CollegeBoard

Statistical Report

Validating College Course Placement Decisions Based on CLEP Exam Scores

CLEP Placement Validity Study Results

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Executive Summary

This study presents evidence of placement validity for College-Level Examination Program® (CLEP®) exam scores. Six exam titles within three subject areas are explored. College records included in this study are from a national longitudinal four-year college outcomes database at the College Board.

CLEP Exam Titles in This Study

- Analyzing and Interpreting Literature
- College Composition
- College Algebra
- Precalculus
- Calculus
- Spanish Language

For each exam title, institutions with adequate examinee volumes were identified. Then researchers located each institution's CLEP credit and placement policy for the specific exam and identified sequent and subsequent courses in which CLEP credit-holders could enroll. Analyses were conducted individually for each sequent or subsequent course at each institution, and are presented together in order to highlight trends in the findings.

Results indicate that students who are given course credit for achieving a required minimum CLEP exam score, most commonly the American Council for Education's recommended score of 50, perform as well as or better in sequent or subsequent courses as their classmates without CLEP exam credit who took the introductory course at the institution. These results support the use of these CLEP exams for awarding students course credit and placement into more advanced courses.

Contents

Tables

Figures

Introduction

The College-Level Examination Program® (CLEP®) is a computer-based prior-learning assessment that allows examinees the opportunity to demonstrate mastery of knowledge and skills necessary to earn postsecondary course credit in higher education. Currently, there are 33 exams in five subject areas: composition and literature, world languages, history and social sciences, science and mathematics, and business. The CLEP exams are accepted in over 2,900 higher education institutions nationwide. Exam scores range from 20 to 80, and the American Council on Education (ACE) recommends a credit-granting score of 50, often referred to as the "C level" because it corresponds to earning a grade of C in the equivalent course. This scaled cut score is determined after a panel of college faculty thoroughly review the exam content and the recommendations are approved by the test development committee overseeing the CLEP exam. More information on ACE's recommendation for CLEP credit can be found at **https://clep.collegeboard.org/develop-your-clep-program/create-a-clep-policy/ace-credit-recommendations**.

Test score validity, or evidence of how accurately scores measure what they are purported to measure, is essential. Placement validity evidence is gathered to support course placement decisions made based on assessment scores and is critical for assessments that determine course credit and placement. Although it can involve simple analytical approaches, placement validity often involves complex data management and preparation before analysis can take place. The research presented here serves as validity evidence called for by the Standards for Educational and Psychological Testing (AERA, 2014). Additional evidence of the validity of the CLEP exams pertaining specifically to how CLEP tests are designed and scored can be found at **https://clep.collegeboard.org/about-clep/research-and-statistics**.

This study presents the investigation of academic performance in sequent or subsequent college courses of students who were awarded postsecondary course credit via CLEP exam scores, as compared to classmates without CLEP exam credit who took the equivalent introductory course at the institution. If students were awarded credit at an appropriate score point (as opposed to the requirement being too lenient with a cut score that is set too low), then it is reasonable to assume that their performance in the sequent or subsequent course would be the same as the performance of students without credit who took the introductory, CLEP-equivalent course at the institution. The purpose of this study is to address CLEP-policy related questions that institutions of higher education may have and to present the first placement validity study conducted at a national level. Specifically, this study addresses the following question:

> *How do CLEP credit-holding students perform in sequent or subsequent courses compared to students without CLEP credit who took the corresponding introductory course at the institution?*

This report details the CLEP exam titles and subsequent courses studied, analysis methods and results, as well as data considerations to note. Although individual institutions included in this study are not identified, descriptive information is provided.

Data

The samples used in this study were derived from two sources. CLEP exam score records from 2005 to 2016 were matched to institution-provided student-level records from a database created by the College Board to study students' college level outcomes. Over 29,000 CLEP exam records were matched to students' college records from 271 four-year

institutions of higher education across the country. Both military and civilian records were maintained in the analyses. More information on the institutions and sample sizes is provided in the Results section.

Methods

Data Considerations

Exams and courses were analyzed individually within institutions. This approach was chosen because institutions not only select the cut score for which to accept credit but also have varying courses and course structures. Sequent and subsequent courses and course requirements may not be the same for all institutions. Therefore, courses and institutions were analyzed separately. In order for an institution to be included in the study, the following requirements had to be met:

- The institution awarded CLEP credit for the exam analyzed and assigned a specific CLEP equivalent course to students who met or exceeded a published required score point on the exam.
- At least 15 CLEP credit-holding students did not have a record of completing the CLEP equivalent course at the institution and completed the sequent or subsequent course for a grade.
- At least 15 non-CLEP credit-holding students took the CLEP equivalent course at the institution and completed the sequent or subsequent course for a grade (not pass-fail, etc.).

A *sequent* course is defined as the one and only course meant to directly follow the CLEP equivalent course. For example, Calculus 2 is the only course that can be taken directly after Calculus 1. Sequent courses most often appear in math and science disciplines. A course is defined as *subsequent* if it is one of several courses where the CLEP equivalent course is a prerequisite. A course was only considered sequent or subsequent if there were no prerequisites other than the CLEP equivalent course.

Analyses

To compare the student groups on course performance, a series of t-tests were calculated for each course, exam, and institution combination. Course grades were translated to a 0 to 4.0 scale according to course grade policies at each institution. Results are presented individually for each course/exam title analyzed for each institution, and then results are summarized across exam titles in order to present trends and patterns while respecting the nested nature of the data. The two groups compared were students with CLEP exam credit who did not take the equivalent introductory course at the institution before taking the sequent or subsequent course and students without CLEP exam credit who did take the equivalent course at the institution before taking the sequent or subsequent course. Statistically significant results indicate that one group performed significantly better than the other group. Alpha levels were set at 0.05.

