



Research Brief

Relationship between CHC Study Skills Courses and Basic Skills Course Success

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Purpose of Brief

This brief illustrates the results of the relationship between students who successfully completed CHC study skills courses with those in the same section who did not successfully complete CHC study skills courses in developmental math, English, and reading courses.

Summary of Findings

- Students who successfully completed CHC-090 (92%) were more likely to complete developmental math, reading, or English courses than students who successfully completed CHC-099 (84%) or CHC-100 (77%)
- Students who successfully completed CHC-090 (77%) were statistically significantly and substantially more likely to successfully complete MATH-942 than students who did not successfully complete CHC-090 (35%)
- Hispanic Students who successfully completed CHC-099 (94%) were statistically significantly and substantially more likely to successfully complete developmental courses than students who did not successfully complete CHC-099 (56%)
- Students who successfully completed CHC-099 (87%) were statistically significantly and substantially more likely to successfully complete ENGL-914 than students who did not successfully complete CHC-099 (47%)

Overview

In Spring 2015 the Crafton Hills College Basic Skills Initiative (BSI) Committee received a question regarding whether BSI funding should be used to support CHC study skills courses (i.e. CHC-090, 099, and 100). As a result, the BSI Committee asked the Office of Institutional Effectiveness, Research, and Planning to examine if there was a relationship between CHC study skills courses and success in basic skills English and math courses.

Methodology

Students who successfully completed (A, B, C, or P grade) CHC-090 (College Skills and Strategies), CHC-099 (Learning Communities Seminar), or CHC-100 (Student Success and the College Experience) were compared to students in the same CHC-090, 099, and 100 section who did not successfully complete (D, F, I, NP, or W grade) the CHC study skills course. Study Skill Students were compared on whether or not they successfully completed a basic skills or developmental reading, English, or math course in the same semester that they earned a grade on record (GOR, A, B, C, D, F, P, NP, I, or W) in the study skills course.

The effect size statistic was used to indicate the size of the difference on each of the student outcome measures between students who successfully completed a study skills course and those who did not. One method of interpreting effect size was developed by Jacob Cohen. Jacob Cohen defined "small," "medium," and "large" effect sizes. He explained that an effect size of .20 can be considered small, an effect size of .50 can be considered medium, and an effect size of .80 can be considered large. An effect size is considered to be meaningful if it is .20 or higher. It is important to mention that the number of students in each group does not influence Effect Size; whereas, when statistical significance is calculated, the number of students in each group does influence the significance level (i.e. "p" value being lower than .05). The P-Value is an indication of statistical significance which exists when the P-value is less than .05 indicating that the difference between the groups is likely to be due to chance only 5 out of 100 times.

Limitations. First, it is important to note that the findings presented indicate a relationship between students who earn a GOR in CHC study skills courses and successfully complete basic skills or developmental math, English, and reading courses, and not causality. Second, students who did not enroll a developmental math, reading, and/or English course were not examined and CHC study skills students were only compared to other CHC study skills students in the same section if they also enrolled in a developmental math, reading, or English course. Third, not surprisingly, students who are successful in a course are more likely to be successful in another course. Accordingly, the results here indicate that a

student's success in a developmental course may be related to the CHC study skills course, but could also be a result of student characteristics.

Sample

In order to increase the number of records examined, students who earned a GOR were examined from 2009-2010 to 2013-2014. Students earned 614 GOR in CHC-090, 2,716 in CHC-099, and 1,080 in CHC-100 and enrolled in a basic skills or developmental reading, English, or math course in the same semester.

Findings

Overall, students who successfully completed CHC-090 (College Skills and Strategies) or CHC-099 (Learning Communities Seminar) were statistically significantly ($p < .05$) and substantially ($ES \geq .20$) more likely to complete basic skills or developmental courses than students in the same section who did not successfully complete CHC-090 or 099 (see Tables 1-2A). On the other hand, students successfully completing CHC-100 (Student Success and College Experience) did not consistently have a higher likelihood of successfully completing developmental math, reading, and/or English courses (see Tables 3 and 3A).

Students who successfully completed CHC-090 (College Skills and Strategies) were statistically significantly and substantially more likely to complete the following courses when compared to students in the same section who did not successfully complete CHC-090 (see Table 1):

- ENGL-914
- MATH-942
- MATH-952
- READ-925
- READ-956

In addition, Hispanic students appeared to benefit most from completing CHC-090 successfully, followed by African American students (see Table 1A). Moreover, males, females, and students 39 years old or younger were also substantially and statistically significantly more likely to complete a developmental math, reading, or English course than students who had not successfully completed CHC-090.

