

**Promising Practices for
Community College Developmental Education**

A Discussion Resource for the
Connecticut Community College System

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September 2007

Acknowledgements: Funding for this guide was provided in part by the Connecticut Community College System. Additional funding was provided by a grant from Lumina Foundation for Education to the Community College Research Center (CCRC) for work on Achieving the Dream: Community Colleges Count, a multiyear national initiative designed to improve outcomes of community college students, especially those who face the greatest barriers to success. The authors would like to thank Elaine Baker for helpful comments on earlier drafts and Doug Slater for expert editing advice.

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Table of Contents

Introduction: Using Research Findings to Guide Practice.....	2
Promising Developmental Education Practices	4
1. Program Management and Organization	4
2. Assessment, Instruction, and Curriculum	6
3. Student Supports	16
4. Faculty	20
5. Roles for Public Policy	23
Conclusion: The Importance of Continuous Evaluation and Improvement	25
References.....	25

Introduction: Using Research Findings to Guide Practice

Developmental education is a key part of the college experience of a great number of community college students. Nationwide, about 60 percent of recent high school graduates who enter postsecondary education through community college take at least one remedial course (Bailey, Leinbach, & Jenkins, 2005). Yet, despite the prevalence of students who take developmental courses at community colleges, there is surprisingly little definitive research evidence on what makes for effective developmental education practice.

Many studies of community college developmental education (or “remedial” education; we use these terms interchangeably) are based on programs and students at single institutions. These studies often do not make use of carefully selected comparison groups, and they typically do not track individuals long enough to find out whether students are eventually able to earn degrees or transfer to baccalaureate programs (see Levin & Calcagno, 2007).

Studies that make it possible to claim that a particular practice is *causally* related to an outcome (as opposed to being merely *correlated* with an outcome) generally require that students be randomly assigned to treatment or control groups and that they be followed over an extended period of time. Such studies are generally expensive and time-consuming to carry out.

An MDRC study on learning communities, conducted as part of its Opening Doors project, is an example of experimental research. In that study, first semester developmental education students at Kingsborough Community College in New York were randomly assigned to either learning communities (the “treatment” group) or to a control group. The students were then tracked through their second semester. Results indicate that the students in learning communities had a statistically higher grade point average than did those in the control group (Bloom & Sommo, 2005). MDRC continues to track the students to examine the effect of learning communities on longer-term measures of educational success.

Experimental studies such as this one provide compelling evidence about the relationship between a given set of practices and resulting student outcomes. Yet even the findings of experimental research must be considered with some caution. The findings of all studies, including experiments, pertain to the particular interventions evaluated and the conditions under which they were implemented. The same outcomes may not be obtained when similar interventions are implemented under different circumstances.

Despite these qualifications, however, there is a growing body of literature that is useful in identifying developmental education practices that appear promising. While these studies often do not make use of rigorous methods, they typically do tap into the accumulated experience of educators who work with developmental students on a daily basis. For example, the Massachusetts Community College Executive Office (2006) recently released a report on effective practices in developmental mathematics that was based on collaboration with developmental educators from colleges throughout the state. And, indeed, the National Center for Developmental Education has been investigating effective developmental practices for more than 15 years. It has produced a wealth of information based on evaluations, case studies, and surveys (see, for example, Boylan, 2002).

The document presented here provides a summary of key findings from the literature on effective developmental education practice. It is designed to promote discussion among community college educators and state agency staff in Connecticut as they consider how to improve outcomes for their many students who are academically unprepared to succeed in college.

One common theme in this literature is that no single set of practices will be effective with every student. There is a broad consensus in the literature — which is shared by the researchers at CCRC — that educators ought to take a holistic approach to developmental education. Instead of focusing on a narrow set of interventions, community colleges should employ a range of instructional strategies and support services, and they should ensure that all relevant instructional services and student supports are well-integrated with one another. The strategies and services that are developed should take account of the educational backgrounds of poorly prepared students, their expectations for higher education, and the demands of their lives outside school. Of course, the selection of specific approaches must be determined in conjunction with an analysis of the institutional capacity to support them, which depends on such considerations as the strength of existing student services, priorities of college leadership, organizational climate, and available funding.

