

Grants Collection

Georgia Gwinnett College



UNIVERSITY SYSTEM
OF GEORGIA



Shuhua Lai, Kairui Chen

Digital Media





Grants Collection

Affordable Learning Georgia Grants Collections are intended to provide faculty with the frameworks to quickly implement or revise the same materials as a Textbook Transformation Grants team, along with the aims and lessons learned from project teams during the implementation process.

Each collection contains the following materials:

- **Linked Syllabus**
 - The syllabus should provide the framework for both direct implementation of the grant team's selected and created materials and the adaptation/transformation of these materials.
- **Initial Proposal**
 - The initial proposal describes the grant project's aims in detail.
- **Final Report**
 - The final report describes the outcomes of the project and any lessons learned.



Unless otherwise indicated, all Grants Collection materials are licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

Syllabus

Tentative Schedule

Dates	Lecture, In-class Activity, Quiz, Test, Lab and Assignment	
	Tuesday	Thursday
Week 1	Syllabus, Wiki http://algitec2110.altervista.com/ALG ITEC2110 Syllabus.pdf http://wiki.ggc.edu/wiki/ITEC1001: How to edit a wiki page	Introduction http://algitec2110.altervista.org/ALG-Introduction.ppt
Week 2	Lab 1 http://wiki.ggc.edu/wiki/User:Slai:UnderstandingWiki	Chapter 1: Background of Digital Media http://algitec2110.altervista.org/ALG-Background-1.ppt
Week 3	Chapter 1: Background of Digital Media http://algitec2110.altervista.org/ALG-Background-2.ppt	Lab 2 http://wiki.ggc.edu/wiki/User:Slai:BasicGimpLogo
Week 4	Chapter 1: Background of Digital Media http://algitec2110.altervista.org/ALG-Background-3.ppt	Quiz 1 and Project 1 Assignment http://algitec2110.altervista.org/ALG-Quiz1.pdf http://wiki.ggc.edu/wiki/User:Slai:Project:one
Week 5	Chapter 2: Fundamentals of Digital Imaging http://algitec2110.altervista.org/ALG-Fundamentals-of-Digital-Imaging-1.ppt	Lab 3 http://wiki.ggc.edu/wiki/User:Slai:3DtextLogo
Week 6	Chapter 2: Fundamentals of Digital Imaging http://algitec2110.altervista.org/ALG-Fundamentals-of-Digital-Imaging-2.ppt	Chapter 2: Fundamentals of Digital Imaging http://algitec2110.altervista.org/ALG-Fundamentals-of-Digital-Imaging-3.ppt
Week 7	Chapter 2: Fundamentals of Digital Imaging http://algitec2110.altervista.org/ALG-Fundamentals-of-Digital-Imaging-4.ppt	Quiz 2, Lab 4 http://algitec2110.altervista.org/ALG-Quiz2.pdf http://wiki.ggc.edu/wiki/User:Slai:stopsign-inkscape
Week 8	Test 1, Project 2 Assignment http://wiki.ggc.edu/wiki/User:Slai:Project:two:new	Chapter 3: Digital Image Processing, Lab 5 http://algitec2110.altervista.org/ALG-Digital-Image-Processing-1.ppt