Students who successfully completed CHC-099 (Learning Communities Seminar) were statistically significantly and substantially more likely to complete the following courses when compared to students in the same section who did not successfully complete CHC-099 (see Table 2):

- ENGL-914
- MATH-952
- READ-925
- READ-956

In addition, Native American students appeared to benefit most from completing CHC-099 successfully, followed by African American, Asian, and Hispanic students (see Table 2A). Moreover, males, females, and students 49 years old or younger were also substantially and statistically significantly more likely to complete a developmental math, reading, or English course than students who had not successfully completed CHC-099.

There were not as many students who both successfully completed CHC-100 (Student Success and the College Experience) and who enrolled in a developmental math, reading, or English course in the same semester (see Table 3). Accordingly, the results were not as substantial for CHC-100 as they were for CHC-090 and 099. However, male students and students 19 years old or younger who successfully completed CHC-100 were statistically significantly and substantially more likely to complete a developmental math, reading, or English course than students who had not successfully completed CHC-100 (see Table 3A).

Table 1: Relationship between Students who successfully Completed CHC-090 (College Skills and Strategies) and those who did not enroll or Successfully Complete CHC-090 in the Same Term and Section by Basic Skills English, Math, and Reading Course from 2009-2010 to 2013-2014.

| Course | Did Not Successfully Complete CHC-090 | | | Successfully Completed CHC-090 | | | ES | P-Value |
|------------|---------------------------------------|-----|------|--------------------------------|-----|-------|------|---------|
| | # | N | % | # | N | % | | |
| ENGL-914 | 56 | 93 | 60.2 | 31 | 33 | 93.9 | .73 | < .001 |
| ENGL-976 | 12 | 24 | 50.0 | 1 | 1 | 100.0 | .98 | |
| MATH-942 | 8 | 23 | 34.8 | 33 | 43 | 76.7 | .86 | .001 |
| MATH-952 | 40 | 76 | 52.6 | 13 | 15 | 86.7 | .69 | .002 |
| MATH-953X2 | 1 | 4 | 25.0 | 0 | 1 | 0.0 | -.56 | |
| READ-078X2 | 23 | 28 | 82.1 | 1 | 1 | 100.0 | .46 | |
| READ-925X2 | 65 | 96 | 67.7 | 89 | 91 | 97.8 | .79 | < .001 |
| READ-956X2 | 27 | 34 | 79.4 | 19 | 19 | 100.0 | .60 | .005 |
| READ-980 | 20 | 31 | 64.5 | 1 | 1 | 100.0 | .74 | |
| Total | 252 | 409 | 61.6 | 188 | 205 | 91.7 | .67 | < .001 |

Table 1: Relationship between Students who successfully Completed CHC-090 (College Skills and Strategies) and those who did not enroll or Successfully Complete CHC-090 in the Same Term and Section in Basic Skills English, Math, and Reading Courses by Ethnicity, Gender, and Age from 2009-2010 to 2013-2014.

| Demographics | Did Not Successfully Complete CHC-090 | | | Successfully Completed CHC-090 | | | ES | P-Value |
|------------------|---------------------------------------|-----|-------|--------------------------------|-----|-------|------|---------|
| | # | N | % | # | N | % | | |
| Ethnicity | | | | | | | | |
| Asian | 11 | 15 | 73.3 | 7 | 7 | 100.0 | .68 | .035 |
| African American | 22 | 35 | 62.9 | 14 | 14 | 100.0 | .83 | < .001 |
| Hispanic | 120 | 215 | 55.8 | 116 | 123 | 94.3 | .84 | < .001 |
| Native American | 5 | 6 | 83.3 | 2 | 2 | 100.0 | .47 | .356 |
| Caucasian | 94 | 137 | 68.6 | 49 | 59 | 83.1 | .32 | .024 |
| Missing | 0 | 1 | 0.0 | | | | | |
| Total | 252 | 409 | 61.6 | 188 | 205 | 91.7 | .67 | < .001 |
| Gender | | | | | | | | |
| Female | 128 | 203 | 63.1 | 105 | 115 | 91.3 | .64 | < .001 |
| Male | 123 | 205 | 60.0 | 83 | 90 | 92.2 | .70 | < .001 |
| Missing | 1 | 1 | 100.0 | | | | | |
| Total | 252 | 409 | 61.6 | 188 | 205 | 91.7 | .67 | < .001 |
| Age | | | | | | | | |
| 19 or younger | 149 | 232 | 64.2 | 128 | 144 | 88.9 | .56 | < .001 |
| 20-24 | 70 | 114 | 61.4 | 39 | 40 | 97.5 | .79 | < .001 |
| 25-29 | 13 | 30 | 43.3 | 5 | 5 | 100.0 | 1.12 | < .001 |
| 30-34 | 4 | 11 | 36.4 | 6 | 6 | 100.0 | 1.25 | .001 |
| 35-39 | 7 | 12 | 58.3 | 2 | 2 | 100.0 | .84 | .016 |
| 40-49 | 8 | 9 | 88.9 | 8 | 8 | 100.0 | .46 | .333 |
| 50 and above | 1 | 1 | 100.0 | | | | | |
| Total | 252 | 409 | 61.6 | 188 | 205 | 91.7 | .67 | < .001 |

