

40th Anniversary Research Timeline

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NATIONAL CENTER FOR DEVELOPMENTAL EDUCATION



During the four decades since the founding of the National Center for Developmental Education (NCDE; originally the Center for Developmental Education), research related to the field has continued to expand and mature. As a research center focused on using research to inform and improve practice, the NCDE's 40th Anniversary timeline presents annotations of ten impactful research studies from each decade from 1976 through 2016. We have defined "impactful research" as investigations that provided important information to influence and direct practice in the field. Our definition of developmental education is the integration of courses and services guided by the principles of adult learning and development. This view of the field as the overarching structures, services, and programs to support and teach underrepresented students in postsecondary education--rather than courses to address academic skills gaps only--guided the selection of research studies represented on the timeline.

Decade of Emerging Knowledge: 1976-1986

The decade between 1976 and 1986 was one of considerable expansion of the developmental education literature. Prior to the late 1970s, only a handful of books and articles had been written on the topic. By the late 1980s there were hundreds of books and articles available, including four journals devoted exclusively to developmental education. As a result, the amount of information available to guide professional practice was dramatically enhanced by an emerging body of knowledge.

Roueche, J.E. (1977). *Overcoming learning problems: A guide to developmental education in college*. San Francisco, CA: Jossey-Bass.

This book was one of the earliest "how to" resources in the field. It summarized the purposes of developmental education and provided practical advice and case studies on how to organize and deliver developmental courses and services. It was highly influential because it was the only book of its type at the time and was widely used by administrators, faculty, and staff to design developmental programs in the 1970s and 80s.

Hill, A. (1978, October). Developmental education: Does it work. *Community College Review*, 6, 41-47.

This was one of the earliest attempts to study the effectiveness of developmental education. It analyzed data from six established programs and determined that developmental programs contribute to improving student grades and retention. The article advocated for more evaluation of developmental programs and discussed some of the causes of underpreparedness among college students. This work was influential in establishing the effectiveness of developmental education.

Lombardi, J. (1979, Summer). Developmental education: A rapidly expanding function. *Community College Review*, 7, 65-72.

This article attempted to describe the various purposes of developmental education and to establish that it was a rapidly growing function of community colleges. Lombardi claimed that developmental education had four purposes: (a) provide pre-transfer education, (b) support handicapped students, (c) conduct remediation, and (d) deliver adult basic education. This report contributed to stigmatizing developmental education by emphasizing its precollege mission.

Maxwell, M. (1979). *Improving student learning skills*. San Francisco, CA: Jossey-Bass.

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1976-1986									
Rouche, J.E. (1977)	Hill, A. (1978)	Lombardi, J. (1979)	Maxwell, M. (1979)	Boylan, H.R. (1980)	Weinstein, C.E. (1982)	Keimig, R.T. (1983)	Kulik, C.L., Kulik, J. A., & Schwalb, B.J. (1983)	Richardson, R. C., Fisk, E.C., & Okum, M.A. (1983)	Rouche, J.E. (1984)

Martha Maxwell's book was a classic in the field and has often been referred to as the "Bible of Learning Assistance." It is not only a well-researched work, but it also integrates Maxwell's decades of experience in learning assistance into practical advice. Maxwell provided a topic-by-topic guide ranging from selecting tutors to gaining administrative support. It has been used for nearly 40 years to establish, justify, and improve learning centers.

Boylan, H.R. (1980). Academic intervention in developmental education. *Journal of Developmental Education*, 3(3), 10-11.

This article is significant for two reasons. First it introduced the term "academic intervention" to the lexicon of higher education. Second, it was the first article to address the issue that remedial students often make mistakes in registering, applying for financial aid and housing, and monitoring their academic performance because they are unfamiliar with the process of matriculation management. It was also the first article to emphasize the importance of monitoring student progress.

Weinstein, C.E. (1982). Learning strategies: The meta-curriculum. *Journal of Developmental Education*, 5(2), 6-7.

The concept of learning strategies was first introduced to developmental education in this article by one of the foremost thinkers in the field. The article described learning to learn competencies that contribute to student success such as active study strategies, information processing, and self-management. The competencies she described were later incorporated into the *Learning and Study Strategies Inventory* (LASSI) and into her Strategic Learning course at the University of Texas–Austin.

