Affordable Learning Georgia Textbook Transformation Grants

Final Report

To submit your Final Report, go to the [Final Report submission page](http://affordablelearninggeorgia.org/site/final_report_submission) on the ALG website: http://affordablelearninggeorgia.org/site/final\_report\_submission

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: August 14, 2020**

**Grant Round: 15**

**Grant Number: #369-499**

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

**Project Lead: Samuel Dolo**

**Team Members (Name, Title, Department, Institutions if different, and email address for each): Talihun Muche, Associate Professor of Mathematics**

**Samuel Dolo, Professor of Mathematics**

**Course Name(s) and Course Numbers: MATH 1111 – College Algebra**

**Semester Project Began: Fall 2019**

**Final Semester of Implementation: Fall 2020**

**Total Number of Students Affected During Project: 537**

# Narrative

* 1. *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*
  1. *Describe lessons learned, including any things you would do differently next time.*

The broad focus for our project was to find a product (course material) that would provide adequate opportunities to motivate our students to solve problems by presenting them with an adequate number of worked out problems in the form of video. More specifically, we sought to do the following: come up with a no-cost product that is user friendly, come up with a no-cost product that possesses a large test bank (access to large data base questions), come up with a no-cost product (software) with links to the e-book, come up with a no-cost product that allows the instructors to edit (remove, add, and modify) questions, and come up with a no-cost product that has a good communication system feature (email, instant chat, etc..). The grant did enable us to research for the appropriate no-cost textbook for our students via the Affordable Learning Georgia links. Our search yielded a no-cost textbook titled ‘Algebra and Trigonometry’, by Jay Abramson: <https://openstax.org/details/books/algebra-and-trigonometry>) that displays all of the characteristics and features that are outlined in the course syllabus. We presented and recommended our selection to the department education and curriculum committee for further analysis and adoption and the committee agreed to adopt the recommended no-cost textbook for the 2019 -2020 academic year and 2020 – 2021 academic year. The data indicate that since the adoption or implementations of the no-cost textbook along with the course redesign strategies, the failure rate of College Algebra at Savannah State University has been minimized to an acceptable range of at most 20%. In Spring 2021, the department will reevaluate the impact of the no-cost textbook and course redesign initiative. We are confident that the reevaluation will yield a positive result and that the current program will continue through future academic years. Having said that, there are some challenges (that are not too vital) associated with our selected product and they include: other libraries cannot be inputted in a convenient manner, and the dashboard is not user friendly.

With regards to the transformative impacts that the project had on students and their performance, it important to note that we incorporated our project with the department of math College Algebra Redesign initiative. The MATH 1111 (College Algebra) Redesign Program’s goal was to strategize and minimize the high failure rate (D and F) of course, and we thought it would be prudent that one of the strategies in minimizing the high failure rate of the course would be the adoption of a no-cost textbook for the course. We are therefore proud to state that the college algebra redesign initiative (at Savannah State University) enhanced by the adoption of an excellent no-cost textbook through the Affordable Learning Georgia Grant Program appears to have helped reverse the high failure rate (D and F grades) associated with College Algebra at Savannah State University in recent years, and the findings regarding the DFI rates are summarized in the following table:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Note: “Pass” in the table represents either ‘A’ or ‘B’ or ‘C’ grade** | | | | | | | | |
| **+ Represents pre No-cost textbook semester data** | | | | | | | | |
| **++ Represents post No-cost textbook semester data** | | | | | | | | |
|  | | | | | | | | |
| **MATH 1111 (College Algebra)** | | | | | | | | |
| **Year** | **D** | **F** | **I** | **W** |  | **Total** | **Pass** | **Failure Rate** |
| + Fall 2017 | 78 | 122 | 0 | NA |  | 705 | 505 | 42.5% |
| + Spring 2018 | 41 | 56 | 1 | NA |  | 271 | 173 | 35.7% |
| + Fall 2018 | 37 | 75 | 0 | NA |  | 712 | 600 | 15.7% |
| + Spring 2019 | 10 | 15 | 0 | NA |  | 157 | 132 | 15.9% |
| +Summer 2019 | 0 | 1 | 0 | NA |  | 7 | 6 | 14.3% |
| ++ Fall 2019 | 18 | 53 | 4 | 6(1%) |  | 422 | 347 | 16.8% |
| ++ Spring 2020 | 6 | 9 | 6 | 4(4%) |  | 104 | 83 | 14.4% |
| ++Summer 2020 | 0 | 0 | 0 | 0 |  | 11 | 11 | 0% |

The data indicate that since the implementations of the no-cost textbook along with the course redesign strategies, the failure rate (D and F) of College Algebra at Savannah State University has been minimized to an acceptable range of at most 20%. This is a welcoming news for the department and our MATH 1111 students because the department is on track to meeting the Fall 2021 deadline of continuous failure reduction. It is also good news for the students in that an overwhelming majority of them are able to exit this gateway course and transition smoothly into their chosen major without delays. One of the challenges, however, is the increase in the number of Incomplete (I) grade due to the COVID-19 pandemic. If the trend continues it has the potential to post some problems.

