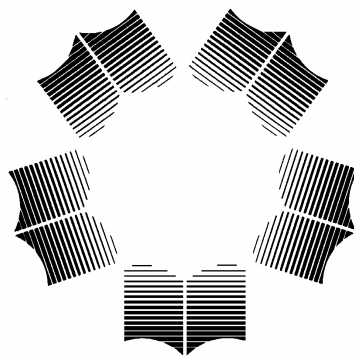


The Academic Profile 2006



PRINCE GEORGE'S
COMMUNITY COLLEGE

Office of Planning and Institutional Research
Outcomes Assessment OA2007-01
August 2006

PRINCE GEORGE'S COMMUNITY COLLEGE
Office of Planning and Institutional Research

The Academic Profile

Executive Summary
August 2006
(Outcome Assessment 2007-01)

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I. INTRODUCTION

This paper provides a summary of the 2006 *Academic Profile* results. Additional analyses on the relationships between student performance, associated background characteristics and institutional factors are also included in this paper. The *Academic Profile*, which is a test of the academic skills students develop through their general education coursework, was administered to all students applying for graduation during the 2005-2006 academic year. Initially piloted at Prince George's Community College (PGCC) in 2002, this is the fifth year the college has assessed general education outcomes using the *Academic Profile*.

Section II opens with a discussion of the strengths and limitations of the *Academic Profile*. **Section III** looks at the performance of Prince George's Community College graduates over time, as well as by comparing the performance of PGCC's 2005-2006 graduates with a national norm group and with well-established proficiency standards for writing, mathematics and reading/critical thinking. **Section IV** employs subgroup analysis to better understand the characteristics influencing student performance and program effectiveness. Finally, **Section V** summarizes the key findings from this year's *Academic Profile* and suggests directions for future research.

It is important to note that while the *Academic Profile* serves as a great lens through which to assess the general education outcomes of our programs, it is different from the course- and program-specific evaluation activities already underway through the college's Academic Outcomes Assessment Committee, self-study processes and other means. Unlike these efforts which tend to focus on particular departments and courses, the *Academic Profile* experience allows us to evaluate academic skills acquired by students *across* disciplines.

II. ACADEMIC PROFILE OVERVIEW

The *Academic Profile*, jointly developed and owned by the Education Testing Service (ETS) and College Board since 1987, assesses college-level reading, college-level writing, critical thinking and mathematics within the context of the humanities, social sciences and natural sciences. In keeping with the intent of the college's *General Education Core Learning Outcomes*, this assessment focuses on the *academic skills* students gain through their general education courses, not on any *content-specific knowledge*.

The *Academic Profile* is available in both a Long and a Short Form. Prince George's Community College uses the Short Form, which is actually the Long Form split into three approximately parallel segments of equal length. These segments are arranged such that random thirds of each group take each of the four skill segments (reading, writing, critical thinking and math). The Short Form contains material from all four skill dimensions so that each student is tested in all areas. Group data is then generated by combining results from the three Short Forms.

One limitation of the Short Form is that it does not contain enough questions on each skill-dimension to provide individual-level subscores or proficiency-level details. While the *total scores* reported in this report are derived from **actual values**, it is important to note that *subscores* and *proficiency groupings* are **estimates** describing the performance of the group tested.

In addition to the test questions, the *Academic Profile* asks students a series of questions about their background characteristics and the details of their academic programming. These **demographic and program data** allow us to describe the students tested and serve as the basis for the subgroup analysis performed in this study. These data are **self-reported** and, therefore, lend themselves to some bias. Depending on the question asked, individuals may have a tendency to respond as they wish to see themselves as opposed to providing a “true” response. For example, when asked to select their approximate overall grade point average, a respondent might opt for the “3.00-3.49” category they have been striving for instead of the “2.55 to 2.99” category where they actually fall. A related issue is the “square-peg-round-hole” phenomenon: Poorly constructed questions and options can leave respondents choosing a next-best option instead of what they would have selected if the correct option existed. Although these factors can detract from the integrity of the data, self-reported data are still very useful for answering research questions and are used extensively in education research.

Finally, the *Academic Profile* includes both **norm referenced** and **criterion referenced scores**, as well as **scaled scores**. **Section IV** includes a detailed discussion of these terms.

Participation and graduation cycles

We typically associate “graduation” with the official commencement ceremony held in May. In reality though, Prince George’s Community College students can apply for graduation in any of three cycles ending in August, December and May. Students are issued an award (defined at the college as a Letter of Recommendation, Certificate and/or Associate degree) at the conclusion of any of these cycles, provided all their graduation requirements are met. While they may receive their award earlier in the academic year, commencement exercises are held at the end of the May semester only. The *Academic Profile* cohort in this study includes all students who applied for graduation during the 2005-2006 academic year (August 2005, December 2005 or May 2006). Of the 771 students applying for graduation this year, 672 (87%) took the *Academic Profile* exam. Participation has increased by over 26 percentage points, or 43%, since year two of the *Academic Profile*¹.

Table 1 looks at the annual *Academic Profile* participation rate since the 2003 academic year. Prince George’s Community College has been able to maintain high participation rates by including the *Academic Profile* on the list of requirements graduates must complete in order to officially graduate. Test dates are scheduled throughout all three graduation cycles, allowing ample opportunity for all prospective graduates to complete this requirement. While

¹ Tests were distributed to a small sample of PGCC students (N=38) during the pilot 2001-2002 year as opposed to being a requirement of graduation as has been the case since 2003. As such, participation rates and results from the 2002 academic year are not included in this analysis.

participation dropped off some from the 2005 to 2006 academic years (from 95% to 87%, respectively), these consistently high participation rates mark the institutionalization of this assessment as a graduation requirement, which was initially implemented in 2003.

