

WWC Review of the Report “Closing the Social-Class Achievement Gap: A Difference-Education Intervention Improves First-Generation Students’ Academic Performance and All Students’ College Transition”¹

The findings from this review do not reflect the full body of research evidence on difference-education interventions.

What is this study about?

The study investigated the impact of attending a moderated panel discussion for incoming freshmen on their adjustment to college. The panel featured demographically diverse college seniors who responded to questions about their experience of and adjustment to college. The study was conducted in a highly selective, midsized private university in the United States.

All incoming first-generation college students—in this study, students whose parents do not have 4-year college degrees—and a sample of incoming non-first-generation college students were invited to participate in the study. The two groups of students did not differ significantly by race or ethnicity. Of the 168 students included in the study, 84 were randomly assigned to the intervention group and 84 to the comparison group.

Incoming students in both groups attended one of eight moderated panel discussions, all featuring the same panel of eight demographically diverse college seniors (three were first generation, five were non-first generation). Panelists were instructed to respond to questions differently depending upon the group of students in attendance. For the students in the intervention group, the panelists’ responses illustrated how their social class backgrounds both positively and negatively shaped their college experiences and influenced the strategies they adopted

for success in college. For students in the comparison group, the panelists’ stories included general content and did not highlight the students’ different backgrounds. After the panel, all students were invited to complete a survey and create a video testimonial about the panel’s main teachings.

The study assessed the impact of the panelists’ stories by comparing grade point averages (GPAs) at the end of students’ freshman year. The authors were particularly interested in whether the intervention affected first-generation and non-first-generation students differently.²

Features of a Difference-Education Intervention

The difference-education intervention exposed incoming freshmen to a moderated panel discussion, during which a panel of diverse senior college students responded to questions about how their social-class backgrounds affected their experience of and adjustment to college.

What did the study find?

The study assessed the impact of the difference-education intervention on GPAs at the end of freshman year. The study authors found, and the WWC confirmed, that there was a statistically significant effect on mean GPA: the intervention group had a higher mean GPA (3.47) than the comparison group (3.30). This effect was mostly due to the statistically significant differences between the GPAs of first-generation students in the intervention and comparison groups. Specifically, the mean GPA for first-generation college students in the intervention group was higher than the mean GPA for first-generation students in the comparison condition (3.47 vs. 3.17, respectively); this difference was statistically significant. In contrast, the GPAs for non-first-generation students were similar across the two groups (3.47 and 3.43, a difference that is not statistically significant).

WWC Rating

The research described in this report meets WWC group design standards without reservations

This study is a well-executed randomized experiment with low attrition.

Appendix A: Study details

Stephens, N. M., Hamedani, M. G., & Destin, M. (2014). Closing the social-class achievement gap: A difference-education intervention improves first-generation students' academic performance and all students' college transition. *Psychological Science, 25*(4), 943–953. doi: 10.1177/0956797613518349

Setting	The study was conducted at a highly selective, midsized private university in the United States.
Study sample	<p>The sample consisted of 168 incoming freshmen. Eighty-four students were randomly assigned to the intervention condition and 84 to the comparison condition. Students were recruited in two ways, before randomization. All incoming first-generation students—that is, students whose parents do not have 4-year college degrees—were identified and asked to participate in the study. The authors then identified and recruited non-first-generation students to match the racial/ethnic profile of the entire non-first-generation student population.</p> <p>The analytic sample consisted of the 147 students who attended the panel and completed the survey at the end of the year. Of the 147, 66 were first generation; of these 45% were White, 24% Latino, 17% Asian or Asian American, and 14% African American. Fifty-nine percent were low income (defined as eligible to receive Pell grants). Eighty-one students in the analytic sample were non-first generation, of whom 52% were White, 25% Asian, 15% Latino, 7% African American, and 1% Native American. Nine percent of these students qualified as low income. Seven participants did not consent to have their grades accessed and thus were excluded from the analyses of academic performance. Additionally, six GPA outliers were excluded from analyses of academic performance. These 13 exclusions resulted in an analytic sample of 134 students for the academic achievement outcome; 66 of these students were in the intervention group and 68 in the comparison group.</p>
Intervention group	Students in the intervention group attended one of eight moderated panel discussions, all featuring the same panel of eight demographically diverse college seniors (three were first generation, five were non-first generation). Each panel discussion lasted 1 hour, during which panelists responded to questions posed by a moderator. In this condition, panelists talked about how their backgrounds affected their college experiences. Their responses illustrated how their social class backgrounds both positively and negatively shaped their college experiences and influenced the strategies they adopted for success in college. At the end of the session, attendees were invited to take a short survey and make a video testimonial on the lessons they learned from the panel. At the end of their freshman year, students completed another survey.
Comparison group	Students in the comparison group also attended one of eight moderated panel discussions, all featuring the same panel of eight demographically diverse college seniors (three were first generation, five were non-first generation). Each panel discussion lasted 1 hour, during which panelists responded to questions posed by a moderator. In this condition, panelists' responses included general content and did not highlight the students' different backgrounds. At the end of the session, attendees were invited to take a short survey and make a video testimonial on the lessons they learned from the panel. At the end of their freshman year, students completed another survey.