In these analyses, control variables were not used. This is because CLEP credit policies are generally not conditional on student background characteristics. That is to say, male students do not have to meet a different standard from female students. The purpose of this study is merely to explore the appropriateness of placement into a more advanced course using a CLEP exam score. No additional inferences about the educational achievements of CLEP examinees are made.

Results

Sequent and subsequent courses were identified from 10 institutions of higher education. These 10 institutions are summarized in Table 1. Public and private institutions of all enrollment sizes and selectivity levels were considered, but due to data considerations and exam volumes, only larger institutions had enough students to warrant analysis. All institutions studied here are four-year public institutions.

Table 1: Summary of Institutions Included in Results

	Type	Size (Undergraduate)	Selectivity	Region
Institution 1	Public, 4-year	Very large: 15,000 or more	50%–75%	Southern
Institution 2	Public, 4-year	Very large: 15,000 or more	50%–75%	Southwestern
Institution 3	Public, 4-year	Very large: 15,000 or more	50%–75%	Southwestern
Institution 4	Public, 4-year	Very large: 15,000 or more	50%–75%	Southwestern
Institution 5	Public, 4-year	Very large: 15,000 or more	Under 50%	Southwestern
Institution 6	Public, 4-year	Large: 7,500 to 14,999	50%–75%	Southern
Institution 7	Public, 4-year	Very large: 15,000 or more	Over 75%	Western
Institution 8	Public, 4-year	Very large: 15,000 or more	50%–75%	Western
Institution 9	Public, 4-year	Very large: 15,000 or more	50%–75%	Western
Institution 10	Public, 4-year	Very large: 15,000 or more	50%–75%	Southwestern

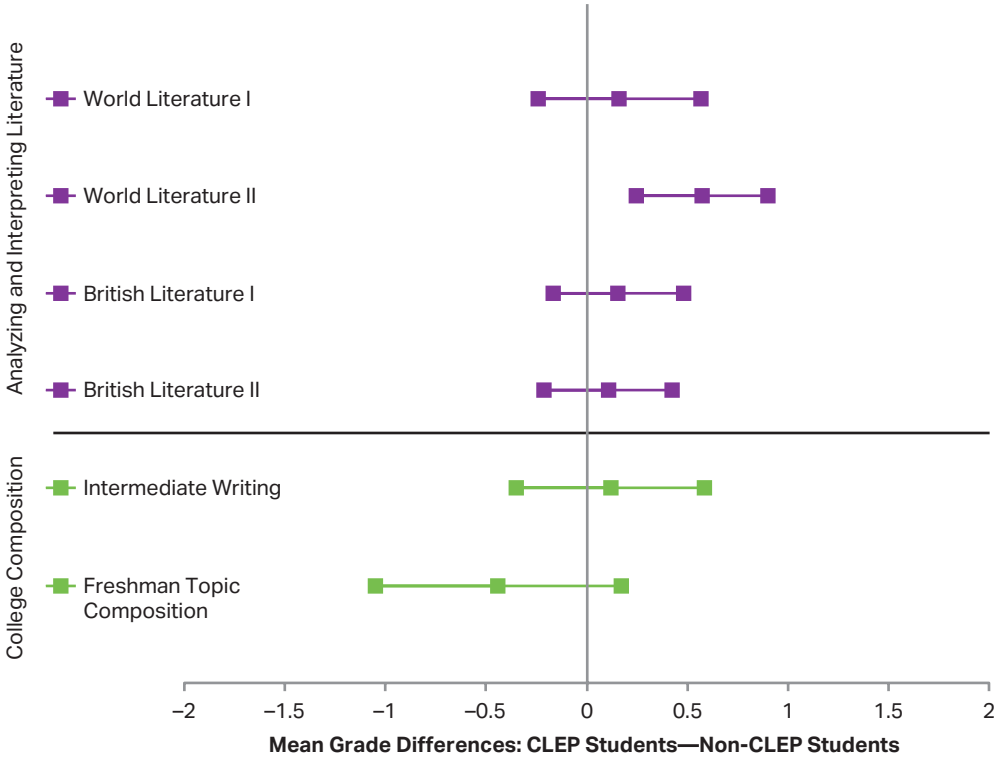
Composition and Literature

Two exams in the Composition and Literature category are included in this study: Analyzing and Interpreting Literature and College Composition. Both exams contain multiple-choice items, and College Composition also contains two mandatory essays, which are scored by English composition faculty through Educational Testing Service's Online Scoring Network (OSN). Analyzing and Interpreting Literature covers materials presented in most introductory undergraduate courses in literature. This includes poetry, nonfiction, fiction, and drama. Passages are mostly derived from American and British literature, but some translated works are also included. Although Analyzing and Interpreting Literature includes an optional essay, this is not often required by institutions and therefore was not included in these analyses. College Composition covers writing skills that are presented in most first-year composition courses.

