

Affordable Learning Georgia Affordable Materials Grants Transformation Grants Final Report

(or Textbook Transformation Grants, if R17 or earlier)

To submit your Final Report, go to the [Final Report submission page](#) on the ALG website.

The final report submission form allows up to five files:

- This completed narrative document (required)
- Syllabus or syllabi (required)
If multiple files, compress into one .zip folder
- Qualitative/Quantitative Measures data files (required)
If multiple files, compress into one .zip folder
- Photo of your team or a class of your students for future ALG promotions (optional)
- Invoice for the second half of the grant's award amount (optional)

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: 2/15/2022

Grant Round: 18

Grant Number: M135

Institution Name(s): Kennesaw State University

Project Lead: Chi Zhang, Associate Professor of Information Technology

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

- Chi Zhang, Associate Professor of Information Technology, chizhang@kennesaw.edu
- Becky Rutherford, Professor of Information Technology, brutherford@kennesaw.edu
- Jack Zheng, Associate Professor of Information Technology, gzheng@kennesaw.edu
- Susan Vande Ven, Senior Lecturer of Information Technology, svandev@kennesaw.edu

Course Name(s) and Course Numbers:

- IT 6103 IT Policy & Law (graduate)
- IT 4713 Business Intelligence Systems
- IT 4723 IT Policy & Law (undergraduate)
- IT 3223 Software Acquisition & Project Management

Semester Project Began: Spring 2021

Final Semester of Implementation: Fall 2021

Table 1. Total Number of Students Affected During Project

Course	Spring 2021		Summer 2021		Fall 2021	
	Sections	Enrollment	Sections	Enrollment	Sections	Enrollment
IT 6103	Not offered	-	1	33	Not offered	-
IT 4713	3	93	Not offered	-	1	25
IT 4723	2	34	2	32	3	72
IT 3223	3	61	1	35	3	68
Total	8	188	4	100	7	165

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*

We have developed and implemented no-cost-to-student learning material for the four proposed courses. Nineteen sections and total number of 265 students have been impacted. Students' opinions on Learning material we created are overwhelmingly positive. 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. Students' Opinion on No-Cost Learning Material

Statement	IT 6103	IT 4713	IT 4723	IT 3223	Average
In general, the learning modules were organized	1.7	1.5	1.4	1.9	1.63
The content, links and other learning module materials were sufficient to help me learn.	2.3	1.7	1.2	2.1	1.83
I liked not having to buy a textbook and instead used the materials that were provided and free.	1.8	1.8	1.0	1.3	1.48
I prefer using selected open source/free learning materials rather than a paid textbook for this course.	1.8	1.7	1.2	1.2	1.48
Overall, compared to a potential paid textbook, open resource learning materials provided the necessary assistance to learn the material.	1.0	1.2	1.0	1.6	1.20
I would take another course that uses open/free learning materials.	1.7	1.4	1.0	1.3	1.35
I would have preferred having a textbook for the course	4.2	3.7	4.4	4.3	4.15

Note: 1) the numbers in the table represent survey participants' opinion on the statements: 5 - Strongly disagree, 4-Disagree,3-Niether agree nor disagree, 2- Agree, 1-Strongly agree

2) The teaching of no-cost learning material for IT 6103 and 4713 were done in Spring 2021, IT 4723 and 3223 in Summer 2021.

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.

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

Below are some of the lessons from each course covered in the grant.

Table 3: Lessons learned

Course	What worked well	What could have done differently
IT 6103	Finding and adding links for the new and additional resources available online.	As the course was not offered in the fall 2021, the new course material was only tested during the summer term.
IT 4713	The open-source tools.	More tutorial and FAQs would help students tackle the technical issues.
IT 4723	The slides and assignment were updated with current real-world cases. It helps engage students.	Ensuring that the online materials are being maintained.
IT 3223	The real-world cases and up-to-date information on the topics	The team project could be designed as case study to get students start quickly.

