Forsyth County Schools

EngageME P.L.E.A.S.E.

Does the use of a learning management system (LMS) with personalization features have a positive impact on math and English/language arts achievement in middle and high school?

Project Overview

THE PROBLEM: What Challenge Did the Program Try to Address?

Forsyth County Schools' (FCS) intervention, EngageME P.L.E.A.S.E.[1] (Personalized Learning Experiences Accelerate Standards-Based Education), was designed to evaluate the use of a Learning Management System (LMS) in the district's middle and high schools. One key feature of the LMS, the recommendation engine, was designed to assist teachers in providing personalized content and activities. The feature could suggest resources based on assessment of learning styles, preferences, and prior achievement. The resource could be an important supplement to classroom instruction and a path to student engagement. This program was designed to assist high-needs students, counter high dropout rates, and increase graduation rates.

THE APPROACH: What Strategies Did the Program Employ?

When FCS secured an i3 development grant from 2010 – 2015, the funding was used to plan and develop the LMS using a software vendor to create a system to their specifications, pilot it, and complete the implementation. In addition, staff received professional development on using the LMS and creating a more personalized approach to classroom instruction. With the goal of determining if an LMS with personalization features improved student academic achievement, FCS implemented the LMS into the district with a recommendation engine feature. Eight middle and four high schools participated in the study; the program schools received the LMS with the recommendations engine feature and professional development around using the tool. The study sought to measure if the LMS had a positive impact on English language arts (ELA) and math achievement after one year in grades 6–8 and grades 9–12 through a randomized controlled trial.

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[1] The Forsyth County School District received an i3 development grant supported by the U.S. Department of Education's Investing in Innovation program through Grant Number U396C100661. Development grants provide funding to support the development or testing of novel or substantially more effective practices that address widely shared education challenges. All i3 grantees are required to conduct rigorous evaluations of their projects. The quality of evidence required to demonstrate a project's effectiveness depends on a project's level of scale or grant type.

THE EGNAGEME P.L.E.A.S.E. MODEL

- **LMS WITH PERSONALIZATION.** The learning management system with personalization features was offered to teachers to support academic work and aid students in moving through course work independently. The LMS was designed to supplement classroom instruction.

- **PROFESSIONAL DEVELOPMENT.** Teachers and administrators participated in training on using the LMS and creating opportunities for more personalized and differentiated instruction.

Summary of Results

DID THE LMS HAVE A POSITIVE IMPACT ON MATH AND ENGLISH/LANGUAGE ARTS ACHIEVEMENT IN MIDDLE AND HIGH SCHOOL?

The LMS program students did not demonstrate any differences in achievement compared to the non-program students.

Mean Difference in Achievement between LMS and Non-LMS Students: ELA and Math*
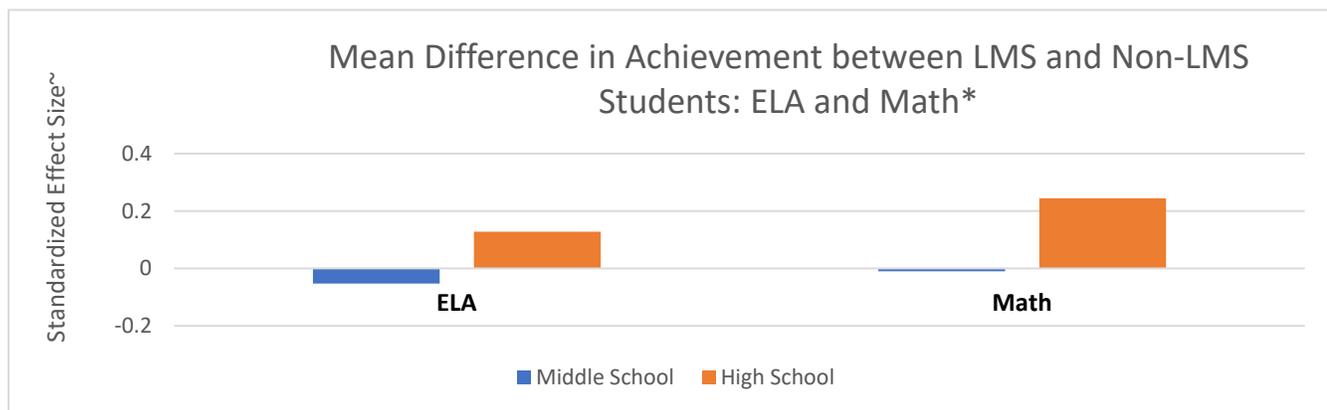
* Middle school performance on the End of Course Tests (EOCTs), High school performance on Criterion-Referenced Competency Tests (CRCT)

~ Education researchers generally interpret effect sizes as follows: 0.2 = small, 0.5 = medium, and 0.8 = large. If the impact does not have an effect size of 0.2 or greater, it is not meaningful, even if it is statistically significant.[2]

- **STUDENT ACHIEVEMENT IN ENGLISH/LANGUAGE ARTS AND MATHEMATICS.** No significant differences were found between program and non-program schools on student achievement in ELA or math at either the middle or high school level.