		http://wiki.ggc.edu/wiki/User:Slai:image-retouching
Week 9	Spring Break	Spring Break
Week 10	Chapter 3: Digital Image Processing http://algitec2110.altervista.org/ALG-Digital-Image-Processing-2.ppt http://algitec2110.altervista.org/ALG-Digital-Image-Processing-3.ppt	Chapter 3: Digital Image Processing http://algitec2110.altervista.org/ALG-Digital-Image-Processing-4.ppt http://algitec2110.altervista.org/ALG-Digital-Image-Processing-5.ppt
Week 11	Chapter 3: Digital Image Processing, Quiz 3 http://algitec2110.altervista.org/ALG-Digital-Image-Processing-6.ppt http://algitec2110.altervista.org/ALG-Quiz3.pdf	Lab 6, Project 3 assignment http://wiki.ggc.edu/wiki/User:Kchen:project1backuplink http://wiki.ggc.edu/wiki/User:Slai:Project:GameDesign
Week 12	Chapter 4: Digital Sound Processing http://algitec2110.altervista.org/ALG-Sound.ppt	Chapter 4: Digital Sound Processing, Quiz 4 http://algitec2110.altervista.org/ALG-Sound.ppt http://algitec2110.altervista.org/ALG-Quiz4.pdf
Week 13	Test 2	Lab 7, Project 4 assignment http://wiki.ggc.edu/wiki/User:Slai:WarpCornerVectorGraphics http://wiki.ggc.edu/wiki/User:Slai:Project:three
Week 14	Chapter 5: Digital Video Processing http://algitec2110.altervista.org/ALG-Ch06Video.ppt	Lab 8 http://wiki.ggc.edu/wiki/User:Slai:audio-retouching
Week 15	Chapter 5: Digital Video Processing, Quiz 5 http://algitec2110.altervista.org/ALG-Ch06Video.ppt http://algitec2110.altervista.org/ALG-Quiz5.pdf	Lab 9, Project 5 assignment http://algitec2110.altervista.org/ALG-VideoEditingLab.docx http://wiki.ggc.edu/wiki/User:Slai:Project:four:mac
Week 16	Chapter 6: Creating Animation, Quiz 6 http://algitec2110.altervista.org/ALG-ch8Animation.ppt http://algitec2110.altervista.org/ALG-Frame-by-frame-animation-with-Animate-CC.pdf http://algitec2110.altervista.org/ALG-Quiz6.pdf	Test 3

Week 17	Review and Final Exam http://wiki.ggc.edu/wiki/ALG:ITEC2110	

Initial Proposal

Application Details

Manage Application: Textbook Transformation Grant

Award Cycle: Round 3

**Internal Submission
Deadline:** Sunday, May 31, 2015

Application Title: 138

Submitter First Name: Shuhua

Submitter Last Name: Lai

Submitter Title: Associate Professor

Submitter Email Address: slai@ggc.edu

Submitter Phone Number: 678-471-0788

Submitter Campus Role: Proposal Investigator (Primary or additional)

Applicant First Name: Shuhua

Applicant Last Name: Lai

Co-Applicant Name(s): Kairui Chen

Applicant Email Address: slai@ggc.edu

Applicant Phone Number: 678-471-0788

Primary Appointment Title: Associate Professor

Institution Name(s): Georgia Gwinnett College

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

Shuhua Lai, Associate Professor, Information Technology, Georgia Gwinnett College, slai@ggc.edu

Kairui Chen, Associate Professor, Information Technology, Georgia Gwinnett College, kchen@ggc.edu

Sponsor (Name, Title, Department, Institution):

Tom Mundie, Dean of School of Science and Technology, Georgia Gwinnett College

Proposal Title: 138

Course Names, Course Numbers and Semesters Offered:

Digital Media, ITEC 2110, it is offered in Spring, Summer and Fall semesters every year.

Final Semester of Instruction:	Spring 2016
Average Number of Students per Course Section:	24
Number of Course Sections Affected by Implementation in Academic Year:	70
Total Number of Students Affected by Implementation in Academic Year:	1680
List the original course materials for students (including title, whether optional or required, & cost for each item):	Digital Multimedia Primer, 2nd Edition; ISBN-13: 9780132893503, Required, \$131.80
Proposal Categories:	No-Cost-to-Students Learning Materials
Requested Amount of Funding:	\$10,800
Original per Student Cost:	\$131.80
Post-Proposal Projected Student Cost:	\$0
Projected Per Student Savings:	100%
Plan for Hosting Materials:	D2L

Project Goals:

This project aims to

- Replace the current textbook used in ITEC 2110 (Digital Media) with more relevant, up to date, no-cost-to-student learning material that offers equivalent or better educational effectiveness;
- Reduce student expenses related to textbook purchases to zero dollars, which lowers the cost of college education. Consequently it can increase student retention and success rates.

