

DESIGN TEAM ON UNDERPREPARED STUDENTS

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INTRODUCTION: DEVELOPMENTAL STUDIES AS A PERVASIVE NEED

The need for a strong program of developmental course offerings has never been greater. Recent research cited in the 2008 Small American Schools report, *Diploma to Nowhere*, suggests that over one-third of all college students need developmental coursework and that, for those entering the community college, about 43% enroll in at least one developmental course. The report claims that the American high school “profoundly fails to prepare students for post-secondary work,”(p. 2) and estimates the cost of remediation for two-year public colleges at over two billion.

Data from this report demonstrate how pervasive the need for developmental coursework has become. According to the 2007 National Assessment of Educational Progress (NAEP), only one-quarter of high school students showed proficiency in math and only 43% of high school students performed at college-ready levels on the ACT in 2007. The report also stresses the correlation between more rigorous high school course loads and the resultant decreased need for developmental coursework, indicating, for example, that “Students with a fourth year of math were two-thirds less likely to need remedial courses than those who took three” (*Diploma to Nowhere*, 2008, p.7).

K-12 educational reform in the last decade has not produced consistent positive results, and, in many cases, has actually exacerbated the problem. Bridgeland, Dilulio and Morison in the 2006 report “The Silent Epidemic: Perspectives of High School Dropouts” contend that “if schools are only rewarded for raising test scores, the law could have the unintended effect of giving schools an incentive to ‘push out’ low-performing students whose test scores would bring down school averages” (p. 18). In essence, the attempt to raise standards may have backfired, resulting in higher drop-out rates, an overemphasis on test scores and the tendency toward grade inflation—all with the goal to boost high school graduation rates and avoid financial sanctions for underperforming schools. This trend also, therefore, contributes to the need for developmental coursework, as those students who were passed on have often failed to build a strong educational foundation, even if their high school grades suggest otherwise.

NEED FOR K-16 CURRICULUM ALIGNMENT

In short, research supports the notion that “high school is not rigorous enough” and that educators “often give high marks to mediocre work” (*Diploma to Nowhere*, 2008, p. 8). College students report that they would have preferred more challenging coursework to prepare them for college-level academics while 66% of the high school dropouts surveyed in the Bridgeland, Dilulio and Morison report “said they would have worked harder if more had been demanded of them” (p.5). In essence, low expectations have become a self-fulfilling prophecy.

Researchers therefore recommend that high schools increase academic expectations by creating more challenging and rigorous programs. The research also strongly supports the need to “create a more interconnected K-16 system with common goals and standards” (*Diploma to Nowhere*, 2008, p. 4). Based on their research, Kirst and Venezia state that “State K-12 and higher education curricula are poorly aligned,” and “Student knowledge of college curricular requirements is sporadic and vague,” (2004, p. 65). They go on to report that

High school assessments often stress different knowledge and skills than do college entrance and placement requirements. Similarly, the coursework between high school and college is not connected; students graduate from high school under one set of standards, and three months later they are required to meet a whole new set of standards in college. (p. 67)

Curriculum alignment efforts that provide opportunities for high school and college faculty collaboration may help to bridge instructional gaps and bolster college preparation. Among other suggestions, Kirst and Venezia (2004) recommend:

1. Provide all students, their parents, and educators with accurate, high-quality information about and access to courses that will help prepare students for college-level standards.
2. Focus on the institutions that serve the majority of students.
3. Create the awareness that getting into college is not the hardest part, but that the real challenge is earning a credential.
4. Ensure that colleges and universities specify, and publicize, their academic standards so that students, their parents, and educators have accurate college-preparation information.
5. Examine the relationship between the content of postsecondary placement exams and K-12 exit standards and assessments to determine if more compatibility is necessary and possible.
6. Allow students to take placement exams in high school so they can prepare academically for college and understand college-level expectations. (pp.68-70)

Having established the widespread need for developmental education, it becomes necessary to examine the most effective means of implementing programs.

BEST PRACTICES IN DEVELOPMENTAL EDUCATION

The following section contains an inventory of best practices in developmental education from Hunter R. Boylan’s *What Works Research-Based Practices in Developmental Education* (2002). The inventory was compiled as a result of research and observations within and among institutions in the Continuous Quality Improvement Network (CQIN) and the National Center for

Developmental Education (NCDE). The CQIN, founded in 1991, seeks to identify and solve problems confronted by American 2-year colleges. The CQIN is comprised of 35 member institutions including 2- and 4-year nonprofit and corporate partners (Boylan, 2002, p. 1).