Keimig, R.T. (1983). *Raising academic standards: A guide to learning improvement*. ASHE/ERIC Higher Education Research Report, No. 4. Washington, DC: Association for the Study of Higher Education.

Keimig provided a major contribution to the field by reporting that the more comprehensive courses and services were, the more likely students were to succeed. She also suggested that the most advantageous arrangement for program organization was the integration of courses and services as a central mission of the institution. Her report was used by many to advocate for centralized services as well as to validate the original concept of developmental education.

Kulik, C.-L., Kulik, J.A., & Schwalb, B.J. (1983, Fall). College programs for high risk and disadvantaged students: A meta-analysis of findings. *Review of Educational Research*, 53, 397-414.

The authors reviewed hundreds of reports on the impact of developmental programs and used meta-analysis to determine whether or not these programs contributed to student success. They found that these programs did, in fact, contribute to greater student retention in colleges and universities. This was the first major attempt to apply sophisticated quantitative analysis to the evaluation of the efficacy of developmental education.

Richardson, R.C., Fisk, E.C., & Okum, M.A. (1983). *Literacy in the open access college*. San Francisco, CA: Jossey-Bass.

Richardson and his colleagues observed remedial and college-level classes and interviewed students and faculty in a variety of community colleges. They discovered that most classes did not require students to do much reading or writing. Instead, the instructors provided outlines, notes, and other resources and did not necessarily require that students read or even buy the textbooks for their courses. This led to a renewed emphasis on developmental reading and writing in the community college.

Roueche, J.E. (1984). *College responses to low achieving students: A national study*. San Diego, CA: Media Systems.

In this book, John Roueche reports the results from the first national survey of remedial and developmental programs for underprepared students. A major finding from this report was that the majority of colleges and universities at the time offered some form of developmental education. He also reported that the major supports offered for underprepared students were intensive orientation and special support programs providing counseling, tutoring, and remedial courses.

Decade of Professional Development: 1986-1996

As open enrollment became more widely applied, the number of students from populations not previously attending postsecondary institutions grew. Higher education professionals became aware of challenges associated with serving the new student population, and a focus on developing the expertise of administrators, faculty, and support personnel ensued. Many important research sources in this decade, therefore, were released as books rather than articles.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition*. Chicago, IL: University of Chicago Press.

Tinto's research regarding student departure from higher education was important as the initial foray examining factors outside academic variables that influence persistence. His qualitative studies were the first to tie sense of belonging and integration into the college culture to student departure. Students from under represented student populations on college campuses may be especially vulnerable in the affective areas he identified.

Knowles, M.S. (1989). *The making of an adult educator: An autobiographical journey*. San Francisco, CA: Jossey-Bass.

Knowles' theory of andragogy (versus pedagogy or the teaching of adults versus teaching of young students) brought focus to the needs of adult learners in instructional settings. His work bringing theory and research together to provide insight into the characteristics, needs, and teaching preferences of adult learners in the college classroom impacted postsecondary teaching practices. With colleges and universities experiencing an influx of non-traditional students in the 1980s, his 1989 volume offered advice for educators working with adults.

Rose, M. (1989). *Lives on the boundary. The struggles and achievements of America's underprepared*. New York, NY: Free Press.

This book reflected insights into the difficulties facing students coming from educational, socio-economic, and cultural backgrounds not typically associated with higher education. His observations and advice about the type of literacy and liberal arts curricula that best support the "educational underclass of students" draws on theory and experience presented via a somewhat personal story.

Upcraft, M.L., & Gardner, J.N. (1989). *The freshman year experience: Helping students survive and succeed in college*. San Francisco, CA: Jossey-Bass.

Success in the freshman year of college was recognized as critical to students' overall achievement and degree completion by these researchers. Their research identified factors that build an environment for success in the first year of college including orientation, academic advising, mentoring, counseling, and health and wellness programs. The book pointed out specialized programs on and off

1986-1996

Tinto, V. (1987)	Knowles, M.S. (1989)	Rose, M. (1989)	Upcraft, M.L. & Gardner, J.N. (1989)	Pascarella, E.T., Terenzini, P.T., & Patrick, T. (1991)	Stahl, N.A., Simpson, M. L., & Hayes C. (1992)	Angelo, T.A., Cross, K.P. (1993)	Boylan, H.R., Bonham, B.S., & Bliss, L.B. (1994)	Flippo, R.F. & Caverly, D.C. (1994)	Casazza, M.E. & Silverman, S.L. (1996)
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campus that could assist specific groups—such as people of color, commuters, disabled students, and others—to meet their needs. The Freshman Year Program model was among the first to advocate for integration of student services and academic coursework.

