

# Affordable 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](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: 10**

**Grant Number: 334**

**Institution Name(s): Kennesaw State University**

**Project Lead: Dr. Meng Han**

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

Meng Han, Assistant Professor of Information Technology, [mhan9@kennesaw.edu](mailto:mhan9@kennesaw.edu)

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Guangzhi Zheng, Associate Professor of Information Technology, [gzheng@kennesaw.edu](mailto:gzheng@kennesaw.edu)

**Course Name(s) and Course Numbers:**

- CSE 3203 - Overview of Mobile Systems - Offered *twice a year in spring & fall semesters*.
- IT 4323 - Data Communication and Networking - Offered three times a year in spring, summer & fall semester with multiple sections each semester.
- IT 4833 - Wireless Security - Offered once a year in spring semesters.
- IT 6203 - IT Design Studio - Offered twice a year in spring & fall semesters.
- IT 6823 Information Security Concepts and Administration - Offered three times a year in spring, summer & fall semester with multiple sections each semester.

**Semester Project Began: Spring 2018**

**Final Semester of Implementation: Fall 2018**

**Total Number of Students Affected During Project:**

Course	Number of sections	Students in each section	Total students affected
CSE 3203	1	47	47
IT 4323	4	15, 29, 29, 44	117
IT 4833	2	20, 27	47
IT 6203	1	19	19
IT 6823	2	34, 26	60
Total	10		290

1. Narrative

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

Our transformation effort is very successful. In this project, we have transformed five courses using no-cost-to-student learning material. Ten sections and total number of 290 students have been impacted. Students’ opinions on Learning material we created are overwhelmingly positive. Our assessment data shows that, in majority of the section where the no-cost learning material were implemented, students’ performance is either neutral or better comparing to students’ performance in previously taught sections using textbooks.

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 side, 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 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.

Below are the lessons learned from the members of our project team.

Dr. Meng Han on IT 4323. The software tools keep changing fast, for example, the Wireshark got its latest version recently. Lesson learned is to keep checking on tools for update and revise instructions and screenshots accordingly. Also, the 5G is coming, more materials in the subject related to latest 5G should also be updated more frequently.

Dr. Lei Li on IT 4833. Wireless security is becoming more and more important in the IT domain, and the latest attacks and defends are also developing very fast. The last material will help the students a lot for the understanding, but in another aspect more efforts are very necessary from the instructor.

Dr. Ming Yang on IT 6823. The course was mainly organized and developed by D2L and offered online to student. It may provide other way for the materials if use the open public available environment for the initial development.

## 2. Quotes

- Provide three quotes from students evaluating their experience with the no-cost learning materials.
  - 1) “It was great, a textbook would have just been an unnecessary expenditure and wouldn't have helped at all over what we were provided. The provided material more than met my needs.”  
– IT 4833
  - 2) “Not utilizing a book makes it a lot easier to read the material provided from professors and learn the basic concepts of the class. Having the book at hand on the other hand is beneficial as well because you can learn the material in depth but many students don't have the patience or time to read the entire book which consist of too much information that will probably not be retained by the students. So there are pros and cons but in my opinion I believe the no-book requirement makes it easier for us students to learn what is deemed necessary by the professors.”  
– IT 4323
  - 3) “Since design studio is mixture of multiple software; using no-cost material would be really helpful. It is easy to access and materials are reliable. We might be missing basics but to cover multiple sectors it is effective method.”  
– IT 6203

### 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: 290

- Positive: 88.17 % of 93 number of respondents
- Neutral: 8.61 % of 93 number of respondents
- Negative: 3.22 % of 93 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?**

We have 5 courses in this project. In term of learning outcomes and grades comparing to previous semesters, two courses are positive, and three courses are negative. Overall student performance outcome is slightly positive comparing to previous semester.