Recognizing developmental education as a priority for member institutions, a national benchmarking study was commissioned in 1999 to identify and document best practices in the field (Boylan, 2002, p. 1). The results from this study were combined with research conducted by NCDE, the nation's leading source of research, training, and resources for developmental educators. The best practices would be identified by studying the nation's most effective developmental education programs and would emphasize actions and concepts that could be applied by any campus with intent to improve their developmental education program. These practices are typically validated by the research and literature in developmental education (Boylan, 2002, p. 1).

The institutions finally selected for study included four community colleges and one university. They were: Durham Technical College in Raleigh, North Carolina, the General College of the University of Minnesota in Minneapolis, Minnesota, Hudson Valley Community College in Troy, New York, Oakton Community College in Des Plaines, Illinois and Richland College in Dallas, Texas. The inventory assembled from this study is divided into the areas of Organization and Administration, Program Components, and Instructional Practices. The inventory is below:

Best Practices In Developmental Education

Organization and Administration

1. We have a centralized developmental education program.
2. We have a highly coordinated developmental education program.
3. Expectations for developmental education are well-managed.
4. There is collaboration between developmental education and other campus units.
5. Our developmental education program has a clearly defined statement of mission, goals and objectives.
6. Developmental education is an institutional priority.
7. The institution provides comprehensive services in support of developmental education.
8. Grant funds are used to support innovation in developmental education.

9. Developmental education is integrated with campus outreach services in the community.

Program Components

10. Assessment is mandatory for all entering students.
11. Placement in courses is mandatory based on assessment.
12. A systematic plan is in place for the evaluation of developmental education courses and services.
13. Formative evaluative is used by developmental educators to refine and improve courses and services.
14. Professional development for developmental educators is consistently supported.
15. Tutoring is provided to developmental students in all basic skills subjects.
16. Tutors working with developmental students are required to participate in training activities.
17. Developmental educators are regularly involved in their professional associations.
18. Adjunct faculty are treated as an important resource for developmental education.
19. Student performance is systematically monitored by faculty and advisors.
20. A written philosophy statement guides the provision of developmental education courses and services.
21. Classrooms and laboratories are well integrated.

Instructional Practices

22. Learning communities are provided for developmental students.
23. A wide variety of different instructional methods are used in developmental courses.
24. Students are tested at least 10 times a semester in developmental courses.
25. Technology is used primarily as a supplement for instruction in developmental courses.
26. Feedback is frequently provided on a regular basis in developmental courses.
27. Mastery learning is a common characteristic of developmental courses.
28. Systematic efforts are made to link the content of developmental courses to the rest of the curriculum.

29. Instructional strategies are regularly shared among developmental instructors in some systematic way.
30. Critical thinking is taught in all developmental courses.
31. Learning strategies are either embedded in developmental courses or taught as a separate course.
32. All developmental instructors regularly use active learning techniques in their courses.
33. All developmental instructors regularly utilize Classroom Assessment techniques in their courses.

EMPHASIS ON DEVELOPMENTAL MATHEMATICS

A significant portion of entering college students who need developmental coursework place into developmental mathematics. According to the 2007 National Assessment of Educational Progress, barely one-quarter of high school seniors are considered math-proficient (*Diploma to Nowhere*, 2008, p. 7). Further, data suggest that success or failure in developmental math is a key indicator of students' ability to persist in college. Because of the critical nature of the developmental math curriculum, developmental educators have piloted various models and assessed student success using each. One of the best-known and well-respected movements in developmental mathematics has been initiated by the National Center for Academic Transformation (NCAT).

With support from the Bill & Melinda Gates Foundation, NCAT is initiating a major program to engage the nation's community colleges in a successful redesign of their remedial/developmental math sequences (i.e., all mathematics courses offered at the institution prior to the first college-level math course.) The goal of this new redesign program is to improve student learning outcomes in remedial/developmental math while reducing costs for both students and institutions using NCAT's proven redesign methodology. Listed below are the best-practice characteristics of a redesign project.

All successful math redesign projects share six best-practice characteristics:

- *Whole course redesign.* In each case, the whole course rather than a single class or section is the target of redesign. In contrast to traditional courses where each instructor typically does his or her own thing, redesigned courses are consistent in content, in coverage, in assessment and in pedagogy across all sections of the course.

