Planning for Scale
Example

Dana Center Mathematics PATHWAYS

Overview

Successful implementation of math pathways at scale requires strategic planning to ensure that pathways are:

- Implemented *across* all institutions;
- Implemented *deeply* within institutions so that all students benefit; and
- Designed to provide a high-quality, rigorous, and well-supported learning experience for students.

To support the MPC states to realize this ambitious vision, the Dana Center has established the following requirements:

- Complete a Plan for Scale
  - Part I: Establish clear goals for what math pathways will look like when fully realized.
  - Part II: Define expectations for institutions in their first years of implementation.
  - Part III: Develop a strategy for how to support institutions to implement.

- By August 2017, obtain written commitments from institutions to begin implementation by Fall 2018.
  - *At minimum*, the state must have a cohort of 2- and 4-year institutions. The state may choose to ask all institutions in the state to implement at once.
  - The written commitment may take various forms such as an MOU, a detailed letter of support, or submission of an implementation plan. The institutions must be aware of and commit to the expectations outlined in Part II of the Plan for Scale.
  - The state must collect implementation data from institutions that are designated as "implementers". The state will define what this data will include and how it will be collected in consultation with the Dana Center and the external evaluators for the project.

- All institutions in the state should be engaged in the process in some capacity. If they are not actually implementing pathways, they should meet expectations for preparation. This could include activities such as participating in statewide events or connecting with other institutions. For examples, see the Part III example or *The NMP in Texas: Active-Learning Sites and Capacity-Building Sites*, which provides an example of different institutional engagement in Texas.

Instructions: The following templates provide support and guiding questions for developing the Plan for Scale. See an example of a full plan at *Planning for Scale Example*. States may use a different format than shown here as long as they include the same information.

Part I: Goals for full-scale Implementation within and across institutions

Technical Assistance Notes:

- Use and modify the dimensions of implementation to align to the task force recommendations and priorities.
- Use the questions for each dimension of implementation to help you write goal statements that determines if, and how, an institution has successfully scale mathematics pathways.
- To set the context for the goal statements, states may add baseline information that defines the current state of math pathways activity in their state.
- Set goals that can be measured or demonstrated in some way within and across institutions.
- Set long-term goals that are essential to the vision of full implementation at scale.
- See an example at *Planning for Scale Example.*

Dimensions of Implementation	Baseline Information	Goal Statements for Evidence of Successful Implementation at Full-Scale
Number, types and structure of pathways • Is there a minimum/maximum number of pathways? • What are the possible pathways? • Are there requirements for how underprepared students are prepared?		All 8 universities and 12 community colleges have at least 1 algebraic-intensive and 1 non-algebraic intensive pathway. At least 60% of underprepared students are in a one-semester corequisite model. The remaining 40% are in a one-year model.
Scale • What is the goal for the number / percentage of students impacted by the mathematics pathways? • What would determine if students are in an "appropriate" pathway?		The percentage of students in a pathway reflects the percentage of students in programs associated with that pathway. All systems and structures related to the pathways are normative practice for all students.
Entrance into the pathways • Are there common placement standards or practices?		Students are placed using multiple measures including high school GPA, ACT score, and assessment of non-cognitive factors. Placement is differentiated by pathway. Students receive information and support to select the

Dimensions of Implementation	Baseline Information	Goal Statements for Evidence of Successful Implementation at Full-Scale
• If not, how is effectiveness of placement demonstrated? • How is effectiveness of advising processes to direct students into appropriate pathways demonstrated?		appropriate pathway.
Alignment of pathways to programs of study • Is there a common alignment of pathways to programs of study across the state? Across a region or with key transfer partners? • If not, how is appropriate alignment demonstrated?		All programs have reviewed math requirements across institutions at the regional level and set common requirements for a single recommended gateway course.
Design of pathways • Do the courses need to meet a common set of learning outcomes? Common assessments? • Are there other elements related to instruction or course design that should be present?		Gateway math courses meet the learning outcomes defined in the state transfer catalog. Pathways are structured so that majority of students can earn college-level math credit in one year or less.
Student success • How is student success measured? Are there goals for student success?		At least 75% of underprepared students earn college-level math credit in one year or less. Every gateway math course has an average success rate of 70% or more. Cohort tracking shows that at least 40% of students entering the algebraic-intensive pathway successfully complete Calculus I.

