Evaluation of the Portland Community College Prerequisite Policy: Executive Summary

Beginning in 2008-09, Portland Community College instituted a new prerequisite policy requiring students to demonstrate a certain level of proficiency in writing, reading, and math prior to taking a wide range of General Education courses. This report is an evaluation of the policy.

This analysis compared outcomes before the policy implementation versus after the implementation. Outcomes included grades and successful completion rates among students with low Writing, Reading, or Math test placement scores in General Education courses, as well as their term-to-term retention rates.

This study found the following:

• There was an overall improvement after the policy implementation in the pass rates and grades among students with low WR, RD, and MTH test scores in General Education courses.

• However, there was no improvement in class retention rates in General Education courses among these students.

• Most of the improvement in pass rates and grades took place among students testing into WR 90 and lower, and testing into RD 90 and lower. There was little improvement among students testing into WR 115 and/or RD 115.

• Winter-to-Spring retention rates improved among students with low WR, RD, and MTH test scores. However, this may have been impacted by economic conditions. There was no improvement, however, in Fall-to-Winter retention rates.

• Not surprisingly, students with low WR, RD, and MTH test scores were less likely to enroll in General Education courses after the policy implementation. Consequently, the students that remained in the General Education courses, particularly in the Fall terms, were on average better prepared to succeed in those courses.
Evaluation of the Portland Community College Prerequisite Policy

Beginning in 2008-09, Portland Community College instituted a new prerequisite policy requiring students to demonstrate a certain level of proficiency in writing, reading, and math prior to taking a wide range of General Education courses. In particular, students were required to demonstrate, typically through test placement scores or coursework in writing/reading/math: (1) writing proficiency equivalent to successful completion of WR 115; (2) reading proficiency equivalent to successful completion of RD 115; and (3) math proficiency equivalent to successful completion of MTH 20.

Although some General Education courses had versions of the above prerequisite requirement already in place prior to the new prerequisite policy, about 230 General Education courses had no such requirement (or non-enforced recommended “prerequisites”) and therefore were impacted by the policy.

This report is an evaluation of the PCC prerequisite policy. It includes the following sections: (I) methodology and outcome measures; (II) overall impact on new entering students with low writing/reading/math placement scores; (III) a comparison of the impact of the policy by student placement level; (IV) the impact on term-to-term retention rates; (V) conclusion.

I. Methodology and Outcome Measures

This evaluation used PCC Banner student end-of-term data, specifically data from the two academic years prior to the implementation of the new policy (i.e., the 2006-07 and 2007-08 academic years), and data from the (one) academic year of the implementation (2008-09).

Student data from 2009-10, two years after the policy implementation, were excluded from the analysis for two reasons. First, in Winter 2010 there were changes to the PCC grading policy that may have had an impact upon the outcome measures used in this study. Second, the economic recession may have had a significant effect on enrollment patterns during that academic year. Thus, only one academic year (2008-09) was included in the post-policy analysis.

The outcomes used in this study focused on three measures, each comparing pre- and post-policy implementation:

1) the extent to which there was an increase in successful completions (i.e., a grade of A, B, C, or PASS) in enrollments in those General Education courses that were impacted by the new policy;

2) the extent to which class withdrawal rates in those General Education courses declined, as measured by a grade of “W”; and
3) the extent to which average grades in the General Education courses (A=4; B=3; C=2; D=1; F=0) improved.

The study also looked at term-to-term retention rates, specifically fall-to-winter term retention, winter-to-spring term retention, and continuous fall-to-winter-to-spring term retention.

This evaluation focused on the effect of the policy on entering fall cohorts of new PCC degree-seeking credit students. (This, by definition, excludes continuing and returning students who were not required to comply with the prerequisite policy during a brief transition period when the policy was implemented).

Moreover, this study only included students with COMPASS test scores placing them into WR 115 or lower; or into RD 115 or lower; or below MTH 60.¹

Finally, this analysis compared outcomes before the policy implementation (2006-07 and 2007-08) versus after the implementation (2008-09). However, it should be kept in mind that advisors, instructors, and other PCC staff encouraged students to fulfill the prerequisite requirements prior to the official implementation. Therefore, it is possible that trends may have started in 2007-08, before the policy implementation.

II. Overall Impact on New Entering Students with Low Writing/Reading/Math Placement Scores

As mentioned above, this study focused on students with COMPASS scores that, after the implementation of the prerequisite policy, would have typically required them to successfully complete coursework in writing/reading/math prior to taking a wide range of General Education courses.² Before the policy, however, most students with equivalent (low) COMPASS scores were allowed to enroll in these same General Education courses without first successfully completing writing/reading/math coursework.