Table 1: *Academic Profile* participation rates, 2003-2006

Academic Year	Unduplicated Graduate Count	<i>Academic Profile</i> Participants	
		N	% of Unduplicated Graduates
2002-2003	660	403	61.1%
2003-2004	720	637	88.5%
2004-2005	758	717	94.6%
2005-2006	771	672	87.2%

III. 2005-2006 ACADEMIC PROFILE COHORT RESULTS

Explanation of analysis

Before we turn to the 2006 *Academic Profile* findings, a brief explanation of norm-referenced and criterion-referenced scores is warranted.

- **Norm-referenced** scores compare an individual's performance on an assessment to the performance of others. The SAT, GRE and ACT are all common examples of norm-referenced tests. In this case, student performance is a factor of where they stand within a group. A student positioned in the top tier of the group is assumed to know a lot or be highly skilled, depending on what is being assessed. Of course, the overall competence of the norm group significantly affects this interpretation; ranking high in a largely low-performing group should not be misinterpreted as high absolute overall achievement.
- **Criterion-referenced** scores compare an individual's performance on an assessment to a predetermined, external standard (as opposed to the performance of other students). In the classroom, performance levels are usually established such that students scoring between 90 to 100 receive an A, those scoring between 80 to 89 receive a B and so forth. If everyone in the class scores between 90 and 100, they all get As. Alternately, if no one scores between 90 and 100, no one receives an A for the class.

In 6 of the 672 *Academic Profile* assessments administered in the 2006 academic year, students answered fewer than half of the test questions. These 6 examinations have been excluded from the analysis due to their unreliability. Additionally, this year one student took the *Academic Profile* twice. Since it is not possible to discern which score is the most recent, the decision was made to keep the higher overall score and discard the lower score. That is, only one score for this student was included in the analysis, leaving a total of 665 students (N=665) in 2006.

2006 graduates and PGCC *Academic Profile* scores over time

Table 2 shows the total scaled scores of this year's graduates compared to those of Prince George's Community College graduates over the past three years. The average score of this year's graduates was 434.02, virtually unchanged from the previous graduating class (434.80). Likewise as shown in **Table 3**, while the skill and context-based subscores dropped slightly, they remained very similar to the average estimates from 2005. In fact from 2005 to 2006, there was not a full point change in either direction for any of the skills and/or context-based areas. Students' writing scores represented the lone increase from 2005, rising by over a quarter of a point (+0.28).

Table 2: Average total scaled scores, 2003-2006⁽¹⁾

Academic Year	N	Mean	SD	Year-to-Year Difference
2002-2003	396	433.85	16.29	
2003-2004	634	433.06	15.84	-0.79
2004-2005	705	434.80	17.55	+1.74
2005-2006	665	434.02	17.03	-0.78

Notes. (1) The overall point range on the *Academic Profile* is 400 to 500.

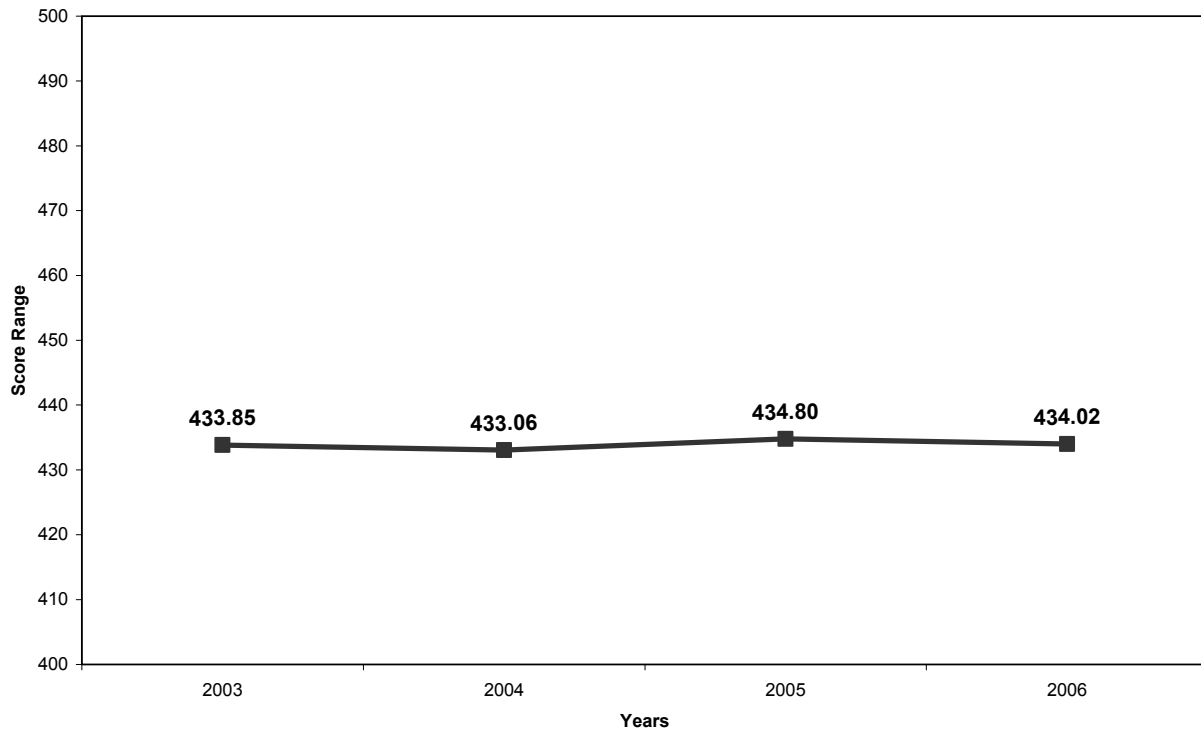
In addition to examining 2005 to 2006 changes, results from the past several years allow us to look at the progress of PGCC graduate cohorts over time. **Figure 1** shows the total scaled score trend over the past four academic years. While there has been both downward (2004 and 2006) and upward (2005) movement, it appears PGCC graduates are maintaining the same level of general education outcomes. Though students' general education scores seem somewhat stagnant, we should be encouraged that students overall performance (total score) is higher today than it was in 2003 when the assessment was rolled out to all applicants for graduation (+0.17). This same trend has held in each of the skills and context-based areas with the exception of critical thinking (-0.09).

