How Current Research Refutes the Mythology of Developmental Education's Ineffectiveness

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Objectives for this session

To describe disinformation about developmental education.

To discuss sources of past disinformation.

To provide new research countering past disinformation.

Activity

Which of the following statements is true?

1. Research suggests that taking remedial courses serves as a barrier to graduation.
2. The majority of students who enroll in remedial courses do not complete them.
3. Students of color are among those least likely to benefit from remedial courses.
4. Those who take remedial courses are less likely to persist than those who don't need them.

Statement of the problem

For nearly a decade, researchers have used improper definitions of developmental education, applied inadequate research assumptions, and, as a result, have drawn erroneous conclusions. They have then created an echo chamber in which a variety of myths persist in the minds of policy makers and the higher education media.

We are not here to argue…

- Against the reform of remedial courses,
- Against the use of effective versions of "Co-Requisite Remediation," or
- Against the fact remedial courses are less effective for better prepared students.

We are here to argue…

- For the continuation of remedial courses for certain students,
- For an end to false claims about remedial courses, and
- For a more accurate understanding of remediation and developmental education among policy makers and the media.

Martorell & McFarlin (2011)[1] – found that students in remedial courses did not outperform students who did not need remediation in follow-up courses. They used this finding to question the effectiveness of remediation. Number of citations: 574.

The Community College Research Center – using similar research methods and assumptions, published several studies questioning the effectiveness of remediation with multiple 100+ citations (see Bailey et al., 2010; Bailey et al., 2015)[2,3].

Complete College America (2012)[4] – using questionable methodology found that students who took remedial courses were less likely to graduate than students who did not, thus questioning the effectiveness of remediation. Number of citations: 303.

Martorell & McFarlin (2011)[1] – declared remediation to be ineffective because students who took remedial courses did not do better in follow-up courses than students who did not need remediation.

Complete College America (2012)[4] – reported that remediation was higher education's "Bridge to Nowhere" because there as a 4.4% difference in graduation rates at the end of 3 years between those who took remedial courses and those who did not have to take them.

The Community College Research Center – undertook multiple Regression Discontinuity studies (Jaggars & Stacey, 2015)[5] and found that those who took remedial courses did not do better in follow-up outcomes as those who did not need remediation, thus concluding that remediation was ineffective.

