



WWC Intervention Report

A summary of findings from a systematic review of the evidence



Supporting Postsecondary Success

July 2016

First Year Experience Courses

Program Description¹

Many students, even those who are academically well prepared, arrive to college without the strong study skills and coping strategies required to effectively navigate the learning and social environments in higher education. *First year experience courses*, often referred to as college success courses or freshman seminars, are courses for first-year students in 2-year and 4-year colleges. As reported by the National Resource Center for The First-Year Experience and Students in Transition, *first year experience courses* are required for all first-year students at approximately 52% of 4-year institutions.² Furthermore, 87% of 4-year institutions that offer freshman seminars do so for academic credit.³ While they are not required for all students, *first year experience courses* are frequently required for special populations (e.g., academically underprepared students, students in specific majors, and students taking remedial courses). The general goals of *first year experience courses* are to support the academic performance, social development, persistence, and degree completion of college students.⁴ Additionally, *first year experience courses* often aim to increase students' sense of campus community and connection to their institutions, while giving students the opportunity to interact with faculty and peers.⁵ While courses vary in terms of content and focus, most *first year experience courses* are designed to introduce students to “campus resources, time management, study skills, career planning, cultural diversity, and student development issues.”⁶

Research⁷

The What Works Clearinghouse (WWC) identified four studies of *first year experience courses* that both fall within the scope of the Supporting Postsecondary Success topic area and meet WWC group design standards. No studies meet WWC group design standards without reservations, and four studies meet WWC group design standards with reservations. Together, these studies included 12,091 freshman college students in four colleges across the United States.

The WWC considers the extent of evidence for *first year experience courses* for freshman college students to be medium to large for one outcome domain—credit accumulation. The WWC considers the extent of evidence for *first year experience courses* for freshman college students to be small for two outcome domains—degree attainment (college) and general academic achievement (college). There were no studies that meet WWC design standards in the other domains specified as eligible in the review protocol, specifically college access and enrollment, attendance, and labor market outcomes. This intervention report does not report on the effectiveness of *first year experience courses* for those three domains. (See the Effectiveness Summary on p. 6 for more details of effectiveness by domain.)

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This intervention report presents findings from a systematic review of *first year experience courses* conducted using the WWC Procedures and Standards Handbook, version 3.0, and the Supporting Postsecondary Success review protocol, version 3.0.

Effectiveness

First year experience courses were found to have potentially positive effects on credit accumulation, degree attainment (college), and general academic achievement (college) for freshman college students.

Table 1. Summary of findings⁸

Outcome domain	Rating of effectiveness	Improvement index (percentile points)		Number of studies	Number of students	Extent of evidence
		Average	Range			
Credit accumulation	Potentially positive effects	+12	+4 to +14	3	11,455	Medium to large
Degree attainment (college)	Potentially positive effects	+9	na	1	8,290	Small
General academic achievement (college)	Potentially positive effects	+6	na	1	1,869	Small

na = not applicable

Program Information

Background

The first freshman seminar was offered in the late 1880s. After experiencing a lull in popularity, the seminar was reintroduced in the 1970s for three primary reasons:⁹ (a) an increased number of diverse students were coming to college unprepared for the academic and social challenges; (b) entering students had to sift through a vast number of new issues (such as curricular choices) upon matriculation because the enterprise of higher education was more complex; and (c) institutions realized that their reliance on peers to provide support was insufficient for students' success. In the early 1990s, Barefoot and Fidler¹⁰ identified five types of *first year experience courses* that still thrive on college campuses today. These are extended orientation, academic seminars with uniform content, academic seminars with variable content, introduction to a discipline or professional seminars, and basic study skills seminars. More recently, hybrid versions of the courses, which include elements from more than one type, have also been offered.

The most common type of course is the extended orientation seminar. Its primary goal is to support student success during the freshman year. The most frequent topics associated with these seminars are study skills, campus resources, time management, career exploration, campus policies, and academic advising. Academic seminars with uniform or variable content are increasing in number.¹¹ The content of these seminars can be uniform (i.e., each section has a set curriculum) or variable (i.e., different sections are built around a specific topic and/or the expertise of the faculty member). All academic seminars also focus on developing students' writing, critical thinking, and study skills. Seminars for introducing students to a discipline or profession focus on preparing students for the demands of their major and eventual profession. Basic study skills seminars are more circumscribed and revolve around helping students prepare for the academic rigors of college by focusing on building skills such as time management and note-taking.¹²

For information about seminars intended for students taking remedial courses, please refer to the intervention report of *first year experience courses* for students in developmental education.¹³

Program details

Three of the *first year experience courses* reviewed in this report were of the extended orientation type (Clouse, 2012; Shoemaker, 1995; Wilkerson, 2009). Course topics varied, but all were designed to ease students' transition to college and provide an extended orientation to the respective colleges. One of the *first year experience courses* reviewed in this report was academic with variable content (Jamelske, 2009). The sections of this course were embedded in a number of core courses at the university (e.g., biology, economics, psychology) but also included a number of elements common in extended orientation.

Cost

Jamelske (2009) indicated that the fall 2006 budget for the first year experience program at the medium-sized midwestern university was \$237,700. During the fall semester of 2006, the university offered 85 variable-content academic seminars, which enrolled about 20 students each. The *first year experience courses* were taught by 62 different instructors that semester. No information was provided regarding what expenses were included in this budget figure. No other studies included cost information.

Research Summary

The WWC identified 97 eligible studies that investigated the effects of *first year experience courses* for first-year college students. An additional 176 studies were identified but do not meet WWC eligibility criteria for review in this topic area. Citations for all 273 studies are in the References section, which begins on p. 8.

The WWC reviewed 97 eligible studies against group design standards.

No studies are randomized controlled trials that meet WWC group design standards without reservations, and four studies (Clouse, 2012; Jamelske, 2009; Shoemaker, 1995; Wilkerson, 2008) use quasi-experimental designs that meet WWC group design standards with reservations. Those four studies are summarized in this report. Ninety-three studies do not meet WWC group design standards.

Table 2. Scope of reviewed research

Grades	Postsecondary
Delivery method	Whole class
Program type	Practice

Summary of studies meeting WWC group design standards without reservations

No studies of *first year experience courses* met WWC group design standards without reservations.

Summary of studies meeting WWC group design standards with reservations

Clouse (2012) conducted a quasi-experimental evaluation of a non-compulsory *first year experience course* at a large public university in the western United States. The intervention group included 3,754 first-time, first-semester freshmen who enrolled in the credit-bearing seminar between 1995 and 2005. The *first year experience course* was designed to help freshmen at the university transition from high school to college and included topics in the following three areas: academic, personal, and community. Academic components included study, communication, and technology skills; personal components included a focus on developing personal goals and responsibilities; and community components focused on developing relationships and learning opportunities outside the classroom. Each section generally included 15 or fewer students and was taught by one of several faculty members and one junior teaching assistant. The comparison condition was comprised of 4,536 first-time, first-semester freshmen at the same university who did not enroll in the *first year experience course*. These students had access to the typical college resources. Baseline equivalence for this study's outcomes was established using data provided by the author to the WWC.

Jamelske (2009) conducted a quasi-experimental evaluation of a *first year experience course* at a medium-sized public university in the midwestern United States. The intervention group consisted of 1,456 first-time freshmen who enrolled in one of 85 different first year experience sections in the fall of 2006. The university in the study offers 100 different course sections, and a majority of first-time freshmen (> 85%) enrolls in one of these sections. The *first year experience courses* are linked to a specific course topic (e.g., biology, economics, psychology), are capped at 20 students, and include small group peer activities, close work with a faculty member, and an upper-classman as a student peer mentor. The program goals are to introduce students to core course content, enhance academic skills (including content knowledge, study skills, time management, etc.), strengthen connections to the university, engage students in out-of-class activities, and enhance student accountability. The comparison condition was comprised of 413 first-time freshmen who did not enroll in the *first year experience course*. These students enrolled in courses typical of first-year students at the university.