Table 2: Relationship between Students who successfully Completed CHC-099 (Learning Communities Seminar) and those who did not enroll or Successfully Complete CHC-099 in the Same Term and Section by Basic Skills English, Math, and Reading Course from 2009-2010 to 2013-2014.

| Course | Did Not Successfully Complete CHC-099 | | | Successfully Completed CHC-099 | | | ES | P-Value |
|------------|---------------------------------------|-------|------|--------------------------------|-----|------|------|---------|
| | # | N | % | # | N | % | | |
| ENGL-914 | 49 | 104 | 47.1 | 180 | 208 | 86.5 | .89 | < .001 |
| MATH-903X4 | 49 | 70 | 70.0 | 1 | 2 | 50.0 | -.43 | .692 |
| MATH-942 | 94 | 160 | 58.8 | 8 | 14 | 57.1 | -.03 | .910 |
| MATH-943 | 91 | 206 | 44.2 | 7 | 14 | 50.0 | .12 | .684 |
| MATH-952 | 425 | 746 | 57.0 | 70 | 104 | 67.3 | .21 | .038 |
| MATH-953 | 53 | 118 | 44.9 | 9 | 15 | 60.0 | .30 | .279 |
| READ-078X2 | 133 | 172 | 77.3 | 27 | 30 | 90.0 | .31 | .050 |
| READ-925X2 | 63 | 145 | 43.4 | 196 | 217 | 90.3 | 1.04 | < .001 |
| READ-956X2 | 225 | 312 | 72.1 | 75 | 79 | 94.9 | .54 | < .001 |
| Total | 1,182 | 2,033 | 58.1 | 573 | 683 | 83.9 | .54 | < .001 |

Table 2A: Relationship between Students who successfully Completed CHC-099 (Learning Communities Seminar) and those who did not enroll or Successfully Complete CHC-099 in the Same Term and Section in Basic Skills English, Math, and Reading Courses by Ethnicity, Gender, and Age from 2009-2010 to 2013-2014.

| Demographics | Did Not Successfully Complete CHC-099 | | | Successfully Completed CHC-099 | | | ES | P-Value |
|------------------|---------------------------------------|-------|-------|--------------------------------|-----|-------|------|---------|
| | # | N | | # | N | | | |
| Ethnicity | | | | | | | | |
| Asian | 39 | 69 | 56.5 | 44 | 49 | 89.8 | .73 | < .001 |
| African American | 93 | 185 | 50.3 | 55 | 66 | 83.3 | .67 | < .001 |
| Hispanic | 529 | 955 | 55.4 | 280 | 337 | 83.1 | .57 | < .001 |
| Native American | 20 | 43 | 46.5 | 6 | 6 | 100.0 | 1.06 | < .001 |
| Caucasian | 493 | 771 | 63.9 | 185 | 222 | 83.3 | .42 | < .001 |
| Missing | 8 | 10 | 80.0 | 3 | 3 | 100.0 | .53 | .162 |
| Total | 1,182 | 2,033 | 58.1 | 573 | 683 | 83.9 | .54 | < .001 |
| Gender | | | | | | | | |
| Female | 688 | 1112 | 61.9 | 339 | 400 | 84.8 | .49 | < .001 |
| Male | 490 | 917 | 53.4 | 233 | 282 | 82.6 | .60 | < .001 |
| Missing | 4 | 4 | 100.0 | 1 | 1 | 100.0 | .00 | .00 |
| Total | 1,182 | 2,033 | 58.1 | 573 | 683 | 83.9 | .54 | < .001 |
| Age | | | | | | | | |
| 19 or younger | 565 | 982 | 57.5 | 374 | 448 | 83.5 | .55 | < .001 |
| 20-24 | 300 | 559 | 53.7 | 108 | 135 | 80.0 | .53 | < .001 |
| 25-29 | 125 | 198 | 63.1 | 38 | 40 | 95.0 | .68 | < .001 |
| 30-34 | 63 | 101 | 62.4 | 13 | 15 | 86.7 | .51 | .020 |
| 35-39 | 46 | 68 | 67.6 | 24 | 26 | 92.3 | .56 | .002 |
| 40-49 | 66 | 97 | 68.0 | 11 | 12 | 91.7 | .52 | .015 |
| 50 and above | 17 | 28 | 60.7 | 5 | 7 | 71.4 | .22 | .608 |
| Total | 1,182 | 2,033 | 58.1 | 573 | 683 | 83.9 | .54 | < .001 |