We hope that the practices described in this document encourage community college educators in Connecticut to reflect on how they currently approach developmental education and discuss ways they might strengthen program outcomes. In the tables that follow, descriptions of promising practices are grouped into these categories:

- (1) program management and organization;
- (2) assessment, instruction, and curriculum;
- (3) student supports;
- (4) faculty; and
- (5) public policy.

The tables indicate sources in the literature where more information on particular strategies can be found.

Any assessment of practices should be done in concert with an analysis of data on program performance and student success. We conclude this guide by describing a process whereby faculty and student support staff can use data on student outcomes to identify barriers to and opportunities for program improvement.

Promising Developmental Education Practices

DEVELOPMENTAL EDUCATION COMPONENT	LITERATURE SOURCE
1. Program Management and Organization	
1.1 Mission Statement and Principles	
<p>A clearly stated <i>mission</i> for developmental education can enhance the potential for the success of such programs.</p> <ul style="list-style-type: none"> • Such a statement specifies concrete principles, values, goals, and objectives and should be communicated throughout the college. • Those involved in developmental education should agree on the criteria by which the success of developmental education at the college will be evaluated. • Colleges should treat developmental educators as equal partners in the overall education mission of the college at large. <p>The principles of a mission statement can also cover the delivery of developmental education.</p> <ul style="list-style-type: none"> • Principles governing developmental course offerings can specify, for example, that those courses: (a) provide students with basic literacy, math, and thinking skills; (b) help students transition to credit-bearing courses with ease; and (c) are aligned with labor market needs. • Principles can also specify that colleges <i>provide instruction in multiple ways</i>, both to help ensure that all students are engaged and able-to-learn and to integrate the use of cognitive, affective, and psychomotor skills. 	<p>Boylan, 2002 Gabriner et al., 2007 Massachusetts Community College Executive Office, 2006</p>

1.2 Program Structure

In general, community colleges administer their developmental education programs in either a centralized or decentralized fashion. Each is thought to have benefits as well as possible weaknesses.

- A *centralized program* coordinates all courses and services for developmental students. A centralized program usually has some autonomy within the college and may be better funded than a decentralized program. It can actively recruit highly motivated faculty with training and experience in teaching adult students with basic skills deficiencies. It can also keep track of developmental students more easily, and can develop new services more quickly than a decentralized program. But because a centralized approach creates a separate program of which developmental students are a part, those students may feel stigmatized. A centralized program therefore needs to create opportunities to integrate the developmental community into the college at large, just as its staff, faculty, and students must expend extra effort to participate in other college programs and activities. Further, there is evidence from at least one study that stand-alone departments have a negative impact on students' outcomes for reading remediation, but not for math.
- A *decentralized approach* assigns developmental education courses to the English and math departments at the college. This structure facilitates coordination between developmental and credit-bearing courses and communication between the faculty for each. It can also foster students' integration into the college at large, and ease their entry into taking credit-bearing courses.
- The disagreement in the literature over which approach — centralized or decentralized — works best may mean that both approaches are potentially effective. It also suggests that the way in which a program is implemented is crucial. The operation of a more centralized program in isolation from degree-granting programs may not be very effective in helping developmental students' transition to college-level programs. Similarly, if a college's English and math departments place less value on their developmental courses, fail to hire instructors who are trained and committed to teach adults with poor basic skills, and limit instruction and supports to the content of their discipline rather than to broader success in college, such a decentralized approach may not be very effective either.

Bailey & Alfonso, 2005

Boylan, 2002

Calcagno, 2007

Gabriner et al., 2007

Goldrick-Rab, 2007

Roueche & Roueche, 1999

DEVELOPMENTAL EDUCATION COMPONENT	LITERATURE SOURCE
2. Assessment, Instruction, and Curriculum	
2.1 Assessment and Placement	
<p>Accurate assessment and placement of students is essential to the success of developmental programs.</p> <ul style="list-style-type: none"> • While many colleges rely on commercially available placement tests, these tests tend to identify only the students with the greatest deficiencies. An alternative is for colleges, alone or in consortia, to develop more nuanced assessments to identify very specific skills (academic skills as well as learning and study skills) where students need support. • Some experience suggests that <i>mandatory</i> assessment and placement is beneficial, but in some cases there has been opposition to such a requirement because it can affect minority students disproportionately. 	<p>Bailey, in press Boylan, 2002 Calcagno, 2007 Gabriner et al., 2007 Grubb, 2001 Perin, 2006 Roueche & Roueche, 1999</p>