Course	Student Performance outcome comparing to previous semester
CSE 3203	Negative
IT 4323	Positive
IT 4833	Negative
IT 6203	Negative
IT 6823	Positive

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

Choose One:

- Positive: Higher performance outcomes measured over previous semester(s)
- X  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?**

Course	Drop/Fail/Withdraw Rate of implementation over previous semesters
CSE 3203	Negative
IT 4323	Positive
IT 4833	Positive
IT 6203	Negative
IT 6823	Positive

**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.*

12.26 % of students, out of a total 129 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 project, we proposed to use 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 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. A copy of survey result is attached separately. Based on the assessment data we collected, the learning material we created offer the same level of the learning effectiveness as the textbook (in some case, even better). Students’ performance outcomes and DFW in generally stay the same pre-implementation and postimplementation.

## 4. Sustainability Plan

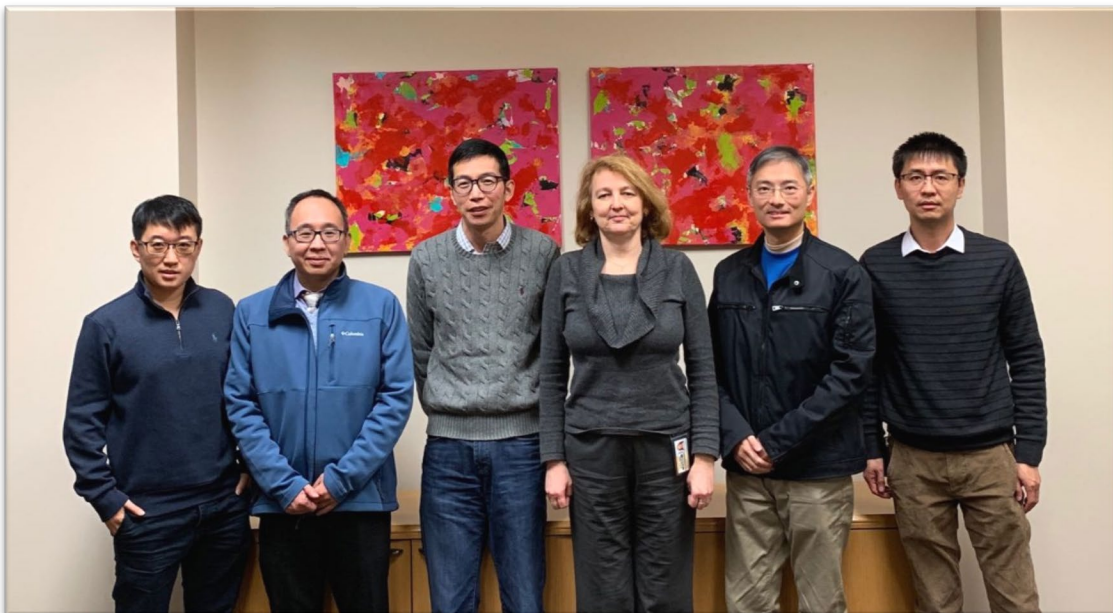
The IT department at KSU implemented a course architect system for all courses. A course architect updates course content based on research, publications and feedback from students and alumni. Each of instructor of record is a course architecture for corresponding courses. A course architect develops 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.

Each of the architecture will update course materials based on this semester course observations and student comments. The courses will be updated every three years based on IT department policy. It would also be update earlier due to the updating of the domain.

## 5. Future Plans

Standing at the point many emerging Information Technology upcoming, the 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 ALG project and three 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. We shared our experience from this project in the 48th Annual Frontiers in Education (FIE) Conference San Jose, CA, USA by Dr. Han. The responses we received from the panel discussion are very positive.

## 6. Description of Photograph



Left to right: Dr. Meng Han, team lead and instructor of record, Dr. Ming Yang, instructor of record; Dr. Lei Li, instructor of record; Dr. Svetlana Peltserger, instructor of record; Dr. Guangzhi Zheng, instructor of record; and Dr. Zhigang Li, for all courses online learning support.