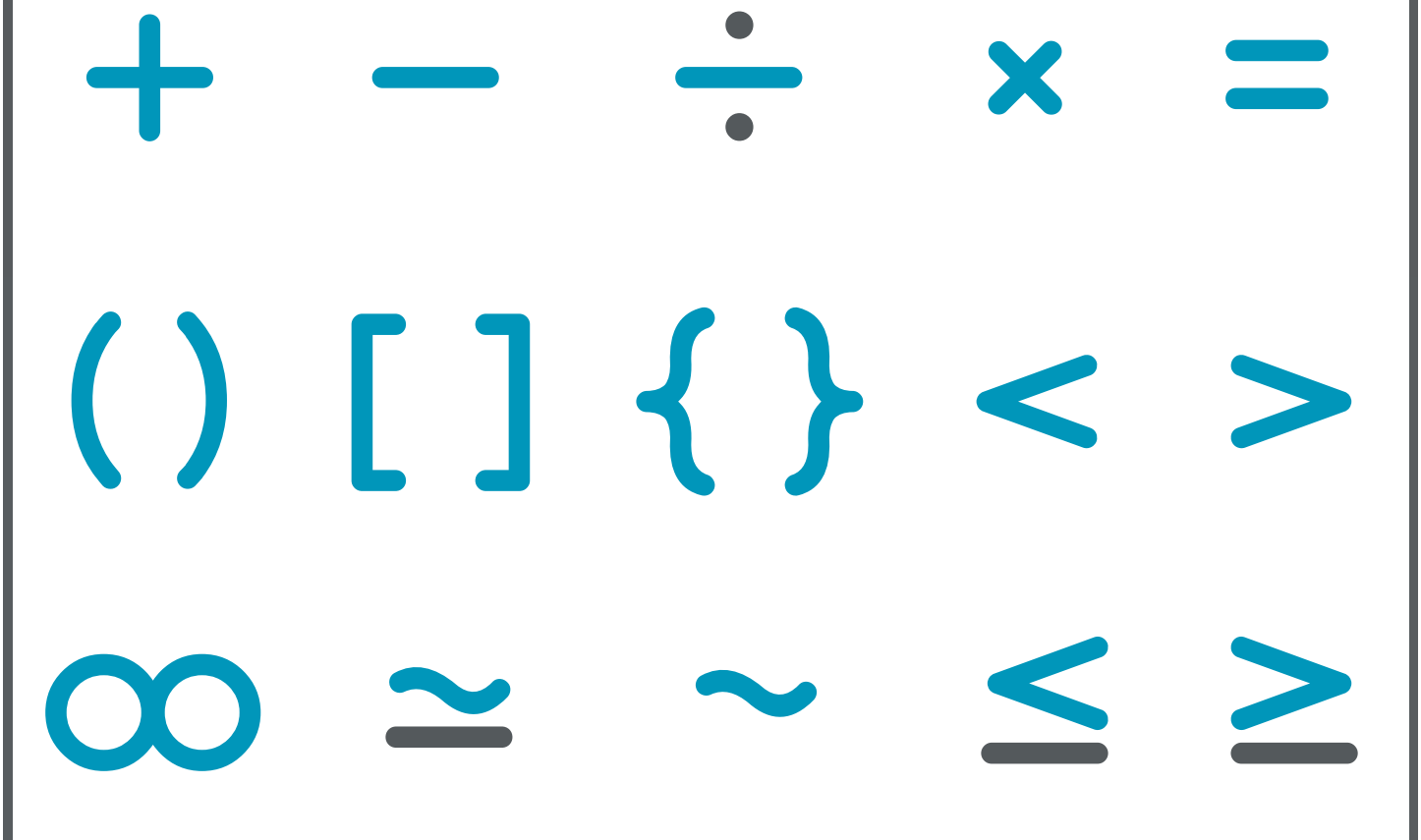
Mathematics Success Initiative

STATUS REPORT



October 2015

OKLAHOMA STATE REGENTS FOR HIGHER EDUCATION

Improving our future by degrees

2015-16 OKLAHOMA STATE REGENTS FOR HIGHER EDUCATION

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BACKGROUND

The Oklahoma State Regents for Higher Education have identified college completion as their No. 1 goal and are working to increase the number of degrees and certificates earned in Oklahoma by an average of 1,700 per year, resulting in a 67 percent increase by 2023. Lack of student success in mathematics has been identified as a significant barrier to achieving this goal. To improve retention and graduation rates of all students, the State Regents focused attention on mathematics success by addressing the following goals:

Goal 1: Improve mathematics preparation of students entering college.