These studies have consistently

1. Used methodology that is ill suited to the problem.

2. Over-reported negative findings.

3. Improperly defined “remedial education” as “developmental education.”

Developmental vs. remedial

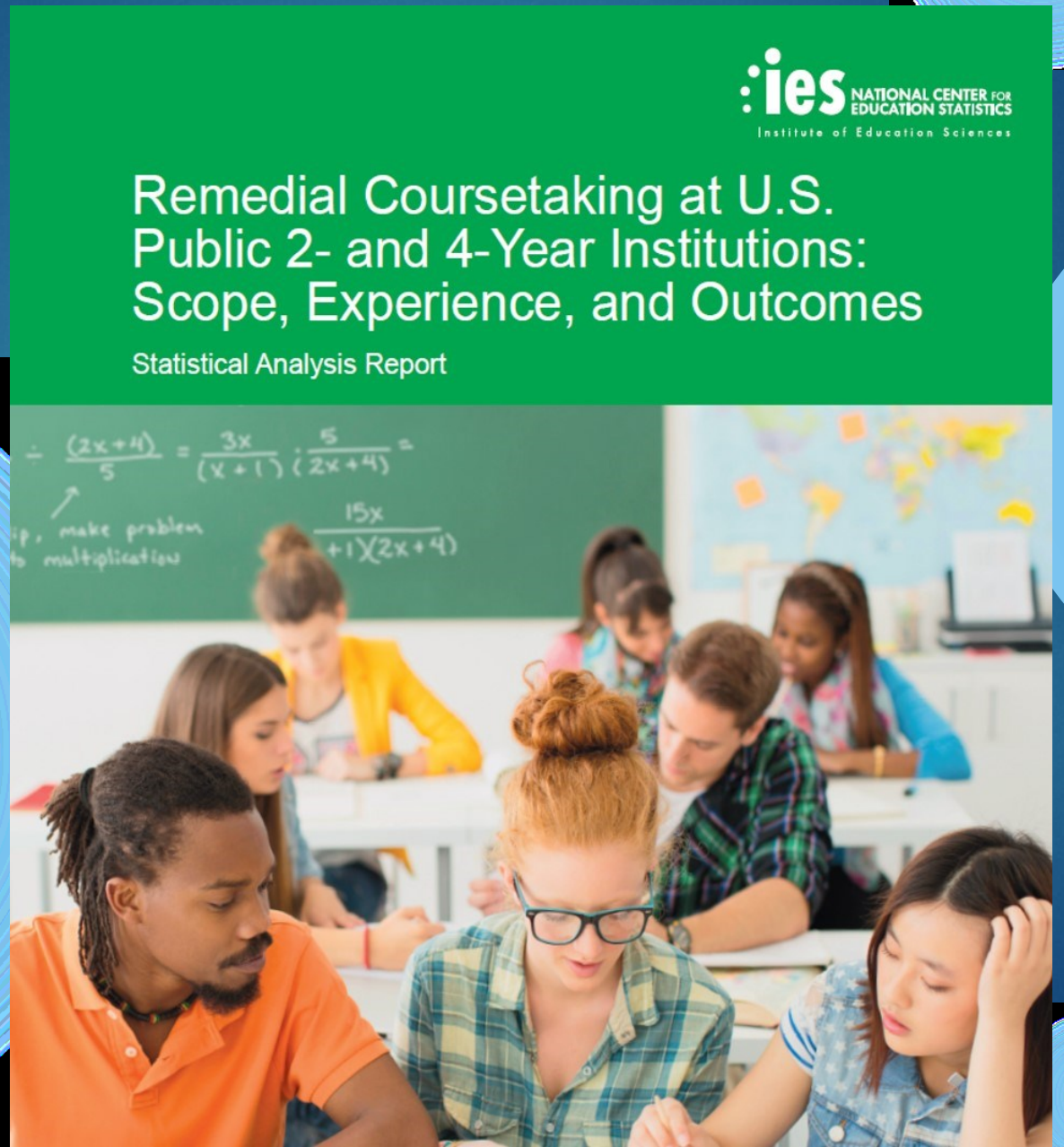
Developmental education is the integration of courses and services guided by the principles of adult learning and development.

Remedial education is the provision of stand-alone courses teaching college preparatory material in a specific subject area.

Current research

- Argues that remedial courses are necessary for weaker students.
- Suggests that reports of the failure of remediation have been exaggerated.
- Indicates that graduation rates for those participating in remediation are equivalent to those of non-remedial students.

"Remedial Coursetaking" (Chen, 2016)[6,7]



Data Show Remediation is *Not* a Barrier

- Chen (2016)[6,7] used the NCES Beginning Postsecondary Students (BPS:04/09) dataset
- The BPS:04/09 is a nationally representative dataset of students
- Contrary to Bailey et al. (2010)[2], a seminal paper claiming remediation's inefficacy (cited 1600+ times), findings from BPS datasets can be generalized to the population
- Results for students who started at community colleges demonstrated that remediation is not a barrier, especially in terms of associate's degrees and certificates (see Chen, 2016 addendum)[7]

BPS:04/09 Data (from Chen, 2016)

Table 180302. Among 2003–04 beginning postsecondary students who first enrolled in public 2year institutions, percentage distribution of students according to their postsecondary persistence and highest degree attainment as of 2009, by remedial course enrollment and completion status: 2003-09

	6-year persistence and degree attainment			
Remedial course enrollment and completion status	**No degree, and not enrolled**	**No degree, but enrolled**	**Attained an associate's degree or certificate**	**Attained a bachelor's degree**
Total	**45.2**	**20.2**	**22.9**	**11.8**
Enrolled in any remedial courses	44.3	23.1	22.3	10.4
Enrolled in remedial courses and passed all	35.3	22.1	25.8	16.8
Enrolled in remedial courses and passed some	46.7	27.0	22.2	4.2
Enrolled in remedial courses and passed none	66.8	17.5	11.6	4.2
Did not enroll in remedial courses	47.0	14.1	24.1	14.8

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- As shown on the prior slide, Table 180302 (NCES, n.d.)[7] from Chen (2016)[6] shows that associate's degree attainment for students in remediation (22.3%) is nearly identical to nonremedial students (24.1%)
- Approximately 2/3rds of students in the sample took a remedial course (p. 10); data in above table were not controlled (if they were, difference would disappear or might show higher graduation rates for remediation)
- Therefore, even percentages from a dataset starting in 2003 show that remediation is not a barrier (similar time frame as ATD)