¹ This report also includes an appendix, showing changes in grades and successful completion rates among the 232 General Education courses impacted by the prerequisite policy. The appendix does include students with both low and high test placement scores.

² Some General Education courses opted-out of the writing, reading, and/or math requirement. These courses were excluded from the study. Also, General Education courses were excluded that had their own prerequisite policies similar to the PCC prerequisite policy but in place prior to implementation of the official PCC policy.
Students with Low WR Test Placement Scores
Table 1A shows the impact of the policy on new students with WR test scores placing them into WR 115 or below. (After the implementation of the policy, these students would typically have been required to successfully complete WR 115 before taking a wide range of General Education classes).

The first row of Table 1A shows enrollments in General Education courses during Winter and Spring 2007 (two years prior to the implementation) by new fall-term students with test score placements of WR 115 or low, and in particular by students who did not successfully complete WR 115 prior to taking the General Education course. The enrollment only includes General Education courses that, prior to the policy, had no WR prerequisite policy, but did so after the policy implementation.

Overall, there were 349 enrollments by such students in these General Education courses. 72.5% of the General Education enrollment showed successful completion (A, B, C, or PASS), and the withdrawal rate (a grade of “W”) was 6.9%. The average grade (A=4; B-3; etc) was 2.46.

The second row also shows successful completion rates, withdrawals, and grades of fall-term students with WR test scores placing them into WR 115 or below, but one year prior to the policy implementation (i.e., during the Winter and Spring of 2008). There were 407 enrollments by these students in the selected General Education courses, with successful completion rates of 67.3%, withdrawal rates of 9.6%, and average grades of 2.33.

This fall cohort of new students (one year prior to implementation) performed even worse than the previous fall cohort of new students (two years prior to implementation). Again, only students who did not pass WR 115 prior to enrolling in the selected General Education courses were included.

The last row, however, represents the outcomes of students with low WR scores who entered during the fall term of the policy implementation. These are students who successfully completed WR 115 before taking the impacted General Education courses. In two of the three outcome measures we see an improvement in outcomes after the policy implementation. In particular, pass rates improved (72.5% and 67.3% before implementation versus 76.7% after implementation), and grades also improved (2.46 and 2.33 versus 2.64). Trends in withdrawal rates, however, were unclear.

In short, among successive waves of new fall students with low WR test scores taking selected General Education courses in the winter and spring terms, we see an improvement in pass rates and grades after the policy implementation.

Students with Low RD Test Placement Scores
Table 1B shows new fall students with reading COMPASS scores placing them into RD 115 or lower. Again, prior to the prerequisite policy implementation, these students would have been allowed to enroll in a wide range of General Education courses without first enrolling in and passing RD 115. In the Winter and Spring of 2007 (row one of Table 1B), there were 375 enrollments by such students. Pass
rates in the General Education courses were 70.9%, withdrawal rates were 7.5%, and average grades were 2.42.

Row 2 (Winter and Spring 2008) shows the enrollment (479) by the next year’s wave of new fall students, again prior to the policy implementation. As compared to their counterparts a year earlier, successful completion rates and grades were about the same. Withdrawal rates increased to 8.1%.

However, after the policy implementation, in the Winter and Spring of 2009 (row 3 of Table 1B; 415 enrollments), we see notable improvements among students with low RD test scores enrolled in impacted General Education courses in their pass rates and grades. In particular, pass rates improved (70.9% and 70.1% before implementation versus 75.2% after implementation), and grades improved (2.42 and 2.40 versus 2.54). Withdrawal rates, however, increased.

**Students with Low MTH Test Placement Scores**

Last, Table 1C shows the enrollment of students that had Math test scores placing them below MTH 60 in impacted General Education courses. The table shows an improvement in pass rates and grades after the implementation of the prerequisite policy. The pass rates in impacted General Education courses among student with low MTH test scores increased considerably (71.7% and 75.0% before the implementation versus 79.7% after implementation), as well as their grades in these courses (2.58 and 2.63 versus 2.79). As with the case of students with low WR and RD test scores, there was no improvement in withdrawal rates in impacted General Education courses among students with low MTH test scores.

In sum, among new PCC students with low WR/RD/MTH test scores, there was an improvement in their pass rates and grades in General Education courses impacted by the policy. Withdrawal rates, however, did not improve.