Goal 2: Reform mathematics remediation to be more effective.

Goal 3: Strengthen mathematics preparation for all majors.

The State Regents' long-standing public agenda incorporates the following broader set of goals and objectives that support the Mathematics Success Initiative:

PUBLIC AGENDA GOALS

- Increase the number of college graduates.
- Enhance access and improve the quality of public higher education for all Oklahomans.
- Better prepare students to meet the challenges of a global economy.

PUBLIC AGENDA OBJECTIVES

- Implement Complete College America (CCA) initiatives to increase the number of degrees and certificates earned in Oklahoma from 30,500 to 50,900 by 2023.
- Enhance capacity to successfully enroll, retain and graduate students.
- Increase systemwide efficiencies and cost savings.
- Strengthen financial support for Oklahoma college students.
- Improve instructional quality.
- Utilize performance funding to enhance student success and academic quality.
- Broaden economic development activities.
- Advance access to and quality of technologies to support systemwide programs and services.

Both Governor Mary Fallin and the State Regents are committed to CCA. Oklahoma was named the national model for degree completion by CCA with a plan focused on:

1. Promoting college readiness.

2. Transforming remediation.

3. Strengthening pathways to certificates and degrees.

4. Expanding adult degree completion efforts.

5. Rewarding performance and completion.

Two of the five Oklahoma CCA initiatives involve higher education and K-12 working together to develop and implement a strategy that seeks to identify students not on target to be college-ready by graduation and ensure that every Oklahoma institution will implement transformational models of remedial placement and support through a statewide, phased implementation and refinement process. The primary activities have been centered around mathematics success.

In addition, OSRHE's performance-funding model specifically incentivizes degrees and certificates conferred, graduation rates, successful transfers from community colleges, first-year retention rates and first-year retention of Pell students. Also in place is a measure for gateway course passage rates, which rewards institutions for up to 13 percent of the total funding for students who earn 24 credit hours of college-level credit in the first academic year. No remedial credit may be counted toward the 24 hours. This and the other seven performance-funding measures are reported each year.

ACTIVITY AND PROGRESS TIMELINE

October 2011: College Completion Agenda

The State Regents adopted the College Completion Agenda incorporating CCA, including two activities for which mathematics success is key:

- Targeted initiatives to increase freshman-to-sophomore retention and overall graduation rates.
- More effective and efficient completion of remediation and freshman gateway courses.

April 2012: Remedial Reform Summit

OSRHE facilitated a systemwide Remedial Reform Summit featuring national- and state-level efforts to address educational pipeline challenges. The summit consisted of concurrent sessions in which public universities and community colleges engaged in reviews of existing remedial education programs to identify best practices that promote more timely completion and improvements to learning outcomes. The all-day summit included a presentation on Washington state's Integrated Basic Education and Skills Training (I-BEST) and the Education Commission of the States (ECS) Principles of Reform. The institutions shared their best practices for improved assessments, advising, supplemental instruction and developmental education. At the recommendation of those attending the summit, as well as the Council on Instruction (COI) Assessment Committee, OSRHE arranged a Mathematics Faculty Conference for 150 mathematics faculty, developmental mathematics faculty and academic administrators.

September 2012: Mathematics Faculty Conference

OSRHE convened mathematics faculty with the purpose of identifying a systemwide strategic approach of encouraging and implementing innovation to improve student success. To expand discussions from the Remedial Reform Summit, additional national initiatives were discussed:

1. Common Core State Standards and the Partnership for Assessment of Readiness for College and Careers (PARCC), in which Oklahoma was a member, for assessments in college algebra, introductory statistics and general/liberal arts mathematics.
2. Twelfth-grade transitional high school courses with the Southern Regional Education Board (SREB), for which Oklahoma trained teachers.
3. Mathematics Pathways with the Charles A. Dana Center at the University of Texas.
4. ECS Getting Past Go project.

Based on conference participant feedback regarding next steps, the following activities were planned:

1. Create a mathematics faculty working group tasked to share professional development and reform efforts among faculty at different institutions and to assist the State Regents in developing a strategic plan to improve mathematics success from college preparation through remediation to graduation in various majors. Institution presidents and the COI approved the creation of the Mathematics Success Group and nominated members.