Data Show Remediation is *Not* a Barrier

- Since the BPS:04/09, another more recent nationally representative dataset using the same methodology has been created, analyzed, and disseminated by the NCES; I am using it in my disseration
- This new dataset is the BPS:12/17, and it uses cohorts of students who started in fall of 2011 and who were also tracked for 6 years (similar methodologies for all four BPS datasets)
- Data in the next two tables also show that remediation is not a barrier (yellow highlights added), and these data are from 2011–2017

BPS:12/17 Data (Pretlow et al., 2020)

National Center for Education Statistics

Table 2.2-C. Among 2011–12 first-time postsecondary students who began in an associate's degree program, percentage distribution of 6-year attainment and persistence status at any institution, by selected beginning enrollment characteristics: 2012–17

Selected beginning enrollment characteristics	Undergraduate certificate	Associate's degree	Bachelor's degree	Enrolled at 4-year institution	Enrolled at less-than-4-year institution	Not enrolled
Total	**5.8**	**21.3**	**12.4**	**6.2**	**8.6**	**45.7**
Strongly agree knew requirements needed to complete degree at first institution, 2011–12[1]						
Yes	5.5	23.4	13.7	6.7	8.1	42.5
No	5.9	21.2	12.0	6.1	8.7	46.0
Strongly agree that I feel that I am a part of my first institution, 2011–12[2]						
Yes	7.0	27.0	11.6	5.7	8.4	40.4
No	5.3	20.6	14.0	6.7	8.1	45.2
Strongly agree have ability to succeed as a student at first institution, 2011–12[2]						
Yes	6.0	25.6	15.8	6.5	8.1	38.1
No	5.8	19.2	8.8	6.2	8.5	51.5
Self-reported remedial or developmental coursetaking, 2011–12						
Yes	6.6	21.0	11.0	6.3	9.9	45.3
No	5.4	21.5	13.1	6.1	8.0	45.9

BPS:12/17 Data (Chen et al., 2020)

Table 4. HIGHEST POSTSECONDARY ATTAINMENT: Percentage distribution of 2011–12 beginning postsecondary students' highest postsecondary attainment, by first degree program and selected coursetaking experiences: June 2017

First degree program[1] and selected coursetaking experiences	No credential, not currently enrolled	No credential, currently enrolled at less-than-4-year institution	No credential, currently enrolled at 4-year institution	Attained an under-graduate certificate	Attained an associate's degree	Attained a bachelor's degree
Total	**39.9**	**4.2**	**5.9**	**6.4**	**9.1**	**34.5**
Undergraduate certificate program	**39.1**	**3.7 !**	**‡**	**53.7**	**2.0 !**	**‡**
Took any remedial courses[2]						
Yes	46.7	12.1 !	‡	32.1	4.7 !	‡
No	36.4	1.0 !	0.3 !	60.9	1.2 !	‡
Withdrew from any courses						
Yes	61.9	8.0 !	‡	23.1	2.7 !	‡
No	30.1	‡	0.2 !	65.6	1.8 !	‡
Received any noncourse credits[3]						
Yes	‡	‡	‡	39.1 !	‡	‡
No	39.0	3.7 !	‡	54.2	1.8 !	‡
Associate's degree program	**55.6**	**5.9**	**5.7**	**4.8**	**17.4**	**10.6**
Took any remedial courses[2]						
Yes	57.4	7.8	5.0	4.9	17.1	7.8
No	52.5	2.8	6.9	4.6	17.8	15.5
Withdrew from any courses						
Yes	59.2	7.3	6.2	3.7	15.1	8.6
No	49.8	3.8	4.9	6.5	21.1	13.9

Data Show Remediation is *Not* a Barrier

- As we have discussed before (Goudas & Boylan, 2012)[10], data on remediation presents a causation-correlation problem that, in addition to biases in data selection, makes it *appear* that remediation is a barrier; however, the problem is not remediation or developmental education per se:

If remediation is a barrier,

then all courses and semesters pose similar barriers

- Even the CCRC has acknowledged that other first-year, first-semester courses at community colleges pose equal barriers to positive outcomes for students (Zeidenberg et al., 2012)[11]

Data Show Remediation is *Not* a Barrier

CCRC researchers Zeidenberg et al. (2012)[11] have demonstrated that other courses pose equal barriers to student success:

> "Our findings indicate that despite the focus on college math and English, these courses are not the only obstacles to completion for community college students. In fact, they present no greater obstacle to completion than the other gatekeeper courses that are identified in this paper" (p. 4).

