**HOW TO REDESIGN A DEVELOPMENTAL MATH PROGRAM BY
USING THE EMPORIUM MODEL**

V. How to Make Course Policy Decisions

Prior to the pilot term, you need to develop a number of policies and procedures in order to implement the Emporium Model consistently. The following questions are frequently asked by teams working on a new redesign; the answers have been collected from those who have successfully implemented and sustained a math emporium. Some questions have definite answers; that is, there is consensus among all successful redesigners. Other questions do not have specific answers. You will need to make certain decisions within your own institution. In the latter case, to help you make those decisions, we have provided examples of options that other institutions have chosen. For some questions, the same answer applies to both the flexible and the fixed attendance versions of the Emporium Model. For others, the answers are different. The various versions of the Emporium Model are described in Chapter I.

Course Credit

Q: How should credit be assigned for the redesigned developmental math courses?

A: Some institutions keep the traditional course names and credit amounts and modularize the content within the courses. Others develop a set of modules and assign one credit for each module.

A third option is to use what are called *shell courses*. Invented at Jackson State Community College, shell courses have no topics and no credits associated with them. They are simply devices to allow students to enroll from one term to another. These shell courses could be called, for example, Developmental Math I, Developmental Math II, and Developmental Math III. Any student in any given shell course can be studying any topic in the total developmental math sequence. The student must complete some specified, minimum number of modules each term to earn a grade for that term. However, the student may complete more than the minimum and may complete the entire sequence of modules if possible. For example, if the total number of modules needed to exit the developmental math program is 12, the minimum needed may be only 4 each term. That would allow a student three terms to complete the total of 12. However, a student could enroll in Developmental Math I, complete all 12, and exit the program in one term. If a student completes only, say, 6 modules, the student would then enroll in Developmental Math II and would need to complete at least 4 of the remaining 6 modules or could complete all 6 and exit the program at the end of Developmental Math II. If this student completes only, say, 4 of the 6 remaining, the student would then enroll in Developmental Math III for two credits and complete the final 2 modules to exit the program.

Modularizing Student Progress

Q: Are these courses self-paced?

A: Definitely not. Self-pacing implies that students move at their own individual pace without any guidelines or benchmarks. Every institution has determined minimum expectations that students must meet to earn credit for that term and has established timelines for completion.

Developmental math students are generally not accomplished time managers, and they need the structure provided by weekly deadlines and other progress indicators to be sure they keep up a pace that will allow timely completion. At some points, students may proceed more quickly than the timeline would indicate; at other points, the same students may need some extra time on a topic. Having a guide for pacing also helps faculty know when to intervene with students who are lagging.

Q: What happens if students have not finished the course at the end of the term or, for that matter, if they finish early?

A: Students can complete one course early and move into the next course in the same semester. If the second course is not finished at the end of the semester, students can continue the next semester at the point they left off the previous semester. Students who do not finish the required modules in one semester can begin work the next semester exactly where they left off the previous semester.

NCAT recommends that institutions award a making-progress (MP) grade to students who are making substantial progress at high mastery levels but have not yet completed the course or the course equivalent at the end of a given term. Definitions of the MP grade should be roughly equivalent to a grade of C or better in the traditional courses (e.g., must have completed 80 percent of modules at 70 percent mastery, 75 percent of modules at 75 percent mastery, 75 percent of modules at 80 percent mastery).

Q: If students have to drop out of a course, do they have to start over when they return?

A: No. The traditional developmental course structure presents significant obstacles to students. Sometimes students who begin a developmental course withdraw due to work, family or health issues. In the traditional format, students who withdraw and then return the following semester must begin the same course from the beginning, even though they may have demonstrated mastery of some portion of the material prior to their withdrawal. In the Emporium Model, students begin the next semester where they left off in the previous semester. They do not repeat what they have already mastered.

Q: Suppose some students don't come back immediately (i.e., must skip a term)? Do they have to start over?

A: This is a decision for the institution. Some institutions decide that students who have demonstrated mastery at some earlier time should pick up where they left off and move on. Other institutions require students to start over because they are concerned that students will have forgotten too much of the material. Students who have not forgotten should be permitted to take challenge tests for the earlier modules and quickly move on.

The How Manys

Q: How many modules should we have?