Figure 1 provides an overview of results for the two CLEP Exams in the Composition and Literature category. The horizontal *x*-axis plots the difference between the mean CLEP student grade in the sequent or subsequent course and the mean course grade of students without CLEP credit who participated in the sequent or subsequent course after completing the prerequisite course at the institution. The middle point of each line represents this difference in means. If this point is to the right of the zero line, the CLEP mean course grade was higher than the mean course grade of non-CLEP credit-holding students. Conversely, mean differences that fall to the left of the zero line indicate that the

non-CLEP credit-holding students performed better in the sequent or subsequent course than CLEP credit-holders. The points on the left and right of each mean difference show the lower and upper limits of the 95% confidence intervals. A 95% confidence interval represents the range of values that the mean difference will take with a 95% certainty. Following the figure, specific results for each course and each CLEP exam are presented.

Figure 1: Composition and Literature Results Overview



Analyzing and Interpreting Literature

Four subsequent courses at one institution met the criteria for investigation of placement validity. This institution accepted the recommended score of 50 on the Analyzing and Interpreting Literature CLEP exam for credit and placement. Information on the distribution of CLEP exam scores for CLEP credit-holders and course grades for non-CLEP credit-holders is provided in Table 2. The course grades in the table are for the CLEP equivalent introductory course serving as the prerequisite for the subsequent course ultimately being analyzed. The categories include pluses and minuses, such that "B" includes the grades B+, B, and B-. The CLEP exam score bands do not coincide with the course grade categories, meaning the presented score bands and grade categories are not equivalent. Table 3 presents the summary of results of the group comparison analyses.

Table 2: Analyzing and Interpreting Literature Exam Scores and Introductory Course Grades

	CLEP Exam Score			Non-CLEP Intro Course Grade			
Subsequent Course Title	50–60	61–70	71–80	C	B	A	Other
World Literature I	17.6%	61.8%	20.6%	14.5%	47.0%	38.6%	0.0%
World Literature II	15.6%	62.2%	22.2%	12.8%	48.0%	39.2%	0.0%
British Literature I	33.3%	63.3%	3.3%	19.8%	43.2%	37.0%	0.0%
British Literature II	34.1%	52.3%	13.6%	17.6%	50.4%	31.3%	0.8%

Table 3: Analyzing and Interpreting Literature Results

	CLEP		Non-CLEP		
Subsequent Course Title	N	Mean (Std. Dev.)	N	Mean (Std. Dev.)	Pr > |t|
World Literature I	34	2.88 (0.98)	83	2.72 (1.02)	0.44
World Literature II	45	3.04 (0.90)	148	2.47 (0.99)	<0.001
British Literature I	30	3.50 (0.68)	81	3.35 (0.95)	0.35
British Literature II	44	3.30 (0.95)	131	3.19 (0.92)	0.52

In three of the four subsequent courses analyzed, the differences between the two groups' mean course grades are numerically different but not enough to be statistically significant. In one course, World Literature 2, the differences were large enough to be significant, with CLEP credit-holders performing better on average. Considering these results altogether indicates that students at this institution who score a 50 or higher on Analyzing and Interpreting Literature and take a subsequent course perform as well as or better in that course than their classmates without CLEP credit who took the equivalent course at the institution. For full results of the t-test analyses and more information on CLEP exam scores for the CLEP credit-holders, please see the Appendix.

College Composition

Two subsequent courses at two institutions met the criteria for investigation of placement validity for the College Composition CLEP exam. These institutions both accepted the recommended score of 50 for credit and placement. The distributions of CLEP exam scores for the CLEP credit-holding students for each subsequent course studied are presented in Table 4 along with the introductory course grade distributions for non-CLEP credit-holding students. These score and grade categories do not coincide with each other, meaning they are not equivalent. Table 5 presents the summary of results of the group comparison analyses.

Table 4: College Composition Exam Scores and Introductory Course Grades

	CLEP Exam Score			Non-CLEP Intro Course Grade			
Subsequent Course Title	50–60	61–70	71–80	C	B	A	Other
Intermediate Writing	92.0%	8.0%	0.0%	16.6%	40.7%	41.9%	0.8%
Freshman Topic Composition	87.5%	12.5%	0.0%	4.9%	32.0%	63.0%	0.1%

Table 5: College Composition Results

	CLEP		Non-CLEP		
Subsequent Course Title	N	Mean (Std. Dev.)	N	Mean (Std. Dev.)	Pr > |t|
Intermediate Writing	25	2.80 (1.33)	1,030	2.68 (1.17)	0.63
Freshman Topic Composition	**16**	**2.91 (1.15)**	**3,106**	**3.35 (0.81)**	**0.14**