Outcomes and measurement

The study had one primary outcome: grade point average (GPA) at the end of the freshman year. GPA was measured using first-year cumulative GPAs from official registrar records. For a more detailed description of this outcome measure, see Appendix B.

Support for implementation

The authors provide information on how the moderators introduced the study to the two different conditions and the questions that were used in each condition. They provide samples of the ways students answered questions in the two conditions.

Reason for review

This study was identified for review by receiving media attention.

Appendix B: Outcome measures for the academic achievement domain

Academic achievement

Grade point average (GPA)

This outcome is based on data from student transcripts received from the university. A mean GPA was measured using first-year cumulative GPAs from official registrar records.

Table Notes: This single-study review does not include other outcomes reported by the authors, including appreciation of difference and perspective taking, taking advantage of college resources, and psychosocial outcomes (i.e., stress and anxiety, psychological adjustment, academic engagement, social engagement). These outcomes were not eligible for review under the Review Protocol for Individual Studies in the Postsecondary Education topic area, version 2.0.

Appendix C: Study findings for the academic achievement domain

Domain and outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			p-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Academic achievement								
Grade point average (GPA)	College freshmen	134	3.47 (0.38)	3.30 (0.39)	0.17	0.44	+17	.006
Domain average for GPA						0.44	+17	Statistically significant

Table Notes: For mean difference, effect size, and improvement index values reported in the table, a positive number favors the intervention group and a negative number favors the comparison group. The effect size is a standardized measure of the effect of an intervention on individual outcomes, representing the average change expected for all individuals who are given the intervention (measured in standard deviations of the outcome measure). The improvement index is an alternate presentation of the effect size, reflecting the change in an average individual's percentile rank that can be expected if the individual is given the intervention.

Study Notes: Adjusted mean GPAs, standard deviations, and analytic sample sizes were obtained through an author query and are not included in the published study. No corrections for clustering or multiple comparisons and no difference-in-differences adjustments were needed. The p-values presented here were reported in the original study. This study is characterized as having a statistically significant positive effect because the effect for at least one measure within the domain is positive and statistically significant, and no effects are negative and statistically significant, accounting for multiple comparisons. For more information, please refer to the WWC Standards and Procedures Handbook (version 3.0), pp. 25–26.

Appendix D: Supplemental findings for the academic achievement domain

Domain and outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			p-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Academic achievement								
<i>Grade point average</i>	First-generation freshmen	60	3.47 (0.36)	3.17 (0.32)	0.30	0.87	+31	< .001
<i>Grade point average</i>	Non first-generation freshmen	74	3.47 (0.39)	3.43 (0.39)	0.04	0.10	+4	.66

Table Notes: The supplemental findings presented in this table are additional findings that do not factor into the determination of the evidence rating. For mean difference, effect size, and improvement index values reported in the table, a positive number favors the intervention group and a negative number favors the comparison group. The effect size is a standardized measure of the effect of an intervention on individual outcomes, representing the average change expected for all individuals who are given the intervention (measured in standard deviations of the outcome measure). The improvement index is an alternate presentation of the effect size, reflecting the change in an average individual's percentile rank that can be expected if the individual is given the intervention. First-generation freshmen include those students whose parents do not have 4-year college degrees.

