Affordable Learning Georgia Textbook Transformation Grants

Final Report

Date: 5/13/2016

Grant Number: #119

Institution Name(s):

Kennesaw State University (previously Southern Polytechnic State University)

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

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Project Lead: Dr. Lei Li

Course Name(s) and Course Numbers:

CSE 3153 Database Systems (fall 2015)

IT 4153 Advanced Database (spring 2016)

IT 4713/6713 Business Intelligence Systems (fall 2015)

IT 5433 Databases: Design and Applications (spring 2016)

Semester Project Began: Spring 2015

Semester(s) of Implementation: Fall 2015 and Spring 2016

Average Number of Students Per Course Section:

Courses	Enrollment
CSE 3153 Database Systems	31
IT 4153 Advanced Database	36
IT 6713 Business Intelligence Systems	26
IT 5433 Databases: Design & Applications	27
Average:	30

Number of Course Sections Affected by Implementation: 4

Total Number of Students Affected by Implementation: 120

No-Cost-Learning Material Links:

Courses	Links
CSE 3153 Database Systems	http://ksuweb.kennesaw.edu/~lli13/CSE3153.html
IT 4153 Advanced Database	http://ksuweb.kennesaw.edu/~speltsve/dba.php
IT 6713 Business Intelligence Systems	http://jackzheng.net/teaching/it6713/
IT 5433 Databases: Design & Applications	http://ksuweb.kennesaw.edu/~lli13/IT5433.html

1. Narrative

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

Overall, our project is very successfully. Overwhelming majority of the students (85%) indicated positive experience with the open-access-free learning material we created. The student success rates in the four participating classes is over 93%. By estimate, our project saved our students $110,419! Our ALG grant along with other KSU ALG recipients are recognized by Kennesaw State University (KSU) in a campus wide announcement.

The transformation process also has positive impact on the instructors. The use of open access materials ensures the flexibility and customized reading materials for our courses which is critical for a project based teaching/learning approach.

Lessons learned:

1. Providing too many choices for reading materials confuses students. Providing too few choices does not provide diverse points of view and enough examples. It may take a couple of semesters to reach a sweet spot.
2. KSU uses Digital Measures to evaluate teaching. There are two questions about textbooks: 1) The textbook was clear and understandable (0-4) and 2) I used the textbook very often (0-4). There is no N/A option, so some students skipped these questions and some chose disagree. We need to modify student survey to correctly collect information about instructional materials.

2. Quotes

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

"Saving money on a textbook was fantastic and a welcomed addition. It's also preferred to have access to any learning materials online and available to download. This class and professor got it right" –IT 5433.

"I enjoy not getting ripped off every semester by having to pay the unreasonably high prices for textbooks that basically cover the same information that is freely available on the Web. So, I am very supportive of Open materials being utilized in the program". –IT 5433.

"Open and free learning materials can be much more useful than textbooks as long as they're picked well (as they were in this course)". – IT 6713

"… conventional "Textbooks" are a horribly overpriced and seldom worth the cost. … I appreciate the money savings in online resources, and use them in my work every day". – IT 6713

3. Quantitative and Qualitative Measures

3a. Overall Measurements

Student Opinion of Materials

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

As the table below indicates, overwhelming majority of students hold positive opinion on the material used in the courses.

Courses	Total number of Respondents	Opinion on the non-cost-material		
		Positive	Neutral	Negative
CSE 3153 Database Systems	31	87%	6.5%	6.5%
IT 4153 Advanced Database	36	81%	11%	8%
IT 6713 Business Intelligence Systems	8	87.5%	0%	12.5%
IT 5433 Databases: Design & Applications	27	85%	11%	4%

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?

Due to the consolidation of SPSU and KSU, we don't have access to comparable students' performance data for three of the four courses. However, the performance data for current courses are very positive.

Courses	Semester 1		Semester 2		Comparison
	Number of Students	Success Rate	Number of Students	Success Rate	
CSE 3153 Database Systems	NA	NA	31	93.5%	Positive
IT 4153 Advanced Database	NA	NA	38	87%	Positive
IT 4713 Business Intelligence Systems	NA	NA	24	96%	Positive
IT 5433 Databases: Design & Applications	24	100%	33	97%	Neutral

Note: 1) Success rate = total number of students with passing grade/total number of students who completed the courses. 2) Semester 1 refers to the semester where traditional textbook was used. Semester refers to the semester where no-cost-learning material was used. Due to the consolidation of SPSU and KSU, the student performance and enrollment of data from previous sections got lost. We use "NA" for those course sections.

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?

Due to the consolidation of SPSU and KSU, we don't have access to comparable students' performance data for three of the four courses. The current DFW rates are in the normal range.