2. Quotes

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

Quotes from IT 6103:

“Online source and material are current and helpful.” “The instructor connects the materials to the real cases well.” “The online material was effective to help me learn.”

Quotes from IT 4713:

“The handout and slides created by the instructor is as good as a textbook. The class is practical and uses the current materials.” “Online tools help my learning.”
“I liked the links and the real-world cases.”

Quotes from IT 4723:

“A good course with open source. The in-class and online discussions about the real-world cases enhanced interest in topic.” “The professor was well prepared and organized. The online material, course work and related topics are helpful.”

Quotes from IT 3223:

“The online cases help me understand the content in the course.”
“Please continue the no-cost learning material. It provides a relevant way to stay up-to-date on technology-related course material.”
“It will be great to have more open sources.”

3. Quantitative and Qualitative Measures

A. 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?

There are a total 48 students completed the survey on the no-cost learning material.

The overall student opinion about the materials used in the courses is positive.

Total number of students affected in this project: 453

- Positive: 90 % of 180 number of respondents
- Neutral: 10 % of 180 number of respondents
- Negative: 0 % of 180 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.

The overall comparative impact on student performance in term of learning outcomes and grades are positive. In 3 out of 4 courses, sections using no-cost material have higher average GPA than the sections using traditional textbook. In one course, the average GPA for using no-cost learning is slightly lower but different instructor may be a factor.

		Student average GPA	
Course	Enrollment	Semester with new no-cost material	Semester prior to new no-cost materials
IT 6103	33	4.0 (33 students sp20)	4.0 (31 students sp20)
IT 4713	118	4.0 (26 students sp20)	3.9 (35 students sp18)
IT 4723	138	4.0 (6 students sp20)	4.0 (7 students sp20)
IT 3223	164	3.6 (22 students su20)	3.9 (37 students sp20)

Choose One:

- ☒ **_X_ 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?

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

 2 % of students, out of a total 453 students affected, dropped/failed/withdrew from the course in the final semester of implementation.

Choose One:

- X 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)

B. 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.

[When submitting your final report, as noted above, you will also need to provide the separate file (or .zip with multiple files) of supporting data on the impact of your Textbook Transformation, such as surveys, analyzed data collected, etc.]

- *Include measures such as:*
 - *Drop, fail, withdraw (DFW) delta rates*
 - *Course retention and completion rates*
 - *Average GPA*
 - *Pre-and post-transformation DFW comparison*
 - *Student success in learning objectives*
 - *Surveys, interviews, and other qualitative measures*
- *Indicate any co-factors that might have influenced the outcomes.*

Course	Enrollment	Drop/Fail/Withdraw Rate Comparison	
		Semester with new no-cost materials	Semester prior to new no-cost materials
IT 6103	33	0%	0%
IT 4713	118	4%	5%
IT 4723	138	2%	3%
IT 3223	164	3%	4%

Based on the assessment data we collected, the learning material we created offer the same level of the learning effectiveness as the textbook. 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 implemented a course architect system for all the courses. A course architect updates course content based on research, publications and feedback from students and alumni. Each of the instructors 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 the 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 Affordable Materials 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.

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 models. The faculty in the IT department already completed many individual ALG projects and multiple transform-at-scale grants. The positive feedback from the students and our own development and implementation process inspires more faculty in the IT to get involved in developing no-cost learning material for their courses.

6. Future Scholarship Plans

Describe any planned or actual papers, presentations, publications, or other professional activities that you expect to produce that reflect your work on this project.

- a) Dr. Becky Rutherford along with other IT faculty, presented at the Conference of Information Technology on the topic of “Transforming IT Education with No-Cost Learning Materials”
- b) Dr. Chi Zhang and Dr. Jack Zheng, published research “Supporting Adult Learning: Enablers, Barriers, and Services”
- c) A project of a review of the current state of online learning during the pandemic and aftermath is planned.

7. Description of Photograph (optional)

This is where a team can list the names of the people shown in this separately uploaded photograph, along with their roles, if applicable.