Pascarella, E.T., Terenzini, P.T., & Patrick, T. (1991). *How college affects students: Findings and insights from 20 years of research*. San Francisco, CA: Jossey-Bass.

The alternate perspective of how the college experience impacts students was an important research contribution from Pascarella and Terenzini. This book covered college outcomes for students attending college in areas ranging from cognitive development and intellectual skills, to personal growth such as relational- and self-systems, to students' quality of life over time. Implications for institutional practice and educational policy from the findings concluded the volume. The work of these researchers provided a focus on positive outcomes from the college experience other than earning potential, many of which are life changing growth areas for college students from underrepresented groups.

Stahl, N.A., Simpson, M.L., & Hayes, C.G. (1992). Ten recommendations from research for teaching high-risk college students. *Journal of Developmental Education*, 16(1), 2-10.

With a main focus on preparing faculty to teach reading and related basic skills at the college level, this article stressed the importance of teaching students to prepare them for transfer into mainstream courses. Researchers developed a set of ten recommendations for teaching high-risk college students. These included incorporate writing, high-utility strategies, regulate strategies, employ strategies, learning strategies, vocabulary development, broaden background, reliable assessment, stress transfer, and cognitive-based philosophy.

Angelo, T.A., & Cross, K.P. (1993). *Classroom assessment techniques: A handbook for college teachers* (2nd ed.). San Francisco, CA: Jossey-Bass.

Classroom research and assessment were a response to concerns regarding the improvement of teaching and learning. K. Patricia Cross, author of *Beyond the Open Door*, teamed up with Thomas Angelo to publish *Classroom Assessment Techniques* which provided instructors with a system for observing learning as part of formative assessment. Their work poised teachers to be classroom researchers and enhance their understanding of the learning process and their influence upon it.

Boylan, H. R., Bonham, B. S., & Bliss, L. B. (1994). Who are the developmental students?

Research in Developmental Education, 11(2), 1-4.

This article disaggregated demographic data from a large, national sample of students enrolled in developmental education programs to report specific student characteristics. Using data from the National Study of Developmental Education, conducted by the National Center for Developmental Education, the parsing of detailed attributes of students enrolled in developmental education at two- and four-year colleges was its major contribution. Findings revealed a highly diverse student cohort, and authors recommended similarly diverse programs and services to serve these students.

Flippo, R. F., & Caverly, D.C. (Eds.). (1994). *Handbook of college reading and study strategy research*. Mahwah, NJ: Lawrence Erlbaum.

Good reading, comprehension, and study skills are essential to college success, and they are often insufficiently developed in at-risk students. Flippo and Caverly's research examined teaching these skills at the postsecondary level. It identified challenges for instruction at the college level and advocated for faculty to engage in specialized training to develop programs integrating reading instruction across courses and with study skills and also to enhance delivery for college students.

Casazza, M. E., & Silverman, S. L. (1996). *Learning assistance and developmental education: A guide for effective practice*. San Francisco, CA: Jossey-Bass.

This publication by Casazza and Silverman provided a model of practice for teaching college students across the spectrum of preparedness. After reviewing the history of and philosophies related to learning assistance and developmental education, the authors put forth learning theory approaches. A model for practice is provided that incorporates connections between theory, research, principles, and practice. Authors further recommended engaging in research that advances practice. They also encouraged professionals to create a guiding philosophy and professional identity to move the field forward.

Decade of Academic Recognition: 1996–2006

The late 1990s through the early years of the first decade of the 21st century was a productive time for

both community colleges and the field of developmental education. Research noted the importance of developing national standards for the field and emphasized that institutions needed to use research as a basis for designing and implementing quality developmental education programs. In addition to the assertion that developmental education was cost-effective and deserved priority in the higher education arena, emphasis was placed on advocating for more legislative support; mandatory orientation, assessment, and placement of all entering students; appropriate advising; practices for effective teaching; the integration of technology in the classroom; the design of centralized programs; the collection of suitable program data; and program evaluation. The following textbooks and studies impacted both instructional practices and developmental education program design across the country.

