



Strategies for Postsecondary Students in Developmental Education

Practice Guide Summary



Educators' Practice Guide Summary

WHAT WORKS CLEARINGHOUSE™

Six evidence-based recommendations in this WWC practice guide focus on ways to improve college students' progress through developmental education, credit accumulation and persistence, academic achievement, and degree attainment.

Introduction

Approximately one-third of students entering higher education do so without the necessary skills in at least one subject to enroll and succeed in college-level work¹. Colleges and universities have developed and adopted various strategies to help underprepared students acquire the skills and knowledge needed to move into college-level courses. The What Works Clearinghouse (WWC) practice guide, *Strategies for Postsecondary Students in Developmental Education – A Practice Guide for College and University Administrators, Advisors, and Faculty*, presents six recommendations that can be used to improve the success of students placed into, or at-risk of placement into, developmental education.

Four recommendations in the guide focus on structural or systems changes:

- Using multiple measures to assess postsecondary readiness and place students.
- Requiring or incentivizing regular participation in enhanced advising.
- Offering students monetary incentives for performance.
- Implementing comprehensive, integrated, and long-lasting support programs.

Two of the guide's recommendations focus on instructional interventions:

- Compressing or mainstreaming developmental education through course redesign.
- Teaching students how to become self-regulated learners.

Developed by a panel of experts, this summary introduces the recommendations and supporting evidence described in the full practice guide. For more specific tips and examples, download your free copy of the full guide at <http://ies.ed.gov/ncee/wwc/PracticeGuide/23>

Recommendation 1. Use multiple measures to assess postsecondary readiness and place students.

Most open-access institutions require incoming students to take brief standardized assessments in math, reading, and writing. The results of these assessments are used to place students in either developmental or college-level courses. However, there are concerns about misplacement rates arising from single placement tests used in isolation. One way to improve college readiness assessment (and therefore to reduce misplacement) is to use multiple measures—such as high school GPA, the number of years since high school graduation or equivalent, the number of courses taken in the subject (e.g., English or math), and the highest level taken in the subject (e.g., Algebra I or Algebra II)—to inform placement decisions.

How to carry out Recommendation 1

- 1. Explore potential measures that faculty and administration believe might inform placement decisions.** Investigate the feasibility of each, and retain those that can be measured reliably and with minimal additional cost. Possible examples include high school GPA, highest math course taken, number of years since graduation, high school graduation status, and scores on college entrance examinations. Develop one or more placement rubrics based on the selected measures.
- 2. Use a pilot period to study the placement rates and success rates of students involving different placement methods.** Use existing

administrative data to develop one or more alternative placement rubrics and policies. Then, randomly assign students to two groups: the new placement method using multiple measures rubric(s) or the current placement method. After random assignment and implementation, determine whether placement method affected student success rates. Finally, use the findings to modify the proposed policy as needed.

- 3. After implementation, investigate the effects of the multiple measures policy on desired student outcomes over time.** Continue to monitor the effects of the placement policy, and use new information to adapt, change, or expand implementation of multiple measures policies and practices.
- 4. Consider how college-readiness policies and practices in your state and local area impact the parameters of decision-making and implementation of multiple measures.** As states implement new college-readiness assessments associated with implementation of the Common Core State Standards, validation studies of these assessments may offer information to guide the potential effectiveness of using them as placement measures.

Summary of evidence for Recommendation 1

The WWC identified two studies that investigated the effectiveness of alternative or multiple measures for placement (e.g., placement test alone versus placement test plus high school GPA) on student outcomes (such as credit accumulation and grades). Neither study met WWC group design standards, but the expert panel believes that these two studies offer useful insight into this recommendation. Two additional non-experimental studies suggest that adding information about student high school experiences (in particular, high school GPA) might help improve placement decisions. In

In addition to multiple measures, these studies offer evidence that alternative measures of high school preparation (compared to scores on the institution's standardized placement test) can also be effective in reducing misplacement. This led the WWC to assign a **minimal** level of evidence rating to this recommendation. For more details, see Tables 1.1 and 1.2, pp. 79-81, of the practice guide.

Recommendation 2. Require or incentivize regular participation in enhanced advising activities.