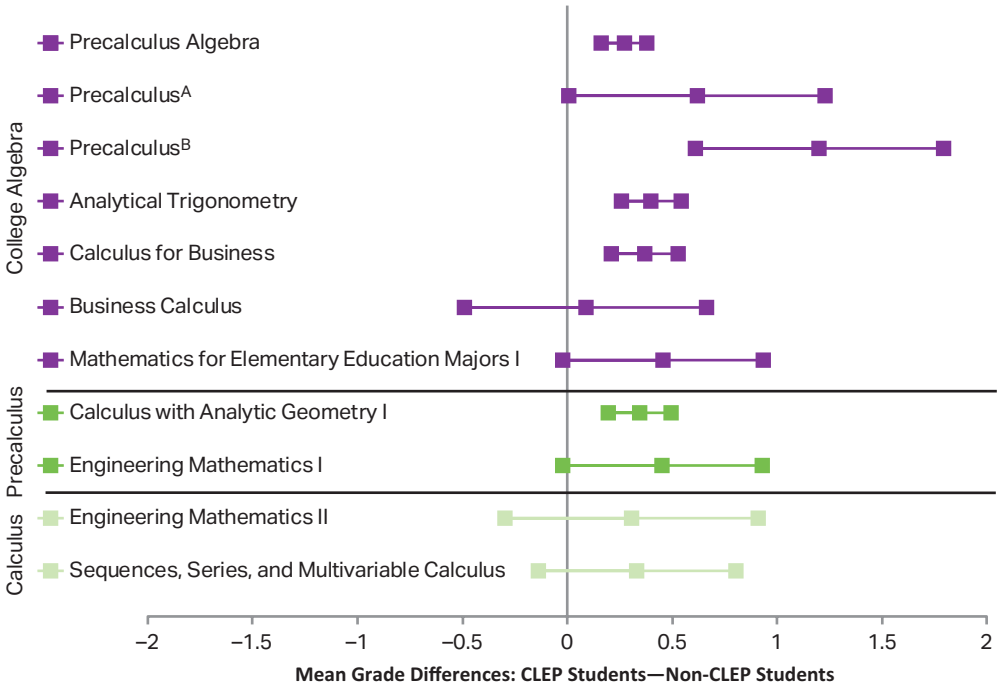
In both courses analyzed across the two institutions, the differences between mean course grades are not statistically significant. Students scoring a 50 or higher on College Composition perform as well as students without CLEP credit who took the equivalent composition course at the institution. Although Freshman Topic Composition met minimum requirements for inclusion in the study despite a small sample, the topics of the course vary from term to term, as opposed to staying relatively stable over time. This should be taken into consideration when interpreting the results for this course. For full results of the t-test analyses, please see the Appendix.

Mathematics

Three exams in the Mathematics category are included in this study: College Algebra, Precalculus, and Calculus. The College Algebra and Calculus CLEP exams cover the materials typically presented in one-semester algebra and calculus courses, respectively and both are multiple-choice format. The Precalculus CLEP exam covers materials necessary for preparation for a college-level calculus course.

Figure 2 provides an overview of results for the three CLEP exams in the Mathematics category. The horizontal *x*-axis presents the difference between the mean CLEP student grade in the sequent or subsequent course and the mean course grade of students without CLEP credit who participated in the sequent or subsequent course after completing the prerequisite course at the institution. The middle point of each line represents this difference, and any point to the right of the zero line means CLEP credit-holding students performed, on average, better than the non-CLEP credit-holding students. The points on the left and right of each mean difference show the lower and upper limits of the 95% confidence intervals. Specific results for each exam are presented following figure 2.

Figure 2: Mathematics Results Overview



College Algebra

Seven subsequent courses at three institutions met the criteria for investigation of placement validity for CLEP College Algebra. Each of these institutions accepted the recommended score of 50 for credit and placement. Information on the distribution of CLEP exam scores for CLEP credit-holders and introductory course grades for non-CLEP credit-holders is presented in Table 6. Like previous results, these score bands and grade categories do not coincide with one another, and non-CLEP credit-holders may have taken the CLEP-equivalent introductory courses pass-fail. Table 7 presents the summary of results of the group comparison analyses.

Table 6: College Algebra Exam Scores and Introductory Course Grades

	CLEP Exam Score			Non-CLEP Intro Course Grade			
Subsequent Course Title	50–60	61–70	71–80	C	B	A	Other
Precalculus Algebra	68.8%	28.4%	2.9%	25.7%	38.2%	35.4%	0.8%
Precalculus[A]	37.5%	56.3%	6.3%	33.0%	35.6%	25.1%	6.3%
Precalculus[B]	63.6%	27.3%	9.1%	12.8%	28.4%	52.4%	6.4%
Analytical Trigonometry	66.4%	31.0%	2.6%	17.7%	38.5%	43.6%	0.2%
Calculus for Business	58.1%	37.4%	4.4%	23.7%	40.0%	35.5%	0.8%
Business Calculus	45.0%	50.0%	5.0%	31.6%	38.9%	21.5%	8.0%
Mathematics for Elementary Education Majors I	46.7%	26.7%	26.7%	30.9%	34.3%	23.6%	11.1%

Table 7: College Algebra Results

	CLEP		Non-CLEP		
Subsequent Course Title	N	Mean (Std. Dev.)	N	Mean (Std. Dev.)	Pr > |t|
Precalculus Algebra	490	2.49 (1.09)	3,529	2.22 (1.15)	<.0001
Precalculus[A]	16	3.25 (1.24)	1,146	2.63 (1.24)	0.05
Precalculus[B]	22	3.14 (1.25)	3,192	1.94 (1.41)	<.0001
Analytical Trigonometry	345	2.46 (1.18)	1,777	2.06 (1.24)	<.0001
Calculus for Business	203	2.77 (1.05)	2,969	2.41 (1.12)	<.0001
Business Calculus	20	2.65 (1.57)	778	2.57 (1.29)	0.77
Mathematics for Elementary Education Majors I	15	3.73 (0.80)	440	3.28 (0.93)	0.06

[A, B] These courses have the same course title but occur at different institutions.

In four of the seven subsequent courses studied, CLEP credit-holding students performed statistically significantly better in the sequent or subsequent course than students without CLEP credit who took the introductory course at the institution. In the remaining three courses, differences were not statistically significant at the 0.05 level. In general, these results indicate that students who earn course credit with a score of 50 or higher on the College Algebra CLEP exam perform as well as or better in subsequent courses than students without CLEP credit who take the equivalent course. For full results of the t-test analyses, please see the Appendix.