**III. Comparison of Impact by Student Placement Level**

Students are now required to show proficiency equivalent to the successful completion of WR 115 and RD 115 prior to taking most General Education courses. However, there are a series of lower-level credit WR and RD courses “below” WR/RD 115, such as WR/RD 90 and WR/RD 80. This section examines the differences (if any) of the impact of the prerequisite policy by various placement levels into WR and RD courses. For instance, did students who tested into WR/RD 115 benefit to the same extent as students who tested into WR/RD 90?
Students with Various WR Placement Scores
Table 2A parallels Table 1A in the previous section. However, Table 2A separates entering fall cohorts of new students into three categories: Those with WR test scores placing them into WR 115; those with test scores placing them into WR 90; and those with test scores placing them into WR 80 or lower.\(^3\)

For example, the first row (124 enrollments) represents students entering in the Fall of 2006 with placement scores into WR 115 that went on to enroll in General Education courses in the Winter and Spring of 2007. Again, these are General Education courses that had no prerequisite requirement prior to the policy implementation, but did so afterward. Prior to the policy implementation, these students enrolled in the General Education courses without enrolling in and successfully completing WR 115.

In the Winter and Spring of 2007, the pass rate of these students in the above General Education courses was 75.0% and the withdrawal rate was 8.9%. Average grades were 2.70. In the next wave of entering students (second row; 156 enrollments), pass rates in the Winter and Spring of 2008 were again 75.0%, withdrawal rates were 7.1%, and average grades were 2.54.

Among this population of students with WR test scores placing them into WR 115, we see little improvement after the implementation prerequisite policy in General Education pass rates, withdrawal rates, and grades. In particular, among the Fall 2008 cohort of students taking General Education courses in the Winter and Spring of 2009 (third row; 209 enrollments), pass rates remained at about 75%, withdrawal rates rose, and trends in average grades were unclear.

However, among students with WR test scores placing them into WR 90 (middle of Table 2A), we see a considerable improvement, particularly in pass rates and grades. For instance, pass rates improved (71.3% and 63.5% before implementation versus 80.1% after implementation), and grades improved (2.35 and 2.21 versus 2.57). The trends in withdrawal rates, however, were ambiguous.

Among students with WR test scores placing them into WR 80, we see an improvement in grades after the policy implementation. However, the sample size may be too small for this population to draw any conclusions.\(^4\)

Students with Various RD Placement Scores
Table 2B follows the same pattern as Table 2A. In particular, for students with RD test scores placing them into RD 115 (top of Table 2A), we see little improvement in performance in General Education

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\(^3\) Prior to the prerequisite policy implementation, there were a small number of adult basic skills students who enrolled in general education courses that eventually had WR, RD, and/or MTH prerequisites after the policy implementation.

\(^4\) These are students that tested into WR 80 and below when they entered in the fall, and would have taken impacted general education courses in the following two terms. Thus, we would expect the general education enrollment of these students to be small, particularly after the prerequisite policy implementation.
courses as a result of the prerequisite policy. Pass rates remained flat at around 75%, withdrawal rates were also flat at about 8.0%, and the trends in grades were ambiguous.

On the other hand, among students with RD test scores placing them into RD 90 (middle of Table 2B), we see significant improvement in their pass rates and grades in the impacted General Education courses; pass rates rose (66.2% and 69.5% before implementation versus 79.5% after implementation), and grades also rose (2.19 and 2.35 versus 2.65).

In summary, in terms of improvements in pass rates and grades, there was little improvement by students who tested into WR 115 and/or RD 115. There was a marked improvement, however, in these measures among students who tested into WR 90 and/or RD 90.

**A Note about Various MTH Placement Scores**

It should be noted that the prerequisite policy requires students to demonstrate math proficiency equivalent to successful completion of the lowest-level math course at PCC offered for credit, MTH 20. Since students testing into Math courses “above” MTH 20 were usually allowed to take General Education courses both *before* and *after* the prerequisite policy implementation, this evaluation does not include an analysis of the impact of the prerequisite policy by placement level into various MTH courses.

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**IV. Term-to-Term Retention Rates**

In theory, students who are better prepared to take and who succeed in General Education courses will stay enrolled at PCC, all else equal. Table 3 looks at the term-to-term retention rates of students with low WR, RD, and/or MTH placement scores.

**Term-to Term Retention of Students with WR Placement Scores into WR 115**

The top of Table 3 focuses on students with reading COMPASS scores placing them into WR 115 or lower who entered PCC in the Fall of 2006. The first row looks at the Fall 06 to Winter 07 retention rates of these students (68.0%). The second row looks at the Fall 07 to Winter 08 retention rates (72.3%) of the next wave of entering students (entering Fall of 2007). Again, these are students with test scores placing them into WR 115 or lower.