Advisor's Role in Enhanced Advising

1. Discuss short- and long term goals.
2. Address concerns and barriers to achieving goals.
3. Listen to and provide support for the student's plan of action.
4. Recommend resources and supports to address barriers and concerns.
5. Help student set realistic, achievable timelines and meet necessary deadlines.
6. Set up next check-in time to discuss progress toward goals, completed actions, and new actions to be taken.

Advising, guidance, and counseling services help students determine academic majors, understand the relationship between school and subsequent employment, and address a variety of academic and personal issues. Some colleges have created more intensive advising experiences, often called "enhanced advising" or "intrusive advising." Enhanced advising replaces the quick, transactional structure of traditional advising (e.g., a focus on class schedules, degree requirements, and financial aid procedures) with a more holistic structure in which advisors ask

deeper questions and engage with students to help them succeed. Mentoring programs that aim to build relationships between students and knowledgeable adults on goal-oriented academic planning may also be considered enhanced advising.

How to carry out Recommendation 2

1. Recruit and train advisors. It is crucial to encourage and gain the participation of a critical mass of advisors. Advisors may be college counselors, volunteers from college staff, or professors. Strategies for increasing the number of advisors may involve a combination of negotiating with existing faculty and staff to take responsibility for enhanced advising roles or hiring additional professional advisors.

Recruited advisors should receive dedicated training and specific advising techniques should be discussed. Researchers have found that training faculty and staff in ways to conduct "advising-as-teaching" is a promising path to engage with students. Training should establish expectations for the frequency and intensity of student contact and provide support for accomplishing these goals.

2. Require or incentivize in-person advising meetings. Although students may favor using technology-mediated tools for simple, administrative tasks, students generally find in-person meetings more effective for problem-solving, complex educational planning, support and encouragement, and productively engaging in goal-setting. Providing a small stipend contingent on in-person participation is one way to incentivize and bolster attendance.

3. Require or incentivize students to meet with advisors frequently and over a long(er) period of time. One advisory meeting is generally not enough time to advise students, particularly for multi-semester course planning

and career guidance. Offering regular meetings, before, during, and at the end of semesters is one way to encourage frequent meetings. In addition, advisors may meet with groups of students, such as during a certain class or at a structured time, to facilitate the communication of information more efficiently.

- 4. Use early alert systems to identify the students who most need enhanced advising.** Early alert and intervention systems are designed to identify and support students at risk of attrition and improve their retention, persistence, and success. Early alert systems, or early warning systems, identify students in need of an intervention, which often includes enhanced advising. These systems can be effective if they bring students in contact with needed services.

Summary of evidence for Recommendation 2

This recommendation is supported by three studies that met standards without reservations. Taken together, these three studies demonstrated a statistically significant effect on college-level credit accumulation in favor of students who received enhanced advising. The aggregated results from two studies did not exhibit a statistically significant effect for academic achievement. Progress through developmental education was assessed in two of the three studies; the effect was positive, but not statistically significant. The WWC defined the level of evidence for this recommendation as **moderate**. See Recommendation 2, [page 20](#), and [Table 2, pp. 82-84](#), for more detail about these studies.

Recommendation 3. Offer students performance-based monetary incentives.

Performance-based incentives are monetary awards that students receive when they meet



specific academic benchmarks. These awards supplement students' financial aid packages, which may be based on need (e.g., Pell grants) or past achievement (e.g., state merit aid grants). The short-term goal of such initiatives is to encourage students to perform better in (and successfully complete) their classes. A longer-term goal is to support students' progress through developmental education and course requirements to increase degree attainment.

Incentive programs can vary in the amount of the incentive and the number of semesters that students are eligible. In the studies informing this recommendation, the incentive amounts ranged from about \$600 to \$1,500 per semester, and students were typically eligible for two or three semesters. Generally, students are allowed to use the awards for any purpose (that is, not necessarily for educational expenses). Incentives are usually distributed at predetermined time points throughout the semester, rather than in one lump-sum payment in order to incentivize students to meet program goals (e.g., maintain a minimum level of enrollment).

How to carry out Recommendation 3

- 1. Design and structure payments of students' performance-based incentives to yield students a net financial gain.** Because many financial aid packages are tied to a student's level of unmet need, an important consideration is the impact that this monetary incentive will have on the overall level of aid.