2.2 Classroom Strategies	
2.2a Principles of Instruction	
<p>Promising developmental teaching practices differ substantially from those used in traditional public school settings.</p> <ul style="list-style-type: none"> • Developmental practices provide students in such programs with a new way of acquiring skills and understanding that is geared to the educational development of adults and customized to address the varied personal interests and learning styles of a diverse student body. • The most effective developmental teaching strategies in the literature are characterized by dynamic student-and-student and teacher-and-student interactions as well as by efforts that aim to awaken students’ innate desire to acquire knowledge. <p>In the Classroom Strategies subsections that follow, we describe a sampling of approaches aimed at adult learners.</p> <ul style="list-style-type: none"> • Most of these approaches fall within the category of <i>active</i> or <i>student-centered</i> learning, which has been demonstrated to be effective with adult, nontraditional, and developmental students. • Promising strategies usually include a mix of individual and group activities: inquiry activities that involve not only seeking out answers to questions, but also devising the questions themselves, critiquing each other’s work, learning through visual stimuli such as computer graphics, journal writing, simulations and role playing, and classroom discussion. • Each practice can be implemented individually, but most are designed to be used in concert with one or more of the others. • While most strategies have not been empirically tested to determine their efficacy with large numbers of students over long periods of time, informal studies and substantial anecdotal evidence suggest that they can help academically unprepared students achieve. 	<p>Boylan, 2002 Gabriner et al., 2007 Goldrick-Rab, 2007 Grubb, 2001 Levin & Calcagno, 2007 Massachusetts Community College Executive Office, 2006</p>

2.2b Culturally Responsive Teaching	
<p>One promising teaching approach is culturally responsive teaching, which includes components designed to promote learning for all students regardless of their socioeconomic, educational, or ethnic background.</p> <ul style="list-style-type: none"> • Instructors respond to the many learning styles represented in the classroom by using a variety of strategies to teach the coursework and by using examples from many cultures during instruction. A related approach involves identifying students’ motivations and building on their interests to teach curriculum content and critical thinking skills. 	<p>Gabriner et al., 2007 Massachusetts Community College Executive Office, 2006</p>
2.2c Contextual Teaching and Learning	
<p>The contextual teaching and learning approach is another promising approach; it involves creating meaningful contexts in which students can learn.</p> <ul style="list-style-type: none"> • A contextual approach to teaching and learning can be carried out in a number of ways: by teaching students basic skills in the context of instruction in technical subject matter; by relating subject matter to real world applications; or by allowing students to solve problems through simulations or even in actual settings in the workplace or elsewhere outside the classroom. • Contextual teaching and learning allows students to build on the knowledge they already have by enabling them to learn in contexts that make sense to their lives outside of the classroom. This approach also puts more of the responsibility for learning on students, with the teacher helping to facilitate the learning process rather acting as the “purveyor of knowledge.” 	<p>Gabriner et al., 2007 Goldrick-Rab, 2007 Massachusetts Community College Executive Office, 2006</p>

2.2d Mastery and Structured Learning

The *mastery learning* approach involves dividing the curriculum into manageable units and testing students on each unit to ensure that they have mastered the content before they move on to another unit.

- One possible component of mastery learning is individualized instruction, which provides each student with personal support to help them master a unit.
- The tests and other assessments, as well as more informal, ongoing feedback — all integral to mastery learning — enable students to learn at their own pace and to monitor and correct their performance through more effective study and practice. The assessments also provide teachers with information about the quality of learning in their classroom.

Developmental students often lack the ability to comprehend and to organize multiple concepts simultaneously. Experience suggests that students develop this ability through very *structured learning experiences* in the classroom.

- Structured learning involves dividing the curriculum into manageable units and teaching those units in a step-by-step sequence while providing tutoring or other academic support when students have difficulty mastering particular topics.
- Using structured learning in the classroom presents students with a model of an effective method for organizing material.

Boylan, 2002

Gabriner et al., 2007

2.2e Collaborative Learning

Research on cognition has demonstrated a strong social component to learning. Colleges may therefore want to provide opportunities for students to learn in groups as well as on their own.