Table 3: Comparison of area subscores, 2003-2006⁽¹⁾

Subscores	2002-03 (N=396)		2003-04 (N=634)		2004-05 (N=705)		2005-06 (N=665)		AY05- AY06 Dif.
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Skills Subscores									
Critical Thinking	107.73	5.01	107.62	5.18	108.32	5.88	107.64	5.47	-0.68
Reading	115.93	6.53	115.94	6.49	116.28	6.85	116.27	6.87	-0.01
Writing	112.74	4.82	112.29	4.74	112.48	4.75	112.76	5.05	+0.28
Mathematics	110.54	5.39	110.41	5.09	110.90	5.45	110.58	5.40	-0.32
Context-based Subscores									
Humanities	112.35	5.71	112.27	5.62	112.67	5.79	112.43	5.86	-0.24
Social Sciences	111.03	5.86	110.97	5.76	111.33	6.13	111.25	6.39	-0.08
Natural Sciences	112.21	4.88	112.20	5.01	112.81	5.51	112.29	5.21	-0.52

Notes. (1) All subscores have a 100 to 130 point range.

Figure 1: Total scaled score trend, 2003-2006



National reference group comparison

Determining the extent to which general education skills are improving over time provides only a narrow view of how well our general education programs (and therefore our students) are doing. Another way to examine this information is in comparison to other community college students. Ideally, we would compare our students with students at our peer institutions, namely those attending large, metropolitan community colleges in Maryland. While we are not able to get at this level of detail with the available data, ETS and the College Board have compiled comparison data on the performance of various groups taking the *Academic Profile* which provides a useful reference group with whom to compare our students. **Appendix A** lists the names of the institutions comprising this reference group as well as the number of students from each school. It is worth noting that four Maryland community colleges (Carroll Community College, Community College of Baltimore County, Howard Community College, and Prince George's Community College) are represented in this group.

Before looking at how well our students are performing compared to the reference group, it is useful to examine the demographic composition and background characteristics of these groups. Do our students fall in the same age category as those in the reference group? Are we similarly diverse? While we can not test whether Prince George's Community College students are

statistically different than the national reference group (we do not have individual data on any students other than PGCC-attenders), a simple comparison of the demographic and background characteristics of these groups points to some sizeable differences. **Table 4** highlights the areas where the differences between the reference group and PGCC students are most pronounced. When evaluating the performance of this year's *Academic Profile* participants as compared to the reference group, the following factors should be considered:

- **Age.** PGCC graduates are older than their equivalents nationally. Just over half (50%) of the PGCC cohort are 30 years of age or older, compared to roughly a third (33%) for the reference group.
- **Race/Ethnicity.** In keeping with the make-up of Prince George's county, PGCC graduates reflect our minority-majority community. There is a 55 point difference between the percentage of minority students in this year's graduating cohort (74%) and the percentage of minority students in the reference group (19%).
- **Enrollment Status.** PGCC students are more likely than the reference group to be enrolled part-time. A 14 percentage point difference also exists between those PGCC and reference group students enrolled full-time. Nearly half (47%) of the PGCC students were enrolled part-time, while only a third (33%) of the national norm were enrolled part-time.
- **Employment.** PGCC students tend to work longer hours than those students comprising the national reference group. Over half (52%) of PGCC students reported working 30 hours or more per week compared to approximately 40% in the reference group.
- **Academic Standing (GPA).** PGCC student performance, as measured by student GPA, was not as high as the reference group. Approximately a quarter (25%) of PGCC students reported a cumulative GPA 3.50 or over, compared to a third (33%) in the reference group.

Table 4: Demographic and background characteristics, PGCC students and reference group, 2006

	PGCC Students N=665	Reference Group N=11,214
Gender		
Male	28%	33%
Female	72%	67%
Age⁽¹⁾		
Under 20	2%	5%
20 to 29	48%	62%
30 to 39	27%	18%
40 to 49	17%	11%
50 to 59	4%	3%
60 or more	2%	<1%
Ethnicity		
African American	65%	11%
Asian, Asian American or Pacific American	6%	2%
Hispanic	2%	4%
American Indian or Alaskan Native	<1%	2%
White (Non-Hispanic)	16%	77%
Other	12%	4%
Best Language		
English	88%	93%
Other	4%	3%
Bilingual	9%	4%
Enrollment Status		
Full-time student	53%	67%
Part-time student	47%	33%
Credit Hours Transferred		
Not a transfer	61%	64%
0-15 hrs transferred	17%	13%
16-30 hrs transferred	12%	10%
More than 30 hrs transferred	11%	12%
House Worked for Wages		
0 (Not Employed)	13%	15%
1 to 15 per week	11%	15%
16 to 30 per week	24%	30%
More than 30 per week	52%	40%
GPA		
3.50-4.00	25%	33%
3.00-3.49	40%	35%
2.50-2.99	27%	23%
2.00-2.49	8%	8%
1.00-1.99	<1%	<1%
Less than 1.00	0%	0%

Notes. (1) Twenty-one (21) entries were excluded from this distribution due to invalid response of age of zero.

Given the substantial differences in age, race/ethnicity, enrollment status, employment and GPA, it is not too surprising that PGCC students and the national reference group did not perform similarly on the *Academic Profile*. **Tables 5 and 6** contrast PGCC and reference group students' performance on the *Academic Profile*. Turning our attention first to the averages of the actual values (total score) earned by each individual student in Table 5, we see that PGCC students scored nearly eight and a half points lower (-8.38) than the reference group, on average. What does this really mean?