Financial aid offices should work with students and administrators to ensure that any monetary incentives provide a net financial gain.

- 2. Distribute payments incrementally, according to specific desired performance benchmarks.** To encourage and motivate students to reach academic milestones, distribute payments throughout the semester or year. Midterms and final exams are good candidates for disbursement periods.
- 3. Target incentives to low-income students.** The evidence suggests that providing monetary incentives has positive effects for low-income students and various at-risk student populations (e.g., male Latino students with delayed entry to college).
- 4. Provide student support services, in conjunction with performance-based monetary incentives.** Many students in developmental education may find it difficult to make time for additional campus supports—given their work, family, and academic demands—without a specific incentive. Monetary awards can help incentivize students to take advantage of support services (e.g., academic advising, tutoring, mentoring) that will help them succeed.

Summary of evidence for Recommendation 3

Six randomized controlled trials (RCTs), which involved nearly 8,000 participants, examined the effects of performance-based monetary incentives. Three of these studies examined the effects of performance-based monetary incentives alone or with minimal additional services and three studies examined performance-based incentives with additional services. Taken together, the panel judged the level of evidence supporting this recommendation to be **moderate**. See Recommendation 3, **page 28** of the practice guide for further details.

Offering incentives only. Three studies provided monetary incentives only and all three were randomized controlled trials that met WWC group design standards without reservations. Across these three studies, incentives were associated with a small, but statistically significant impact on the first instance of enrollment after randomization to condition. Two studies assessed the effect of performance-based incentives on academic achievement; this meta-analytic effect was positive, but not statistically significant. All three studies evaluated the effects of providing performance-based incentives on college-level credits earned, and the meta-analytic results indicated a positive and statistically significant increase in credits earned. Finally, two studies assessed the effect of performance-based incentives on degree attainment. The meta-analytic results indicated a statistically non-significant positive increase. See [Table 3.1](#) on **pp. 85-86** in the practice guide for more information.



Combining incentives with other supports. Three studies provided monetary incentives with additional supports, and all three were RCTs that met WWC group design standards without reservations. Providing performance-based incentives with additional supports had a positive, statistically significant impact on enrollment across the three studies. Academic achievement was measured by two studies in this group. Meta-analytic results indicated a positive and statistically significant intervention effect. All three studies assessed the effect of

performance-based incentives with additional supports on credit accumulation, but the meta-analytic effect was not significant. Finally, two studies assessed the effect of performance-based incentives on degree attainment. The meta-analytic results indicated a positive, statistically significant impact. See [Table 3.2](#) on [pp. 87-89](#) in the practice guide for more information.

Recommendation 4. Compress or mainstream developmental education with course redesign.

Participation in accelerated developmental experiences, referred to interchangeably as “intensive,” “compressed,” “condensed,” or “time-shortened” models, can minimize the negative effects of being placed into developmental education. Students who register for more than one sequential course in a semester are more likely to enroll in the second course, thereby improving retention. Accelerated courses that mainstream developmental education students into college-level work with contextualization or supplemental instruction also help students achieve the goals and outcomes of the college-level course assignments. Acceleration may promote persistence and academic success because the reduced time in developmental education also reduces the opportunity for external factors, such as work or family responsibilities, to hinder students’ success.

How to carry out Recommendation 4

- 1. Obtain faculty and leadership buy-in to improve course structures and policies.** Particularly for mainstreaming models, colleges must establish collaborative structures and processes for instructors to communicate with one another and ensure that students are mutually supported as they complete college-level coursework. Assess the existence and effectiveness of current strategies for accelerating students’ progress through developmental education. During planning, anticipate challenges and strategize collaboratively.
- 2. Provide systematic professional development and support for faculty to implement new accelerated course models.** New models of acceleration generally require systematic professional development for faculty and, depending on the type of acceleration, faculty needs for professional development will vary.
- 3. Offer support to faculty for differentiating instruction to students of varied levels of academic preparedness in their classes.** In mainstreaming models, faculty who teach introductory college-level courses may not be accustomed to differentiating instruction for students without college-level proficiency. Or, they may not have



experienced tightly coordinating their curriculum and instructional delivery with other instructors (e.g., those who provide supplemental instructional support). Developmental education instructors need to become familiar with the rigor of the college course content and assessments and determine how to best support students' success in mastering the college-level course material.