Please see Appendices B and C for information about the evaluation's design and the quality of the evidence, respectively.

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[2] Cohen, J. (1992). A power primer. Psychological Bulletin, 112, 155-159.

OTHER CONSIDERATIONS

The following considerations were noted in the impact study:

- **VALUE OF THE LMS SYSTEM.** Because of delays in software development and three vendor changes during the five-year i3-funded program, the LMS with the recommendations engine was not delivered to classroom teachers until February of the impact year. Therefore, it was not widely implemented. Though the impact study did not find a significant effect, it is still possible that the LMS could be a useful tool in middle and high school instruction.

- **INDIVIDUALIZED INSTRUCTION.** The goal of the intervention was to design classroom instruction to be more individually tailored toward specific student needs and interests. The LMS designed by Forsyth County Schools included a recommendations engine that would further this goal. In addition, classroom teachers received professional development focused on creating a more personalized approach to instruction.
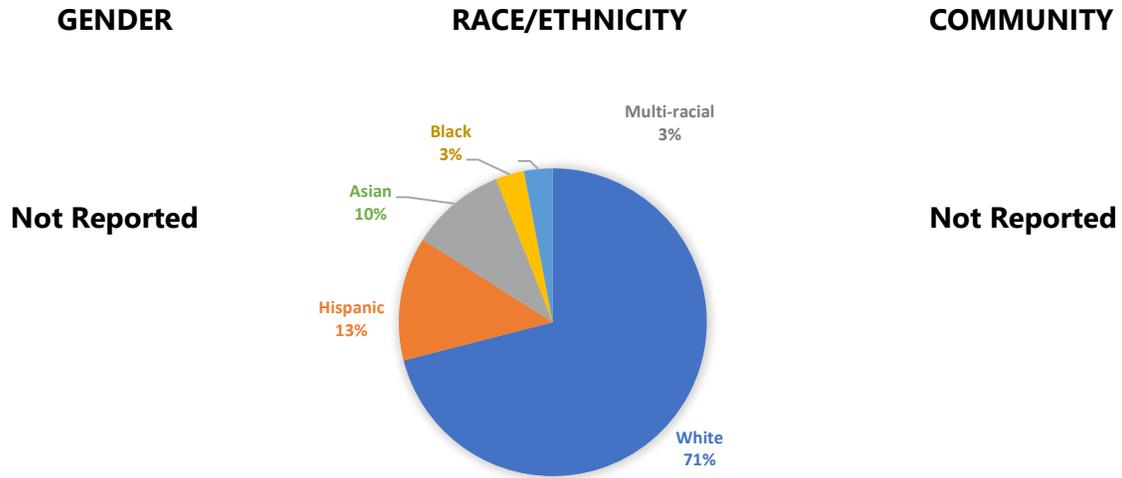
For More Information

Evaluation Reports

Final Evaluation Report (PDF) (Program Evaluation Group, University of Georgia)[3]

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[3] The information and data for this report was collected from the most recent report as of 01/23/2020: EngageMe P.L.E.A.S.E. Impact Study Results from Program Evaluation Group, University of Georgia.

Appendix A: Students Served by the Project[4]

GRADE(S)

PK	K	1	2	3	4	5	6	7	8	9	10	11	12

GENDER	RACE/ETHNICITY	COMMUNITY
Not Reported		Not Reported

RACE/ETHNICITY pie chart:
- White 71%
- Hispanic 13%
- Asian 10%
- Black 3%
- Multi-racial 3%

HIGH-NEEDS STUDENTS[i][5]

Economically Disadvantaged	English Learners	Students with Disabilities
17%	Not Reported	Not Reported

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[4]These data reflect the entire student population served by the intervention, not just the evaluation sample used in the impact study.
[5] Seven percent of middle school and 8% of high school treatment group, and 7% of middle school and 12% of high school control group were listed as high needs (ELA).