Shoemaker (1995) conducted a quasi-experimental evaluation of a *first year experience course* at the University of California, Irvine campus in 1993. The intervention group consisted of 34 students who enrolled in the two-credit course called "The University Experience: Issues and Options for Unaffiliated/Undecided Students" in the fall quarter of 1993. The course met twice weekly and included guest lectures from faculty and professional staff, discussion, and assignments designed to promote a successful transition to college. Course topics covered library skills,

interacting with faculty, university policies and procedures, learning styles, goal setting, cultural diversity, and stress and time management skills. The comparison condition included 602 unaffiliated or undeclared freshmen who did not enroll in the seminar.

Wilkerson (2008) conducted a quasi-experimental study of a *first year experience course* at the University of Texas at San Antonio. The intervention group was comprised of 133 first-time freshmen who enrolled in a *first year experience course* at the university from 2002 to 2004. The course was a core three-credit class for students in the College of Social and Behavioral Sciences. No other details about the content of the course were provided by the author. The comparison condition was comprised of 1,163 freshman students who did not enroll in the *first year experience course*.

Effectiveness Summary

The WWC review of *first year experience courses* for the Supporting Postsecondary Success topic area includes outcomes in six domains: credit accumulation, degree attainment (college), general academic achievement (college), college access and enrollment, college attendance, and labor market. The four studies of *first year experience courses* that meet WWC group design standards reported findings in three of the six domains: (a) credit accumulation, (b) degree attainment (college), and (c) general academic achievement (college). The findings below present the authors’ estimates and WWC-calculated estimates of the size and statistical significance of the effects of *first year experience courses* on freshman college students. For a more detailed description of the rating of effectiveness and extent of evidence criteria, see the WWC Rating Criteria on p. 39.

Summary of effectiveness for the credit accumulation domain

Table 3. Rating of effectiveness and extent of evidence for the credit accumulation domain

Rating of effectiveness	Criteria met
<p>Potentially positive effects <i>Evidence of a positive effect with no overriding contrary evidence.</i></p>	<p>In two of the three studies that reported findings, the estimated impact of the intervention on outcomes in the <i>credit accumulation</i> domain was positive and statistically significant. In the remaining study, there was no statistically significant impact of the intervention on the single outcome in the <i>credit accumulation</i> domain.</p>
Extent of evidence	Criteria met
<p>Medium to large</p>	<p>Two studies that included 9,586 students in two universities reported evidence of effectiveness in the <i>credit accumulation</i> domain.</p>

Three studies that meet WWC group design standards with reservations reported findings in the credit accumulation domain.

Clouse (2012) reported on students’ persistence at the university to the third semester (i.e., whether students completed their freshman year). The author reported, and the WWC confirmed, that there was a positive and statistically significant difference in retention between students who participated in the *first year experience course* and those who did not. The WWC characterizes this finding as a statistically significant positive effect.

Jamelske (2009) reported on students’ retention at the university after 1 year. The author reported that there was no statistically significant difference between *first year experience course* participants and comparison participants on retention. The WWC characterizes this finding as an indeterminate effect.

Wilkerson (2009) reported on students’ retention at the university to the second year (i.e., whether students returned for their second year fall semester). The author reported, and the WWC confirmed, that there was a positive and statistically significant difference between *first year experience course* participants and comparison participants on retention. The WWC characterizes this finding as a statistically significant positive effect.

Thus, for the credit accumulation domain, two studies that met WWC group design standards with reservations showed statistically significant positive effects, while one study that met WWC group design standards with reservations showed an indeterminate effect. This results in a rating of potentially positive effects, with a medium to large extent of evidence.

Summary of effectiveness for the degree attainment (college) domain

Table 4. Rating of effectiveness and extent of evidence for the degree attainment (college) domain

Rating of effectiveness	Criteria met
Potentially positive effects <i>Evidence of a positive effect with no overriding contrary evidence.</i>	In the one study that reported findings, the estimated impact of the intervention on outcomes in the <i>degree attainment (college)</i> domain was positive and statistically significant.
Extent of evidence	Criteria met
Small	One study that included 8,290 students in one university reported evidence of effectiveness in the <i>degree attainment (college)</i> domain.

One study that meets WWC group design standards with reservations reported findings in the degree attainment (college) domain.

Clouse (2012) reported on students’ attainment of an undergraduate degree at their home institution and at any US college participating in the National Student Clearinghouse Data Program. The author reported, and the WWC confirmed, that there was a statistically significant difference between *first year experience course* participants and comparison participants on undergraduate degree attainment at the home institution and a statistically significant difference between the two groups in undergraduate degree attainment at any US college. The WWC characterizes the mean effect across the two measures in this domain as a statistically significant positive effect.

Thus, for the degree attainment (college) domain, one study showed a statistically significant positive effect. This results in a rating of potentially positive effects, with a small extent of evidence.

Summary of effectiveness for the general academic achievement (college) domain

Table 5. Rating of effectiveness and extent of evidence for the general academic achievement (college) domain

Rating of effectiveness	Criteria met
Potentially positive effects <i>Evidence of a positive effect with no overriding contrary evidence.</i>	In the one study that reported findings, the estimated impact of the intervention on outcomes in the <i>general academic achievement (college)</i> domain was positive and statistically significant.
Extent of evidence	Criteria met
Small	One study that included 1,869 students in one university reported evidence of effectiveness in the <i>general academic achievement (college)</i> domain.

Two studies that meet WWC group design standards with reservations reported findings in the general academic achievement (college) domain.

Jamelske (2009) reported on students’ cumulative grade point average after 1 year. The author reported, and the WWC confirmed, that there was a statistically significant difference between *first year experience course* participants and comparison participants on cumulative grade point average. The WWC characterizes this finding as a statistically significant positive effect.

Shoemaker (1995) reported on students’ grade point average for the spring quarter of 1994 for the students who participated in the *first year experience course* in the fall quarter of 1993 and the students who did not participate in the seminar. The statistical significance and the effect size for the comparison that meets WWC group design standards with reservations could not be determined from the information reported by the author.

Thus, for the general academic achievement (college) domain, one study showed a statistically significant positive effect. This results in a rating of potentially positive effects, with a small extent of evidence.

References

Studies that meet WWC group design standards without reservations

None.

Studies that meet WWC group design standards with reservations

Clouse, W. A. (2012). *The effects of non-compulsory freshman seminar and core curriculum completion ratios on post-secondary persistence and baccalaureate degree attainment* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3523633)

Jamelske, E. (2009). Measuring the impact of a university first-year experience program on student GPA and retention. *Higher Education*, 57(3), 373–391.

Shoemaker, J. S. (1995, April). *Evaluating the effectiveness of extended orientation for new, undecided freshmen*. Paper presented at the meeting of the American Educational Research Association, San Francisco, CA. <http://files.eric.ed.gov/fulltext/ED384303.pdf>.

Wilkerson, S. L. (2008). *An empirical analysis of factors that influence the first year to second year retention of students at one large, Hispanic Serving Institution (HSI)* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3333787)

Studies that do not meet WWC group design standards

Adams, C. L. (2008). *Effectiveness of the first-year experience program at the University of Northern Colorado in supporting student transition and success: An application of Tinto's theory of college student withdrawal* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3348780) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

Albitz, F. L. (2001). *The influence of a student-athlete first-year success course on college retention* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3037826) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

Bai, H., & Pan, W. (2009–2010). A multilevel approach to assessing the interaction effects on college student retention. *Journal of College Student Retention: Research, Theory & Practice*, 11(2), 287–301. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

Barton, A., & Donahue, C. (2009). Multiple assessments of a first-year seminar pilot. *The Journal of General Education*, 58(4), 259–278. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

Beckwith, M. M. (2006). *The impact of a freshman seminar on the success of first term students at a for-profit postsecondary institution* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3226111) The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.