Boylan, H., Bliss, L., & Bonham, B. (1997). Program components and their relationship to student success. *Journal of Developmental Education*, 20(3), 2-4, 6, 8.

This article was written using data from the National Study of Developmental Education. The study, which originally began with a grant funded by the Exxon Education Foundation in 1988, drew from a random sample of nearly 6,000 students enrolled in developmental education programs at institutions across the country. The article recaps many issues deliberated in the literature and primarily focused on components closely related to the success of students enrolled in developmental education including models of delivery, learning assistance services, effective teaching practices, and promising learning strategies. These components became the foundation for the redesign and implementation of many current developmental education programs.

Merriam, S., & Brockett, R. (1997). *The profession and practice of adult education: An introduction*. San Francisco, CA: Jossey-Bass.

Over the years, Sharen Merriam consistently turned out textbooks and research articles on the topic of adult education. This particular book, however, emphasized that nontraditional learners needed to know why they must learn something before deciding to learn it. The content of this text, widely used by professionals in the United States and in other countries, also recommended that

1996=2006									
Boylan, H., Bliss, L., & Bonham, B., (1997)	Merriam, S., & Brockett, R., (1997)	Obanion, T. (1997)	Adelman, C. (1999)	Rouche, J.E., & Rouche, S.D. (1999)	Silverman, S. & Casazza, M. (1999)	McCabe, R. (2000)	Boylan, H.R. (2002)	Sedlecek, W.E., (2004)	Kuh, G.D., Kinzie, J., Schuh, J.H., & Whitt, E. (2005)

responsibility for learning must shift ultimately from the facilitator to the learner.

O'Banion, T. (1997). *A learning college for the 21st century*. Phoenix, AZ: Oryx Press.

Noted for his work on the development of the learning college, O'Banion is widely cited in research in the field of developmental education. This text focuses on how educational organizations, primarily community colleges, could evolve into learning-centered institutions. Six community colleges that implemented ways to help students make better connections to learning were examined. The lessons of this book formed the basis of the learner centered college movement.

Adelman, C. (1999). *Answers in the toolbox: Academic intensity, attendance patterns, and bachelor's degree attainment*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.

This research, related to degree completion, followed a national cohort of students for 13 years. Using test scores, surveys, and high school transcripts, the author developed a model that accounts for a large percentage of the variability in degree completion. Three major points referenced reveal (a) many students attend numerous institutions, and therefore, institutional graduation rates are not very significant; (b) colleges that stress admissions based on test scores and high school grade point average rather than academic rigor and curriculum quality are likely to produce lower degree completion rates; and (c) relative to degree completion, the type and amount of remediation is important. This is particularly relevant today, as several legislative mandates have waived mandatory testing and placement and permit students to walk in to credit courses for which many are not prepared.

Roueche, J. E., & Roueche, S.D. (1999). *High stakes, high performance: Making remedial education work*. Washington, DC: American Association of Community Colleges, The Community College Press.

This study examined characteristics of successful developmental education programs around the country and contended that changing demographics, increased growth in technology, and the weakening of the public education system resulted in increased social problems including illiteracy, unemployment, and crime. Additionally, the study accentuated the necessity for recruiting, hiring, and training the best faculty to work in developmental education classrooms. This work was frequently used in the design of developmental programs and policies.

Silverman, S., & Casazza, M. (1999). *Learning and development: Making connections to enhance teaching*. San Francisco, CA: Jossey-Bass.

Widely used by practitioners and college teachers, this text is noted for making solid connections between research and practice. It examines how developmental needs such as learning difficulties and lack of self-esteem hinder with the learning process. It suggests what teachers can do to promote success with support from case studies, applications, and various mechanisms. This work introduced the Theory/Research/Principles/Practice (TRPP) Model, which is widely used for designing instructional, and support services.

McCabe, R. (2000). *No one to waste: A report to public decision-makers and community college leaders*. Washington, DC: American Association of Community Colleges, Community College Press.

This report established that remedial education was central to improving the success of ethnic minorities. It also stressed that community college remedial programs were cost-effective, but reported that few colleges were applying the research outlining what was involved in successful programs around the country. The study included information from 25 community colleges and made a case for validating that students who were successful in their remedial programs performed well in their college coursework and found productive employment.