Appendix B: Impact Evaluation Methodology[6]

RESEARCH DESIGN:

Design:	Randomized Controlled Trial
Approach:	▪ The study was a two-level randomized controlled trial with schools as the unit of assignment. Schools were paired prior to randomization based on the percentage of high-needs students. All schools in the district were given access to the LMS, but only treatment schools had access to the recommendation engine. Students with both pre-test and post-test scores were included in the impact analysis. ▪ The impact was measured by the state-mandated tests in the given subject. The impact study was conducted over the course of the fourth academic year of the i3-funded project.
Study Length:	One year (2013–14)

DATA COLLECTION AND ANALYSIS

Study Setting	Eight middle schools and four high schools in Forsyth County School District (Georgia)
Final Sample Sizes	▪ *Middle school intervention*: 3,839 (ELA), 3,811 (math) ▪ *Middle school comparison*: 4,020 (ELA), 3,992 (math) ▪ *High school intervention*: 2,345 (ELA), 1,858 (math) ▪ *High school comparison*: 1,801 (ELA), 1,493 (math)
Intervention Group Characteristics	▪ *Middle School (ELA)*: 48% Female, 7% High Needs, 76% White, 11% Asian, 2% Black, 8% Hispanic, 2% Mixed, 0.3% Indian ▪ *Middle School (Math)*: 49% Female, 6% High Needs, 76% White, 11% Asian, 2% Black, 8% Hispanic, 2% Mixed, 0.2% Indian ▪ *High School (ELA)*: 50% Female, 8% High Needs, 73% White, 13% Asian, 2% Black, 9% Hispanic, 3% Mixed, 0.3% Indian, 0.1% Pacific Islander ▪ *High School (Math)*: 51% Female, 9% High Needs, 76% White, 34% Asian, 3% Black, 10% Hispanic, 3% Mixed, 0.3% Indian
Comparison Group Characteristics	▪ *Middle School (ELA)*: 51% Female, 7% High Needs, 70% White, 8% Asian, 3% Black, 15% Hispanic, 3% Mixed, 0.4% Indian ▪ *Middle School (Math)*: 51% Female, 7% High Needs, 70% White, 8% Asian, 3% Black, 16% Hispanic, 2% Mixed, 0.4% Indian ▪ *High School (ELA)*: 51% Female, 12% High Needs, 79% White, 2% Asian, 3% Black, 13% Hispanic, 3% Mixed, 0.5% Indian ▪ *High School (Math)*: 49% Female, 13% High Needs, 77% White, 2% Asian, 3% Black, 15% Hispanic, 2% Indian, 0.5% Indian
Data Sources	▪ State standardized math and ELA student test scores
Key Measures	▪ Criterion-Referenced Competency Tests (CRCT): middle school assessments; End of Course Tests (EOCT): high school assessments

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[6] These data reflect only the evaluation sample in the impact study, not the entire population served.

Appendix C: Quality of the Evidence

Although an evaluation was not reviewed by the time of publication for this summary, the study may be reviewed at a later date. Please visit the websites found in the footnotes on this page to check for updates.

WHAT WORKS CLEARINGHOUSE REVIEW[ii]

STUDY	RATING
Not reviewed as of 01/23/2020	N/A

EVIDENCE FOR ESSA REVIEW[iii]

STUDY	RATING
Not reviewed as of 01/23/2020	N/A

NATIONAL CENTER ON INTENSIVE INTERVENTIONS REVIEW[iv]

STUDY	RATING
Not reviewed as of 01/23/2020	N/A

The **Investing in Innovation Fund (i3)**, established under section 14007 of the American Recovery and Reinvestment Act of 2009, is a Federal discretionary grant program at the U.S. Department of Education within the Office of Innovation and Improvement. i3 grants help schools and local education agencies work in partnership with the private sector and the philanthropic community to develop and expand innovative practices that improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, and/or increase college enrollment and completion rates for high-need students.

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[i] "High-need student" refers to a student at risk of academic failure or otherwise in need of special assistance and support, such as students who are living in poverty, attend high-minority schools, are far below grade level, who have left school before receiving a regular high school diploma, at risk of not graduating with a diploma on time, who are homeless, in foster care, have been incarcerated, have disabilities, or who are English learners. For more information see: Applications for New Awards; Investing in Innovation Fund-Development Grants, 81 FR 24070 (April 25, 2016).

[ii] https://ies.ed.gov/ncee/wwc/FWW

[iii] https://www.evidenceforessa.org/

[iv] https://intensiveintervention.org/