Belcheir, M. J. (1997). *An evaluation of the early impacts of the cluster program and first year experience seminar on new freshmen* (Research Report 97-02). Boise, ID: Boise State University. <http://files.eric.ed.gov/fulltext/ED409769.pdf>. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

Bender, D. S. (2001). Effects of study skills programs on the academic behavior of college students. *Journal of College Reading and Learning*, 31(2), 209–216. The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.

- Bitz, K. (2011). *Implementation of a first-year seminar: Retention and student views of advising and engagement at a small midwestern university* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3515489) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Boudreau, C. A., & Kromrey, J. D. (1994). A longitudinal study of the retention and academic performance of participants in freshman orientation course. *Journal of College Student Development*, 35(6), 444–449. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Brown, M. S. (2008). *The impact of a minority orientation program on first-year African American students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3305455) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Brunelle-Joiner, K. M. (1999). *Effects of an extended orientation program on personal resiliency and adjustment to college as it relates to academic performance and retention* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9919688) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Burgette, J. E., & Magun-Jackson, S. (2008–2009). Freshman orientation, persistence, and achievement: A longitudinal analysis. *Journal of College Student Retention*, 10(3), 235–263. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Cambridge-Williams, T., Winsler, A., Kitsantas, A., & Bernard, E. (2013–2014). University 100 orientation courses and living-learning communities boost academic retention and graduation via enhanced self-efficacy and self-regulated learning. *Journal of College Student Retention*, 15(2), 243–268. doi:10.2190/CS.15.2.f The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Cavote, S. E. (2001). *A comparative analysis of academic performance, retention, and self-reported commitment differences between first year experience and non-first year experience course completers* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3042746) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Cho, S.-W., & Karp, M. M. (2013). Student success courses in the community college: Early enrollment and educational outcomes. *Community College Review*, 41(1), 86–103. doi:10.1177/0091552112472227 The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Clark, M. H., & Cundiff, N. L. (2011). Assessing the effectiveness of a college freshman seminar using propensity score adjustments. *Research in Higher Education*, 52, 616–639. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Connolly, S. L. (2001). *The impact of a freshman year experience course on social integration for female college students: An exploratory study* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3021885) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Craig, K. L. (1994). *Student retention and academic performance: Relationship to a freshman seminar/student success course* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9521941) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

- Dale, P. M. (1995). *A successful college retention program*. West Lafayette, IN: Purdue University. <http://files.eric.ed.gov/fulltext/ED380017.pdf>. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Davis, K. H. (2012). *Longitudinal study of student success at the University of South Alabama* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 1509407) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Davis-Underwood, M., & Lee, J. A. (1994). An evaluation of the University of North Carolina at Charlotte freshman seminar. *Journal of College Student Development*, 35(6), 491–492. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Derby, D. C., & Smith, T. (2004). An orientation course and community college retention. *Community College Journal of Research & Practice*, 28(9), 763–773. doi:10.1080/10668920390254771 The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Douthett, T. A. (1998). *Policy analysis of Bowling Green State University's freshman seminar course* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9913577) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Emmerson, J. E. (2009). *Leading them to water: A study of the efficacy of a Mandatory Placement Project in first-year academic courses at a community college* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3360341) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
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- Fidler, P. P., & Moore, P. S. (1996). A comparison of effects of campus residence and freshman seminar attendance on freshman dropout rates. *Journal of the Freshman Year Experience*, 8(2), 7–16. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Friedman, D. B., & Alexander, J. S. (2007). Investigating a first-year seminar as an anchor course in learning communities. *Journal of the First-Year Experience and Students in Transition*, 19(1), 63–74. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Friedman, D. B., & Marsh, E. G. (2009). What type of first-year seminar is most effective? A comparison of thematic seminars and college transition/success seminars. *Journal of the Freshman Year Experience and Students in Transition*, 21(1), 29–42. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Fry, M. K. (2006). *The relationship of admission type and freshman seminar participation to retention and academic success* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3241822) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Glass, C. J., & Garrett, M. S. (1995). Student participation in a college orientation course, retention, and grade point average. *Community College Journal of Research and Practice*, 19(2), 117–132. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

- Gonzalez, J. M. (2000). Community colleges: Open door or revolving door? Intervention strategies to reduce the number of probationary students and increase student persistence (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9957848) <http://files.eric.ed.gov/fulltext/ED470477.pdf> The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.
- Green, R. M. L. (1995). *College success: An evaluation of a freshman orientation course for learning-disabled and non-learning-disabled students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9534585) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Hall, R. A. (2007). *Freshman experience at a community college: Its relationship to academic performance and retention* (Unpublished doctoral dissertation). Liberty University, Lynchburg, VA. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Harroun, D. G. (2005). *An assessment of the first-year experience seminar as a factor of student retention* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3187982) The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.
- Helbig, T. L. (2004). *Beating the odds: A survival analysis of the effects of freshman seminar participation on university student persistence, controlling for academic achievement, financial assistance and social integration factors* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3158248) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
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- Hendel, D. D. (2001, April). *The relative contribution of participating in a first-year seminar on student satisfaction and retention into the sophomore year*. Paper presented at the annual meeting of the American Educational Research Association, Seattle, WA. <http://files.eric.ed.gov/fulltext/ED453724.pdf>. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Additional source:**
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- Horstman, W. A. (2004). *A quantitative comparison of two different college success course formats on freshmen at a four-year college* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3160094) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

- House, J. D., & Kuchynka, S. J. (1997). The effects of a freshman orientation course on the achievement of health sciences students. *Journal of College Student Development*, 38(5), 540–542. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Isaacson, M. L. (2008). *Mattering and persistence relative to a first-year seminar for residential students at a Great Plains university* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3333958) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Johnson, M. H. (2012). *An analysis of retention factors in undergraduate degree programs in science, technology, engineering, and mathematics* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3518473) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Kaplan, N. S. (2000). *The impact of a College Experience 101 course on student retention, academic success, and academic performance for at-risk freshmen at St. John's University* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9967703) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Keenan, K., & Gabovitch, R. (1995, October). *Evaluating the impact of a freshman seminar program on student development and retention*. Paper presented at the meeting of the North East Association for Institutional Research, Burlington, VT. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Keup, J. R. (2005–2006). The impact of curricular interventions on intended second-year re-enrollment. *Journal of College Student Retention*, 7(1-2), 61–89. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Klein, B. J. (2013). *Building student connections: A successful first-year experience course and community college retention* (Unpublished doctoral dissertation). Iowa State University, Ames. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Klimovich, D. E. (1994). *Effect of academic support services on retention of college freshmen: A study of persisters and nonpersisters* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9509750) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Klinkenberg, L. B. (2013). *A quantitative analysis of a mandatory student success course on first-time full-time student college academic progress and persistence* (Unpublished doctoral dissertation). Iowa State University, Ames. The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.
- Kolb, M. M. (2005). *The relationship between state appropriations and student retention at public, four-year institutions of higher education* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3159880) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Kronenberger, J. L. (2012). *Student success: The effects of a community college first-year course* (Unpublished doctoral dissertation). University of Dayton, OH. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

- Lang, D. J. (2007). The impact of a first-year experience course on the academic performance, persistence, and graduation rates of first-semester college students at a public research university. *Journal of the First-Year Experience and Students in Transition*, 19(1), 9–25. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Lehmuller, P. A. (2010). *The effect of multiple interventions on freshman college student engagement and retention* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3439267) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Magun-Jackson, S. (1996). *The relationship of a freshman orientation course to minority and non-minority retention at a large urban university* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9705696) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Maw, J. A. (2005). *The facilitation of student success: Incorporating affective, behavioural, and cognitive factors into first-year experience programs* (Unpublished doctoral dissertation). University of Manitoba, Winnipeg. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- McGrath, S. M. (2011). *Success course intervention for students on academic probation in science majors: A longitudinal quantitative examination of the treatment effects on performance, persistence, and graduation* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3453501) The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.
- McGrath, S. M., & Burd, G. D. (2012). A success course for freshmen on academic probation: Persistence and graduation outcomes. *NACADA Journal*, 32(1), 43–52. The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.
- McMillan-Haron, V. (2003). *The impact of freshman success courses on freshman-to-sophomore persistence and academic achievement at WICHE Urban University and College* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3091806) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Merica, M. M. (2014). *Applying propensity score analysis in the evaluation of a first-year seminar program* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3621124) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Micceri, T., & Wajeer, E. (1999, June). *Evidence supporting a university experience course's efficacy at a metropolitan university, and associated effective processes*. Paper presented at the meeting of the Association for Institutional Research, Seattle, WA. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Miller, J. W., & Janz, J. C. (2007). The retention impact of a first-year seminar on students with varying pre-college academic performance. *Journal of the First-Year Experience and Students in Transition*, 19(1), 47–62. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