2. Continue work on the 12th-grade transitional mathematics course. Oklahoma teachers participated in SREB professional development, and the Oklahoma State Department of Education is assisting with implementation.

3. Develop common course requirements for the same major in order to improve transferability among institutions.

4. Create opportunities for collaboration in seeking funding by identifying funding sources and getting faculty involved in pursuing the sources.

September 2013: Mathematics Success Group Planning Meeting

The Mathematics Success Group was established with faculty recommendations from the COI. The group consists of 35 mathematics faculty, department chairs and teacher educators, with 7 from research universities, 11 from regional universities and 17 from community colleges, as well as the secondary mathematics director from the State Department of Education. The purpose of the first meeting was to develop a sustainable and actionable strategic plan to address the group's goals.

The planning meeting was held in an active learning classroom at the University of Oklahoma with five trained team leaders. Group members were assigned to a team based on expertise and diversity. Laptops at each team table contained pertinent background resource information and discussion questions. The work of each group was shared throughout the room and discussed. Each participant then selected another team table to further that work, which was then shared with the whole group.

The resulting list of strategies evolved for each of the three goals:

GOAL 1: IMPROVE MATHEMATICS PREPARATION OF STUDENTS ENTERING COLLEGE.

- Strategy 1: Offer 12th-grade courses for various levels and in multiple formats.
- Strategy 2: Improve science education in middle school and better prepare elementary teachers.
- Strategy 3: Bring more physical, digital and teacher resources to mathematics classrooms, address teacher shortages and upgrade materials.
- Strategy 4: Hold regular local conversations between high school teachers and college faculty with a common agenda, including curriculum alignment in mathematics, mathematics and science crossovers, and teaching persistence. Include the business community.

GOAL 2: REFORM MATHEMATICS REMEDIATION TO BE MORE EFFECTIVE.

- Strategy 1: Improve vertical alignment within the institution.
- Strategy 2: Offer corequisite courses and modules.
- Strategy 3: Use multiple assessments.

GOAL 3: STRENGTHEN MATHEMATICS PREPARATION FOR ALL MAJORS.

- Strategy 1: Create multiple pathways that are standardized by discipline.
- Strategy 2: Provide professional development targeting STEM (science, technology, engineering and math) crossover.
- Strategy 3: Use internships to demonstrate relevance.

November 2014: Mathematics Success Group Strategic Plan Implementation Meeting

The strategic plan was refined by the Mathematics Success Group and presented for feedback to numerous groups, including the Council of Presidents; the COI; the Faculty Advisory Council; the Council on Student Affairs; Oklahoma deans of colleges of arts, sciences and education; the Oklahoma P-20 Data Coordinating Council; and the Oklahoma Business and Education Coalition. The plan was also presented to Achieving the Dream states through the Jobs for the Future Postsecondary State Policy Network at the Mathematics Preparation for Community College Students Interested in STEM Programs convening, a one-day Cross-State Topics Series Meeting.

The Mathematics Success Group held a strategic plan implementation meeting using the same method as in the previous meeting to identify priorities and an implementation process using the feedback collected from outside groups. The meeting was also used to begin systematic professional development on topics of key importance. Dr. Uri Treisman presented "Context Setting: Parallel Work Taking Place Across the Country and Challenges for Oklahoma" and Oklahoma State University faculty members presented on "STEM and Non-STEM Pathways Reform at Oklahoma State University." Materials were shared from the Conference Board of the Mathematical Sciences Forum on the First Two Years of College Mathematics. In addition, the Mathematics Success Group drafted the membership, charge and tasks of the work teams, each of which will be assigned to address one of the following priorities:

1. Hold regular local conversations between high school teachers and college faculty with a common agenda, including curriculum alignment in mathematics, mathematics and science crossovers, and teaching persistence (include the business community).
2. Offer 12th-grade courses for various levels and in multiple formats.
3. Reform remediation to be more effective by improving vertical alignment within the institution and offering corequisite courses and modules.
4. Improve course placement by using multiple assessments.
5. Create multiple pathways that are standardized by discipline.