Courses	Semester 1		Semester 2		Comparison
	Enrollment	DFW Rate	Enrollment	DFW Rate	
CSE 3153 Database Systems	NA	NA	31	6.5%	Positive
IT 4153 Advanced Database	NA	NA	48	21%	Positive
IT 4713 Business Intelligence Systems	NA	NA	24	4%	Neutral
IT 5433 Databases: Design & Applications	24	0%	35	9%	Negative*

Note: 1). Semester 1 refers to the semester where traditional textbook was used. Semester refers to the semester where no-cost-learning material was used. Due to the consolidation of SPSU and KSU, the student performance and enrollment of data from previous sections got lost. We use "NA" for those course sections. 2) * The class section in semester 1 is a hybrid section. The class in semester 2 contain both online and hybrid section. Online section traditionally have higher DFW rate.

3b. Narrative

In the project, we used quantitative and qualitative methods to access the effectiveness of the learning material we developed.

Quantitatively, we collected student performance data (success rate, grades, DFW rate). Due to the consolidation of SPSU and KSU, we were not able to collect the student performance data of the controlled courses in previous semester. The student performance data of current courses showed the students were able to achieve their learning goals using the learning material we developed. At the end of the semester, we also conducted survey to all four participating courses to get students' opinion on the learning material. The survey results show that over 85% of the respondents think positively on the learning material used in the classes. The detailed survey results can be found in the supporting document that is submitted along with this final report.

The end of semester survey also contains open-ended questions in which students can freely express their opinion on the learning material. The analysis of the comments also showed students held a positive view on the learning material and many of them appreciated the savings of no-cost-material. Selected list of students' comments can be found in section two. All comments from the survey respondents are included in the supporting document.

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.

5. Future Plans

In general, this project has enhanced our visions to use free and open access learning materials in all my teaching. This enables me to customize my course content and teaching method to best reflect my experience and expertise.

Secondly, we found out that it may take more than one design-and-implement cycle to get right on the open access learning materials. We will keep revising the corresponding learning material based on our research and feedbacks from students and alumni.

6. Description of Photograph
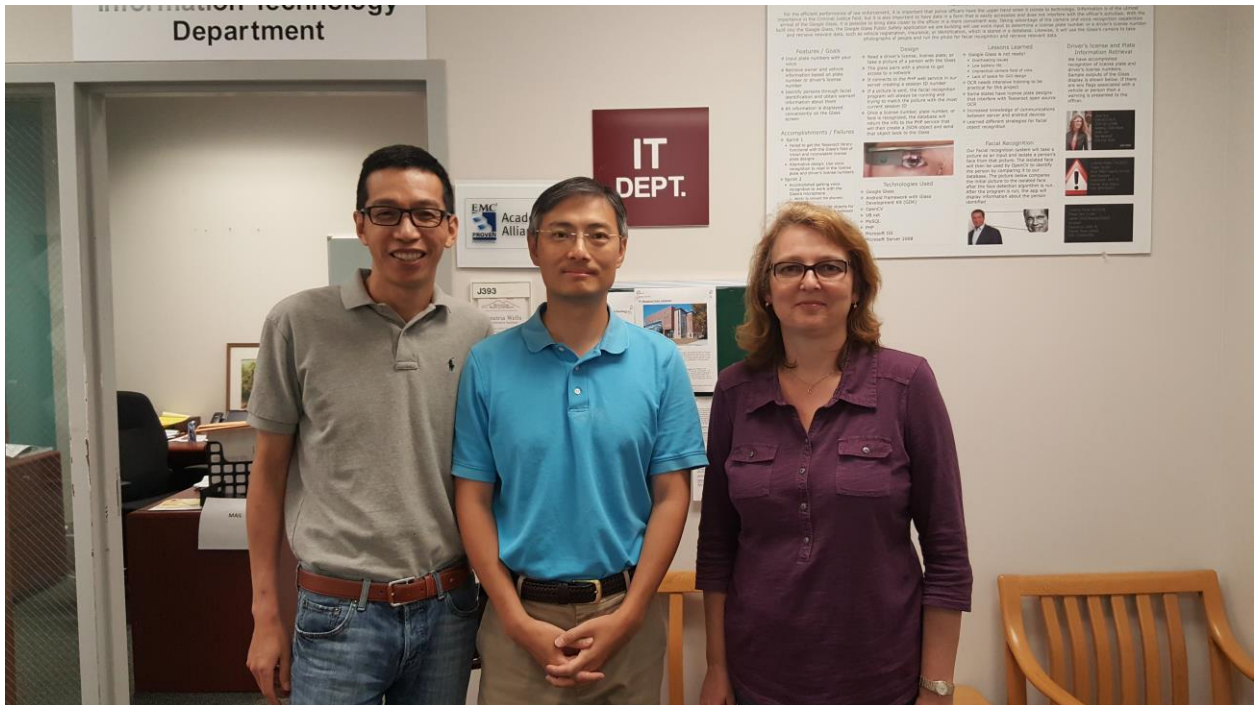
Left-right: Dr. Lei Li, team lead, instructional designer, and instructor of record; Dr. Jack Zheng, instructional designer, and instructor of record; Dr. Svetlana Peltsverger, instructional designer, and instructor of record. Team members missing from the picture are: Dr. Rebecca Rutherfoord, Ms. Nancy Coylar, and Dr. Zhigang Li.