Statement of Transformation:

- **Describe the transformation:**

The textbook used in ITEC2110 Digital Media at GGC is expensive, which is about \$132 for the latest edition. As a matter of fact, most textbooks on information technology are expensive.

In addition, due to the fast evolving nature of the digital media field, the textbooks used in the proposed courses are updated frequently, which negatively impacts their resale value.

On the other side, the learning resources for digital media are abundant on the World Wide Web today. Many of these resources are publicly accessible, free, or with an open license to use. The investigators of this proposal will identify, select and adopt/create no-cost materials to replace the costly textbook and achieve the same learning outcomes.

- **Identify stakeholders affected by the transformation:**

The stakeholders affected by the transformation will be approximately 1700 traditional and non-traditional undergraduate students annually who are enrolled in the 70 sections of Digital Media course at GGC. Also students in Georgia and across the country can use the free course material when they take the Digital Media course.

- **Describe the impact of this transformation on stakeholders and course success:**

The transformation process will help remove and eliminate the cost of expensive textbooks for students, and provide students with access to course learning material on the first day of class. The impact will be a reduction in the students' cost of attendance, improved student retention and success rates.

- **Describe the transformative impact on the program, department, institutions, access institution, and/or multiple courses**

The main impacts are:

- 1.the cost of taking the course for students will be significantly reduced by replacing expensive textbooks with no-cost-to-student learning materials;
- 2.the educational experience for the students will be improved by students having access to the more relevant and up to date course materials on the first day of class, and
- 3.retention and success rates of students taking this course will likely improve by students having free access to the course materials.

Transformation Action Plan:

- **The identification, review, selection, and adoption/adaptation/creation of the new course materials**

The new course materials will be identified and gathered/created based on course objectives and student learning outcomes stated in the course syllabus of the ITEC 2110 (Digital Media) course. While some of the course materials can be created by referring to the currently used textbook, most of them will be produced by using publicly available resources since most of

the content taught in this course are standard digital media applications maintained by nonprofit organizations and open source foundations. The identified, selected, and recreated course materials will be officially adopted after the Curriculum Committee in the School of Science and Technology at Georgia Gwinnett College thoroughly reviews and approves.

- **The course and syllabus instructional design/redesign necessary for the transformation.**

The syllabus will be made available in D2L for this course by the PIs. Since the new course materials will be completely electronic on D2L, each topic included in the course syllabus will have a web link in D2L, which contains all the materials relevant to the topic. Also, each course topic will be designed based on learning-by-doing approach to include many examples, tutorials, and hands-on features that allow students to practice and improve their own digital media skills.

- **The activities expected from each team member and their role(s): subject matter experts, instructional designer, librarian, instructor of record, et al.**

Team member: Shuhua Lai, Digital Media Course Coordinator, as a subject matter expert and instructional designer, will identify and create new course materials and oversee the entire transformation process. He will select and determine study material for all quizzes, exams and homework assignments/projects, develop hands-on activities, lab activities, complete and analyze all grade/survey related data for the course.

Team member: Kairui Chen, Associate Professor of Information Technology, as a subject matter expert and instructional designer, will create new course materials including developing lecture notes/course PPT slides, identifying online free complementary reading materials/tutorials/video clips for each course topic. Also he will set up and maintain the D2L course material for this project.

- **The plan for providing open access to the new materials.**

The new course materials will be hosted in D2L and all students who take this course will have free access to the materials on the first day of class.

Quantitative & Qualitative Measures: Quantitative Measures: The PIs will collect data from all students who take this course using the developed no-cost-to-student course material. These data includes but not limited to:
 The cost savings from not purchasing books, Retention rate in the course, classification, major area of study, passing and failing rate, drop and withdraw rate, other demographic data, and overall academic success of students completing course
 Qualitative Measures: The PIs will also survey our student participants to understand their experience/attitude using the developed no-cost-to-student course material. The following qualitative data will be collected and analyzed.
 What does the No-Cost-to-Students Learning Materials mean to you?
 How has the No-Cost-to-Students Learning Materials helped your academic learning experience in this course?
 What were the best aspects of using the No-Cost-to-Students Learning Materials?
 What were the challenges of using the No-Cost-to-Students Learning Materials?
 Other comments or suggestions provided by student participants.