Yeado et al. (2014)[12]

Table 6: Success Rates in the First Three Mathematics Courses at the University of Alabama Over Time

	Math 005	Math 100	Math 110
Fall 2005	64.2%	67.2%	66%
Fall 2006	73.6%	73.8%	70.3%
Fall 2007	74%	75.2%	74.8%
Fall 2008	67.8%	78.1%	65.5%
Fall 2009	67.2%	70.5%	77.7%
Fall 2010	64%	72.2%	73.3%
Fall 2011	66.7%	65.3%	72.7%
Fall 2012	84.6%	65.1%	80.1%

Data Show Remediation is *Not* a Barrier

Aside from past research showing positive results for remediation (Goudas & Boylan, 2012)[10], other recent studies using statistical controls also have concluded that remediation is not a barrier:

Sanabria et al. (2020)[13]: "Taking remediation is associated with a nearly nine percentage-point increase in bachelor's degree completion for 2-year college students after accounting for demographic, familial, and academic background characteristics" (p. 474).

Saw (2019)[14] : "For 2-year college students, remediation enrollment in both mathematics and English improved the likelihood of transferring to a 4-year college and earning a bachelor's degree" (p. 298).

Data Show Remediation is *Not* a Barrier

Four more past and current studies have not been cited frequently:

Fike and Fike (2008)[15]: "Students who did not enroll in developmental mathematics had lower odds of retention than those who enrolled in developmental mathematics but did not successfully complete the course. This finding suggests the significant role that developmental mathematics plays in student retention" (p. 78).

Turk (2019)[16]: "When two groups of statistically similar students were compared, developmental education generally improved the chances of earning an associate degree" (p. 1090).

Data Show Remediation is *Not* a Barrier

Cabrera et al. (2005)[18]:"Those taking math remediation courses were 4% more likely to transfer than those who did not….However, among Lowest-SES students, the effect of taking remedial reading is particularly noteworthy. For this group taking remedial reading actually increases their likelihood of transferring by 24%" (p. 23).

Lesik (2006)[19]: "Using the regression-discontinuity design and an instrumental variables strategy to model selection bias, I concluded that participating in a developmental mathematics program significantly increases the odds of successfully completing a college-level mathematics course on the first try" (p. 17).

Data Show Remediation is *Not* a Barrier

- The primary cause of low completion rates (first-year success, graduation, transfer, etc.) is not particular college courses, remedial or nonremedial
- Factors such as income (i.e., work, family obligations, children, daycare, transportation), race, age, parental education level, high school courses taken (HS quality), support levels in college, college choice, tutoring, disability, mental health—all of these and more have a far larger impact on outcomes for at-risk 2-year college students

Data Show Remediation is *Not* a Barrier

- The most effective reform of the past decade, the City University of New York's Accelerated Study in Associate Programs (ASAP), addressed all of these issues yet has not eliminated remediation; original RCT was comprised of 90% students of color and more than doubled graduation rates (21% vs. 48% for developmental students)
- Miller et al. (2020)[17] studied a replication of ASAP in Ohio and found that this model of true holistic *developmental education* caused a 3-year graduation rate increase of 12 percentage points (49 vs. 37%) (p. 48) at a cost of $1,840 per student per year (p. ES-7)

Thomas Merton once said, "The self-fulfilling prophecy leads to a reign of error."

1. Claiming that remediation doesn't work fulfills negative expectations of low-income students.
2. Claiming that remediation doesn't work encourages resources to be withdrawn from remediation, thus insuring its ineffectiveness.
3. Claiming that remediation doesn't work encourages mindless "reform" efforts as well as mindful efforts.

Don't allow the reign of error to persist on your campus…

1. Share research results presented here with your colleagues and administrators.

2. Oppose stereotyping of students just because they enroll in remedial courses.

3. Encourage mindful reform based on accurate data.

Thanks, and Enjoy the Conference

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