- One key to the success of collaborative learning in the classroom is students' knowledge and use of a set of skills that allow them to be, alternatively, the "problem articulator" and the "feedback provider" or "reflector." As one student presents aloud possible ideas for solving a problem, another listens carefully and then provides feedback by tracking and guiding the problem-solving process to a successful conclusion.
- Instructors also model this approach as they teach, providing feedback to students engaged in collaborative activities and giving them the opportunity to reflect on their participation.
- Writing across the curriculum is especially conducive to collaborative learning; projects can involve group writing, blogs, and discussion boards.

Gabriner et al., 2007

Massachusetts
Community College
Executive Office,
2006

2.2f Computer Instruction	
<p>Computer-assisted models offer a promising accompaniment to traditional means of teaching content in the classroom; many practitioners believe that varied instructional strategies are helpful in retaining the interest of developmental students.</p> <ul style="list-style-type: none"> • Computer models may: allow students to learn at their own pace, reinforce an instructor’s efforts, monitor students’ learning progress, and provide diagnostic feedback. 	<p>Boylan, 2002 Gabriner et al., 2007 Massachusetts Community College Executive Office, 2006</p>
2.2g Thinking Skills Development	
<p>In addition to basic academic subject matter, a comprehensive developmental education curriculum includes critical thinking, analytic reasoning, and problem solving skills.</p> <ul style="list-style-type: none"> • The acquisition of specific thinking skills can be embedded in the curriculum for developmental courses, where instructors monitor their appropriate application by students. • A college’s educational support offerings can also include instruction on, and modeling of, effective learning strategies. 	<p>Boylan, 2002 Gabriner et al., 2007 Pascarella & Terenzini, cited in Bailey & Alfonso, 2005</p>
2.2h Study Skills and College Success Courses	
<p>Some developmental education programs offer separate courses or tutorials, sometimes called <i>strategic learning courses</i>.</p> <ul style="list-style-type: none"> • Such courses cover a variety of “learning-to-learn” strategies, including guidance on taking notes, group- and self-study, test taking, time management, and successful education and personal habits. <p>An even broader conception of learning-to-learn skills is sometimes provided in what are called <i>college success courses</i>.</p> <ul style="list-style-type: none"> • These courses include content on career exploration and planning, introduction to the culture and expectations of college, and, in some cases, life skills tutorials on topics such as personal finance. • Some research suggests that students who take such courses have better college outcomes. 	<p>Boylan, 2002 Gabriner et al., 2007 Pascarella & Terenzini, cited in Bailey & Alfonso, 2005 Zeidenberg, Jenkins, & Calcagno, 2007</p>

2.2i Frequent Testing Opportunities	
<p>There is some evidence that students get better final test scores when they have been previously tested on a regular basis.</p> <ul style="list-style-type: none"> • Aside from traditional quizzes, testing can take the form of verbal questioning, individual or group projects, and written papers. • Good testing practice includes covering relevant material before administering the test, giving students opportunity to prepare for the test, providing clear standards (with examples) for student mastery, and giving students detailed feedback on their performance. 	Boylan, 2002
2.2j Homework	
<p>Doing homework can help boost student learning.</p> <ul style="list-style-type: none"> • Assignments that are carefully constructed, monitored by instructors, and successfully completed reinforce classroom activities. 	Massachusetts Community College Executive Office, 2006

2.3 Organization of Coursework	
2.3a <i>Stand-Alone Versus Combined Course Offerings</i>	
<p>Colleges can offer stand-alone or combined developmental education courses.</p> <ul style="list-style-type: none"> • For part-time and evening students, stand-alone courses might be the most practical way to provide instruction. • Ongoing research is demonstrating, however, that pairing courses, or even grouping three or more courses to be taken at the same time to create an “educational package,” results in a more meaningful and productive experience for students, perhaps because the interrelationship of content and different learning skills is strengthened. <p>In the Organization of Coursework subsections that follow, we describe various approaches to combining and sequencing developmental courses.</p>	<p>Bloom & Sommo, 2005 Boylan, 2002 Gabriner et al., 2007</p>

2.3b Course Sequencing

Two alternative strategies for moving students through developmental education are prevalent. Both are aimed at fostering retention, and both are based on the premise that students should not take college-level English or math courses before passing a developmental course in that subject if one is necessary.