First, the PGCC average falls well within one standard deviation of the reference group average. So while the PGCC group average is somewhat below the average for this particular reference group, the overall performance of PGCCs students is far from being at the low end of the score range.

Secondly, we can compare the mean and median (50th percentile) scores of these groups to get a clearer sense of how the data are distributed. Unfortunately, this does not paint as optimistic of a picture as the previous point. Looking at the mean and median scores, we see that the PGCC median is 3 scaled score points lower than the group's mean (average) score. This suggests that the presence of some high scoring students in the PGCC graduate cohort are pushing up our average (we return to the subject of who these students are in Section V). When we compare the PGCC and reference group median scores, the difference jumps to 10 points (431 for the PGCC group versus 441 for the reference group).

And finally, despite the suggestion of some upward bias in our cohort, our standard deviation (17.03) is very comparable to that of the reference group (17.60). Standard deviation is the most frequently used statistic for looking at variability and indicates how spread out our scores are around the average.

Table 5: *Academic Profile* individual total score comparison, 2006⁽¹⁾

	PGCC Students N=665		Reference Group N=11,214		Difference
	Mean	SD	Mean	SD	
Total Score	434.02	17.03	442.40	17.60	-8.38
75 th Percentile ⁽²⁾	443		454		
50th Percentile	431		441		
25 th Percentile	423		430		

Notes. (1) The overall point range on the *Academic Profile* is 400 to 500. (2) Percentiles indicate the percentage of scores that fall at or below a given score. This tells us that 75% of the PGCC scores were lower than 443, fifty percent (50%) or half were lower than 431 and 25% were lower than 423.

Table 6 shows how well PGCC students performed on the *Academic Profile* subscore dimensions compared to the reference group. Again, although PGCC students appear to score lower on both the skill and context-based subscores, it is important to note that the difference is within 3 points across the board. This reinforces the conclusions drawn above that PGCC students are performing well within one standard deviation of the mean.

Table 6: Institutional mean subscore comparison, 2006⁽¹⁾

Subscores	PGCC Students N=666		Reference Group N=11,214		Difference
	Mean	SD	Mean	SD	
Skills Subscores					
Critical Thinking	107.64	5.47	110.60	6.00	-2.96
Reading	116.27	6.87	118.50	6.60	-2.23
Writing	112.76	5.05	114.10	4.80	-1.34
Mathematics	110.58	5.40	112.60	5.50	-2.02
Context-based Subscores					
Humanities	112.43	5.86	114.50	6.10	-2.07
Social Sciences	111.25	6.39	113.30	6.20	-2.05
Natural Sciences	112.29	5.21	114.80	5.60	-2.51

Notes. (1) All subscores have a 100 to 130 point range.

What is the relationship between student background characteristics and final score on the *Academic Profile*? Do differences in age, employment, race/ethnicity, etc., have a significant impact on student's general education outcomes, as measured by the *Academic Profile*? **Table 7** compares the performance of the 2006 *Academic Profile* participants at PGCC based on various background and program characteristics, specifically: gender, age, enrollment status, GPA, transfer status, hours worked and ethnicity. The mean scores of these groups were then tested to determine whether observed differences in scores were, in fact, statistically significant². The strongest differences ($p < 0.001$) were between the following groups:

- **Age.** Younger students (< 30 years old) outperformed older students (≥ 30 years old) by nearly 7 and a half points, scoring 437.78 as compared to 430.35, on average. The younger students were not, however, as centered around the mean as the older group. In fact, they experienced more variability than the PGCC group overall (SD=19.03).
- **Enrollment Status.** Full-time students also scored statistically significantly higher (436.13) than part-time students (432.00).
- **Employment.** While there was not a statistical difference between not working at all and working "some" (defined by 1 to 30 hours/week), the difference between not working or working some and working more than 30 hours a week (full-time) was notable. Students who worked full-time scored below the group average (431.48), while those who did not work at all or worked some scored above the 434.02 group average (436.68 and 436.81, respectively).
- **Academic Standing (GPA).** As we might expect, students who reported having GPAs in the 3.00 to 4.00 range far outperformed students who reported GPAs below 3.00 (436.67 to 429.27).³
- **Race/Ethnicity.** And finally, when testing the difference between student scores based on race/ethnicity, there was a statistically significant difference between the scores of white students (450.52) and both black (430.17) and other (433.04) student groups. The

² The two-sample t-test and analysis of variance (ANOVA) statistics were used for this analysis.

³ Students reporting lower than 1.00 were excluded from the analysis.

average score of the white subgroup was over 8 points higher than the reference group average.

These tests show us that younger, non-minority students with GPAs in the 3.00 to 4.00 range, who are enrolled in school full-time but do *not* work full-time, are associated with higher general education outcomes. As previously discussed in Table 4, these are the same characteristics underrepresented in the PGCC graduating class of 2006 when compared to the reference group.

While not statistically significant, students also performed differently based on their gender and transfer status. Male students scored 3 points higher on the *Academic Profile* than female students ($p = 0.029$). Likewise, transfer students scored almost 3 points higher on than those who started at PGCC ($p = 0.041$).

Table 7: Background characteristics impacting score outcomes, 2006

Students' Background Characteristics	# of students	Mean	SD	T-test/ANOVA	P-value
Gender					
Male	187	436.36	18.12	2.19	0.029 ^c
Female	476	433.15	16.54		
Age					
<30 years old	322	437.78	19.03	5.68	<0.001 ^a
>=30 years old	322	430.35	13.81		
Enrollment Status					
Full-time	347	436.13	17.57	3.11	0.002 ^b
Part-time	307	432.00	16.28		
GPA					
1 to 2.99	233	429.27	13.40	5.94	<0.001 ^a
3.00 to 4.00	424	436.67	18.19		
Transfer					
Transfer student	256	435.95	17.43	2.05	0.041 ^c
Not a transfer student	398	433.16	16.71		
Cert/Workforce/Career	41	429.80	15.64		
Hours Worked					
1: Not employed	84	436.68	17.76	Grp1 & Grp2	0.998
2: 1 to 30 hours/wk	231	436.81	19.04	Grp1 & Grp3	0.040 ^c
3: >30 hours/wk	344	431.48	14.84	Grp2 & Grp3	<0.001 ^a
Ethnicity					
1: Black	420	430.17	13.48	Grp1 & Grp2	<0.001 ^a
2: White	106	450.52	19.38	Grp1 & Grp3	0.184
3: Other	125	433.04	16.99	Grp2 & Grp3	<0.001 ^a

Notes. (1) Statistical significance at the <0.001, 0.01, 0.05 and 0.10 levels (two-tailed) is denoted by "a," "b," "c" and "d," respectively.