Precalculus

Two sequent or subsequent courses at two institutions met the requirements for analysis for the Precalculus CLEP exam. Both of these institutions accepted a score of 50 for credit and placement. Information on CLEP exam scores for CLEP credit-holders and introductory course grades for non-CLEP credit-holders is listed in Table 8. At the institution offering Calculus with Analytic Geometry I as a subsequent course for

Precalculus, students have two options for prerequisite credit: one accelerated course or two sequent courses. Most students took the two-course option. Grades for the three courses are represented in Table 8 in sum total. Table 9 presents the results of the group comparison analyses. There were not enough non-CLEP credit-holders in the accelerated single prerequisite course to break them out separately from the two-course prerequisite option. Therefore, results are presented together.

Table 8: Precalculus Exam Scores and Introductory Course Grades

	CLEP Exam Score			Non-CLEP Intro Course Grade			
Subsequent Course Title	50–60	61–70	71–80	C	B	A	Other
Calculus with Analytic Geometry I	59.2%	36.0%	4.8%	30.0%	38.5%	29.6%	1.9%
Engineering Mathematics I	44.4%	40.7%	14.8%	31.2%	33.0%	15.7%	20.1%

Table 9: Precalculus Results

	CLEP		Non-CLEP		
Subsequent Course Title	N	Mean (Std. Dev.)	N	Mean (Std. Dev.)	Pr > |t|
Calculus with Analytic Geometry I	250	2.80 (1.10)	2,210	2.46 (1.14)	<.0001
Engineering Mathematics I	**27**	**2.59 (1.12)**	**2,491**	**2.14 (1.25)**	**0.06**

In both courses analyzed, the average course grade for CLEP credit-holding students was better than the average grade for non-CLEP students. For one of the two courses, the difference between the two groups was statistically significant. These results indicate that students with a score of 50 or higher on the Precalculus CLEP exam in the two institutions analyzed perform as well as or better in sequent or subsequent courses than students without CLEP credit who took the equivalent course. For full results of the t-test analyses, please see the Appendix.

Calculus

Two subsequent courses at two institutions met the requirements for Calculus CLEP exam analysis. The institution for the first course listed in Table 10, Engineering Mathematics II, accepted a score of 50 on the Calculus CLEP exam, while the second required a score of 60 in order to award credit. Information on CLEP exam scores for CLEP credit-holders and introductory course grades for non-CLEP credit-holders is in Table 10. Table 11 presents the results of the group comparison analyses.

Table 10: Calculus Exam Scores and Introductory Course Grades

	CLEP Exam Scores			Non-CLEP Intro Course Grade			
Subsequent Course Title	50–60	61–70	71–80	C	B	A	Other
Engineering Mathematics II	20.0%	40.0%	40.0%	25.2%	39.0%	33.5%	2.3%
Sequences, Series, and Multivariable Calculus*	8.7%	43.5%	47.8%	18.5%	29.7%	51.4%	0.5%

*For this course at this institution, a CLEP credit-holder had to have a minimum score of 60.

Table 11: Calculus Results

	CLEP		Non-CLEP		
Subsequent Course Title	N	Mean (Std. Dev.)	N	Mean (Std. Dev.)	Pr > |t|
Engineering Mathematics II	15	2.73 (1.22)	7,942	2.43 (1.19)	0.32
Sequences, Series, and Multivariable Calculus*	**23**	**3.01 (1.10)**	**6,481**	**2.68 (1.15)**	**0.17**

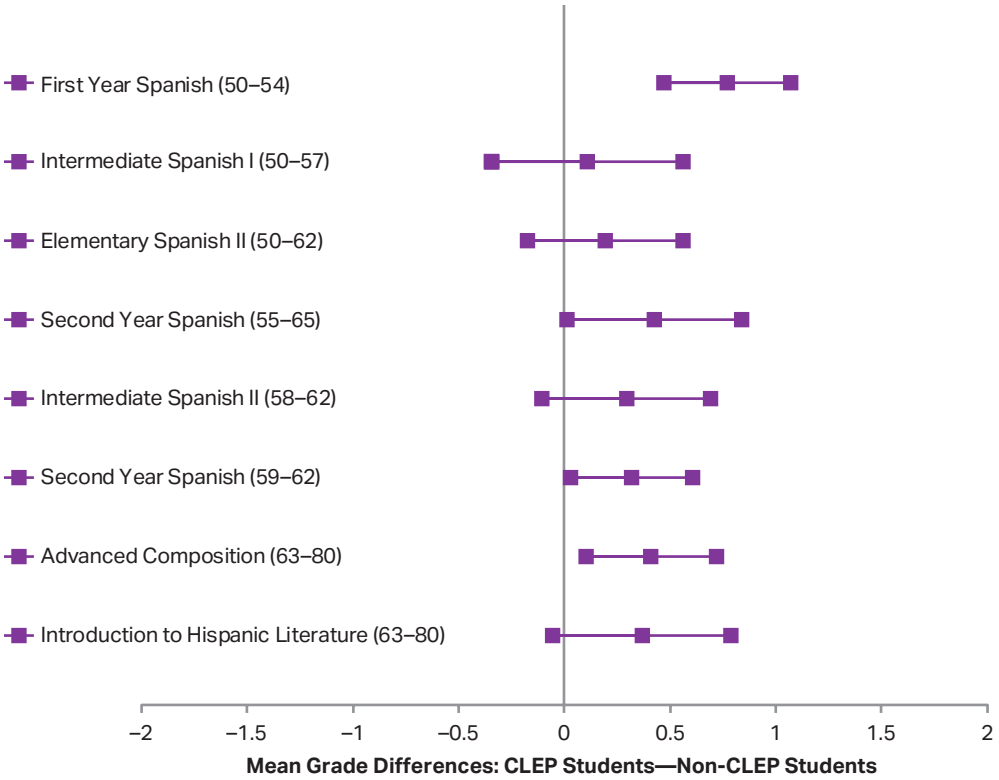
*For this course at this institution, a CLEP credit-holder had to have a minimum score of 60.