Timeline:

10/31/2015

- Complete course modules redesign to use the no cost materials. These include all complementary reading materials, lecture notes, tutorials/video clips, hands-on activities, labs, and homework assignments.

11/30/2015

- Complete course level materials redesign. This includes syllabus and test banks for quizzes, tests and final exam.

12/19/2015

- Develop a survey of using the no cost materials to replace textbook.

- Deliver the first report.

04/30/2016

- Complete the course offering in the spring semester.
- Complete the survey data collection.
- Complete student evaluation.

05/31/2016

- Complete data collection and analysis.
- Compile final report.

Budget:

The funding mainly compensates the investigators' work and activities beyond normal teaching load in order to successfully complete the project.

Compensation for two faculty: $\$5,000 * 2 = \$10,000$

Travel expense: \$800

Total: \$10,800

Only open source software will be used in this project thus there is no additional spending on software or equipment purchasing.

Sustainability Plan:

Digital Media is a general education course at GGC. There are about 70 sections offered in each academic year. The proposed plan will initially introduce no-cost-to-students materials to 5 sections the two PIs teach. It is reasonable to expect that the success of this project will greatly reduce students cost, better prepare and engage students, improve academic performance, and in turn raise retention and success rates in this course. We will then propose to have all 70 sections adopt the no-cost-to-students material approach.

All no-cost materials and resources will be made available in D2L and will be shared among all faculty teaching this course. In addition, the course materials will be updated periodically by faculty in the Information Technology program reflecting feedback from various sources and newly emerged digital media technologies in the industry.

May 29, 2015

Grant Review Committee
Affordable Learning Georgia

Re: Textbook Transformation Grant

Dear Committee,

I am pleased to write this letter to support Dr. Shuhua Lai and Dr. Kairui Chen's application for the ALG Textbook Transformation Grant.

The proposal focuses on the creation of no-cost-to-students learning materials to replace current textbook for our general education course Digital Media (ITEC 2110). This will lower costs of students taking this course and will most likely increase our retention and success rates in the course.

Drs. Lai and Chen have been teaching ITEC 2110 for a long time. They have the knowledge, skills and experiences needed to successfully perform the action plan and meet the obligations of the grant. If awarded the grant, the school will work with them to coordinate the distribution of their award and provide necessary resources to facilitate their activities in developing the proposed learning materials.

Please let me know if you have any questions or need additional information.

Sincerely,



Thomas Mundie, Ph.D.
Dean, School of Science and Technology

Final Report

Affordable Learning Georgia Textbook Transformation Grants

Final Report

Date: 5/4/2016

Grant Number: 138

Institution Name(s): Georgia Gwinnett College

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

- Shuhua Lai, Associate Professor, School of Science & Technology, Georgia Gwinnett College, slai@ggc.edu
- Kairui Chen, Associate Professor, School of Science & Technology, Georgia Gwinnett College, kchen@ggc.edu

Project Lead: Shuhua Lai

Course Name(s) and Course Numbers: Digital Media, ITEC 2110

Semester Project Began: Fall 2015

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

Average Number of Students Per Course Section: 24

Number of Course Sections Affected by Implementation: 8

Total Number of Students Affected by Implementation: 192

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

We developed the no-cost-to-student course learning material during the Fall 2015 semester and piloted its implementation in 2 sections of ITEC 2110 Digital Media in Spring 2016 semester. The key outcomes of this project include

1. A completed set of course material for students to use for free is developed
2. Student cost for textbook is significantly reduced when take this course
3. Retention and success rates of students taking this course are improved

The exit survey showed that students enjoyed using this no-cost-to-students course material and overall experience is overwhelmingly positive.