Proficiency standard outcomes

In addition to the norm-referenced scores discussed above, ETS provides an institutional summary of the percentage of students at each of three criterion-referenced proficiency levels (proficient, marginal, not proficient) in the areas of reading/critical thinking, writing and mathematics. **Appendix B** explains the skills students are required to have at each proficiency level. **Table 8** summarizes the proficiency levels achieved on each skill dimension by PGCC graduates and the reference group. Gaining a better sense of the proficiency standards themselves is a useful consideration before more closely inspecting these scores. Notice, for example, only 2% of PGCC graduates and 3% of reference group students met the highest proficiency level for critical thinking. Similarly, two-thirds of PGCC students and half of the reference group nationally were considered “not proficient” at the mid-level math skills based on these proficiency standards. Taken together these points suggest a bit of a gap between the standards set by ETS and what is actually being performed by community-college students nationally.

As was the case with the skills-area subscores, PGCC students again showed strength in their writing abilities. The same percentage of students met the highest proficiency standard for Level 3 writing at PGCC as did in the reference group (6%). An area of weakness, however, was Critical Thinking. Granted students across the country appear to be underperforming in this area (when the ETS scores are used as the measuring-stick) with 85% receiving the “not proficient” rating, this percentage jumped 7 points to 92% for PGCC students.

Table 8: Proficiency level comparisons, PGCC and reference group, 2006

Skill Dimension and Level	PGCC, 2005-2006 N=666 ⁽¹⁾			Reference Group N=11,214		
	Proficient	Marginal	Not Proficient	Proficient	Marginal	Not Proficient
Critical Thinking	2%	6%	92%	3%	12%	85%
Reading, Level 2	18%	24%	58%	32%	24%	45%
Reading, Level 1	52%	27%	21%	66%	21%	13%
Writing, Level 3	6%	16%	79%	6%	26%	68%
Writing, Level 2	11%	30%	60%	14%	39%	47%
Writing, Level 1	49%	34%	17%	64%	26%	11%
Math, Level 3	3%	6%	91%	4%	13%	84%
Math, Level 2	11%	22%	67%	20%	30%	50%
Math, Level 1	32%	33%	34%	49%	32%	20%

Notes. (1) Unlike the criterion-referenced scores which ETS provides at the individual level, proficiency scores are only processed at the group level. Given this, it was not possible to eliminate the student who took the *Academic Profile* twice from the final proficiency scores.

IV. SUBGROUP ANALYSIS

Earlier in Section III, we identified the three-point spread between PGCC's mean and median total score on the *Academic Profile* as evidence of some bias in this year's graduating cohort. In this section, we more closely examine various subgroups across campus to see where students are exhibiting strong mastery of general education skills and where they are not. Specifically, we turn our attention to program areas, developmental studies and the honors program.

Program areas

In the demographic/informational section of the *Academic Profile*, students were asked to select their *one* "intended or current" major from a list of 31 options. Average test scores by major for the past four academic years are included in **Table 9** below. The top section in Table 9 highlights the only subgroups from which we can draw any reliable conclusions. Subgroup analysis on *Academic Profile* data is only possible where the number of students tested is large enough to ensure a reasonably accurate representation of the parts of the Short Form within the subgroups, which works out to be a minimum of 10 students for any subgroup (*The Academic Profile User's Guide, 1998*). Results from the remaining subgroups are included in the bottom portion of Table 9 but readers should resist the temptation to draw conclusions from these data as their small sample sizes introduce tremendous volatility. Another point to consider when reviewing this information is the "square-peg-round-hole" problem discussed earlier. Students were only given 31 majors to choose from, yet more than 50 programs of study exist at PGCC.

Table 9: Total score means of PGCC students by self-designated major, 2006

Major	2002-2003		2003-2004		2004-2005		2005-2006	
	n	Mean	n	Mean	n	Mean	n	Mean
Accounting	20	434.40	30	428.90	25	437.40	31	433.77
Allied Health	20	431.40	46	435.20	40	428.80	79	433.90
Business Administration	38	436.80	70	433.60	81	431.70	62	434.24
Computer & Information Systems	67	432.30	95	433.20	70	440.00	69	434.12
Criminal Justice	19	437.80	35	431.70	34	436.40	33	431.00
Education	23	435.10	37	430.00	40	436.30	26	437.92
Health & Medical Sciences	24	429.80	46	431.90	37	431.50	35	430.17
MAJOR MISSING	35	428.70	38	429.40	90	428.90	70	426.79
Other A	98	434.90	137	432.70	164	436.60	148	435.57
Table 9, part 2⁽¹⁾								
Agriculture	-	--	1	473.00	-	--	-	--
Architecture and Env. Design	-	--	1	426.00	1	450.00	-	--
Art and Art History	3	436.00	7	441.00	10	433.80	7	443.71
Banking & Finance	-	--	2	421.50	2	424.50	-	--
Biological Sciences	4	450.00	5	416.00	8	457.60	2	421.50
Chemistry	-	--	1	438.00	2	435.00	-	--
Communications	7	436.90	15	439.70	7	422.30	19	430.63
Earth, Atmosphere & Marine Sciences	-	--	-	--	-	--	1	457.00
Economics	-	--	1	441.00	1	444.00	2	463.50
Engineering and Eng Technology	10	439.20	15	434.90	22	433.10	9	442.89
English	1	444.00	3	471.00	1	428.00	3	455.00
Environmental Sciences	-	--	-	--	-	--	1	441.00
History	4	431.50	1	425.00	5	466.60	2	455.00
Liberal Studies	4	424.00	5	433.80	8	443.80	6	434.33
Marketing	1	427.00	5	425.00	6	433.80	4	428.75
Mathematics or Statistics	-	--	1	476.00	-	--	1	438.00
Music	2	424.00	4	432.50	4	432.00	4	441.75
Other C	-	--	-	--	1	405.00	-	--
Philosophy	-	--	-	--	2	438.00	1	436.00
Political Science	-	--	3	425.30	5	454.60	6	450.67
Psychology	9	430.20	18	434.60	23	436.50	28	433.39
Religion & Theology	-	--	-	--	1	414.00	-	--
Social Work	-	--	1	419.00	3	437.30	2	418.00
Sociology	5	433.00	7	445.30	5	421.40	9	434.44
Undecided	2	460.00	4	448.50	7	433.60	5	450.00
Total	396	433.85	634	433.06	705	434.80	665	434.02