- The first strategy requires students to take developmental courses during their first semester and to *complete all developmental courses* before taking any credit-bearing academic or career courses. The rationale is that such sequencing moves students more quickly to a course load containing only degree-granting courses and gives them an educational foundation for achievement in higher level courses.
- The second strategy calls for students to *take developmental and college-level courses (but not English or math) at the same time* in the belief that mixing courses will maintain their interest and give them an immediate sense that they are moving toward a degree. Education provided through *learning communities* and *linked courses*, described below, reflect this strategy.
- It should be noted that there is also some evidence that *delaying* remediation — taking developmental courses only after a semester of college-level work has been completed — has a negative effect on student transfer and completion.

Calcagno, 2007

Gabriner et al., 2007

Goldrick-Rab, 2007

Roueche & Roueche, 1999

2.3c Learning Communities

A promising way to engage and motivate students is by providing opportunities for educational interaction, shared inquiry, and a coherent learning experience in a *learning community*, where a set of courses taken by a group of students is organized around a theme.

- Students as a cohort take all the courses offered through the learning community; they work with each other in a group. Instructors for each course coordinate closely to provide a unified educational experience. Developmental instructors use college-level course material to contextualize learning, and the instructors of degree-credit courses reinforce the teaching of basic academic skills.
- A typical learning community contains several “lead” academic or career courses and a developmental English or math course. It may also include a learning-to-learn or student success course. Students learn basic skills in the developmental course, sometimes making use of examples from credit-bearing courses. They can immediately apply these basic skills in learning college-level material. They can work with each other on inter-course projects and problem solving, and they have time for discussion and reflection on the courses as a whole.
- Students feel a greater attachment to their college through participation in a learning community, and, thus, may be more likely to persist.
- Some part-time and working students may not have the time to participate in a dense and structured program, however. Further, more time may be required of learning community instructors than adjuncts are able to commit.

Bailey & Alfonso, 2005

Bloom & Sommo, 2005

Boylan, 2002

Gabriner et al., 2007

Taylor, Morre, MacGregor, & Limblad, cited in Bailey & Alfonso, 2005

2.3d *Linked Courses*

Another promising approach is the linking of a basic course with another developmental course and/or with an academic or a career education course.

- Course linking is considered by some colleges simply as a less comprehensive version of a learning community. It offers students some of the same benefits, but without taxing their personal schedules so heavily.
- The practice of linking courses is based on the belief that skills taught in isolation are less likely to be applied to, or used productively in, other circumstances. Thus, there may be an increase in student learning when, for example, the content of a history course is used as the basis for an assignment in a developmental reading or writing course or when a problem solving skill acquired in a developmental course is successfully applied in a career course.
- Experience at some colleges suggests that students succeed when reading and writing instruction is integrated.

Boylan, 2002

Gabriner et al., 2007

Grubb, 2001

DEVELOPMENTAL EDUCATION COMPONENT	LITERATURE SOURCE
3. Student Supports	
3.1 Coordination of Services	
<p>The literature emphasizes the importance of colleges' offering services to support developmental students in their learning.</p> <ul style="list-style-type: none"> • While each support can be provided individually, taking a holistic approach by implementing a variety of services to meet the diverse educational and personal needs of students seems to be most effective. • In fact, experience suggests that student persistence increases with the number and extent of coordination of the services offered, their availability, and their responsiveness to personal needs and schedules. 	<p>Boylan, 2002 Gabriner et al., 2007 Jenkins, 2006 Roueche & Roueche, 1999 Massachusetts Community College Executive Office, 2006 Muraskin, 1998</p>
3.2 Orientation and Guidance	
<p>Colleges should provide all new students with a comprehensive orientation.</p> <ul style="list-style-type: none"> • The orientation should foster high expectations for academic achievement as well as an understanding of the effort required on the part of students to meet those expectations. • The orientation should be followed up with frequent reinforcing messages. • By clearly identifying the level of effort expected of students and also encouraging students to take advantage of all available academic and personal supports, colleges can promote student success. 	<p>Bailey & Alfonso, 2005 Boylan, 2002 Gabriner et al., 2007 Massachusetts Community College Executive Office, 2006 Roueche & Roueche, 1999</p>