- Transformative impacts on your instruction
The instruction experience for faculty who piloted the implementation of the no-cost-to-student course learning material was improved by having more relevant and up to date course material freely available to students on the first day of class, which eliminated the situation that some students could not afford a textbook.
- Transformative impacts on your students and their performance
The main impacts the no-cost-to-student learning material had on students include:
 1. no-cost-to-student learning material freely available to students on the first day of class helps students succeed in class
 2. Cost saving helps students retain in class
 3. Retention and success rates improve due to big cost saving
 4. Better education experience can be achieved because of more relevant and up to date course materials

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

The only challenge we had was that it was really difficult to find a publicly available and sustainable web hosting service. We would like to request some financial support for this if we do it again next time.

2. Quotes

- Provide three quotes from students evaluating their experience with the no-cost learning materials.
Here are three quotes from our students about our no-cost-to-student learning material:
 - 1) Good Idea, hopefully other courses will jump on board to this idea. It saves students a lot of money and in turn, will make grades better because all students will be able to access the book.
 - 2) I like this type of approach. Not all students have the money to afford the expensive textbooks so cutting cost is king above all else. I can deal with no hard copies and am technologically able to access my digital notes.
 - 3) The no cost to students program was great. Happy with the outcome

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?

Total number of students affected in this project: 46

- Positive: 95% % of 44 number of respondents
- Neutral: 2.5% % of 44 number of respondents
- Negative: 2.5% % of 44 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?

The overall comparative impact on student performance in terms of learning outcomes and grades are overwhelmingly positive. Among 46 participants, only one failed the class, but we had 50% of the participants getting an A. In previous semesters, we normally did not have half of the students getting As.

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

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?

The overall DFW rate in the semester of implementation was much lower compared to previous semesters. Historically the DFW rate at GGC for ITEC2110 was more than 20%. The DFW rate for the two pilot sections that affected by the no-cost-to-student textbook was about 6.8%.

Drop/Fail/Withdraw Rate:

6.8 % of students, out of a total 46 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. Narrative

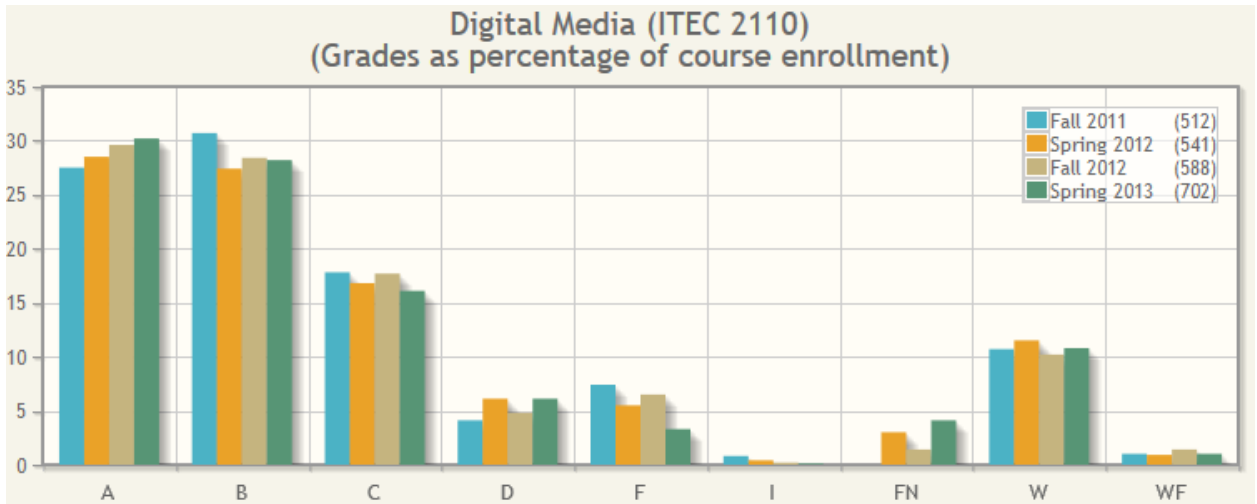
The PIs piloted the implementation of the no-cost-to-student course material in two sections of ITEC2110 Digital Media course with total of 46 students, two of which withdrew early during the semester. An exit survey was conducted at the end of the semester to assess the student success and experience of the project. The data we collected are summarized as follows.