The COI and other key organizations, such as the Oklahoma Academic Advising Association (OACADA), the Oklahoma Association for Institutional Research (OKAIR) and teacher associations, are providing suggestions for work team members. The goal is to have representation from all higher education institutions and key stakeholders. The planning group for the Mathematics Success Group meetings has become the Mathematics Steering Committee.

April 2015: Higher Education Completion Conference

OSRHE continues to offer systemwide conferences. The Higher Education Completion Conference included CCA Game Changers with an emphasis on guided pathways, such as the program at Georgia State University. The sessions covered national and Oklahoma best practices, including the Mathways Project, the Higher Learning Commission Student Persistence and Completion Academy, course placement, predictive analytics, online student retention, remediation reforms, academic advising, student success courses and student retention research. Feedback from the conference indicated that the institutions are investigating or implementing mathematics pathways and guided pathways.

Fall 2015: Implementation of Mathematics Success Group Work Teams

The Mathematics Steering Committee is refining the membership, charge and deliverables for each of the five work teams. Training will be provided to the co-leaders of the work teams prior to the initial meeting in fall 2015. Most mathematics department chairs either serve on these groups or have volunteered to serve on a work team. In addition, the mathematics department chairs will convene regularly to contribute to implementation of reforms and mathematics pathways. CCA and other OSRHE reports will measure the effectiveness of the strategies.

The Dana Center and CCA staff are providing guidance and resources from work in other states. As a participant in the CCA Scaling Corequisite Initiative, the State Regents commit to implementing a systemwide corequisite strategy for the public colleges and universities. Some institutions already have begun to offer corequisite courses, develop one-year course pathways and align college-level mathematics courses by discipline. A systemwide approach is needed to promote the success of all students.

ONGOING RELATED WORK

Course Equivalency Project (CEP)

For 20 years, OSRHE's Course Equivalency Project (CEP) has provided course equivalency information to facilitate student transfer within the state system of higher education. Beginning at the 2014 annual meeting, faculty from numerous disciplines discussed the mathematics courses currently required for the major and where alternate courses to college algebra may be possible. Using CEP to support a state system mathematics pathways model continues.

Policy Modifications

The State Regents approved a revised assessment and remediation policy with two significant changes from the previous policies. The first is to identify assessments that more accurately describe a student's chance at success in entry-level courses. The second revision allows remediation to be offered through a variety of mechanisms, including the corequisite model. While the assessment and remediation policies were being considered, several institutions received OSRHE's permission to use different assessment procedures and to offer developmental education in formats other than a remedial course. Reports are being collected to document the effectiveness of these approaches.

State and National Partnerships

Collaboration with the State Department of Education includes the current review of common education standards in mathematics that prepare students for college-level mathematics, consideration of a 12th-grade mathematics course for students not prepared for college-level mathematics and work with the Mathematics Success Group. The secondary mathematics director serves on the OSRHE Mathematics Steering Committee and was a trained leader for the strategy meetings.

Oklahoma joined Achieving the Dream (AtD) in 2007 and belongs to the Jobs for the Future (JFF) State Policy Network, and two Oklahoma colleges – Oklahoma City Community College and Rose State College – are national AtD leader colleges. Oklahoma also is a participant in JFF's Policy Leadership Trust for Student Success, a national leadership group convened to help solve crucial state policy challenges affecting community colleges. The goals are to design and drive adoption of policies to support scaling effective innovation and to produce significant change. As part of this work, OSRHE is represented on the Redesign of Developmental Education Task Force, whose goal is to transform developmental education into an on-ramp to a program of study. Oklahoma is a member of the Cross-State STEM Workgroup funded by the Leona M. and Harry B. Helmsley Charitable Trust through JFF and also contributed to "A Call to Action to Improve Mathematics Placement Policies and Processes: Six Policy Recommendations to Increase STEM Student Aspirations."

OSRHE continues to work closely with SREB, which has offered assistance in efforts to implement a 12th-grade high school transitional course from the higher education institutions, such as the model used in Tennessee. SREB will also support the Mathematics Success work team charged with developing systematic, strategic conversations between high schools and colleges.

Professional associations, such as OACADA and OKAIR, are briefed by OSRHE staff regarding policy changes and higher education issues, and input is solicited. OACADA members who heard Treisman speak at OSRHE's mathematics convenings invited him to present at the 2015 OACADA conference on guided pathways, tough decisions, persistence and grit. OKAIR members will serve on all of the work teams so that measurable outcomes will be included.