3.3 Academic Support	
<p>Several educational services appear promising. These include:</p> <ul style="list-style-type: none"> • Targeted remedies for identified academic weaknesses, • Instruction in education success skills, • Professional and peer tutoring, and individual and group assistance, and • Access to education technology and computer-assisted instruction to augment in-class instruction. <p>There are numerous ways to deliver these services; popular methods are described below.</p>	<p>Boylan, 2002 Goldrick-Rab, 2007</p>
3.3a Supplemental Instruction	
<p>This out-of-class support consists of highly structured course-related group tutoring, frequently conducted by a student who has successfully completed the course.</p> <ul style="list-style-type: none"> • A form of collaborative learning, supplemental instruction consists of group interaction using the specific learning strategies provided by the leader. The leader offers continuous feedback so that students can make necessary changes to increase their mastery of the content. Preferably, the leader sits in the classroom with the students and coordinates instruction methods and content with those of the course instructor. • A new and promising form of supplemental instruction, created specifically for developmental students, is video-based supplemental instruction. Students view videotapes of their classes at their own pace to ensure that they understand the material presented. The leader is present to answer questions and discuss the material in alternative ways as needed to facilitate comprehension by each student. 	<p>Boylan, 2002 Gabriner et al., 2007</p>

3.3b *Laboratories and Academic Assistance Centers*

Some colleges have experienced promising results with the use of learning laboratories and academic assistance centers (also called learning assistance centers).

- The lab or center functions as a separate entity outside the department structure and provides a full complement of academic services at a single location.
- Independent of any academic department, the lab or center emphasizes the interrelationship of all individuals at the college by promoting the participation of faculty, administrators, and students in the various learning activities provided.
- A lab or center should also create mechanisms for its staff to coordinate with instructors in devising the most relevant academic supports for specific courses.

Boylan, 2002
Gabriner et al.,
2007

3.4 Counseling	
<p>Counseling for developmental education students that is proactive, integrated into the overall structure of a developmental education program, based on the college’s goals and on the principles of student development theory, and provided early on, has shown promise in several studies.</p> <ul style="list-style-type: none"> • Ideally, counselors are trained to work with developmental students. • A comprehensive counseling service comprises intensive education, career, and personal counseling, and includes intensive monitoring. Experience also suggests that mandatory counseling for developmental students can be effective. • Pre-registration counseling has also been shown to help students construct realistic expectations. • Counseling can be most effective when advisors work with students throughout their developmental education experience. 	<p>Bailey & Alfonso, 2005</p> <p>Gabriner et al., 2007</p> <p>Goldrick-Rab, 2007</p>
3.5 Early Warning System	
<p>To ensure that struggling students are noticed, colleges can implement an “early warning” system.</p> <ul style="list-style-type: none"> • Developmental faculty and staff alert administrators or counselors about students in need of extra help. Staff can then move swiftly to provide appropriate academic or personal supports and to monitor students to be sure that they are benefiting from the supports. 	<p>Bailey & Alfonso, 2005</p>

DEVELOPMENTAL EDUCATION COMPONENT	LITERATURE SOURCE
4. Faculty	
4.1 Qualifications	
<p>There is agreement in much of the literature that faculty should be committed to the college’s approach to developmental education and should be willing to participate in activities related to developmental education, whether they are specifically hired to teach developmental students or whether they are simply adding developmental classes to their teaching load.</p> <ul style="list-style-type: none"> • Having mastery over both the subject content they teach and the diverse teaching strategies shown to be successful with developmental education students can improve instructors’ effectiveness. • To promote coordination of the curriculum and the seamless transfer of students from course to course, instructors should understand the role of their courses among developmental courses, among other courses in their discipline, and among credit-bearing courses in general. • Developmental education instructors need to understand the unique challenges and special learning needs of their students, and they must respect their students’ efforts to succeed in college. • Instructors can bolster students’ self-esteem and promote their persistence and achievement by conveying high expectations and by attending to students’ attitudes and life situations as well as their education. 	<p>Boylan, 2002 Gabriner et al., 2007 Jenkins, 2006 Massachusetts Community College Executive Office, 2006</p>
4.2 Composition	
4.2a Adjunct Faculty	
<p>Frequently the faculty who teach developmental courses are adjuncts.</p> <ul style="list-style-type: none"> • Part-time status can offer greater flexibility in scheduling classes and meetings and can result in a better match between instructor, course, and class. • It is important that adjunct instructors be integrated into the college community as fully as possible. This can be difficult given their part-time status. Ensuring that adjuncts are available to their students outside of class can also be a challenge. 	<p>Gabriner et al., 2007 Massachusetts Community College Executive Office, 2006</p>