Notes. (1) These “majors” do not have sufficiently large samples from which to draw any reliable conclusions. They are included here for information-sharing purposes only.

Looking at the average scores of those majors consistently graduating more than ten students per year over the past four years provides some useful data. **Table 10** shows those students who selected “other” as their major and students in the Computer & Information Systems program had the highest four-year averages among all subgroups (both scored 434.9); while students who neglected to answer the question at all (coded here as “MISSING MAJOR”) scored the lowest

(428.63). Students majoring in Education were close behind the high-scoring “other” and Computer and Information Systems students with an average of 434.83. Students majoring in the health and medical sciences scored higher than the missing students but lower than the other subgroups analyzed (430.84). Although there were not enough students graduating from the Engineering and Engineering Technology category this year to include them in Table 10, prior to the 2005-2006 academic year they consistently graduated enough students to be included in the subgroup analysis. Furthermore, their three-year (2003-2005) average was well-above any other program at 437.94.

Table 10: Average *Academic Profile* score by major, 2003-2006

Majors	2002-2003		2003-2004		2004-2005		2005-2006		4-yr. Avg.
	n	Mean	n	Mean	n	Mean	n	Mean	
Other A	98	434.9	137	432.7	164	436.6	148	435.57	434.94
Computer & Info. Systems	67	432.3	95	433.2	70	440.0	69	434.12	434.90
Education	23	435.1	37	430.0	40	436.3	26	437.92	434.83
Criminal Justice	19	437.8	35	431.7	34	436.4	33	431.00	434.23
Business Administration	38	436.8	70	433.6	81	431.7	62	434.24	434.09
Accounting	20	434.4	30	428.9	25	437.4	31	433.77	433.62
Allied Health	20	431.4	46	435.2	40	428.8	79	433.90	432.32
Health & Med. Sciences	24	429.8	46	431.9	37	431.5	35	430.17	430.84
MISSING MAJOR	35	428.7	38	429.4	90	428.9	70	426.79	428.45

Developmental and college-ready outcomes

The *Academic Profile* does not ask students to indicate whether they were required to complete any developmental coursework at the onset of their studies. However, PGCC does maintain information on students’ developmental status which contains, among other elements, detailed information on 1) whether a student took any of the existing remediation placement tests (these fall into three basic skill areas of English, Reading and Mathematics); 2) whether students were required to take any developmental coursework; and finally 3) whether students completed their required coursework (either by completing the necessary class(es) or testing out). By linking this information to student’s total score on the *Academic Profile*, we were able to look at the general education outcomes of prepared and underprepared students and test for differences in outcomes.

Of the 292 graduates who were required to take developmental coursework in at least one area, two hundred twenty-four (224) students completed all their requirements. The remaining 68 students failed to complete at least one of their developmental requirements. Not surprisingly, developmental completers scored significantly higher (429.10) than those students who failed to complete all the necessary requirements (424.47) ($p = 0.008$).

While the general education skills of our developmental completers are still falling in the lower quarter when compared to the reference group, the lower scores of non-completers indicate significant progress. The relatively low performance exhibited by the non-completers remains particularly worrisome. Not only are these students falling behind their own classmates, they look extremely different than the reference group. In fact, their total score is 18 points *lower* (more than one standard deviation) than that of the reference group.

Look at the 373 graduates determined college-ready at the onset; we again see some important distinctions between groups. Here, we will consider those students who passed all the remediation tests (tested) and those who were able to bypass the testing (not-tested)⁴. Not only did the tested students far outperform those who did not go through the testing process, their total score average on the *Academic Profile* was actually the same as the reference group (442)!

Table 11: General education outcomes, PGCC developmental and college-ready students, 2006

	# of students	Mean	SD	Test Statistic	P-value
Developmental Students					
Completers	224	429.10	12.58		
Non-completers	68	424.47	13.84	2.66	0.008 ^b
College-Ready Students					
Tested	223	442.26	17.32		
Not-tested	150	433.26	18.55	4.78	<0.001 ^a

Notes. (1) Statistical significance at the <0.001, 0.01, 0.05 and 0.10 levels (two-tailed) is denoted by “a,” “b,” “c” and “d,” respectively.

General education success for PGCC honors students

As with the analysis of general education outcomes based on preparedness and completion of developmental requirements above, we can gain some insight into how our honors students are doing by linking student’s *Academic Profile* scores with honors participation files. Graduates who also participated in the honors program performed nearly 12 points higher, on average, than those students who did not participate in the honors program. The average total score of honors students in the 2006 graduating class was 444.77 compared to 432.85 for non-honors students ($p < 0.001$). What’s more, PGCC honors students actually performed *higher* than the mean of the reference group (444.77 compared to 442.40).