- 4. Mobilize and communicate targeted supports for students' specific instructional needs.** When accelerating students' progress in developmental coursework, students who are not yet college-ready may require targeted supports. For example, students may need help sustaining motivation and integrating the skills and knowledge learned from module to module when using a modularization approach.

Summary of evidence for Recommendation 4

One study that evaluated the effects of a compressed, redesigned developmental writing course met WWC standards with reservations. The researchers found that students in an accelerated developmental writing course sequence were more likely than students in the traditional, longer sequence to pass college-level English, to have earned more college-level credits after three years, and to have earned a degree after five years. All of these effects were statistically significant. Three additional studies did not meet WWC group design standards, but the panel believes that they provide credible evidence to support this recommendation. As a result, the panel assigned a rating of **minimal** evidence to this recommendation. See Recommendation 4, **page 35** and **Table 4, pp. 90-92**, in the practice guide for additional information.

Recommendation 5. Teach students how to become self-regulated learners.

Traditional academic instruction emphasizes learning content. Many students, including those in developmental education, arrive on college campuses with little knowledge about how they learn and which study strategies might work best. Schools and teachers should attempt to incorporate self-regulated learning strategies into existing subject-matter coursework. The training should encourage students to monitor and reflect on their learning and focus students on the parts of the learning process that they have control over. Typically, teaching students to become self-regulated learners involves demonstrating how to (a) approach a task, (b) implement that approach or strategy, (c) evaluate how well the approach or strategy worked, and (d) decide what to do next.

Students' Role in Self-Regulated Learning



How to carry out Recommendation 5

- 1. Encourage students to improve their estimation of their current capabilities.** When students plan strategies to use in a learning task, they have to make an accurate judgment of their capabilities and resources. Students should start by completing tasks where they

have been previously successful because they already know effective strategies and these will take less forethought. As students encounter new learning tasks or situations, they use their previous experience on similar tasks to determine the strategies that might be relevant.

Struggling learners, however, are often poor judges of their knowledge and capabilities. Monitoring and reflecting on the learning process allows students to practice judging their abilities, performing a task, and getting feedback to improve their judgment. Instructors can prompt students to reflect on what they think they know while doing an academic task. After students receive feedback on the task, instructors can ask students to reflect on whether they performed as expected.

Example Student Reflection Questions for Planning Phase of a Sample Quiz

PLAN IT

- How much time did you spend studying for this topic area?
 - How many practice problems did you do in this topic area in preparation for this quiz?
(circle one) 0 – 5 / 5 – 10 / 10+
 - What did you do to prepare for this quiz? (use study strategy list to answer the question)
- After you solved this problem, was your confidence rating too high (i.e., 4 or 5)?
yes / no
- Explain which strategies or processes went wrong on the quiz problem.

2. Integrate monitoring and reflecting on the learning process with coursework or course content. Students can learn to be better learners while learning course content. Instructors should structure their courses to support simultaneous self-regulation by integrating into the course expectations and assignments that require students to plan, reflect, and evaluate their learning processes. Instructors should prompt students to reflect on their learning at the beginning or end of assignments. These prompts can be steps that students have to go through to complete the assignment. For more general studying behaviors, instructors should ask questions, such as: “How do you take notes in class? Do you review your notes? When and how? Do you stop periodically and check to see if you are understanding the material?”

3. Present students with examples and models of how to monitor and reflect in the course subject matter. Instructors should model monitoring and reflecting behaviors by making their thinking explicit in classroom discussions and lectures, so that students have a model for how to approach an academic task. An instructor might explain to students how to determine what is important in a reading passage. Or, instructors could ask students to be explicit about their monitoring and reflecting in class discussions.

Summary of evidence for Recommendation 5

One study met WWC standards without reservations. The study authors found statistically significant positive effects of self-regulated learning on passing college-level math (the preferred measure of progressing through developmental education), and academic achievement. The panel judged the level of evidence supporting students in regulating their own learning as **minimal**. See Recommendation 5, **page 44**, and **Table 5, page 93**, for more detail on this study.