# Quotes

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

* 1. *“The course has helped me a lot making me closer to achieving my goals that I have set.”*

* 1. As I am working on the selected questions, I would work out the problem completely and get the correct answer. However, once I submit the answer it is marked wrong. Although, the answer I answer I submit is the same once I click "Jump to answer". Is it because my given answer is formatted differently ?

# Quantitative and Qualitative Measures

## 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: 537

Total number of students who responded to the survey question using the scale from 1 to 5: **‘The textbook for the course is excellent’**: 222 responded with the total average rating of 4.449. It is very important to note that overall there were very few inherent software glitches report by students, but fortunately the instructors were knowledgeable to remedy the glitches. Overall, we are confident that the students had a positive experience with the product.

* Positive: \_\_\_\_\_\_\_ % of \_\_\_\_\_\_\_\_ number of respondents
* Neutral: \_\_\_\_\_\_\_ % of \_\_\_\_\_\_\_\_ number of respondents
* Negative: \_\_\_\_\_\_\_ % of \_\_\_\_\_\_\_\_ 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.*

Choose One:

* In terms of academic year, the passing rate is as follows: 67.7% (2017 – 2018 academic year); 84.7% (2018 – 2019 academic year); 87.3% (2019 – 2010 academic year) \_\_\_ 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.*

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

Choose One:

* In terms of academic year, the failure rates are as follows: 39.1% (2017 – 2018 academic year); 15.8% (2018 – 2019 academic year); 15.6% (2019 – 2010 academic year). \_\_\_ 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)

## 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.*

A college algebra redesign initiative (at Savannah State University) enhanced by the adoption of an excellent no-cost textbook through the Affordable Learning Georgia Grant Program appears to have helped reverse the high failure rate (D and F grades) associated with College Algebra at Savannah State University in recent years, and the findings regarding the DFI rates are summarized in the following table:

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# 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.*

In Spring 2018 the high failure rate associated with MATH 1111 in recent years at Savannah State University triggered the course redesign initiative (by the university administration) with the primary objective of reducing the failure rate to at most 30% by Fall 2021. Essential to achieving this objective would be the accessibility to affordable textbook of no-cost for students and we were very fortunate to have been the recipients of round 15 of the Affordable Learning Georgia Textbook Transformation Grant. The grant did enable us to research for the appropriate no-cost textbook for our students via the Affordable Learning Georgia links. Our search yielded a no-cost textbook titled ‘Algebra and Trigonometry’, by Jay Abramson: <https://openstax.org/details/books/algebra-and-trigonometry>) that displays all of the characteristics and features that are outlined in the course syllabus. We presented and recommended our selection to the department education and curriculum committee for further analysis and adoption and the committee agreed to adopt the recommended no-cost textbook for the 2019 -2020 academic year and 2020 – 2021 academic year. The data indicate that since the adoption or implementations of the no-cost textbook along with the course redesign strategies, the failure rate of College Algebra at Savannah State University has been minimized to an acceptable range of at most 20%. In Spring 2021, the department will reevaluate the impact of the no-cost textbook and course redesign initiative. We are confident that the reevaluation will yield a positive result and that the current program will continue through future academic years.

# 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.*

*Now that we have some experience with the Affordable Learning Georgia Textbook Transformation Grant Program, we intend to submit an application (this October) for one of our newly adopted courses (MATH 1401). MATH 1401 now serves as a Statistics Pathway course for non-STEM major. We are hopeful that the grant (if our proposal is successful) has the potential to have a positive impact on this newly designed course. With our newly gained experience, we will improve on student survey (which is almost lacking in this report partly due to inexperience with grant writing).*

# 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.*

*As mentioned earlier, our no-cost textbook grant program was incorporated with the math department course redesign initiative of MATH 1111. The two initiatives are inseparable because we supervised and implemented every strategy of the two programs. The successful narrative of MATH 1111 redesign program is incomplete without the narrative of the no-cost textbook initiative. The story of MATH 1111 course redesign program is the story of MATH 1111 no-cost textbook project. In Spring 2020, our course redesign research work was submitted and accepted for presentation at a Gateway to College Completion conference in Chicago, but due to the COVID-19 pandemic the actual in person presentation was cancelled. Indeed, there are future plans to share two inseparable stories at upcoming math conferences.*

# 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.*