- *Active learning.* The projects make teaching and learning more learner-centered, moving students from a passive, “note-taking” role to one of active-learning. Students spend the bulk of their course time doing math problems. As one math professor has put it so well, “Students learn math by doing math, not by listening to someone talk about doing math.”
- *Computer-based learning resources.* Instructional software packages such as MyMathLab, ALEKS or Hawkes Learning Systems--which include interactive tutorials, computational exercises, videos, practice exercises and online quizzes--play a central role in engaging students with course content. Students spend more time on task than when they simply watch or listen to a lecture given by an instructor in a traditional format. Students find the software easy to use and achieve a comfort level with the technology in a short amount of time. They especially like the instant feedback they receive when working problems and the guided solutions that are available when they do not get a correct answer. Instructional software packages also support auditory, visual and discovery-based learning styles.
- *Mastery learning.* Student pacing and progress are organized by the need to master specific learning objectives according to scheduled milestones for completion. In contrast to the lockstep pacing of a traditional format, students spend more time on things they don’t understand and less time on things they have already mastered. When students understand the material, they can move quickly through it and demonstrate mastery. When they get stuck, they can ask for an example or a step-by-step explanation and take more time to practice.
- *On-demand help.* Requiring students be part of the learning community is critical to persistence, learning, and satisfaction. Projects replace lectures with individual and small-group activities that take place in computer labs or in classrooms, enabling students to have more one-on-one assistance from faculty, teaching assistants and peers. Students get assistance when they encounter problems in doing math.
- *Alternate staffing.* In contrast to traditional lecture formats where individualized assistance is difficult to provide, students find help in labs where instructors, tutors and/or peers are available to provide on-demand assistance when students encounter difficulties. Any problem areas that students encounter are addressed on an individual basis during lab time. Students also get help from fellow students. Computer stations are often arranged in pods of four to six to encourage student collaboration.

Institutions who wish to pursue a *Changing the Equation* grant are asked to consider these questions when developing a design that incorporates best practices listed above:

- 1. Course Sequence

What impact will redesigning the remedial/developmental course sequence have on the curriculum, on students and on the institution—i.e., why do you want to redesign this course sequence? Is there an academic problem in this sequence such as a high failure rate? Do the courses face a resource problem such as how to meet increased enrollment

demand with no commensurate increase in resources? Please be specific—i.e., provide enrollment numbers, describe how the courses are currently structured (how many sections of each course do you offer? how many students are in each section?), include baseline data on pass rates and/or costs, and so on.

- 2. Redesign Model

When you develop your redesign plan, you will be asked to base it on NCAT's prior successful redesigns in math, all of which use a variation of the Emporium Model. At this point in the planning process, how would you implement the Emporium Model on your campus? What possible constraints may impact your implementation?

- 3. Assessment Plan

Successful redesign efforts begin by identifying the intended learning outcomes and developing alternative methods other than lecture/presentation for achieving them. When you develop your redesign plan, you will be asked to select an assessment model. Have you identified each course's expected/intended learning outcomes in detail? How do you plan to collect baseline data and compare it to student learning outcomes after you have redesigned the course sequence?

- 4. Cost Savings Plan

When you develop your redesign plan, you will be asked to select a cost reduction strategy. At this point in the planning process, which cost savings strategy do you think would be most appropriate for your redesign? Why? How would you reallocate the resources saved?

- 5. Learning Materials

Successful course redesign that improves student learning while reducing instructional costs is heavily dependent upon high-quality, interactive learning materials. Are the participating faculty members able and willing to incorporate existing curricular materials in order to focus work on redesign issues rather than materials creation? Are they willing to partner with content providers such as commercial software producers or other colleges and universities who have developed technology-based materials? What learning materials are you thinking about using in your redesign?

- 6. Departmental Support

A collective commitment is a key factor for the success and the sustainability of redesign projects. Are the faculty ready to collaborate? Have they engaged in joint conversations about the need for change? Are decisions about curriculum in the department made collectively--in other words, beyond the individual faculty member level? Will the department agree to let a sub-set of the faculty try a new approach? If

remedial/developmental studies is in a department separate from the math department, what is the level of cooperation between the two?

PROPOSAL STATUS: As of April 27, 2010, MVCC's NCAT "Changing the Equation" proposal had been accepted into the second round. 50 teams--among them MVCC's Julie Dewan, Gary Kulis, Emily Hantsch, and Tom Schink—have been invited to participate in an intensive proposal development workshop in May 2010 to expand and refine the proposal. Of those 50 accepted into the second round, 25 will be awarded a grant to support this initiative.