In both subsequent courses analyzed, CLEP credit-holding students performed, on average, better than students without CLEP credit who took the introductory course at the institution. However, in both cases differences in mean grade were not significant at the 0.05 level. For full results of the t-test analyses, please see the Appendix.

Spanish Language

The Spanish Language CLEP exam is designed to measure knowledge and skills typically learned during the first and second year of college-level language study. The format is multiple choice. Materials taught during both years are incorporated into a single exam, covering both level 1 and level 2 content. As a result, many institutions accept different CLEP exam scores to place students into different levels of instruction. Figure 3 provides an overview of results for each of the eight subsequent courses at four institutions included in this analysis. The CLEP scores required for placement into the course are shown next to the course title.

Figure 3: Spanish Language Results Overview



In Figure 3 above, the horizontal *x*-axis represents the difference between the mean CLEP student grade in the sequent or subsequent course and the mean student grade of students without CLEP credit who participated in the sequent or subsequent course after completing the prerequisite course at the institution. The center marker denotes this difference, and any points to the right of the zero line indicate that CLEP credit-holding students, on average, performed better than students without CLEP credit. The spikes on the left and right of each mean difference show the lower and upper limits of the 95% confidence intervals. Table 12 presents the results of the group comparison analyses. Because institutions had varied placement policies using Spanish CLEP exam scores that involved multiple cut scores, the number of CLEP credit-holders in different score bands is not provided here.

Table 12: Spanish Language Results

	CLEP		Non-CLEP		
Sequent Course Title	**N**	**Mean (Std. Dev.)**	**N**	**Mean (Std. Dev.)**	**Pr > |t|**
First-Year Spanish	21	3.71 (0.64)	1,139	2.95 (1.05)	<.0001
Intermediate Spanish I	20	2.95 (1.00)	1,322	2.84 (1.02)	0.65
Elementary Spanish II	26	3.13 (1.15)	1,072	2.94 (0.94)	0.31
Second Year Spanish[A]	39	3.46 (1.23)	302	3.04 (0.98)	0.02
Intermediate Spanish II	27	3.15 (1.06)	1,073	2.86 (1.04)	0.15
Second Year Spanish[B]	20	3.73 (0.45)	2,633	3.41 (0.65)	0.03
Advanced Composition	81	3.10 (0.96)	84	2.69 (1.03)	0.01
Introduction to Hispanic Literature	**46**	**2.91 (0.91)**	**51**	**2.55 (1.15)**	**0.12**

[A, B] These courses have the same course title but occur at different institutions.

In four of the eight sequent courses studied, CLEP credit-holding students performed statistically significantly better in the sequent or subsequent course than students without CLEP credit who took the prerequisite course at the institution. In the remaining four courses, CLEP students had higher grades than students without CLEP credit. However, the differences were not significant at the 0.05 level. For full results of the t-test analyses, please see the Appendix.

Discussion

In all three subject areas covered in the presented analyses—Composition and Literature, Mathematics, and Spanish Language—a general trend was evident: Students with CLEP exam credit performed as well as or better in the sequent or subsequent course than students without CLEP credit who took the equivalent course at the institution. In most analyses, the cut score was 50, and in most cases, there were students scoring the minimum score in the CLEP credit-holding group. In placement validity analysis, group comparisons are made to determine if students who were given credit via exam score perform as well as students without credit who took the equivalent course. If credit was awarded appropriately, as opposed to prematurely or with insufficient performance, credit-by-exam students should perform as well as their classmates who took the equivalent course. In all courses studied here, CLEP credit-holding students performed as well as or better than their classmates without CLEP credit. These results support the use of CLEP exam scores as an indicator of sufficient skills and knowledge necessary to be placed into a sequent or subsequent course for which the CLEP-equivalent course is the prerequisite.

These analyses explored the appropriateness of a minimum CLEP exam score (in most cases, a score of 50) as evidence of adequate preparation for the next level course, regardless of the source of the information and skills. Therefore, control variables were not necessary. In addition, some analyses presented here include a very small group of students, as few as 15 in some cases. The analytical approach presented here, comparing groups using a t-test, is sensitive to sample sizes when determining statistical significance. That should be noted when reading and interpreting findings. Meaningful differences may not be statistically significant.

The results presented here contribute to the body of validity evidence for CLEP exam scores. That is to say, the results support the use of CLEP exam scores as an indication of adequate skills and knowledge for preparation for the next course at the institution. Institutions are encouraged to explore their own credit and placement policies by conducting studies such as this as necessary.