A: The number of modules created by the Changing the Equation participants varies considerably:
- 5 institutions (13 percent) created 5–9 modules.
- 11 institutions (29 percent) created 10–13 modules.
- 14 institutions (37 percent) created 14–19 modules.

- 8 institutions (21 percent) created 20–31 modules.

Q: What level of mastery should be required? Should mastery levels vary for homework assignments, for quizzes, and for tests?

A: There are no right or wrong answers to what NCAT calls the *how-many* questions. Following are examples of decisions other institutions have made about the mastery level required for various kinds of assessments:

	College #1	College #2	College #3	College #4	College #5	College #6
Homework	90%	70%	80%	85%	80%	90%
Quizzes	80%	75%	65%	85%	75%	80%
Module tests	75%	70%	75%	80%	75%	75%

Q: What assignment setting is best for homework and quizzes?

A: Homework should be open from the beginning of the semester, with unlimited attempts prior to the due dates. Feedback should be immediate, with the opportunity to rework an exercise until mastery. Mastery levels can be set before students are allowed to move on to the next homework assignment. Students should use all tutorial resources available to them for homework.

Quizzes should be set so that no tutorials and no feedback are allowed until submission. Remember that quizzes are preparations for tests. Students should be given many attempts to retake quizzes. Questions on quizzes should be pooled so that additional attempts allow students to see a range of questions or problems within one objective. Students should not be able to go back and rework individual items on a quiz to improve their grades. Often, quizzes are timed to give students a more realistic sense of the upcoming test situation. The best score should be the one kept so as to encourage students to continue taking a quiz to improve their grade or just to get additional practice with no penalty.

Q: How many attempts should students be allowed on quizzes, tests, and final exams?

A: There are no right or wrong answers to what NCAT calls the *how-many* questions. Multiple testing opportunities are musts if mastery is required, and a plan should be in place to require an amount of time to go by so students can prepare for a retake. For example, after two attempts without success, the student should be required to meet with an instructor to review errors prior to attempting the test a third time. Following are examples of decisions that other institutions have made:

	College #1	College #2	College #3	College #4	College #5	College #6
Quizzes	6	NA	Unlimited	10	2	10
Module tests	3	10	3	2	2	3
Final exam	3	10	NA	1	1	1

Q: What percentages of course points should be awarded for each course component?

A: There are no right or wrong answers to what NCAT calls the *how-many* questions. Following are examples of decisions that other institutions have made:

	College #1	College #2	College #3	College #4	College #5	College #6
Participation	5%	10%	5%	10%	7.2%	6%
Homework	20%	30%	15%	10%	6.8%	11%
Notebooks	NA	NA	10%	NA	NA	6%
Quizzes	15%	NA	NA	10%	16%	11%
Module tests	45%	50%	70%	45%	40%	48%
Midterm	NA	5%	NA	NA	NA	NA
Final exam	15%	5%	NA	25%	30%	18%

Q: Should partial credit be awarded on tests and/or exams?

A: There are differences of opinion as to what constitutes appropriate policy. Some institutions believe that the correct answer is important and that students should be granted credit for the problem only if they have arrived at the correct solution. Other faculty contend that part of what a student is learning involves the process of thinking through the problem, setting it up correctly, and then doing the calculations. Thus, a student who shows understanding of the process, even though making an error in calculating the answer, should receive partial credit.

If partial credit is to be granted, there needs to be a clear rubric for assigning that credit, so that everyone is treated fairly and partial credit is awarded consistently. Granting partial credit may require that either the problem be identified in preset steps (so that the software can grade it) or that the problem be hand graded. Hand grading is time-consuming, especially for large sections. Some institutions formulate one section of each test (usually about 30 percent) to require that students solve problems and show their work; that section is then hand graded and given partial credit. The remainder of the test is taken online, and only correct answers receive full credit. Whether or not to grant partial credit and under what circumstances are decisions that the faculty need to discuss, arrive at, and apply consistently for all students.

Testing

Q: How should we handle testing?

A: Module tests and final exams should be taken in a proctored environment: a segregated section of the lab, a computer classroom, or a college testing center when available. Keep students who are taking tests segregated from those who are working on homework and other assignments. This allows those proctoring the testing students to know who is actually taking a test. Provide scratch paper for students by using varied-color paper, pick up the scratch paper as students leave, and shred it after the testing window closes. Students should be allowed to take their tests before the deadline as long as a test proctor is present, so that they can proceed through the course at a faster rate.