Additional source:

- Janz, J. C. (2004). *The retention impact of the freshman seminar on students with varying pre-college academic performance* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3141095)
- Minchella, D. J., Yazvac, C. W., Fodrea, R. A., & Ball, G. (2002). Biology resource seminar: First aid for the first year. *The American Biology Teacher*, 64(5), 352–357. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Nguyen, Q. T. H. (2013). *Modeling completion at a community college* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 1523327) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Odell, P. M. (1996). Avenues to success in college: A non-credit eight-week freshman seminar. *Journal of the Freshman Year Experience*, 8(2), 79–92. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Odom, J. E. (1994). *Encouraging growth in moral judgement: A cognitive-developmentally based first year orientation program* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9425483) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Outlaw, J. S. (2008). *Academic outcomes of academic success programs* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3319077) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Owen, J. (2012). *Predictors of student degree attainment at a four-year, mid-sized, public university in the Great Plains* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3507929) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Pietro Paolo, P. A. (1994). *The effects of an academic intervention on persistence of science/technology majors at a community college* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9522551) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Potts, G. T., & Schultz, B. L. (2008). The freshman seminar and academic success of at-risk students. *College Student Journal*, 42(2), 647–658. The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.
- Rosa, K. J. (1997). *Evaluation of a commercial student retention program at Topeka Technical College* (Unpublished doctoral dissertation). Nova Southeastern University, Fort Lauderdale, FL. The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.
- Ryan, M. P., & Glenn, P. A. (2004). What do first-year students need most: Learning strategies instruction or academic socialization? *Journal of College Reading and Learning*, 34(2), 4–28. <http://files.eric.ed.gov/fulltext/EJ690847.pdf>. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Schnell, C. A., & Doetkott, C. D. (2002–2003). First year seminars produce long-term impact. *Journal of College Student Retention*, 4(4), 377–391. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

- Schnell, C. A. J. (2000). *First year seminar effectiveness: Success, retention, and subsequent graduation of college freshmen* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9961010) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Additional source:**
- Schnell, C. A., Louis, K. S., & Doetkott, C. (2003). The first-year seminar as a means of improving college graduation rates. *Journal of the First-Year Experience and Students in Transition*, 15(1), 53–76.
- Sheldon, C. Q., & Durdella, N. R. (2009). *Examining the relationship between freshman seminars, student achievement, and persistence: A study of first-time Santa Monica College students enrolled in Counseling 20*. Unpublished manuscript, Santa Monica College, CA. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Sidle, M. W., & McReynolds, J. (1999). The freshman year experience: Student retention and student success. *NASPA Journal*, 36(4), 288–300. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Simmons, G., Wallins, J., & George, A. (1995). The effects of a freshman seminar on at-risk under-, over-, and low achievers. *NACADA Journal*, 15(1), 8–14. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Starke, M. C., Harth, M., & Sirianni, F. (2001). Retention, bonding, and academic achievement: Success of a first-year seminar. *Journal of the First-Year Experience and Students in Transition*, 13(2), 7–35. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Stewart, B. W. (1997). *The effects of a freshman seminar course on student retention, academic success, and academic performance* (Unpublished doctoral dissertation). Mississippi State University, Starkville. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Stovall, M. L. (1999). *Relationships between participation in a community college student success course and academic performance and persistence* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9945007) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Strayhorn, T. L. (2009). An examination of the impact of first-year seminars on correlates of college student retention. *Journal of the First-Year Experience and Students in Transition*, 21(1), 9–27. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Sullivan, C. J. (2010). *Academic self-regulation, academic performance, and college adjustment: What is the first-year experience for college students?* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3422866) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Summerlee, A., & Murray, J. (2010). The impact of enquiry-based learning on academic performance and student engagement. *Canadian Journal of Higher Education*, 40(2), 78–94. <http://files.eric.ed.gov/fulltext/EJ904276.pdf>. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Tampke, D. R., & Durodoye, R. (2013). Improving academic success for undecided students: A first-year seminar/ learning community approach [Study 1: FYE vs. comparison]. *Learning Communities Research and Practice*,

- 1(2), Article 3. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Tampke, D. R., & Durodoye, R. (2013). Improving academic success for undecided students: A first-year seminar/ learning community approach [Study 2: FYE+LC vs. comparison]. *Learning Communities Research and Practice*, 1(2), Article 3. [Study 2: FYE+LC vs. comparison] The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Tebbe, C. M. (2007). *The effectiveness of a learning strategies course on college student-athletes' and non-athletes' adjustment, academic performance, and retention after the first two years of college* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3300977) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- teDuits, D. J. (2008). *The effects of a first-year academic support program on first time in college freshmen* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3289810) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Thachil, S. A. (2013). *Factors that relate to the persistence of first-generation undergraduate students in a public university* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3585038) The study does not meet WWC group design standards because the measures of effectiveness could not be attributed solely to the intervention.
- Vancil, J. J. (2001). *The development, design, course content, and student outcomes of a freshman orientation seminar* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 1406273) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Walleri, R. D., Stoker, C. L., & Stoering, J. (1997, May). *Building a community of learning: A comprehensive approach to assisting at-risk students*. Paper presented at the meeting of the Association for Institutional Research, Orlando, FL. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Walls, L. L. (2000). *The impact of a first-year orientation course on at-risk students at a large, public research university* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9988482) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Williford, A. M., Chapman, L. C., & Kahrig, T. (2000–2001). The university experience course: A longitudinal study of student performance, retention, and graduation. *Journal of College Student Retention: Research, Theory & Practice*, 2(4), 327–340. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Yale, A. A. (1999). *The impact of a one-credit freshman seminar on student retention, academic progress, and academic and social integration, while controlling for the volunteer effect* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9957798) The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.
- Yockey, F. A., & George, A. A. (1998). The effects of a freshman seminar paired with supplemental instruction. *Journal of the First-Year Experience and Students in Transition*, 10(2), 57–76. The study does not meet WWC group design standards because equivalence of the analytic intervention and comparison groups prior to the intervention was necessary and not demonstrated.