Boylan, H. R. (2002). *What works: Research-based practices in developmental education*. Boone, NC: Continuous Quality Improvement Network and the National Center for Developmental Education, Appalachian State University.

One of the first publications featuring models and techniques available to professional developmental educators, this text outlined the best practices that institutions could implement to achieve positive results with developmental education student populations. It reported research foundations and positive practices including the use of multiple teaching and learning strategies and the integration of classroom and laboratory activities, as well as a number of program initiatives, program designs, and services and resources that remain as the accepted standard today in programs across the country.

Sedlacek, W. E. (2004). *Beyond the big test: Noncognitive assessment in higher education*. San Francisco, CA: Jossey-Bass.

Recognized as a leading authority on noncognitive assessments, Sedlacek's text is influential because it challenged the use of standardized tests as the only assessment tool for college and university admissions. Examples of assessments that can be used in conjunction with standardized tests are provided as well as case studies showing how educators have used these methods in a fair and realistic way to teach and reach diverse student populations. Additionally, his research explored ways of using noncognitive variables in advising and counseling and the design of campus programs.

Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2005). *Student success in college: Creating conditions that matter*. San Francisco, CA: Jossey-Bass.

This text, more than 350 pages in length, recommends instructional practices that can better engage diverse classroom populations with course material and promote a more effective connection with faculty and peers. Suggested practices are drawn from the examination of 20, four-year institutions which the authors refer to as DEEP (Documenting Effective Educational Practice) schools. These institutions were noted for having both high levels of student engagement and graduation rates as evidenced by the National Survey of Student Engagement (NSSE). Findings from the study of these varied institutions provide the reader a view of programs and policies that have boosted student learning and achievement.

Decade of Data-Driven Change: 2006-2017

The decade of 2006-2017 saw a plethora of change, across the country, in the field of developmental education. Many organizations, such as the Bill and Melinda Gates Foundation, Achieving the Dream, and the Community College Research Center (CCRC), published and supported research touting better instructional practices for helping students complete the developmental education course sequences in both mathematics and English. Accelerated Learning along with emporium models for mathematics and the integration of reading and English curriculum were implemented at many institutions. With the addition of new technology, other paradigms previously used such

2006-2017									
Adams, P., Gearhart, S., Miller, R., & Roberts, A. (2009)	Boylan, H.R. (2009)	Arendale, D.R. (2010)	Bailey, t., Jeong, D.W., & Cho, S. (2010)	Edgecombe, N. (2011)	Hughes, K.L., & Scott-Clayton, J. (2011)	Rutschow, E.Z. & Schneider, E. (2011)	Tinto, V. (2012)	Complete College America (2012)	Boylan, H. R., Calderwood, B.J., & Bohnam, B.S. (2017)

as modularization and co-requisites came back into vogue. Selection of certain models for use in developmental education classrooms were based on the premise that these instructional models would enable students to complete courses faster, graduate with less debt, and enter the workforce sooner. Whether it was state or institutionally mandated, change occurred quite frequently during this decade.

Adams, P., Gearhart, S., Miller, R., & Roberts, A. (2009). The accelerated learning program: Throwing open the gates. *Journal of Basic Writing, 28*(2) 50–69.

This article was based on the experience of writing instructors implementing an accelerated program for students to complete developmental writing. The authors linked an upper-level developmental writing class with a credit-bearing first-year writing course. This, according to the authors, served to motivate students to succeed by helping them move into college-level courses faster and promote the formation of learning communities. The positive research findings from this article have been used to promote the corequisite model of accelerated remediation. It is cited by practically everyone who advocates reform in the way remedial writing is taught. Findings from this study have also been widely replicated by those who implement the accelerated learning program.

Boylan, H.R. (2009). Targeted intervention for developmental education students (T.I.D.E.S.). *Journal of Developmental Education, 32*(3), 14-23.

This article provides a framework for an alternative for assessing, advising, and placing underprepared students in colleges and universities. It promotes combining information about a student's personal life situation with cognitive and affective assessment. It includes details on this model and how to implement it successfully. The point of this article is that there is a more effective, holistic, and accurate means for placing underprepared students. The article's guidelines were often used as a basis for designing more systematic advising, placement, and instructional interventions for underprepared students.