Table 12: General education success of PGCC honor’s students, 2006

	# of students	Mean	SD	Test Statistic	P-value
Honors Students	65	444.77	20.14	4.612	<0.001 ^a
Non-honors students	600	432.85	16.26		

Notes. (1) Statistical significance at the <0.001, 0.01, 0.05 and 0.10 levels (two-tailed) is denoted by “a,” “b,” “c” and “d,” respectively.

⁴ Students are exempt from the placement testing process based on the following conditions: 1) obtaining a formal exemption based on prior college work (transfer students); 2) basis of scores received on national education tests such as the SAT or ACT; and 3) fulfillment of special preparatory programs.

V. SUMMARY

Key findings

- This year's participation rate was 87%, down 7 points from the 2005 academic year.
- The average total scaled scores of this year's graduates were virtually unchanged from the previous graduating class. While there has been slight downward (2004 and 2006) and upward (2005) movement in students' total scaled score over the past four academic years, overall our graduates are maintaining the same level of general education outcomes. Likewise, students' subscores remained relatively stable from the 2005 academic year without a full point change in either direction for any of the skills and context-based areas. Students' writing scores represented the lone increase from 2005, rising by over a quarter of a point.
- The demographic make-up and background characteristics of this year's PGCC graduates differed from those of the national reference group in several ways. PGCC students were more likely than the national norm group to be older, members of a minority group, work full-time, attend school part-time and report GPAs below 3.0. These same characteristics (age, race/ethnicity, enrollment status, employment, academic standing) were also found to be the strongest predictors of student performance on the *Academic Profile* in this year's graduating cohort. Gender and transfer status were also found to be predictors of student performance on the *Academic Profile*, though to a lesser degree. Any valid comparison between these groups would need to control for the effect of these predictors on the test scores. However, such a comparison is not possible without access to individual test scores from the reference group.
- The proficiency ratings of PGCC students at all levels in reading/critical thinking, writing and mathematics fell well short of the standards set by ETS, though proficiency ratings in writing were comparable to those of the reference group.
- Of those majors with sufficiently large samples across all four years of the *Academic Profile* administrations, students who selected "other" as their major (major not listed) or selected the Computer & Information Systems, Education, Criminal Justice or Business Administration majors had the highest four-year averages among all subgroups. These results speak only to the general education skills of students in these areas, not to the effectiveness of course curriculum within a particular major or discipline.
- Graduates who completed all their developmental requirements scored statistically significantly higher than students who did not complete their required developmental coursework. Students who were determined to be college-ready after taking the necessary developmental diagnostic assessments had the *same* mean score as the national reference group.

- PGCC honors students graduating in the 2005-2006 academic year performed *higher*, on average, than all other PGCC subgroups, not to mention *higher* than the national reference group.

Future research

At any institution, there are some students who apply for graduation but fail to meet all the related academic requirements and, therefore, are not ultimately issued an award. Because the *Academic Profile* is just one of many graduation requirements at PGCC, students have no guarantee when taking it if they will, in fact, be issued an award. An interesting question then, especially given the focus of this assessment on *graduating* student outcomes, is whether the scores of *Academic Profile* participants who go on to graduate and those who do not differ in any way. It is reasonable to assume that the roughly 10% of students who do not go on to graduate share some common characteristics and perhaps perform lower as a group than graduates do on the assessment. If so, keeping them in the analysis runs the risk of making the average score of graduates appear lower than it really is.

Unfortunately, the graduate database necessary for addressing this question is not scheduled for release until later in the summer, at which point this report will have already been released. Ideally, this report would include the results of *official graduates* only (versus the existing practice of reporting on results for *graduate applicants*). However, given the significance of this study as an examination of Prince George's Community College students over time and the usefulness of this information in preparing for the 2006-2007 academic year, both graduates and non-graduates have been included here. Distinguishing between official graduates and graduate applicants in the future would provide a more accurate representation of the level of graduating students' general education skills and allow for additional questions. For example, are those students who apply for graduation but fail to graduate highly correlated with those students who are required to take some form of developmental coursework but never complete it? And, if so, how do their general education levels differ?

Additionally, bringing in student record files would allow for more flexibility when looking at general education outcomes by award type (Associate, Certificate and Letter of Recognition) and program area than is possible using only the self-reported data from ETS.

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Office of Planning and Institutional Research

Appendix A: Academic Profile reference group

*Includes the number of students (with 61-90 semester hours or 91-145 quarter hours)
tested at Associate's Colleges*