○ Demographic data:

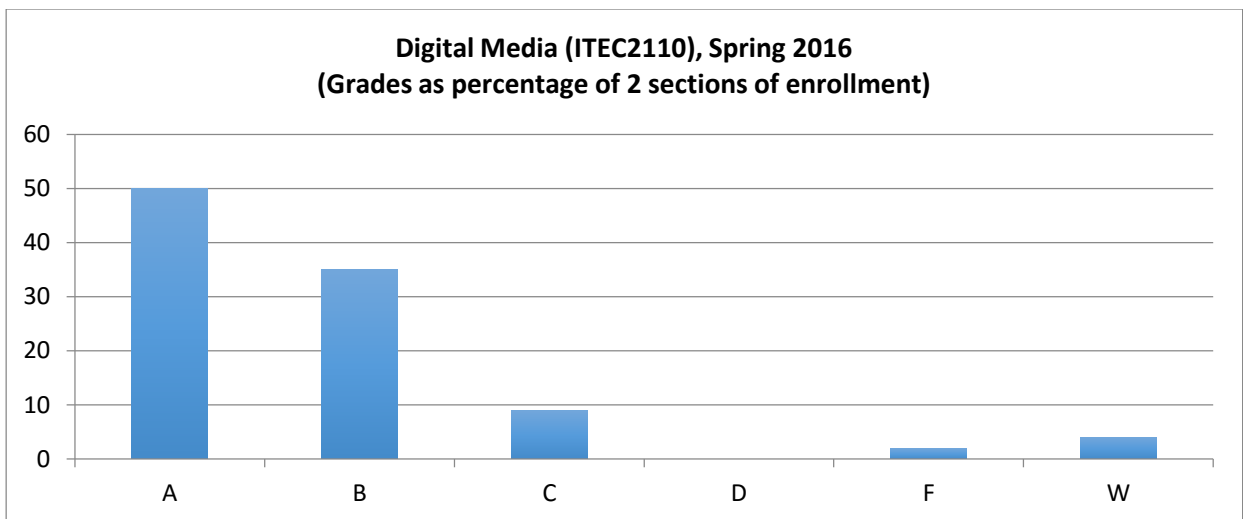
Total number of participating students:	44	
Male students:	22	48%
Female students:	24	52%
Major:		
Science & Technology:	14	32%
Business:	11	25%
Education:	4	9%
Liberal Art:	5	11%
Other:	10	23%
Classification:		
Freshman:	3	7%
Sophomore:	37	84%
Junior:	4	9%
Senior:	0	0%

- Drop, fail, withdraw (DFW) delta rates
 - Among the 46 participants, only 1 student got F, and 2 withdrew. Everybody else passed the course. So the overall drop, fail, withdraw (DFW) delta rate is 6.8%.
- Course retention and completion rates
 - Among the 46 participants, 44 students retained in the course, and finished the course. So the retention and completion rate is 95.7%.
- Average GPA
 - Among the 46 participants, 23 got A, 16 got B, 4 got C, 1 got F, and 2 withdrew. So the overall GPA for all the participants is 3.22.
- Pre-and post-transformation DFW comparison

- The Pre-Transformation DFW rate for this course was more than 20% (See the following figure).



- The Post-Transformation DFW rate for this course was 6.8%.



- Student success in learning objectives
 - The assessment showed student success in all the 3 following course goals:
 - 88% of the participants did well in clearly communicating ideas in written and oral form
 - 91% of the participants did well in demonstrating effective use of information technology
 - 90% of the participants did well in demonstrating an ability to collaborate in diverse and global contexts.
- The PIs also surveyed our student participants to understand their experience/attitude using the developed no-cost-to-student course material. The following qualitative data were collected and analyzed.

