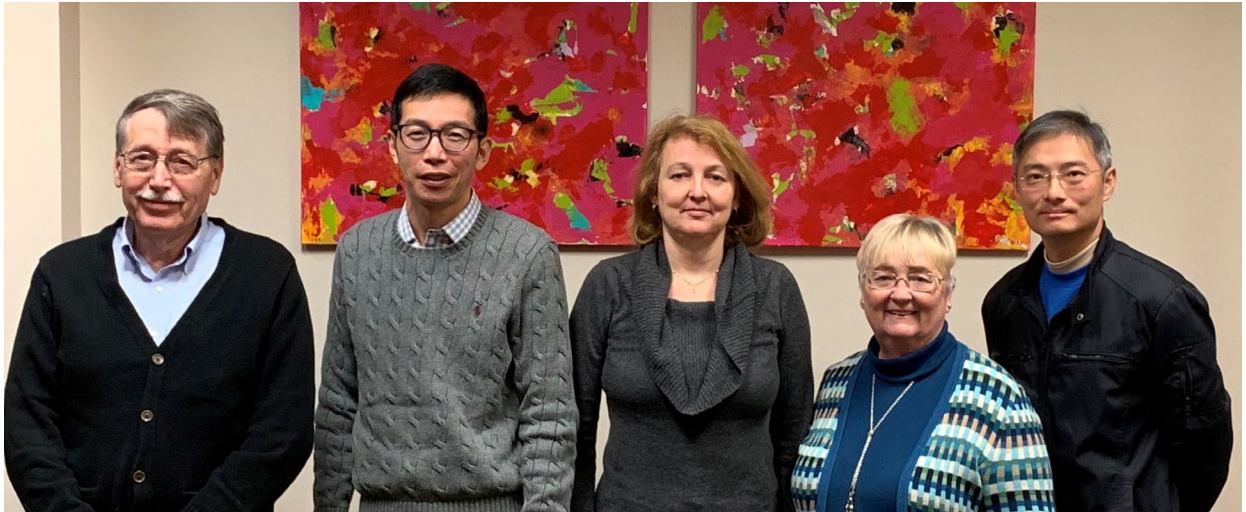
- *Describe any impacts or influences this project has had on your thinking about or selection of learning materials in this and other courses that you will teach in the future.*
- *Describe any planned or actual papers, presentations, publications, or other professional activities that you expect to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

Information technology is a 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 model. 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.

Dr. Becky Rutherford presented a paper at the EDSIG conference fall 2018 on creating no-textbook courses in STEM areas.

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 to right: Dr. Richard Halstead-Nussloch (developer & instructor of record), Dr. Lei Li (project lead, developer & instructor of record), Dr. Svetlana Peltsverger (developer & instructor of record), Dr. Rebecca Rutherford (developer & instructor of record), Dr. Guangzhi (Jack) Zheng (developer & instructor of record).