Studies that are ineligible for review using the Supporting Postsecondary Success Evidence Review Protocol

- Abernathy, L. T. (1997). *The impact of variations in the psychosocial orientation of first-year college students on academic and social integration* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 1388088) The study is ineligible for review because it is out of scope of the protocol.
- Abts, M. (2012). *Effectiveness of online community college success courses* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3502982) The study is ineligible for review because it does not use an eligible design.
- Aldredge, T. W. (1997). *The impact of a college success course on students' long-term academic persistence* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9821953) The study is ineligible for review because it is out of scope of the protocol.
- Anderson, E. G. (2008). *Freshmen retention: The impact of a first year experience program on student satisfaction and academic performance* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3348688) The study is ineligible for review because it does not use an eligible design.
- Andrade, M. S. (2006). A first-year seminar for international students. *Journal of The First-Year Experience and Students in Transition*, 18(1), 85–103. The study is ineligible for review because it does not use an eligible design.
- Andrade, M. S. (2008–2009). The value of a first-year seminar: International students' insights in retrospect. *Journal of College Student Retention: Research, Theory & Practice*, 10(4), 483–506. The study is ineligible for review because it does not use an eligible design.
- Barefoot, B. O., Warnock, C. L., Dickinson, M. P., Richardson, S. E., & Roberts, M. R. (1998). *Exploring the evidence: Reporting outcomes of first-year seminars. The first-year experience, vol. 2* (Monograph Series No. 25). Columbia: National Resource Center for the First-Year Experience, University of South Carolina. The study is ineligible for review because it does not use an eligible design.
- Barnes, J. (2012). The first-year experience impact on student success in developmental education. *Journal of Applied Research in the Community College*, 20(1), 27–35. The study is ineligible for review because it does not use a sample aligned with the protocol.
- Bement, S. A. (2010). *The effects of first-year experience course on students' grades in remedial english and mathematics courses* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3433121) The study is ineligible for review because it does not use a sample aligned with the protocol.
- Beran, P. B. (1996). *A comparison of the effects of major and interest specific orientation courses versus generic orientation courses* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9718294) The study is ineligible for review because it does not use an eligible design.
- Berkovitz, R. A., & O'Quin, K. (2006–2007). Predictors of graduation of readmitted "at risk" college students. *Journal of College Student Retention: Research, Theory & Practice*, 8(2), 199–214. The study is ineligible for review because it is out of scope of the protocol.
- Bianchino, E. G. G. (1994). *The impact of a community college freshman orientation program on student persistence rate and cumulative college grade point average* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3426145) The study is ineligible for review because it does not use an eligible design.
- Borden, V. M. H., Burton, K. L., Evenbeck, S. E., & Williams, G. A. (1997). The impact of academic support programs on student performance and persistence. *Research Brief*, 4(4), 1–16. The study is ineligible for review because it is out of scope of the protocol.
- Boroch, D., & Hope, L. (2009). *Effective practices for promoting the transition of high school students to college: A review of literature with implications for California Community College practitioners*. Sacramento: Center for Student Success, Research and Planning Group of the California Community Colleges. <http://files.eric.ed.gov/fulltext/ED519286.pdf>. The study is ineligible for review because it is not a primary analysis of the effect of an intervention.

- Bradfute, R. W. (2011). *Community college counseling and mathematics study skills: Retention and success* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3472675) The study is ineligible for review because it does not use a sample aligned with the protocol.
- Brennan, J. B. (2008). *College and career effectiveness skills and their impact on student success and learning* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3338142) The study is ineligible for review because it does not use an eligible design.
- Brown, L. J. E. (1994). *Interventions for academic success of African American freshman college students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9519872) The study is ineligible for review because it is out of scope of the protocol.
- Brown-Durham, G. (2006). *The effectiveness of the BICUM Study-Reading Instructional Strategy on reading comprehension and self-efficacy levels of first-year, first-semester students enrolled in a three-credit college developmental reading and study skills course* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3221500) The study is ineligible for review because it does not use a sample aligned with the protocol.
- Buchanan, S. R. (1993). University 101 for high school students. *Journal of the Freshman Year Experience*, 5(2), 49–68. The study is ineligible for review because it does not use a sample aligned with the protocol.
- Burgert, J. C. (1999). *The role of a study skills course on improving the academic success of “at risk” college freshmen* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9928055) The study is ineligible for review because it is out of scope of the protocol.
- Burley, H. (1994, May). *Persistence: A meta-analysis of college developmental studies programs*. Paper presented at the meeting of the Association for Institutional Research, New Orleans, LA. The study is ineligible for review because it is not a primary analysis of the effect of an intervention.
- Candia, P. P. (1998). *An investigation of the effects of orientation and study skills courses on retention and grade point average of first time in college students in a community college in south Texas* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9915214) The study is ineligible for review because it does not use a sample aligned with the protocol.
- Cardin, L. H. L. (2001). *Effects of individualized web-based instructional modules on the strategic learning strategies of students enrolled in a university study skills course* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3033770) The study is ineligible for review because it does not use an eligible design.
- Carraway, J. D. (2006). *High school to college transition programs* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3208836) The study is ineligible for review because it does not use an eligible design.
- Chasteen, B. C. (2005). *A new student orientation program: Its relationship to retention and academic performance* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3189905) The study is ineligible for review because it is out of scope of the protocol.
- Cone, A. L. (1991). Sophomore academic retention associated with a freshman study skills and college adjustment course. *Psychological Reports*, 69, 312–314. The study is ineligible for review because it is out of scope of the protocol.
- Crissman, J. L. (1999). *The impact of clustering freshman seminars with English composition courses on new students’ grade point average and retention rates* (Unpublished doctoral dissertation). The Pennsylvania State University, State College. The study is ineligible for review because it does not use an eligible design.
- Crissman, J. L. (2001–2002). The impact of clustering first year seminars with English composition courses on new students’ retention rates. *Journal of College Student Retention*, 3(2), 137–152. The study is ineligible for review because it does not use an eligible design.

- Crowson, M. L. (2004). *Effectiveness of retention strategies for high-risk community college students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3143577) The study is ineligible for review because it is out of scope of the protocol.
- Davig, W. B., & Spain, J. W. (2003–2004). Impact on freshman retention of orientation course content: Proposed persistence model. *Journal of College Student Retention: Research, Theory, & Practice*, 5(3), 305–323. The study is ineligible for review because it does not use an eligible design.
- Davis, D. (1997). *The effects of a study-skills course on the academic self-efficacy of at-risk freshmen college students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9806263) The study does not include an outcome within a domain specified in the protocol.
- Davis, J. M. (2013). *The impact of orientation programming on student success outcomes at a rural community college* (Unpublished master's thesis). Eastern Kentucky University, Richmond. The study is ineligible for review because it is out of scope of the protocol.
- Dery, B. (2009). *An examination of intervention programs for students on academic probation* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 1463461) The study is ineligible for review because it does not use an eligible design.
- Dimon, M. G. (1994). *The effect of reading/study skills courses on high-risk students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9413615) The study is ineligible for review because it is out of scope of the protocol.
- Dittmar, D. M. (2000). *Freshman to sophomore retention, academic performance, and progress: The impact of the admission process and interventions in a school of management* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9961586) The study is ineligible for review because it is out of scope of the protocol.
- Driskill, W. C. (1998). *Effectiveness of the 4MAT instructional design on personal and cognitive attitudes of students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9905723) The study is ineligible for review because it does not use an eligible design.
- Dunn, J. R., Hains, B. J., & Epps, R. B. (2013). Stakeholders' perspectives: Students' perceptions of retention efforts in a college of agriculture. *NACTA Journal*, 57(1), 2–9. The study is ineligible for review because it does not use an eligible design.
- Durkin, K., & Main, A. (2002). Discipline-based study skills support for first-year undergraduate students. *Active Learning in Higher Education*, 3(1), 24–39. doi:10.1177/1469787402003001003 The study is ineligible for review because it does not use an eligible design.
- Dyson, S. L. (1995). *The effectiveness of mentor supplemented freshman orientation: A self-concept enhancing retention intervention model* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9605349) The study is ineligible for review because it does not use an eligible design.
- Eberling, D. J. (1998). *A comparison of the effectiveness of study strategies instruction with community college students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9828314) The study is ineligible for review because it is out of scope of the protocol.
- Ellison, H. Y. (2002). *The efficacy of the Ellison model as a retention initiative for first semester freshmen* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3049781) The study is ineligible for review because it is out of scope of the protocol.
- Ellis-O'Quinn, A. (2011). *An ex post facto study of first-year student orientation as an indicator of student success at a community college* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3459677) The study is ineligible for review because it is out of scope of the protocol.