Recommendation 6. Implement comprehensive, integrated, and long-lasting support programs.

Some institutions have implemented comprehensive and integrated support programs that incorporate a variety of components. Although many colleges offer multiple supports to their students, what differentiates this practice from business as usual is the intentional focus on integrating these supports and incentivizing participation in the long term. One example is the City University of New York's (CUNY's) Accelerated Study in Associate Programs (ASAP). ASAP provides a comprehensive, integrated package of student services, monetary incentives, linked courses, an ASAP seminar, and other supports. The program's implementers sent consistent, strong messages to ASAP students to enroll full time, take their developmental classes early, and graduate within three years.

How to carry out Recommendation 6

1. Develop a strong, collaborative organizational structure that uses data to inform practice. A large number of people and units will need to be involved in fairly constant communication. ASAP, for example, was implemented as a partnership between the CUNY Office of Academic Affairs and three participating community colleges. This required multiple layers of organizational structure and high levels of collaboration. The Office of Academic Affairs provided fiscal and programmatic oversight while the individual colleges established ASAP teams that operated the programs and provided direct services to their students. The central office staff and college ASAP directors met monthly and communicated frequently between meetings. It is also important to use data to inform program structure, monitor program implementation and usage, and evaluate program effectiveness.

- 2. Clearly communicate expectations to students.** Full-time enrollment, participation in developmental courses, and expeditious graduation goals should be communicated efficiently through written materials, program orientation, and discussions with advisers. The messaging should begin immediately as students entered the program and continue through it. The primary messages students should receive are to: (a) enroll full time and take intersession courses, (b) take developmental courses early, and (c) graduate quickly.
- 3. Design course enrollment strategically.** Group program students together and allow program students to maximize the likelihood of maintaining a full-time schedule. Students should also participate in blocked or linked courses, student success courses, and receive early registration.
- 4. Decide which student support services will be provided and how to ensure that students participate.** There are a number of different types of student support services that can be offered. Advisors could offer comprehensive advising on academic, social, and interpersonal issues. Furthermore, students should be required to receive tutoring during any academic probation semester. Finally, students should be required to meet regularly with dedicated career and employment specialists.