SUPPORT FOR DEVELOPMENTAL STUDENTS: THE COLLEGE LEARNING CENTER

While a coordinated learner-centered developmental program is essential for community college students, it is incomplete without a vibrant, well-equipped learning center staffed by proactive, forward-thinking professionals. In terms of student support, the presence of a college learning center cannot be overestimated. The National College Learning Center Association defines a learning center as "a place where students can be taught to become more efficient and effective learners. Learning Center services may include tutoring, mentoring, supplemental instruction, academic and skill-building labs, computer-aided instruction, success seminars/programs, advising and more" (NCLCA, 2010). Other definitions stress a holistic learning center approach "where students (learners) come to effect change in their learning assistance skills and attitudes, particularly in areas of writing, computation, and study skills" (Christ, 1971), and which "assists students in the ongoing development of academic and affective skills which contribute to positive adjustment to and performance in a learning environment" (*The role of learning assistance programs*). Chandler (1974) suggests that for a learning assistance support system to be effective, "A counseling approach is vital to success."

Through extensive research of best practices, the purpose and functions of the learning center are outlined as follows:

- To provide educational support in a flexible manner to enrolled students regardless of age, stage and background.
- To assist in the identification of core groups of students in need of specifically designed learning programs.
- To provide an opportunity for individual students to achieve academically to their fullest potential.
- To assist individual students in becoming autonomous, confident and effective learners in order to successfully meet academic standards.
- To provide advice, assistance and resources to faculty seeking to embed ways of improving student learning strategies in curricula.
- To work with faculty and student groups in providing opportunities for peer support.
- To encourage understanding of cultural diversity and learning styles in the institution.

LEARNING CENTER BEST PRACTICES

Experts in the field suggest that a fully-realized learning center should:

1. Consider success in student learning as its main goal by providing a range of services in a convenient location where students gather to work.
2. Provide an accessible and aesthetically pleasing work space that includes group study rooms, social space, and quiet space.
3. Be adaptable to people or it is destined to fail in its instructional purpose (College and Research Libraries, 1982).
4. Provide appropriate space since optimum availability is likely to prove most attractive to users (Karwin, 1973).
5. Be centrally located rather than functioning in multiple sites on campus (Currey, 1980; Walker, 1980).
6. Should include adequate spaces and equipment for a wide range of teaching, learning and study situations pursuant to academic programs supported by the center (Karwin, 1973; Sharpe, 1978).

RECOMMENDATIONS

1. CONCENTRATION ON QUALITY OF DEVELOPMENTAL INSTRUCTION

Given the data reflecting the growing need for developmental coursework, it is imperative that the Institution make developmental education a priority. Currently, a majority of the developmental coursework offered at the College is taught by adjunct instructors, many of whom do not have specific expertise or experience with developmental education and, by necessity (often because they teach at neighboring institutions or have other work commitments), cannot devote extended office hours to provide the breadth of support needed by students in developmental classes. The Design Team recommends that a full-time faculty member be hired and committed to teaching and developing the curriculum for each developmental course discipline. Full-time instructors would be able to take ownership of these courses, be accessible to students, and provide the structure and support so needed to build students' skills and academic confidence.

2. ONE PROMISING MODEL: LEARNING COMMUNITIES

The overwhelming need for developmental programs is apparent; moreover, the quality and design of these programs has never been more critical. Data suggest that students who enroll in developmental courses are more vulnerable to dropping out of college. They may be frustrated and lose momentum. Some are surprised by placement test scores; others are angry and embarrassed. The emotional toll of placement in developmental courses, the stress associated with being a new college student, and the isolation often experienced by community college commuter students may result in the decision to drop out of college. In fact, the *Diploma to Nowhere* report suggests that of students taking three or four remedial courses, only 19% ultimately earned a bachelor's degree.

Learning communities offer a promising instructional design that addresses students' emotional struggles and feelings of disengagement while promoting academic support and team-based learning. The cohort model provides students the security of a consistent peer group that shares academic challenges and supports a collaborative approach to learning. By taking two or more classes together, students develop mutual goals and a sense of shared problem-solving. They also form personal bonds, and these friendships foster emotional stability and feelings of community. "Learning communities engender a sense of belonging to a campus community, providing a structure that promotes student retention" (Dodge & Kendall, 2004, p. 151.)

Successful developmental learning community models provide MVCC with a blueprint for the future of our developmental program. One such model can be found at LaGuardia Community College, where "The New Student House" enrolls a cohort in four clustered courses:

Basic Writing, Basic Reading, Freshman Seminar, and a college-level content course. Faculty plan together a highly integrated curriculum that includes joint readings, projects, field trips, and large group meetings. The program boasts a 95% retention rate (compared with a 25% retention rate for students enrolled in non-learning community developmental courses) (P. Van Slyke, personal interview, 3-5-10).