Additional source:

- Ellis-O'Quinn, A. (2012). An ex post facto study of first-year student orientation as an indicator of student success at a community college. *Inquiry*, 17(1), 51–57.
- Farmer, P. M. K. (2002). *In Idaho: Design and evaluation of a student orientation program for entering freshmen students at the University of Idaho utilizing wilderness experience* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3076169) The study is ineligible for review because it is out of scope of the protocol.
- Fecas, V. S. (1996). *Effects of participation in Carolina Camp at the University of South Carolina for 1992 and 1993* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9637114) The study is ineligible for review because it is out of scope of the protocol.
- Fidler, P. P. (1991). Relationship of freshman orientation seminars to sophomore return rates. *Journal of the Freshman Year Experience*, 3(1), 7–38. The study is ineligible for review because it is out of scope of the protocol.
- Fillenworth, L. I. (1995). *Using reciprocal teaching to help at-risk college freshmen study and read* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9526421) The study is ineligible for review because it is out of scope of the protocol.
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- Tharp, T. J. (2009). *Learning communities for university students at-risk of school failure: Can they make a difference?* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3389640) The study is ineligible for review because it does not use a sample aligned with the protocol.
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Wernersbach, B. (2011). *The impact of study skills courses on academic self-efficacy in college freshmen* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 1491914) The study is ineligible for review because it does not use a sample aligned with the protocol.

Whalen, T. F. (2012). *A comparison of first-year experience programming to enhance the retention of future allied health professionals* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3521005) The study is ineligible for review because it does not use an eligible design.

Windham, M. H., Reh fuss, M. C., Williams, C. R., Pugh, J. V., & Tincher-Ladner, L. (2014). Retention of first-year community college students. *Community College Journal of Research and Practice*, 38(5), 466–477. The study is ineligible for review because it is out of scope of the protocol.

Additional source:

Windham, M. H. (2012). *Retention of first year community college students* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3506841)

Yang, H. W. (2001). *A comparison of academic achievement, continuous full-time enrollment, and persistency rate between first-semester freshman students who participated in one of the two types of freshman orientation programs at Fresno City College* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3022946) The study is ineligible for review because it does not use an eligible design.

Yarbrough, E. B. (1993). *The effects of an extended orientation program on student out-of-classroom involvement as it relates to academic performance and retention* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9413305) The study is ineligible for review because it is out of scope of the protocol.

Appendix A.1: Research details for Clouse (2012)

Clouse, W. A. (2012). *The effects of non-compulsory freshman seminar and core curriculum completion ratios on post-secondary persistence and baccalaureate degree attainment* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3523633)

Table A1. Summary of findings

Meets WWC group design standards with reservations

Outcome domain	Sample size	Study findings	
		Average improvement index (percentile points)	Statistically significant
Degree attainment (college)	8,290 students	+9	Yes
Credit accumulation	8,290 students	+8	Yes

Setting The study was conducted at a large public university in the western United States using archival data extracted from the student records central information warehouse. Data from all first-time, full-time incoming freshmen enrolled in the fall semester from 1995 to 2005 were eligible for analysis.

Study sample The author reported baseline characteristics on the full sample. The mean age was 18.69 (SD = 1.42). Of the full sample, 60% were male and 88% were White. The average amount of need-based aid received over the first year was \$1,035.74 (SD = \$2,471.44).

Intervention group Students in the intervention condition chose to enroll in a credit-bearing freshman seminar course designed for first-time, first-semester freshman college students. The *first year experience course* was designed to help freshmen at the university transition from high school to college and included topics in the following three areas: academic, personal, and community. Academic components included study, communication, and technology skills; personal components included a focus on developing personal goals and responsibilities; and community components focused on developing relationships and learning opportunities outside the classroom. Each section generally included 15 or fewer students and was taught by one of several faculty members and one junior teaching assistant.

Comparison group This study utilized a business-as-usual comparison condition. The comparison group consisted of those students who chose not to enroll in the freshman seminar. These students had access to typical college resources. Services received by the comparison group were not monitored.

Outcomes and measurement The author reported three dichotomous outcome variables: (1) Home degree conferred (whether a student received an undergraduate degree from their home institution within 6 years of entering); (2) External degree conferred (whether a student received an undergraduate degree from any US college participating in the National Student Clearinghouse Data Program within 6 years of initial postsecondary enrollment); and, (3) Persistence (whether students persisted at the home institution from the first to the third semester, i.e., completed the freshman year). All data were obtained from either the study site’s student records central information warehouse or the National Student Clearinghouse.

Support for implementation

Implementation of the freshman seminar program was initiated by the college in 1993. The course is taught by 2–4 faculty and/or instructional staff. These faculty/staff are supported by teaching assistants who are selected from currently enrolled students. No information on training for instructors is reported.

Appendix A.2: Research details for Jamelske (2009)

Jamelske, E. (2009). *Measuring the impact of a university first-year experience program on student GPA and retention. Higher Education, 57(3), 373–391.*

Table A2. Summary of findings

Meets WWC group design standards with reservations

Outcome domain	Sample size	Study findings	
		Average improvement index (percentile points)	Statistically significant
General academic achievement (college)	1,869 students	+6	Yes
Credit accumulation	1,869 students	+4	No

Setting

The study took place at a medium-sized public university in the midwestern United States. A total of 100 *first year experience course* sections were offered to students in the fall of 2006.

Study sample

In the overall sample of students, 40% were male, 93% were White, the average age was 18.6 (SD = .34) years, 16% were from low-income households, 42% were first generation college students, and the average ACT score was 24.3 (SD = 2.87).

Intervention group

The first-year experience (FYE) program in this study was designed to offer academic and extracurricular services to first-time freshmen and to help integrate participating students into the university setting. The university offers 100 different FYE course sections, and almost all (> 85%) first-time freshmen enroll in an FYE course. The FYE courses are linked to a specific course topic (e.g., biology, economics, algebra, calculus, psychology, Spanish) and involve small group peer activities (FYE were capped at 20 students for enrollment), close work with a faculty member, and a student peer mentor. The FYE program goals are to introduce students to core course content, enhance academic skills (including content knowledge, study skills, time management, etc.), strengthen connections to the university, engage students in out-of-class activities, and enhance student accountability. The FYE also aims to foster connections with at least one faculty member and provide a peer educational learning community. Regardless of whether teaching an FYE or non-FYE course, instructors must cover the same basic topical materials (i.e., both FYE and non-FYE biology must cover the same biology content), and grades must be determined on comparable assignments and exams. The author noted that integrating the FYE material without compromising the original core course was difficult, and that the time commitment for extracurricular activities was problematic for FYE faculty.

Comparison group

Students in the comparison condition were full-time, first-year college students who did not enroll in any FYE course sections during fall 2006. These students enrolled in courses typical of first-year students at the university.

Outcomes and measurement

The study reports findings for two eligible outcomes: (1) retention: a binary measure indicating whether students were retained at the university for the fall 2007 semester after being enrolled for their entire freshman year in 2006–07; and (2) cumulative grade point average (GPA), a continuous measure representing students' cumulative GPA during their first academic year in 2006–07. No information is provided about the source of the outcome data in this study.

Support for implementation

Informal, voluntary faculty and peer mentor training workshops were provided, with no procedures to hold instructors accountable for meeting program goals. There was no formal application process for selecting FYE faculty and no added value placed on performance reviews for teaching FYE.

Appendix A.3: Research details for Shoemaker (1995)

Shoemaker, J. S. (1995, April). *Evaluating the effectiveness of extended orientation for new, undecided freshmen*. Paper presented at the meeting of the American Educational Research Association, San Francisco, CA. <http://files.eric.ed.gov/fulltext/ED384303.pdf>.

Table A3. Summary of findings

Meets WWC group design standards with reservations

Outcome domain	Sample size	Study findings	
		Average improvement index (percentile points)	Statistically significant
General academic achievement (college)	636 students	na	na

na = not applicable

Setting

The freshman orientation course was offered at the University of California, Irvine campus in 1993. The students included all incoming first-year students with undeclared majors during that academic year.

Study sample

The intervention group was 53% female, and the comparison group was 49% female. The sample was racially diverse. Students in the intervention group were 68% Asian, 18% White, and 14% other minority. Students in the comparison group were 56% Asian, 24% other minority, and 20% White. Of the full study sample, 24% of the intervention group and 25% of the comparison group were classified as low income, and 9% of the intervention group and 8% of the comparison group were English language learners.