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Appendix

Analyzing and Interpreting Literature

Subsequent Course Title	Number CLEP Credit Holders	Summary of CLEP Exam Scores		
		Mean	Standard Deviation	Range
World Literature I	34	65.91	4.95	58–75
World Literature II	45	66.00	5.35	56–76
British Literature I	30	63.80	4.66	56–73
British Literature II	44	64.02	5.44	52–76

World Literature I

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.8824	2.5413	3.2234	0.9775	0.7884	1.2866
Non-CLEP		2.7229	2.5011	2.9447	1.0159	0.8814	1.1992
CLEP – Non-CLEP	Pooled	0.1595	–0.2459	0.5648	1.0050	0.8902	1.1541

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	115	0.78	0.4374

World Literature II

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.0444	2.7730	3.3159	0.9034	0.7479	1.1412
Non-CLEP		2.4730	2.3117	2.6342	0.9928	0.8911	1.1209
CLEP – Non-CLEP	Pooled	0.5715	0.2448	0.8982	0.9729	0.8844	1.0814

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	191	3.45	0.0007

British Literature I

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.5000	3.2452	3.7548	0.6823	0.5434	0.9172
Non-CLEP		3.3457	3.1354	3.5559	0.9508	0.8236	1.1249
CLEP – Non-CLEP	Satterthwaite	0.1543	–0.1713	0.4799			

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	72.182	0.94	0.3479

British Literature II

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.2955	3.0053	3.5856	0.9543	0.7885	1.2091
Non-CLEP		3.1908	3.0317	3.3500	0.9208	0.8212	1.0482
CLEP – Non-CLEP	Pooled	0.1046	–0.2150	0.4242	0.9293	0.8408	1.0387

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	173	0.65	0.5191

College Composition

		Summary of CLEP Exam Scores		
Subsequent Course Title	Number CLEP Credit Holders	Mean	Standard Deviation	Range
Intermediate Writing	25	56.04	3.19	50–61
Freshman Topic Composition	16	57.69	2.87	53–62

Intermediate Writing

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.8000	2.2519	3.3481	1.3279	1.0369	1.8473
Non-CLEP		2.6849	2.6133	2.7564	1.1704	1.1219	1.2233
CLEP – Non-CLEP	Pooled	0.1151	–0.3512	0.5815	1.1742	1.1262	1.2266

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	1053	0.48	0.6282

Freshman Topic Composition

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.9063	2.2951	3.5174	1.1470	0.8473	1.7752
Non-CLEP		3.3489	3.3204	3.3774	0.8096	0.7900	0.8303
CLEP – Non-CLEP	Satterthwaite	–0.4427	–1.0544	0.1690			

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	15.077	–1.54	0.1439

College Algebra

Subsequent Course Title	Number CLEP Credit Holders	Summary of CLEP Exam Scores		
		Mean	Standard Deviation	Range
Precalculus Algebra	490	58.25	5.75	50–80
Precalculus[A]	16	62.00	5.32	51–71
Precalculus[B]	22	58.86	6.70	50–73
Analytical Trigonometry	345	58.46	5.68	50–75
Calculus for Business	203	59.29	5.92	50–76
Business Calculus	20	60.45	6.40	50–75
Mathematics for Elementary Education Majors I	15	63.73	7.83	53–78

[A, B] These courses have the same course title, but occur at different institutions.

Precalculus Algebra

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.4918	2.3951	2.5885	1.0895	1.0253	1.1624
Non-CLEP		2.2224	2.1843	2.2604	1.1526	1.1263	1.1801
CLEP – Non-CLEP	Pooled	0.2695	0.1612	0.3777	1.1451	1.1206	1.1707

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	4017	4.88	<.0001

Precalculus

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.2500	2.5902	3.9098	1.2383	0.9147	1.9165
Non-CLEP		2.6335	2.5618	2.7052	1.2370	1.1884	1.2898
CLEP – Non-CLEP	Pooled	0.6165	0.00551	1.2275	1.2370	1.1887	1.2895

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	1160	1.98	0.0480

Precalculus

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.1364	2.5839	3.6888	1.2460	0.9586	1.7807
Non-CLEP		1.9377	1.8887	1.9867	1.4121	1.3783	1.4476
CLEP – Non-CLEP	Pooled	1.1986	0.6068	1.7905	1.4110	1.3774	1.4464

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	3212	3.97	<.0001

Analytical Trigonometry

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.4601	2.3353	2.5850	1.1788	1.0969	1.2740
Non-CLEP		2.0625	2.0048	2.1202	1.2402	1.2007	1.2824
CLEP – Non-CLEP	Pooled	0.3977	0.2557	0.5396	1.2305	1.1945	1.2686

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	2120	5.49	<.0001

Calculus for Business

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.7709	2.6257	2.9162	1.0495	0.9563	1.1628
Non-CLEP		2.4062	2.3658	2.4466	1.1220	1.0942	1.1513
CLEP – Non-CLEP	Pooled	0.3647	0.2058	0.5237	1.1176	1.0907	1.1458

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	3170	4.50	<.0001

Business Calculus

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.6500	1.9174	3.3826	1.5652	1.1904	2.2862
Non-CLEP		2.5656	2.4745	2.6566	1.2941	1.2328	1.3618
CLEP – Non-CLEP	Pooled	0.0844	–0.4940	0.6629	1.3012	1.2403	1.3684

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	796	0.29	0.7745

Mathematics for Elementary Education Majors I

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.7333	3.2910	4.1757	0.7988	0.5848	1.2598
Non-CLEP		3.2795	3.1921	3.3670	0.9336	0.8757	0.9997
CLEP – Non-CLEP	Pooled	0.4538	–0.0259	0.9335	0.9297	0.8729	0.9945

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	453	1.86	0.0637

Precalculus

Subsequent Course Title	Number CLEP Credit Holders	Summary of CLEP Exam Scores		
		Mean	Standard Deviation	Range
Calculus with Analytic Geometry I	250	59.03	6.20	50–76
Engineering Mathematics I	27	63.04	6.78	51–75