4.2b Full-Time Faculty	
<p>Full-time faculty who usually teach credit-bearing courses may also teach developmental courses.</p> <ul style="list-style-type: none"> Ensuring that these instructors are adept at using the teaching strategies appropriate to developmental students can increase their effectiveness. 	<p>Gabriner et al., 2007</p> <p>Massachusetts Community College Executive Office, 2006</p>
4.3 Collaboration and Communication	
<p>Developmental education faculty can feel marginalized from the rest of the college. Thus, meeting with each other, and with the college's total faculty, can provide an opportunity for them to share information, insights, and concerns.</p> <ul style="list-style-type: none"> Colleges that provide opportunities for faculty to meet in groups — by discipline, for example — to discuss content and pedagogy matters, and to report on conferences and seminars attended, can maximize the coordination of developmental education and other courses. Colleges can also promote the sharing of syllabi to better align courses. College-wide meetings where developmental education is discussed can promote the mainstreaming of the program. Some colleges use email and listservs to promote the exchange of ideas and information and for discussing and debating strategies. 	<p>Boylan, 2002</p> <p>Gabriner et al., 2007</p> <p>Massachusetts Community College Executive Office, 2006</p>

4.4 Professional Development

In general, colleges should communicate their expectations to developmental education faculty and other staff and define specific ways of supporting students' academic efforts. They should also indicate that they expect faculty to interact with students outside the classroom and to be involved in the various academic supports that are provided to students.

- Providing faculty with a *handbook* on developmental instruction in general and suggestions for how to teach specific subjects may help ensure that faculty understand the unique aspects of teaching developmental courses.
- *Training* for developmental education faculty also shows promise for increasing program effectiveness.
- Comprehensive training that is specific, flexible, varied, responsive to the faculty's diverse needs and the diversity of the students they teach, aligned with the college's goals, and tied to faculty reward structures seems to have the most promise.
- In addition to traditional *professional development classes*, training can take the following forms:
 - (1) *peer mentoring*: two faculty members work together to improve their practice;
 - (2) *instructional consultation*: an outside expert works with an individual or group on a specific issue; and
 - (3) *reflective practice*: an instructor engages in self-reflection on a teaching issue, expresses a personal theory about it, and then works with peers to develop alternative approaches.

Gabriner et al.,
2007

Massachusetts
Community
College Executive
Office, 2006

DEVELOPMENTAL EDUCATION COMPONENT	LITERATURE SOURCE
5. Roles for Public Policy	
5.1 General Commitment and Involvement	
<p>Ultimately, the effectiveness of developmental education depends on how it is implemented and managed in the classroom. The literature suggests, however, that public policy can play an important role in promoting and supportive effective practice.</p> <ul style="list-style-type: none"> • The effectiveness of developmental education can be enhanced when it exists in a policy environment where, through concrete action, there is a demonstrated commitment to: <ol style="list-style-type: none"> (1) the efficacy of developmental education, (2) the belief that it is equal in value and status with other college programs, (3) the persistence of underprepared college students, and (4) the intent to move students seamlessly into college-level coursework. 	<p>Bettinger & Long, 2005</p> <p>Boylan, 2002</p> <p>Gabriner et al., 2007</p> <p>Jenkins & Boswell, 2002</p> <p>Massachusetts Community College Executive Office, 2006</p>
5.2 State Supports	
<p>States can take a proactive role in developmental education at community colleges.</p> <ul style="list-style-type: none"> • One important way states can promote effective developmental practice is by collecting and disseminating data throughout the public college system. Those data can be used in decision making. In Massachusetts, for example, a federally-supported statewide initiative collects extensive data on math developmental education. The initiative analyzes and disseminates the information with the goal of improving student outcomes, education delivery, and professional development. • Similar data analysis can, of course, be undertaken at the system and college levels. In addition, appropriate divisions at all levels can foster the dissemination of information and ideas, and they can provide a mechanism for problem solving among developmental education staff and faculty through conferences, forums, and electronic exchanges. 	<p>Massachusetts Community College Executive Office, 2006</p>