Study Notes: No corrections for clustering or multiple comparisons and no difference-in-differences adjustments were needed. The p-values presented here were reported in the original study.

Endnotes

¹ Single study reviews examine evidence published in a study (supplemented, if necessary, by information obtained directly from the authors) to assess whether the study design meets WWC group design standards. The review reports the WWC's assessment of whether the study meets WWC group design standards and summarizes the study findings following WWC conventions for reporting evidence on effectiveness. This study was reviewed using the Postsecondary Education topic area review protocol, version 2.0. A quick review of this study was released in March 2014, and this report is the follow-up review that replaces that initial assessment. The WWC rating applies only to the study outcomes that were eligible for review under this topic area. The reported analyses in this single study review are only for those eligible outcomes that either met WWC group design standards without reservations or met WWC group design standards with reservations, and do not necessarily apply to all results presented in the study.

² There were seven outcomes included in the study that are not described in this WWC report. These include appreciation of difference and perspective taking, taking advantage of college resources, and psychosocial outcomes (i.e., stress and anxiety, psychological adjustment, academic engagement, social engagement). See the table notes in Appendix B for more information.

Recommended Citation

U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse. (2014, October). *WWC review of the report: Closing the social-class achievement gap: A difference-education intervention improves first-generation students' academic performance and all students' college transition*. Retrieved from <http://whatworks.ed.gov>

Glossary of Terms

Attrition	Attrition occurs when an outcome variable is not available for all participants initially assigned to the intervention and comparison groups. The WWC considers the total attrition rate and the difference in attrition rates across groups within a study.
Clustering adjustment	If intervention assignment is made at a cluster level and the analysis is conducted at the student level, the WWC will adjust the statistical significance to account for this mismatch, if necessary.
Confounding factor	A confounding factor is a component of a study that is completely aligned with one of the study conditions, making it impossible to separate how much of the observed effect was due to the intervention and how much was due to the factor.
Design	The design of a study is the method by which intervention and comparison groups were assigned.
Domain	A domain is a group of closely related outcomes.
Effect size	The effect size is a measure of the magnitude of an effect. The WWC uses a standardized measure to facilitate comparisons across studies and outcomes.
Eligibility	A study is eligible for review if it falls within the scope of the review protocol and uses either an experimental or matched comparison group design.
Equivalence	A demonstration that the analysis sample groups are similar on observed characteristics defined in the review area protocol.
Improvement index	Along a percentile distribution of individuals, the improvement index represents the gain or loss of the average individual attributable to the intervention. As the average individual starts at the 50th percentile, the measure ranges from -50 to +50.
Multiple comparison adjustment	When a study includes multiple outcomes or comparison groups, the WWC will adjust the statistical significance to account for the multiple comparisons, if necessary.
Quasi-experimental design (QED)	A quasi-experimental design (QED) is a research design in which study participants are assigned to intervention and comparison groups through a process that is not random.
Randomized controlled trial (RCT)	A randomized controlled trial (RCT) is an experiment in which eligible study participants are randomly assigned to intervention and comparison groups.
Single-case design (SCD)	A research approach in which an outcome variable is measured repeatedly within and across different conditions that are defined by the presence or absence of an intervention.
Standard deviation	The standard deviation of a measure shows how much variation exists across observations in the sample. A low standard deviation indicates that the observations in the sample tend to be very close to the mean; a high standard deviation indicates that the observations in the sample are spread out over a large range of values.
Statistical significance	Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between the groups. The WWC labels a finding statistically significant if the likelihood that the difference is due to chance is less than 5% ($p < .05$).
Substantively important	A substantively important finding is one that has an effect size of 0.25 or greater, regardless of statistical significance.

Please see the [WWC Procedures and Standards Handbook \(version 3.0\)](#) for additional details.