Another highly successfully learning communities program is located at Kingsborough Community College, where students who test into developmental classes are advised into the appropriate developmental course, a one-credit college seminar course taught by their case manager, and one course in their major. The case manager becomes the student's primary support person until the student transfers to an academic advisor within the discipline. The learning community is distinguished by a team approach, where faculty and student collaboration is critical. An essential element is professional development; all staff are cross-trained, so that everyone in the cluster is engaged and invested in the learning community model (D. Gomez, personal interview, 2-22-10). Models such as these inform development of a richer, more comprehensive and highly-integrated developmental course program, with the ultimate goals of providing a learning community experience for all students who test into developmental courses.

2. EMPHASIS ON K-16 CURRICULUM ALIGNMENT

As the research has demonstrated, greater efforts must be expended to ensure that high school and college curricula are better aligned and that high school students and their parents are more fully aware of academic expectations in college. The team strongly suggests that a carefully-planned curriculum alignment initiative be established with our region's public schools. Elements of this initiative may include:

- Creation of a curriculum alignment summit, which brings together high school principals and discipline specialists for an information-gathering session with college administration and faculty with the goal of communicating freshman course learning outcomes and placement criteria.
- Follow-up individual discipline meetings that provide collaboration opportunities between college faculty and discipline specialists from each area high school to help bridge gaps in learning outcomes.
- Establishment of clear assessment measures to ensure that outcomes of newly-aligned curricula are effectively achieved.

3. CONCENTRATION OF EFFORT ON DEVELOPMENTAL MATH COURSE REDESIGN

NCAT has established best practices and developed models for developmental mathematics that show promising outcomes. The design team supports the piloting of our team's proposed redesign, and, assuming positive results, the establishment of an across-the-board rejuvenated developmental mathematics approach which will improve students' ultimate success in subsequent credit-bearing mathematics courses.

4. INSTITUTIONAL SUPPORT FOR AN EXPANDED, COLLEGE-SUPPORTED LEARNING CENTER

Best practices outlined above suggest that, while our MVCC learning center staff has adopted the flexible, student-centered approach recommended, the facility is lacking, both in terms of sufficient space and design. While the master plan is in process, building projects are expected to be long-range in nature. In the meantime, burgeoning enrollments have put additional stress on a facility that is far too limited to handle demand. The design team recommends the consideration of additional space to provide the access and academic support needed for all students, many of whom leave the current learning center in frustration since there is simply not enough room to accommodate them. We further recommend that the space allocated be designed to allow for comfortable study areas, small study group and tutoring spaces, and computer-equipped stations that will accommodate our students' diverse needs.

5. ESTABLISHMENT OF A PROFESSIONAL DEVELOPMENT PROGRAM FOR DEVELOPMENTAL TEACHING FACULTY

Since instructors of developmental coursework face different and varied challenges that may not be shared by their counterparts teaching credit-bearing coursework, a professional development program that features sessions designed to explore strategies geared toward developmental learners is warranted. Experts in the field of developmental education should be sought to present workshops at fall, spring and/or summer institutes on campus. In addition, funds should be allocated to support developmental instructors' participation in national and regional conferences, such as NADE and NYCLSA. A professional library of resources for developmental faculty should be developed on campus to provide a wealth of creative techniques to support instructors seeking to keep abreast of trends and to enhance instruction.

6. EXPLORATION OF DEVELOPMENTAL SUMMER PROGRAM OPTIONS

Intensive, cohort-based summer programs have shown some promise among students requiring developmental coursework. For example, Ivy Technical College has established a summer program for students in need of remediation. Students are on campus Monday through Friday, taking classes four of the days, with a fifth day for flexible programming, such as field trips or academic support/tutoring. The program is distinguished by extensive collaboration among faculty members who plan together and coordinate assignments.

Ivy Tech's program is funded through a Lumina Foundation grant to support colleges that are involved in "Achieving the Dream" programs:

Achieving the Dream: Community Colleges Count is a national initiative to help more community college students succeed, particularly students of color and low-income students. The initiative works on multiple fronts — including efforts on campuses and in research, public engagement and public policy — and emphasizes the use of data to drive change. Achieving the Dream was launched in 2004, with funding provided by Lumina Foundation for Education. Seven national partner organizations work with Lumina to guide the initiative and provide technical and other support to the colleges and states. They are: the American Association of Community Colleges; the Community College Leadership Program at the University of Texas-Austin; the Community College Research Center, Teachers College, Columbia University; Jobs for the Future; MDC Inc.; MDRC; and Public Agenda. MDC is the initiative's managing partner.

MVCC should explore similar grant opportunities to fund such summer programs since students may have difficulty securing federal or state financial aid for the summer semester.

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