After the policy implementation (third row at the top of Table 3), fall-to-winter retention rates did *not* improve among the Fall 08 wave of entering students with test scores placing them into WR 115 or lower (69.2% retention rate). Thus, the fall-to-winter retention rates did not increase among students with scores placing them into WR 115 or lower.

However, there was considerable improvement in the winter-to-spring retention rates of these same students (test scores placing them into WR 115 or lower). For instance, the Winter 07 to Spring 07
retention rates among this Fall 06 cohort was 75.7%. Two years later, the Winter 09 to Spring 09 retention rates was 83.1% among students entering in Fall 08.

There was also improvement in the continuous fall-to-winter-to-spring retention rates, although that trend was most pronounced prior to the policy implementation.

**Term-to Term Retention of Students with RD Placement Scores into RD 115**
The middle of Table 3 looks at students with test scores placing them into RD 115 or lower. The retention rates follow the same patterns as the above students testing into WR 115 or lower. In particular, there was a large increase in the winter-to-spring retention rates.

For example, the Winter 07 to Spring 07 retention rates was 76.4% among students with test scores placing them into RD 115 or lower. The Winter 09 to Spring 09 retention rates was 83.2% among comparable students entering in Fall 08. There was an improvement in the continuous fall-to-winter-to-spring retention rates, but again that trend was most pronounced prior to the policy implementation.

**Term-to Term Retention of Students with MTH Placement Scores below MTH 60**
The bottom of Table 3 looks at students with test scores placing them below MTH 60. As with the above students, winter-to-spring retention rates increased significantly. For instance, the Winter 07 to Spring 07 retention rates among this population was 74.8%. The Winter 09 to Spring 09 retention rates rose to 81.6% among the students entering in Fall 08.

**Caveat Regarding Term-to-Term Retention Rates**
One of the factors affecting term-to-term retention is economic conditions. All else equal, students tend to stay at PCC if they face poor job prospects during the period of their enrollment. The unemployment rate in the Portland-Metro area began to rise in the summer of 2008, so it is possible that the increase in the winter-to-spring retention rates before the prerequisite policy versus after implementation may have been driven by economic conditions.

However, if that were the case, we might have also seen at least a moderate increases in fall-to-winter retention rates among this population as a result of the recession. Yet, this was not the case; most of the increase retention took place between the winter and spring terms. Moreover, students with high test scores would have also been impacted by the recession, but would not have been impacted by the prerequisite policy. Yet, among students with high test scores (not shown in the tables), there was not the increase in winter-to-spring retention that we have seen among students with low test scores.
V. Conclusion

This evaluation looked at the General Education success of students with low WR, RD, and MTH test scores prior to the prerequisite policy implementation versus after the implementation. The three major conclusions are:

1) There was an overall improvement after the policy implementation in the pass rates and grades in General Education courses among students with low WR, RD, and MTH test scores;

2) Most of the improvement took place among students testing into WR 90 and lower, and testing into RD 90 and lower. There was little improvement among students testing into WR 115 and/or RD 115.

3) Winter-to-Spring retention rates improved among students with low WR, RD, and MTH test scores. However, this may have been impacted by economic conditions.
Appendix: Success of Students with Low and High Test Scores in General Education Courses

One consequence of the prerequisite policy is that enrollment in WR, RD, and MTH-preparation courses increased as students attempted to fulfill the prerequisite requirements, while enrollment in some General Education courses decreased. From an instructor viewpoint, it may be interesting to see if the performance of the remaining students increased after the prerequisite policy implementation.

In theory, as students who are less prepared to succeed in the General Education course instead enroll elsewhere after the prerequisite policy implementation (i.e., in WR, RD, and MTH-preparation courses), we should see an improvement in grades, withdrawal rates, and pass rates in General Education courses.

Appendix Table A (General Education courses that adopted the WR/RD prerequisite) and Appendix Table B (General Education courses that adopted the MTH prerequisite) show this improvement. However, the improvement in grades, withdrawal rates, and pass rates are most noticeable in the Fall terms. For instance, among the General Education courses that adopted the WR/RD prerequisite (Appendix Table A), the fall term withdrawal rates fell from 10-12% before the policy implementation to slightly above 8% afterward. Pass rates improved from 73-74% to slightly above 78%. This same pattern holds among General Education courses that adopted the MTH prerequisite (Table B).

Note that, comparing enrollment in General Education courses before and after the policy implementation, there was a general decline in enrollment during the fall terms; in particularly the fall terms, students with low WR/RD/MTH test placement scores enrolled to a lesser extent in General Education courses. The students that remained in the fall General Education courses were, on average, better prepared.

This suggests that instructors, particularly those teaching fall-term General Education courses, see an improvement in the caliber of their students as a result of the prerequisite policy.