Arendale, D. R. (2010). *Access at the : Learning assistance in higher education. ASHE Higher Education Report, Volume 35, Number 6.* San Francisco, CA: Jossey-Bass.

With the ability to expand access and assist students in meeting academic expectations of their perspective institutions, learning assistance centers hold a prominent place in the halls of higher education. By recapping the history of learning assistance, reviewing best practices in the field, exploring the operational challenges of learning

assistance centers today, and examining the future for stakeholders in this field, Arendale makes the case for the importance of learning assistance and what needs to be done to meet complex issues that lie ahead for the field. This report is generally regarded as providing the definitive history of college learning assistance.

Bailey, T., Jeong, D. W., & Cho, S. (2010). Referral, enrollment, and completion in developmental education sequences in community colleges. *Economics of Education Review, 29*, 255-270.

This paper discusses data on student completion and retention in developmental education courses. It also mentions variables which can contribute to or negate student success and retention for a variety of reasons. It was presented at the White House Summit on Community Colleges. The data and information contained in this article are among the most widely quoted statistics used in the national policy discussion of developmental education. As a result, it was highly influential in the movement to reform college remediation.

Edgecombe, N. (2011). *Accelerating the academic achievement of students referred to developmental education* (CCRC Working Paper No. 30). New York, NY: Columbia University, Teachers College, Community College Research Center.

This CCRC Working Paper did an excellent job of describing a variety of approaches to accelerating remediation. Advocating that shortening the time to complete college-level courses increases student persistence, the study examined how accelerating completion of basic skills preparation supports student success. Edgecombe's research proposes that a number of course redesign models primarily being used in community colleges can utilize acceleration, or some form of it, to increase student outcomes. It provides a concise review of the literature on acceleration as well as brief suggestions for practical application.

Hughes, K.L., & Scott-Clayton, J. (2011). Assessing developmental assessment in community colleges. *Community College Review, 39*(4), 327-351.

This article was a product of a Community College Research Center study of the efficacy of assessment instruments used for college placement in remedial courses. A major finding was that the accuracy of the assessment instruments used for placement into remedial courses was questionable. In spite of this, the instruments were used to place more than half of the students enrolling in community colleges into remedial courses. These findings led to further studies questioning the value of contemporary placement policies, instruments, and procedures. These, in turn, contributed substantially

to a national movement to reform assessment and placement in U.S. community colleges.

Rutschow, E.Z., & Schneider E. (2011). *Unlocking the Gate: What we know about improving developmental education.* New York, NY: MDRC.

MDRC was a partner in studying remedial education during the decade of the 2000s. This report is based on data and narratives from Achieving the Dream and highlights many of the lessons learned through the Achieving the Dream process. It discusses the best ways to revise the structure, curriculum, and delivery of developmental education courses in order to raise student success and retention rates. It also discusses the lack of research on the effects of reforms in developmental education classes and programs and advocates for improved evaluation of redesign efforts.

Tinto, V. (2012). *Completing college: Rethinking institutional action.* Chicago, IL: University of Chicago Press.

One of the more influential points in this book was that nearly half of college students do not complete a degree within 6 years. Student attrition, therefore, is a major issue for higher education policy and practice. In this book, Vincent Tinto distills an enormous amount of research into a systematic approach for improving college student retention and completion. This is one of the most widely referenced and quoted books among retention scholars and practitioners.

Complete College America. (2012). *Remediation: Higher education's bridge to nowhere.* Indianapolis, IN: Author. Retrieved from http://www.insidehighered.com/sites/default/server_files/files/CCA%20Remediation%20ES%20FINAL.pdf

This report had wide-ranging effects on remediation across the United States. Citing undisclosed data gathering methods, the report stated that "remediation programs" represented barriers to students' ability to enroll in gateway courses and enter programs of study, thereby hindering rather than supporting completion. These findings contributed to the remedial reform movement in U.S. community colleges. Some states and institutions subsequently implemented policies allowing students to enroll into any course they wished. Many also adopted co-requisite remediation based on recommendations from this report. Although this report was not based on empirical research, it was highly influential among state higher education policy makers.

Boylan, H.R., Calderwood, B.J., & Bonham, B.S. (2017). *College completion: Focus on the finish line* (NCDE White Paper). Boone,