School Name	Number of Students
ART INSTITUTE OF HOUSTON, TX	292
BLUE RIDGE CMTY COLL VA, VA	80
CAROLINAS COLLEGE OF HEALTH SCIENCES, NC	34
CARROLL COMMUNITY COLLEGE, MD	35
CENTRAL MAIN TECHNICAL COLLEGE, ME	78
CENTRAL VIRGINIA COMMUNITY COLLEGE, VA	197
CHATFIELD COLLEGE, OH	68
CHATTANOOGA STATE TECHNICAL COMMUNITY COLLEGE, TN	839
CLAYTON COLLEGE & STATE UNIVERSITY, GA	84
CLEVELAND STATE COMMUNITY COLLEGE, TN	85
COASTAL GEORGIA COMMUNITY COLLEGE, GA	179
COCHISE COLLEGE, AZ	75
COLUMBIA STATE COMMUNITY COLLEGE, TN	860
COMMUNITY COLLEGE OF BALTIMORE COUNTY, MD	30
COMMUNITY COLLEGE OF DENVER, CO	102
DARTON COLLEGE, GA	432
GLENDALE COMMUNITY COLLEGE, AZ	223
HOWARD COMMUNITY COLLEGE, MD	69
ITASCA COMMUNITY COLLEGE, MN	59
KENDALL COLLEGE, IL	61
KISHWAUKEE COLLEGE, IL	104
LAKE LAND COLLEGE, IL	67
LARAMIE COUNTY COMMUNITY COLLEGE, WY	75
LEEWARD COMMUNITY COLLEGE, HI	45
MANATEE COMMUNITY COLLEGE, FL	108
MERCER COUNTY COMMUNITY COLLEGE, NJ	54
MIDWAY COLLEGE, KY	256
MOTT COMMUNITY COLLEGE, MI	61
MOUNT WACHUSETT COMMUNITY COLLEGE, MA	135
MUSKEGON COMMUNITY COLLEGE, MI	78
NASHVILLE STATE COMMUNITY COLLEGE, TN	44
NORTH IOWA AREA COMMUNITY COLLEGE, IA	248
NORTHEAST STATE COMMUNITY COLLEGE, TN	547
NORTHEASTERN OKLAHOMA AGRICULTURAL AND MECHANICAL COLLEGE, OK	319
NORTHERN KENTUCKY UNIVERSITY, KY	42
OKLAHOMA CITY COMMUNITY COLLEGE, OK	89
PENINSULA COLLEGE, AZ	69
PIMA COMMUNITY COLLEGE, AZ	710
PRINCE GEORGE'S COMMUNITY COLLEGE, MD	667
RIO SALADO COLLEGE, AZ	45
ROANE STATE COMMUNITY COLLEGE, TN	635
SAINT VINCENT'S COLLEGE, CT	128
SEMINOLE STATE COLLEGE, OK	49
SOUTH COLLEGE, TN	94
SOUTH LOUISIANA COMMUNITY COLLEGE, LA	39
ST. LOUIS COMMUNITY COLLEGE @ MERAMEC, MO	1268
STATE FAIR COMMUNITY COLLEGE, MO	323
SULLIVAN UNIVESITY @ LEXINGTON, KY	838

<i>Appendix A, con't</i>	
UNIVERSITY OF NEW MEXICO @ GALLUP, NM	81
VOLUNTEER STATE COMMUNITY COLLEGE, TN	811
WALTERS STATE CUMMUNITY COLLEGE, TN	322
WAYCROSS COLLEGE, GA	56
WEST VIRGINIA UNIVERSITY AT PARKERSBURG, WV	51
	12,340 ⁽³⁾
<p><i>Notes.</i> (1) The national reference group includes all relevant students who took the <i>Academic Profile</i> from 2001 to the present. (2) Only those institutions testing 30 or more students in a college class were included in the analyses for that college class (3) These data have been weighted to prevent the statistics from being dominated by a few very large institutions.</p>	

Appendix B: Proficiency level definitions for the *Academic Profile*

Writing

Level 1 – WRITING

A student at Level 1 recognizes agreement among basic elements (nouns, verbs, pronouns) in the same clause or phrase. This student avoids gross errors in short or simple structures and can logically select and order main ideas or divisions in a sustained paragraph using appropriate transition words. Students at this level demonstrate a basic understanding of appropriate writing.

Level 2 – WRITING

In addition to performing successfully at Level 1, a student who is proficient at Level 2 recognizes appropriate agreement among basic elements when they are complicated by intervening words or phrases, avoids errors in relatively long and complicated constructions, and is able to recast several simple clauses using a single, more complex combination. Students performing at this intermediate level can recognize and use the elements of good writing.

Level 3 – WRITING

In addition to performing Level 1 and Level 2 skills successfully, a student at Level 3 can recognize logical statements and comparisons and is able to solve difficult or subtle writing problems, such as appropriate use of parallelism. These students can make fine distinctions among closely related root words and grammatical structures characteristic of mature writing style.

Mathematics

Level 1 – MATHEMATICS

A student at Level 1 demonstrates basic number sense and skills in arithmetic operations and relationships and in elementary geometry and measurement. A student at this level can read and interpret information from simple graphs or charts, solve simple equations or evaluate expressions, and solve simple and routine word problems.

Level 2 – MATHEMATICS

In addition to performing successfully at Level 1, a student who is proficient at Level 2 understands number systems, including order magnitude, and relationship of integers, fractions, and decimals. A student at this level can solve moderately difficult equations and inequalities, evaluate complex formulas, compare and apply information from more complex charts and graphs, and apply reasoning, geometry, and measurement skills in solving moderately complex problems, including word problems.

Level 3 – MATHEMATICS

In addition to performing Level 1 and Level 2 skills successfully, a student at Level 3 can generalize and apply mathematical knowledge and skills in nonroutine situations, and demonstrates real comprehension of exponents, variables, geometry, and measurement. A student at this level can solve multistep and nonroutine problems involving a range of reasoning skills.

(Appendix B, con't)

Reading/Critical Thinking

Level 1 – READING

At level 1 a student recognizes and comprehends discrete pieces of information (e.g. a single detail, information presented in a single sentence), as well as relationships or connections explicitly stated in a passage and understands words and phrases in context.

Level 2 – READING

In addition to performing successfully at Level 1, students who are proficient at Level 2 can gather information from different sections of a passage and recombine it. These students recognize relationships that can be inferred but are not explicit; they can recognize summaries and alternative ways of stating information, interpret figurative language, and recognize the point or purpose of a passage as a whole or significant portions of a passage.

Level 3 – CRITICAL THINKING

In addition to performing Level 1 and Level 2 skills successfully, students at Level 3 can evaluate and analyze arguments and, within an academic field, handle interpretation, inductive generalizations, or causal explanations.

Level 3 skills are differentiated within those areas as follows:

- Humanities:
Evaluate views and interpretations
- Social Sciences:
Evaluate claims, disputes, and inductive generalizations
- Natural Sciences:
Evaluate explanatory hypotheses and draw conclusions

Source: *Academic Profile User's Guide, Exhibit 1, 1998*