Intervention group

The intervention was a two-credit freshman orientation course called “The University Experience: Issues and Options for Unaffiliated/Undecided Students.” The course met twice weekly and was comprised of guest lectures from faculty and professional staff, group discussion, and various assignments intended to ease the transition to college. Course topics covered library skills, interacting with faculty, university policies and procedures, assessing individual learning styles, setting goals, cultural diversity, stress management skills, and opportunities for student leadership.

Comparison group

The comparison condition included all unaffiliated or undeclared freshmen who did not enroll in the orientation course. These students received traditional college services and coursework; they did not participate in the orientation course.

Outcomes and measurement

The study included five outcomes in two domains relevant for the review protocol. In the credit accumulation domain: retention rates (enrolled at the end of the first year), academic progress by units (normal with 36 or more units vs. subject to probation/disqualification with fewer than 36 units), and quarter units completed were reported. In the general academic achievement (college) domain: GPA (college GPA), and Writing status (satisfied vs. not satisfied completion of entrance requirement in Writing) were reported. Only the GPA outcome met WWC group design standards. The study also included one outcome not relevant to the review protocol. Student satisfaction was measured using student-reported ratings of lecture and discussion sessions on a 5-point scale and by asking students whether they would recommend the course to other freshmen.

Support for implementation

No information was provided regarding support for implementation.

Appendix A.4: Research details for Wilkerson (2009)

Wilkerson, S. L. (2008). *An empirical analysis of factors that influence the first year to second year retention of students at one large, Hispanic Serving Institution (HSI)* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3333787)

Table A4. Summary of findings

Meets WWC group design standards with reservations

Outcome domain	Sample size	Study findings	
		Average improvement index (percentile points)	Statistically significant
Credit accumulation	1,296 students	14	Yes

Setting

The study took place at the University of Texas at San Antonio. The university is a metropolitan, comprehensive public university that offers bachelor’s, master’s, and doctoral degree programs.

Study sample

Characteristics of the full sample are reported. The sample contained 55.3% females and 44.7% males. Of the sample, 46.1% were Hispanic, 39.8% were White, 7.2% were African American, 6.7% were Asian or Pacific Islander, and 0.2% were American Indian or Alaskan Native. In addition, 75% of the students were financial aid applicants, and 48.8% were first generation students.

Intervention group

The first-year seminar was offered as a three-credit course and was considered a core requirement for students in the College of Social and Behavioral Sciences. No specific information on how the course is implemented is reported.

Comparison group

The comparison group for the study is considered a business-as-usual comparison; these students did not participate in the first-year seminar. No information on monitoring this group is reported.

Outcomes and measurement

One eligible outcome was reported in the study: first-to-second year retention. The university's Office of Institutional Research manages the student databases, including the BANNER system, which houses admission, academic, demographic, and personal information for students. Data were collected from this system to identify seminar participants and to assess retention into the second year. Retention was measured as a dichotomous outcome.

Support for implementation

No information was provided regarding support for implementation.

Appendix B: Outcome measures for each domain

Credit accumulation	
<i>Enrollment</i>	Credit accumulation was measured by student enrollment in fall 2007 after being enrolled the entire 2006–07 academic year (as cited in Jamelske, 2009).
<i>First-to-second year retention</i>	Retention into the second year at the university was obtained from the university's Office of Institutional Research BANNER system (as cited in Wilkerson, 2009).
<i>Persistence from first to third semester</i>	Persistence (whether a student persisted at their home institution from their first to their third semester) was obtained from the study site's student records central information warehouse (as cited in Clouse, 2012).
Degree attainment (college)	
<i>Degree conferred at home institution</i>	Degree attainment (college) was measured by 6-year graduation rates at the institution in the study. Data were obtained from the central information warehouse at the study site (as cited in Clouse, 2012).
<i>Degree conferred at any institution</i>	Degree attainment (college) was measured by 6-year graduation rates at any college or university participating in the National Student Data Clearinghouse data program. Data were obtained from the National Student Clearinghouse (as cited in Clouse, 2012).
General academic achievement (college)	
<i>Cumulative grade point average (GPA)</i>	General academic achievement (college) was assessed by cumulative GPA at the end of the spring semester of the 2007 school year (as cited in Jamelske, 2009).
<i>GPA</i>	General academic achievement (college) was measured with student GPAs at the end of the 1994 spring quarter (as cited in Shoemaker, 1995).

Appendix C.1: Findings included in the rating for the credit accumulation domain

Outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			p-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Clouse, 2012^a								
<i>Persistence from first to third semester</i>	College students	8,290	nr	nr	nr	0.21	+8	.00
Domain average for credit accumulation (Clouse, 2012)						0.21	+8	Statistically significant
Jamelske, 2009^b								
<i>Enrollment</i>	College students	1,869	nr	nr	nr	0.11	+4	> .05
Domain average for credit accumulation (Jamelske, 2009)						0.11	+4	Not statistically significant
Wilkerson, 2009^c								
<i>First-to-second year retention</i>	College students	1,296	nr	nr	nr	0.36	+14	.00
Domain average for credit accumulation (Wilkerson, 2009)						0.36	+14	Statistically significant
Domain average for credit accumulation across all studies						0.23	+12	na

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 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. The WWC-computed average effect size is a simple average rounded to two decimal places; the average improvement index is calculated from the average effect size. The statistical significance of the domain average was determined by the WWC. Some statistics may not sum as expected due to rounding. na = not applicable. nr = not reported.

^a For Clouse (2012), no corrections for clustering or multiple comparisons and no difference-in-differences adjustments were needed. The p-value presented here was reported in the original study. The WWC effect size was calculated by taking the natural log of the reported odds ratio and dividing the result by 1.65 (Cox logit method). 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 Procedures and Standards Handbook (version 3.0), p. 26.

^b For Jamelske (2009), no corrections for clustering or multiple comparisons and no difference-in-differences adjustments were needed. The p-value presented here was reported in the original study. This study is characterized as having indeterminate effects because the reported effect size was neither statistically significant nor large enough to be substantially important. For more information, please refer to the WWC Procedures and Standards Handbook (version 3.0), p. 26.

^c For Wilkerson (2009), no corrections for clustering or multiple comparisons and no difference-in-differences adjustments were needed. The p-value presented here was 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 Procedures and Standards Handbook (version 3.0), p. 26.

Appendix C.2: Findings included in the rating for the degree attainment (college) domain

Outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			p-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Clouse, 2012^a								
<i>Degree conferred at home institution</i>	College students	8,290	nr	nr	nr	0.23	+9	.00
<i>Degree conferred at any institution</i>	College students	8,290	nr	nr	nr	0.24	+9	.00
Domain average for degree attainment (college) (Clouse, 2012)						0.24	+9	Statistically significant
Domain average for degree attainment (college) across all studies						0.24	+9	na

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 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. The WWC-computed average effect size is a simple average rounded to two decimal places; the average improvement index is calculated from the average effect size. The statistical significance of the study's domain average was determined by the WWC. Some statistics may not sum as expected due to rounding. na = not applicable. nr = not reported.

^a For Clouse (2012), a correction for multiple comparisons was needed but did not affect whether any of the contrasts were found to be statistically significant. The p-values presented here were reported in the original study. The WWC effect size was calculated by taking the natural log of the reported odds ratio and dividing the result by 1.65 (Cox logit method). 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 Procedures and Standards Handbook (version 3.0), p. 26.

Appendix C.3: Findings included in the rating for the general academic achievement (college) domain

Outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			p-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Jamelske, 2009^a								
<i>Cumulative grade point average</i>	College students	1,869	nr	nr	nr	0.14	+6	.01
Domain average for general academic achievement (college) (Jamelske, 2009)						0.15	+6	Statistically significant
Shoemaker, 1995^b								
<i>Grade point average</i>	College students	636	2.79 (0.50)	2.74 (0.59)	0.05	na	na	na
Domain average for general academic achievement (college) (Shoemaker, 1995)						na	na	na
Domain average for general academic achievement (college) across all studies						0.15	+6	na

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 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. Some statistics may not sum as expected due to rounding. na = not applicable. nr = not reported.