Part II: Defining Initial Institutional Implementation

Technical Assistance Notes:

- This part has two sections; the first section creates a road map for institutions to follow and the second section creates a plan for how to obtain the commitment from institutions.
- The first section is designed to show institutional expectations over three years. You may add additional years if you wish. To plan across the years, consider how activities defined in Year 1 might expand or improve.
- For each dimension, identify 1 to 3 high-value outcomes or deliverables that would move an institution towards the full-scale goals defined in Part I. In general, the outcomes or deliverables should be verifiable.
- Identify outcomes or deliverables that are non-negotiable for initial implementation and those that might need flexibility based on local context. Where applicable, allow institutions flexibility through an opportunity to negotiate expectations (see Year 1 Scale, *Planning for Scale Example*) or through setting their own goals (see Year 1 Student Success, *Planning for Scale Example*).

Dimensions of Implementation	Year 1 Implementation	Year 2 Implementation	Year 3 Implementation
Project participation and reporting • What events, reporting, and/or shared learning opportunities will the institution commit to? • How will this work be shared?	Send a team of at least three people to the Designing Mathematics Pathways Workshop. Submit data on enrollment and success in each pathway, as defined in MOU. Report on progress towards student success goals.	Participate in regional events to support implementation. Submit data on enrollment and success in each pathway, as defined in MOU. Report on progress towards student success goals.	Share learning with other institutions through presentations, site visits, consulting calls, etc. Submit data on enrollment and success in each pathway and on distribution of students across pathways compared to projected distribution based on program of study enrollments and requirements, as defined in MOU. Report on progress towards student success goals.

Dimensions of Implementation	Year 1 Implementation	Year 2 Implementation	Year 3 Implementation
Number, types, and structure of pathways • What is the minimum/maximum number of pathways offer at the institution? • What are the requirements for how underprepared students are prepared?	Offer one or more pathways other than the algebraic-intensive pathway, as defined in the task force recommendations.	Add new pathways if applicable.	
Scale • What is the goal for the number / percentage of students enrolled in the institutions' mathematics pathways? • What would demonstrate that students are in an "appropriate" pathway?	Offer at least three sections of the non-algebraic intensive gateway course (negotiable for smaller institutions). If these courses exist rather than new pathways, the institution commits to increase the number of students going into the pathway.	At least 50% of students enter into a mathematics pathway based on a program of study. Based on new and projected alignment to programs, define the end goal of percentage and numbers of students expected to be in each pathway at full scale.	At least 70% of students enter into a mathematics pathway based on a program of study.
Entrance into pathways • What common placement standards or practices will be used, if any? • What evidence would show that effective advising processes have been put into place?	Train advisors on new requirements and how to help students select the appropriate pathway.	Review and improve placement policies to include multiple measures (supported by statewide work on placement).	The normative advising practice includes a process to help students select the appropriate pathway. The normative placement practice is based on multiple measures and is differentiated by pathway.
Alignment of pathways to programs of study • What actions will the institution engage in to identify and align mathematics pathways to programs of study? • What actions will occur to ensure	Review mathematics requirements for programs of study and identify those that might potentially be improved, either by defining a single, recommended course or by changing the requirement to a	Continue outreach to partner disciplines to align mathematics pathways to programs. Outreach will be informed by regional work. Mathematics requirements for programs impacting at least	All programs have one recommended math requirement that is aligned to other institutions in the region.

Dimensions of Implementation	Year 1 Implementation	Year 2 Implementation	Year 3 Implementation
alignment of pathways to programs of study are coordinated across a region or with key transfer partners?	different course. Begin outreach to partner disciplines to address these issues. Identify programs that will be aligned with the new pathways for the first-year implementation.	50% of the student population have been reviewed and are now appropriately aligned based on regional or state practice.	
Design of pathways • What pathway(s) structure will serve underprepared students (e.g., one-semester or yearlong corequisite model)? • Do the courses need to meet a common set of learning outcomes? Common assessments? • Are there other elements related to instruction or course design that should be present?	Structure pathway(s) as a one-semester or year-long corequisite model that allows students who are not college ready to earn college credit in one year or less (where applicable).	Monitor and review implementation, student learning, and student success to improve work.	Monitor and review implementation, student learning, and student success to improve work.
Student success • How will student success be measured? Are future goals defined for student success?	Survey students in newly designed/redesigned courses to determine levels of engagement (survey provided). Review student success data submitted to project to identify areas of concern. Adjust plans accordingly. Set goals for the next two years to increase success for students at all placement levels.	Assess progress towards goals. Adjust plans accordingly.	Assess progress towards goals. Adjust plans accordingly.