5.3 Policies	
<p>State and institutional policies can help ensure that students who need developmental services receive them.</p> <ul style="list-style-type: none"> • They can require that all incoming students be assessed for placement into developmental education and that all students shown to need such education take developmental courses. • Such mandates can pave the way for the creation of assessment tools that fully, accurately, and equitably measure all aspects of student proficiency. • Mandates can also legitimize the role of developmental education within a college’s mission, thus helping to eliminate the stigma associated with being a student assigned to it while reducing the possibility that students will be identified for assessment based on profiling. 	<p>Attewell, Lavin, Domina, & Levey, 2006</p> <p>Bailey, in press</p> <p>Gabriner et al., 2007</p> <p>Perin, 2006</p>
5.4 Institutional Financial Support and Student Financial Assistance	
<p>Studies suggest that having adequate funds for the provision and rigorous evaluation of developmental education can promote better student outcomes.</p> <ul style="list-style-type: none"> • Making financial aid available to students while they are taking developmental education — without reducing subsequent aid for credit-bearing courses — and providing the aid early so that students can concentrate on their studies and get a foothold on higher education, are two mechanisms that have been recommended as an effective use of aid dollars. • A number of studies also suggest providing funds for child care, transportation, and other personal needs to facilitate regular college attendance. 	<p>Gabriner et al., 2007</p> <p>Goldrick-Rab, 2007</p> <p>Massachusetts Community College Executive Office, 2006</p>

Conclusion: The Importance of Continuous Evaluation and Improvement

The literature reviewed in the tables above is useful in facilitating discussion, but it does not provide conclusive guidance on what developmental education practices are most effective in all circumstances. It is ultimately up to the educators at each community college to determine what practices work best at their institutions. In this sense, educators who are serious about improving outcomes for developmental students become applied researchers themselves as they begin to evaluate and enhance their own programs.

Colleges would do well to consider their policies from a holistic perspective. Doing so would help ensure that all aspects of their programs and services are well aligned to support student success (see Jenkins, 2006). A holistic perspective would also help to ensure that all of the diverse needs of students are adequately met (see, for example, Gabriner et al., 2007).

Colleges could better understand the characteristics of students who take developmental coursework by comparing those who take such courses with all those whom placement tests indicate need it. Colleges should then track their students' progress through developmental courses to see whether they successfully advance from one level to the next and, ultimately, take and pass college-level English and math on the way to earning college credentials.

Faculty should come together after each term to examine the short- and long-term outcomes of their programs and to discuss ways to improve them. Ideally, course performance should be broken down by instructor, so that the faculty can learn from colleagues whose students are more successful in advancing to college-level work. Because the literature suggests that supports such as advising and counseling are important to student success, faculty should also meet regularly with student services staff to discuss ways that they can work together to improve student achievement.

Faculty and staff should also work together with the institutional research staff to evaluate the effectiveness of program modifications and new program interventions. Wherever possible, such evaluations should include a comparison between students who participated in the intervention and similar students who did not. In some cases, it might be possible to compare students receiving an intervention in pilot sections with students in the same term who do not participate. In other cases, it may be necessary to compare students with similar cohorts of students in previous terms. In making such comparisons, colleges should consider the ways in which students in the treatment and comparison groups differ and how such differences might affect the outcomes of the evaluation (see, for example, Attewell, Lavin, Domina, & Levey, 2006; Levin & Calcagno, 2007; Gabriner et al., 2007; Grubb, 2001; Perin, 2006; Roueche & Roueche, 1999).

The literature reviewed in this document makes it clear that no single set of practices will be effective for every college and its students. Research suggests that colleges will be more successful in improving outcomes for developmental students not by adopting the latest "best practice," but by adopting a continuous improvement *process* that involves regularly monitoring the progress of students, trying different approaches to help students overcome identified barriers to success, evaluating the success of such interventions, and making further adjustments based on these results.

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