^a For Jamelske (2009), no corrections for clustering or multiple comparisons and no difference-in-differences adjustment were needed. The p-value presented here was reported in the original study. The WWC effect size was calculated using the OLS regression coefficient and the pooled standard deviation. 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 Procedures and Standards Handbook (version 3.0), p. 26.

^b For Shoemaker (1995), an effect size could not be computed from the information provided in the study, though the study used an approved method of analyzing the impact of the intervention; the means shown in the table were not adjusted for baseline covariates, and were therefore not used to compute an effect size. The findings for this study cannot be characterized by the WWC because effect sizes could not be computed.

Endnotes

- ¹ The descriptive information for this program was obtained from Clouse (2012), Jamelske (2009), Shoemaker (1995), and Wilkerson (2009).
- ² Young, D. G., & Hopp, J. M. (2014). *2012-2013 National survey of first-year seminars: Exploring high-impact practices in the first college year* (Research report No. 4). Columbia: University of South Carolina, National Resource Center for The Freshman Year Experience.
- ³ Barefoot, B. O., & Fidler, P. P. (1992). *The 1991 national survey of freshman seminar programming: Helping first-year college students climb the academic ladder* (Monograph No. 10). Columbia: University of South Carolina, National Resource Center for The Freshman Year Experience.
- ⁴ Hunter, M. A., & Linder, C. W. (2005). First-year seminars. In M. L. Upcraft, J. N. Gardner, B. O. Barefoot, & Associates (Eds.), *Challenging and supporting the first-year student: A handbook for improving the first year of college* (pp. 275–291). San Francisco: Jossey-Bass; Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students. Vol. 2: A third decade of research*. San Francisco: Jossey-Bass.
- ⁵ Barefoot, B. O., & Fidler, P. P. (1992). *The 1991 national survey of freshman seminar programming: Helping first-year college students climb the academic ladder* (Monograph No. 10). Columbia: University of South Carolina, National Resource Center for The Freshman Year Experience.
- ⁶ Barefoot, B. O., & Fidler, P. P. (1992). *The 1991 national survey of freshman seminar programming: Helping first-year college students climb the academic ladder* (Monograph No. 10). Columbia: University of South Carolina, National Resource Center for The Freshman Year Experience.
- ⁷ The literature search reflects documents publicly available by September 2015. The studies in this report were reviewed using the Standards from the WWC Procedures and Standards Handbook (version 3.0), along with those described in the Supporting Post-secondary Success review protocol (version 3.0). The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.
- ⁸ For criteria used in the determination of the rating of effectiveness and extent of evidence, see the WWC Rating Criteria on p. 39. These improvement index numbers show the average and range of individual-level improvement indices for all findings across the studies.
- ⁹ Dwyer, J. O. (1989). A historical look at the freshman year experience. In M. L. Upcraft & J. N. Gardner (Eds.), *The freshman year experience* (pp. 24–39). San Francisco: Jossey-Bass.
- ¹⁰ Barefoot, B. O., & Fidler, P. P. (1992). *The 1991 national survey of freshman seminar programming: Helping first-year college students climb the academic ladder* (Monograph No. 10). Columbia: University of South Carolina, National Resource Center for The Freshman Year Experience.
- ¹¹ Young, D. G., & Hopp, J. M. (2014). *2012-2013 National survey of first-year seminars: Exploring high-impact practices in the first college year* (Research report No. 4). Columbia: University of South Carolina, National Resource Center for The Freshman Year Experience.
- ¹² Barefoot, B. O., & Fidler, P. P. (1992). *The 1991 national survey of freshman seminar programming: Helping first-year college students climb the academic ladder* (Monograph No. 10). Columbia: University of South Carolina, National Resource Center for The Freshman Year Experience.
- ¹³ U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse. (2016, February). *Studies of Interventions for Students in Developmental Education intervention report: First year experience courses for students in developmental education*. Retrieved from <http://whatworks.ed.gov>

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WWC Rating Criteria

Criteria used to determine the rating of a study

Study rating	Criteria
Meets WWC group design standards without reservations	A study that provides strong evidence for an intervention's effectiveness, such as a well-implemented RCT.
Meets WWC group design standards with reservations	A study that provides weaker evidence for an intervention's effectiveness, such as a QED or an RCT with high attrition that has established equivalence of the analytic samples.

Criteria used to determine the rating of effectiveness for an intervention

Rating of effectiveness	Criteria
Positive effects	Two or more studies show statistically significant positive effects, at least one of which met WWC group design standards for a strong design, AND No studies show statistically significant or substantively important negative effects.
Potentially positive effects	At least one study shows a statistically significant or substantively important positive effect, AND No studies show a statistically significant or substantively important negative effect AND fewer or the same number of studies show indeterminate effects than show statistically significant or substantively important positive effects.
Mixed effects	At least one study shows a statistically significant or substantively important positive effect AND at least one study shows a statistically significant or substantively important negative effect, but no more such studies than the number showing a statistically significant or substantively important positive effect, OR At least one study shows a statistically significant or substantively important effect AND more studies show an indeterminate effect than show a statistically significant or substantively important effect.
Potentially negative effects	One study shows a statistically significant or substantively important negative effect and no studies show a statistically significant or substantively important positive effect, OR Two or more studies show statistically significant or substantively important negative effects, at least one study shows a statistically significant or substantively important positive effect, and more studies show statistically significant or substantively important negative effects than show statistically significant or substantively important positive effects.
Negative effects	Two or more studies show statistically significant negative effects, at least one of which met WWC group design standards for a strong design, AND No studies show statistically significant or substantively important positive effects.
No discernible effects	None of the studies shows a statistically significant or substantively important effect, either positive or negative.

Criteria used to determine the extent of evidence for an intervention

Extent of evidence	Criteria
Medium to large	The domain includes more than one study, AND The domain includes more than one school, AND The domain findings are based on a total sample size of at least 350 students, OR, assuming 25 students in a class, a total of at least 14 classrooms across studies.
Small	The domain includes only one study, OR The domain includes only one school, OR The domain findings are based on a total sample size of fewer than 350 students, AND, assuming 25 students in a class, a total of fewer than 14 classrooms across studies.

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 and inclusion in this report 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.
Extent of evidence	An indication of how much evidence supports the findings. The criteria for the extent of evidence levels are given in the WWC Rating Criteria on p. 39.
Improvement index	Along a percentile distribution of individuals, the improvement index represents the gain or loss of the average individual due to the intervention. As the average individual starts at the 50th percentile, the measure ranges from -50 to +50.
Intervention	An educational program, product, practice, or policy aimed at improving student outcomes.
Intervention report	A summary of the findings of the highest-quality research on a given program, product, practice, or policy in education. The WWC searches for all research studies on an intervention, reviews each against design standards, and summarizes the findings of those that meet WWC design standards.
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.
Rating of effectiveness	The WWC rates the effects of an intervention in each domain based on the quality of the research design and the magnitude, statistical significance, and consistency in findings. The criteria for the ratings of effectiveness are given in the WWC Rating Criteria on p. 39.
Single-case design	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.

Glossary of Terms

- 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 tend to be 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.
- Systematic review** A review of existing literature on a topic that is identified and reviewed using explicit methods. A WWC systematic review has five steps: 1) developing a review protocol; 2) searching the literature; 3) reviewing studies, including screening studies for eligibility, reviewing the methodological quality of each study, and reporting on high quality studies and their findings; 4) combining findings within and across studies; and, 5) summarizing the review.

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



An **intervention report** summarizes the findings of high-quality research on a given program, practice, or policy in education. The WWC searches for all research studies on an intervention, reviews each against evidence standards, and summarizes the findings of those that meet standards.

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