Table 3: Relationship between Students who successfully Completed CHC-100 (Student Success and the College Experience) and those who did not enroll or Successfully Complete CHC-100 in the Same Term and Section by Basic Skills English, Math, and Reading Course from 2009-2010 to 2013-2014.

| Course | Did Not Successfully Complete CHC-099 | | | Successfully Completed CHC-099 | | | ES | P-Value |
|------------|---------------------------------------|-------|------|--------------------------------|----|-------|------|---------|
| | # | N | % | # | N | % | | |
| ENGL-914 | 92 | 157 | 58.6 | 22 | 33 | 66.7 | .16 | .383 |
| MATH-903X4 | 52 | 74 | 70.3 | 2 | 2 | 100.0 | .65 | < .001 |
| MATH-942 | 83 | 132 | 62.9 | 9 | 9 | 100.0 | .78 | < .001 |
| MATH-943X2 | 32 | 46 | 69.6 | 1 | 2 | 50.0 | -.42 | .700 |
| MATH-952 | 98 | 179 | 54.7 | 3 | 6 | 50.0 | -.10 | .834 |
| READ-078X2 | 64 | 85 | 75.3 | 4 | 4 | 100.0 | .58 | < .001 |
| READ-925X2 | 215 | 262 | 82.1 | 15 | 16 | 93.8 | .31 | .082 |
| READ-956X2 | 43 | 70 | 61.4 | 2 | 3 | 66.7 | .11 | .877 |
| Total | 679 | 1,005 | 67.6 | 58 | 75 | 77.3 | .21 | .055 |

Table 3A: Relationship between Students who successfully Completed CHC-100 (Student Success and the College Experience) and those who did not enroll or Successfully Complete CHC-100 in the Same Term and Section in Basic Skills English, Math, and Reading Courses by Ethnicity, Gender, and Age from 2009-2010 to 2013-2014.

| Demographics | Did Not Successfully Complete CHC-099 | | | Successfully Completed CHC-099 | | | ES | P-Value |
|------------------|---------------------------------------|-------|------|--------------------------------|----|-------|------|---------|
| | # | N | % | # | N | % | | |
| Ethnicity | | | | | | | | |
| Asian | 37 | 43 | 86.0 | 3 | 6 | 50.0 | -.92 | .124 |
| African American | 38 | 66 | 57.6 | 9 | 11 | 81.8 | .49 | .080 |
| Hispanic | 299 | 456 | 65.6 | 23 | 31 | 74.2 | .18 | .299 |
| Native American | 13 | 24 | 54.2 | | | | | |
| Caucasian | 287 | 400 | 71.8 | 21 | 25 | 84.0 | .27 | .118 |
| Missing | 5 | 16 | 31.3 | 2 | 2 | 100.0 | 1.37 | < .001 |
| Total | 679 | 1,005 | 67.6 | 58 | 75 | 77.3 | .21 | .055 |
| Gender | | | | | | | | |
| Female | 366 | 534 | 68.5 | 29 | 41 | 70.7 | .05 | .769 |
| Male | 313 | 471 | 66.5 | 29 | 34 | 85.3 | .40 | .004 |
| Total | 679 | 1005 | 67.6 | 58 | 75 | 77.3 | .21 | .055 |
| Age | | | | | | | | |
| 19 or younger | 360 | 531 | 67.8 | 43 | 54 | 79.6 | .26 | .045 |
| 20-24 | 148 | 239 | 61.9 | 6 | 10 | 60.0 | -.04 | .908 |
| 25-29 | 60 | 83 | 72.3 | 2 | 3 | 66.7 | -.12 | .868 |
| 30-34 | 35 | 45 | 77.8 | 3 | 3 | 100.0 | .54 | .001 |
| 35-39 | 29 | 48 | 60.4 | 1 | 1 | 100.0 | .80 | |
| 40-49 | 36 | 47 | 76.6 | 3 | 4 | 75.0 | -.04 | .951 |
| 50 and above | 11 | 12 | 91.7 | | | | | |
| Total | 679 | 1,005 | 67.6 | 58 | 75 | 77.3 | .21 | .055 |