- 77% of the participants said they saved \$150 or more because of using the no-cost-to-student course material.
 - 89% of the participants said money-saving was what the no-cost-to-student meant most to them
 - When asked about what were the best aspect of using the no-cost-to-student learning material, 66% picked convenience +availability + no-cost, 25% picked no-cost only.
 - When asked about what were the challenges of using the no-cost-to-student learning material, 20% said no hard copy, but 75% said no challenges at all.
 - When asked would you like to see other courses that you are going to take also adopt a no-cost-to-student textbook, 95% of the participants said yes.
- Any co-factors that might have influenced the outcomes for better or worse.
 - Majority of the participants were not Science or Technology major, which might have influenced the outcomes in a negative way because the ITEC 2110 is a technology hands-on oriented course.

4. Sustainability Plan

All no-cost materials and resources are made publicly available in GGC D2L and will be shared among all GGC faculty teaching this course. For none GGC faculty, they can access the no-cost-to-student course learning material using the following web link: <http://wiki.ggc.edu/wiki/ALG:ITEC2110>. Moreover, the course materials will be updated periodically by faculty in the IT program reflecting feedback from various sources and newly emerged digital media technologies in the industry.

5. Future Plans

- Due to the overwhelmingly positive feedback we got from our students, we were thinking about providing the no-cost-to-students course materials to more sections of the Digital Media course and expanding the Affordable Learning concept into other potential courses
- We had a paper accepted and presented based on what we did in this ALG project:

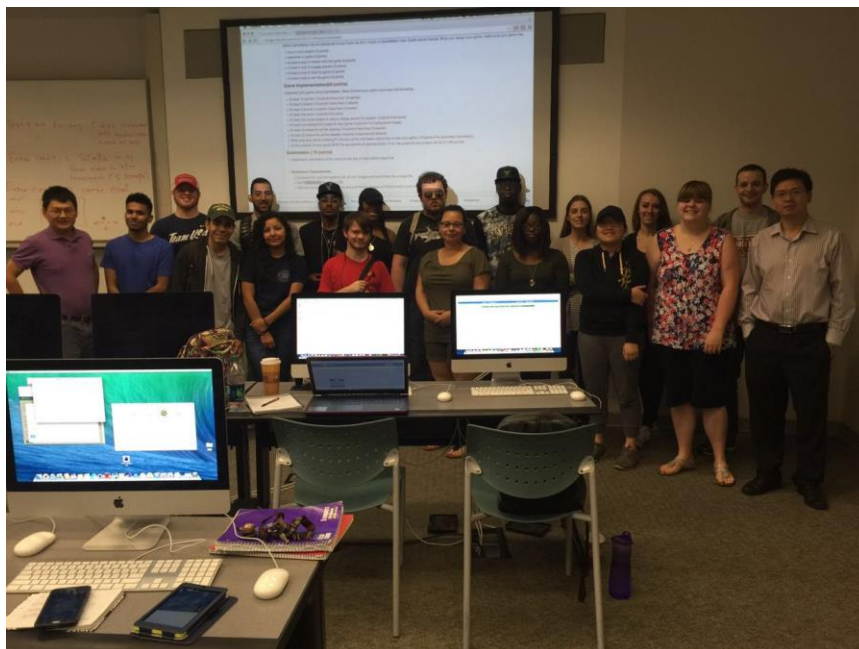
Kairui Chen and Shuhua Lai, "Use of Open Source Software for Teaching Digital Media Content Skills at Georgia Gwinnett College", USG Teaching and Learning Conference 2016, Athens GA, 4/13/2016-4/14/2016

6. Description of Photograph

- *List the names of the people in the separately uploaded photograph and their roles.*



The left-most person is Dr. Shuhua Lai (PI) and the right-most person is Dr. Kairui Chen (co-PI). And all others are participating students.



The left-most person is Dr. Kairui Chen (co-PI), and the right-most person is Dr. Shuhua Lai (PI).. And all others are participating students.