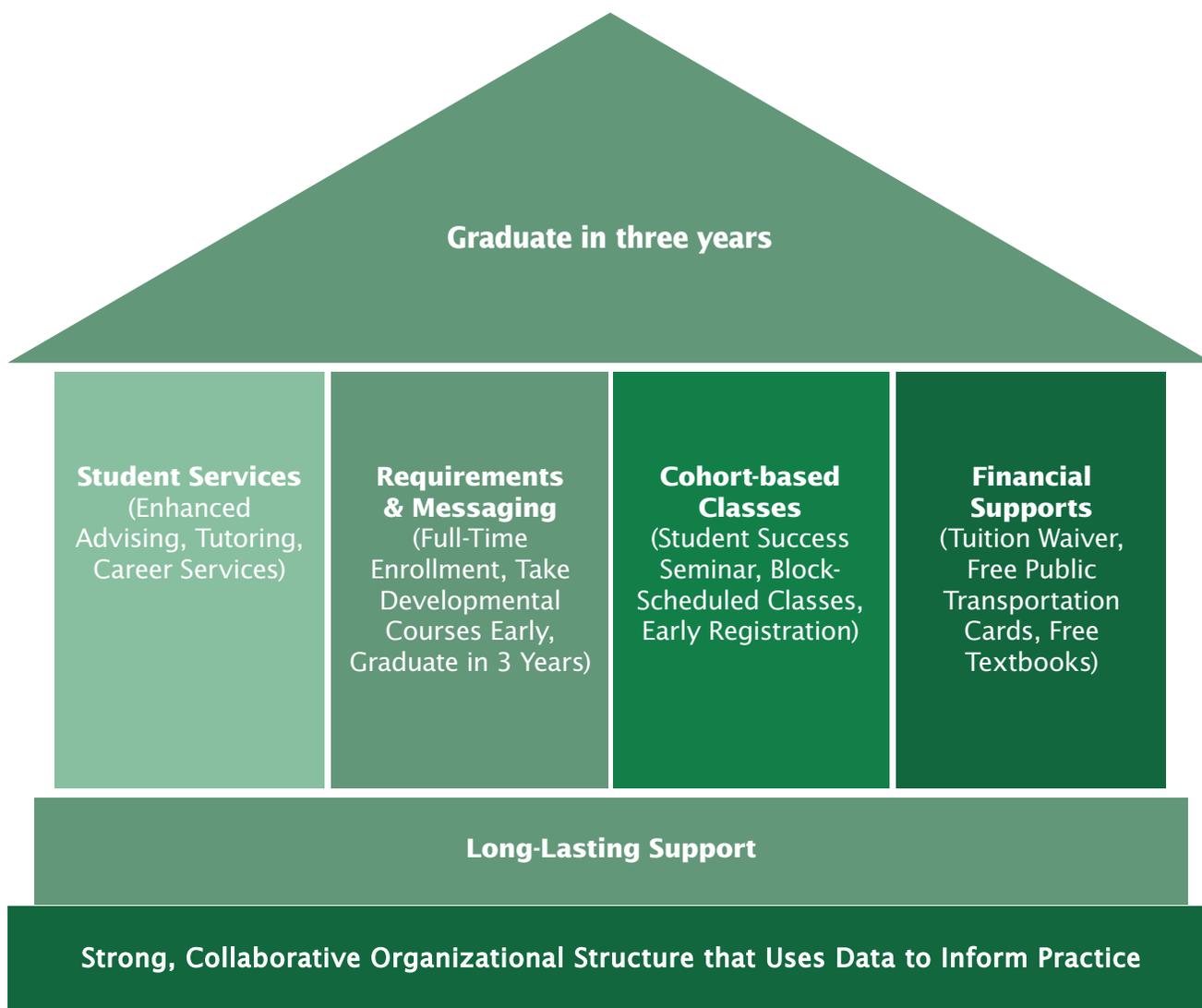
Voluntary services should also be provided. For example, students could meet with a social work intern one-on-one as needed. Additionally, following the initiative set by ASAP, students could participate in a student leadership program focused on public speaking skills, teamwork, diversity, and advocacy.
- 5. Provide performance-based monetary incentives and other financial supports.** Many options are available

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to financially incentivize student participation. For example, schools may provide: (a) financial assistance with textbooks, (b) a tuition waiver that covered the difference between a student's tuition and fees and financial aid, or (c) a monthly transportation

pass. In the ASAP program, in order for students to receive the financial benefits, they must have enrolled in at least 12 credits or more per term. A 3.0 GPA or higher was required to receive advisors' discretionary funds for covering students' winter or summer coursework.

Illustrative Example of Comprehensive, Integrated, and Long-Lasting Supports



“Of the interventions studied for this guide, ASAP was the largest in terms of scale and scope. Although other practices received a moderate rating from the panel, this practice—implementing comprehensive, integrated, and long-lasting support programs—showed the largest increases in effects on college success outcomes, including degree attainment.” — p. 59 of the practice guide.

Summary of evidence for Recommendation 6

One large RCT of 896 low-income students with developmental education needs that meets WWC standards without reservations was used to inform this recommendation. Students who participated in the program were more likely to complete their developmental education requirements; earn better grades; earn more college credits; earn a degree (usually an associate’s degree) at the study’s longest follow-up date; and enroll at a four-year college within three years of entering the program.

Of the interventions studied for this guide, ASAP was the largest in terms of scale and

scope. Although other practices received a moderate rating from the panel, this practice—implementing comprehensive, integrated, and long-lasting support programs—showed the largest increases in effects on college success outcomes, including degree attainment. Based on the relatively large effects achieved by ASAP relative to the effects of an individual program or a combination of supports implemented for a short time, the expert panel recommends adopting a systematically integrated set of interventions over multi-year period over any single intervention in isolation. As a result, the WWC assigned a **moderate** evidence rating for this practice. See Recommendation 6, **page 59**, and **Table 6, page 94**, for additional details.

Endnotes

¹ National Center for Education Statistics. (2013). *First-year undergraduate remedial coursetaking: 1999-2000, 2003-04, 2007-08 – Statistics in Brief*. (NCES 2013-013). Washington, DC: U.S. Department of Education, National Center for Education Statistics.