Obtaining and Supporting Institutional Commitment:

How will institutions make their commitment? Examples may include MOU, letter of commitment, implementation plan, etc.	Memorandum of Understanding (MOU) that specifically references the Year 1 expectations, identifies a math faculty and administrative lead.
Who should make the commitment, e.g., president, math department chair, chief academic officer, etc. What information will they need to make an informed commitment?	Math department chair with support and approval from president and/or CAO They will need a brief of state level activity for math pathways and implementation expectations to commit, including support strategies to help the institution.
What support will institutions need to meet these commitments?	Dana Center Math Pathways workshop Corequisite Academy workshop Academic Advisor and Registrar training Dept. of Higher Ed will hold 2 webinars with math leads from all institutions to share ideas and questions Dept. of Higher Ed will create an online library of sample corequisite materials Dept. of Higher Ed will host an Institutional Action Planning math summit (spring 2018)
What data/information will be collected to verify that expectations have been met? Balance high standards with reasonable expectations.	<u>For each academic year, beginning Fall 2018</u>: # of math pathways offered at institution % of underprepared students in corequisite math courses % of underprepared students in 1-year math pathway % of students enrolled in recommended math course (e.g., QR, College Algebra, SR) aligned to programs of study Completion and attrition data for corequisite, 1-year math pathways sequence, and gateway math courses. Completion and attrition data for STEM pathway students from underprepared math sequences (if needed) to completion of Calculus I.

Part III: Scaling strategy and yearly activities

Technical Assistance Notes

- Use the *General description* to briefly describe the basis for and composition of the scaling strategy. For either 'All In' or 'Strategic Cohort' strategy, note the number and type of institutions.
- Refer back to the MPC expectations on page 1.
- Ensure that the scaling strategy and its major milestones and activities connect with the institutional commitments (Part II) and the full-scale goals (Part I).
- Use the table to provide greater detail on which major milestones and activities will be met by each group and plan outreach to institutions not yet committed to implementation.
- Keep in mind that implementing mathematics pathways is a long-term goal that may extend beyond the three-year commitment.
- See an example at *Planning for Scale Example.*

General description: Implementation will be supported on a regional level to take advantage of existing regional networks. There will be three cohorts. Institutions may implement ahead of their regional cohort.

Cohort 1: 2 universities, 3 community colleges; Northwest Region
Cohort 2: 4 universities, 5 community colleges; Southwest and Southeast Regions
Cohort 3: 2 universities, 4 community colleges; Northeast Region

Institutions that have not yet committed to implementation or are in later cohorts will receive communications and be invited to participate in certain engagement activities to build understanding and interest.

Major Milestones and Activities			
Cohort	**AY 2017–2018**	**AY 2018–2019**	**AY 2019–2020**
Cohort 1	Signs MOUs and establishes teams to begin planning for Year 1 implementation; presents plans at Math Summit in April 2018.	Meets objectives for Year 1 implementation and plans for Year 2. Representatives participate in outreach to Cohorts 2 and 3.	Meets objectives for Year 2 implementation and plans for Year 3. Representatives participate in outreach to and support for Cohorts 2 and 3. Send representatives to Math Summit to share information and learning.
Cohort 2	Meets with task force members visiting each Cohort 2 institution to meet with the mathematics department and administration to address questions about the task force recommendations and implementation. Sends at least one representative to Math Summit.	Signs MOUs and establishes teams to begin planning for Year 1 implementation; submit plans to Department of Higher Ed (DHE). Participates in at least one virtual or in-person event with Cohort 1 representatives (to be defined later).	Meets objectives for Year 1 implementation and plans for Year 2. Representatives participate in outreach to Cohort 3. Sends representatives to Math Summit to share information and learning.
Cohort 3	Sends at least one representative to Math Summit.	Participates in at least one virtual or in-person event with Cohort 1 representatives (to be defined later). Meets with task force members or representatives from Cohort 1 institutions visiting each Cohort 3 institution to meet with the mathematics department and administration to address questions about the task force recommendations and implementation.	Signs MOUs and establishes teams to begin planning for Year 1 implementation; submit plans to DHE. Sends representatives to Math Summit to share information and learning.