Calculus with Analytical Geometry I

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.8000	2.6629	2.9371	1.1008	1.0121	1.2068
Non-CLEP		2.4581	2.4104	2.5059	1.1441	1.1113	1.1789
CLEP – Non-CLEP	Pooled	0.3419	0.1927	0.4910	1.1398	1.1088	1.1726

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	2458	4.49	<.0001

Engineering Mathematics I

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.5926	2.1502	3.0350	1.1184	0.8807	1.5326
Non-CLEP		2.1421	2.0929	2.1913	1.2527	1.2189	1.2885
CLEP – Non-CLEP	Pooled	0.4505	–0.0243	0.9253	1.2514	1.2178	1.2870

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	2516	1.86	0.0629

Calculus

Subsequent Course Title	Number CLEP Credit Holders	Summary of CLEP Exam Scores		
		Mean	Standard Deviation	Range
Engineering Mathematics II	15	67.47	8.96	51–80
Sequences, Series, and Multivariable Calculus	23	70.00	6.61	60–80

Engineering Mathematics II

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.7333	2.0562	3.4105	1.2228	0.8952	1.9285
Non-CLEP		2.4289	2.4026	2.4551	1.1918	1.1736	1.2106
CLEP – Non-CLEP	Pooled	0.3045	–0.2993	0.9083	1.1919	1.1736	1.2107

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	7955	0.99	0.3230

Sequences, Series, and Multivariable Calculus

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.0143	2.5374	3.4913	1.1028	0.8529	1.5609
Non-CLEP		2.6839	2.6559	2.7119	1.1506	1.1312	1.1708
CLEP – Non-CLEP	Pooled	0.3304	–0.1407	0.8015	1.1505	1.1310	1.1706

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	6502	1.37	0.1692

Spanish

Sequent Course Title	Number CLEP Credit Holders	Summary of CLEP Exam Scores		
		Mean	Standard Deviation	Range
First Year Spanish	21	51.52	1.50	50–54
Intermediate Spanish I	20	53.60	2.28	50–57
Elementary Spanish II	26	54.88	3.77	50–62
Second Year Spanish[A]	39	58.90	2.67	55–64
Intermediate Spanish II	27	59.67	1.36	58–62
Second Year Spanish[B]	20	60.50	1.19	59–62
Advanced Composition	81	74.22	3.67	64–80
Introduction to Hispanic Literature	46	73.76	3.89	64–80

[A, B] These courses have the same course title but occur at different institutions.

First-Year Spanish

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.7143	3.4213	4.0073	0.6437	0.4924	0.9295
Non-CLEP		2.9456	2.8847	3.0064	1.0466	1.0054	1.0915
CLEP – Non-CLEP	Satterthwaite	0.7687	0.4704	1.0670			

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	21.997	5.34	<.0001

Intermediate Spanish I

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.9500	2.4826	3.4174	0.9987	0.7595	1.4586
Non-CLEP		2.8442	2.7890	2.8994	1.0228	0.9852	1.0633
CLEP – Non-CLEP	Pooled	0.1058	–0.3461	0.5577	1.0225	0.9852	1.0627

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	1340	0.46	0.6460

Elementary Spanish II

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.1346	2.6721	3.5971	1.1451	0.8980	1.5806
Non-CLEP		2.9443	2.8878	3.0007	0.9422	0.9040	0.9839
CLEP – Non-CLEP	Pooled	0.1904	–0.1786	0.5593	0.9474	0.9093	0.9888

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	1096	1.01	0.3116

Second-Year Spanish

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.4615	3.0621	3.8610	1.2322	1.0070	1.5880
Non-CLEP		3.0397	2.9283	3.1512	0.9841	0.9114	1.0696
CLEP – Non-CLEP	Satterthwaite	0.4218	0.00824	0.8354			

Method	Variances	DF	t Value	Pr > |t|
Satterthwaite	Unequal	44.481	2.05	0.0458

Intermediate Spanish II

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.1481	2.7274	3.5689	1.0635	0.8375	1.4575
Non-CLEP		2.8565	2.7940	2.9189	1.0429	1.0005	1.0890
CLEP – Non-CLEP	Pooled	0.2917	–0.1072	0.6906	1.0434	1.0015	1.0889

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	1098	1.43	0.1517

Second-Year Spanish

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.7250	3.5130	3.9370	0.4529	0.3444	0.6615
Non-CLEP		3.4104	3.3855	3.4354	0.6520	0.6349	0.6701
CLEP – Non-CLEP	Satterthwaite	0.3146	0.0281	0.6010			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	2651	2.15	0.0314

Advanced Composition

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		3.0988	2.8872	3.3103	0.9566	0.8286	1.1318
Non-CLEP		2.6905	2.4671	2.9139	1.0294	0.8938	1.2139
CLEP – Non-CLEP	Pooled	0.4083	0.1025	0.7141	0.9943	0.8971	1.1154

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	163	2.64	0.0092

Introduction to Hispanic Literature

Group	Method	Mean	95% CL Mean		Std. Dev.	95% CL Std. Dev.	
CLEP		2.9130	2.6414	3.1847	0.9147	0.7587	1.1521
Non-CLEP		2.5490	2.2244	2.8737	1.1544	0.9659	1.4350
CLEP – Non-CLEP	Pooled	0.3640	–0.0589	0.7870	1.0477	0.9176	1.2212

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	95	1.71	0.0908

About the College Board

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