STUDENT AND CURRICULUM ALIGNMENT AT UAA: DEVELOPMENTAL COURSE PERFORMANCE

Topic Paper 2002-01

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EXECUTIVE SUMMARY

- When the proportion of enrollees in each college for both total and Developmental/ Remedial (D/R) enrollment is compared between Fall 2000 and 2001, the degree of similarity is striking. Overall, selecting Fall 2000 for analyses does not appear to be an atypical term for drawing conclusions about D/R performance.

- There were 1,748 students who were taking one or more D/R courses as of Fall 2000 opening census. These students were enrolled in 2,348 D/R course seats for an average of 1.3 D/R courses per student. Over half of the students taking a D/R course (56.3%) did not provide UAA with an indication why they were attending the university. There is also a revealing anomaly when comparing the student-declared intent against the university-assigned degree status. Note that 199 students (26.1%) were identified as non-degree seeking by UAA when they had declared their intent to seek either a 2-year, 4-year, or graduate degree.

- There were 2,348 enrollees in 142 developmental or remedial course sections across 11 disciplines. Nearly half of all 2,348 D/R enrollees were in D/R courses offered through the Community and Technical College. Another one-fourth were in Arts & Sciences D/R offerings. The remaining 30% were enrolled at the various community campuses, military bases, and through Telecourses. D/R courses comprised 5.1% of all UAA enrollments. Between Fall 2000 and 2001, total enrollment increased by 2.3% while D/R enrollment decreased by 5%.

- Together, English and Mathematics accounted for two-thirds of all D/R enrollments at UAA. Nearly half of all D/R enrollment was in CTC sponsored courses. Just over 70% of all D/R enrollment was taken on the Anchorage campus.

- There were no stable biographic characteristics found that were predictable in differentiating between attritors and non-attritors in D/R courses. The infrequency of significance level findings throughout D/R courses strongly suggests that there are other, currently unidentified, factors at work that accounts for performance differences associated with student biographic characteristics.

- Even acknowledging that biographic characteristics play little or no predictable role in influencing performance in D/R courses, the differences between attrition in these courses compared to the total student body is noteworthy**.** Student attrition across the entire curriculum is 18.7% but D/R course attrition is 25.8%. Even though students taking D/R courses earned an overall mean GPA of 2.7, one in every four (587 students) did not earn credits in these courses.

- Although the glass is "¼ empty" (25.8%), it is also "¾ full." Three of every four students taking D/R courses perform successfully, which presumes that they are now prepared to advance to college level work in the appropriate disciplines.

- It has already been established that biographic characteristics play no predictive role but it is still informative to learn if there are different proportional distributions because it suggests areas where additional research may be needed. To illustrate, females occupy 60% of the seats in all UAA courses and males occupy the remaining 40%. The gender proportions are the same for D/R enrollees. Thus, it appears that students taking D/R courses have the same relative gender distribution as the university overall. At the same time, both males and females have about 7-8% higher attrition from D/R courses than their counterparts in all courses throughout the university. Females who successfully complete D/R courses are, on average, performing about one-half a grade higher than males in D/R courses.

- The proportion of traditional/non-traditional enrollees approaches 50-50 across the entire curriculum but traditional age students outnumber non-traditional students in D/R courses by a 3-2 ratio. Although traditional students are in the majority in D/R courses, they are much more likely to attrit, and those who do complete the course perform less well than their non-traditional classmates**.** It does suggest that maturity reasons for taking D/R courses, and intrinsic motivation could likely be contributing factors if one assumes there is no significant difference between them.

- Minority students were much more likely to be taking D/R courses than White students compared to their counterparts throughout the curriculum. Nearly one in five enrollees taking D/R courses was of Indian descent, either AK Native (17.9%) or American Indian (1.7%) compared to a combined (8.2%) minority enrollees throughout the curriculum. Black and AK/AI enrollees were much more likely to be unsuccessful in D/R courses than Asian or Hispanic enrollees. Asian enrollees had the lowest attrition rate (21.1%), which was even better than White enrollees (25%). Black and AK/AI students also had the lowest average GPA among those who successfully completed D/R courses. These findings further corroborate the knowledge that Blacks and AK/AI, as groups, are the most at-risk academically. Further research is needed to document the root causes and search for appropriate intervention strategies.

- First, the attrition rate for first-time freshmen in D/R courses (22%) is lower than the attrition rate for first-time freshmen in all of their courses (25.4%). However, as the number of total credits earned goes up so does the attrition rate in D/R courses. This is counterintuitive on the surface because one would expect that as a student has more experience in a collegiate learning environment they would be more likely to be successful in all of their coursework. To some degree this hypothesis is borne out when one observes the increasing mean GPA of students who successfully complete D/R courses as their student standing increases. It would appear that juniors and seniors are enrolling in D/R courses for reasons other than the intended purposes of such courses and that non-alignment ultimately results in a higher attrition rate for them.

- Transfer students, although a small proportion of the total enrollees, perform better and are less likely to become attritors in D/R courses than students who originally enrolled at UAA.

- A significant difference exists (0.05 confidence level) between degree and non-degree seekers when one includes all of their D/R coursework GPA. However, when that total is broken down by discipline, the only discipline showing a significant GPA difference between the two groups is Mathematics. For all other disciplines there is no difference in GPA performance. Further, except for the HCA discipline, there is no significant difference in attrition rate between the degree seekers and non-degree seekers.

- Just over half of all D/R courses offered during Fall 2000 were in Mathematics and nearly one-third were in English. Mathematics and Chemistry have the largest section sizes while English D/R courses are approximately the same size as the university-wide average.

- Average D/R course section size is smaller at the community campuses than on the Anchorage campus. Kodiak campus had an average of 5 enrollees in their D/R fourteen course sections. Within Anchorage campus, D/R courses offered through Community and Technical College (CTC) are 41% smaller, on average, than counterpart D/R courses offered through the College of Arts and Sciences. CTC enrollees were averaging one letter grade higher (B) than CAS enrollees (C) in D/R courses. There is a correlation between GPA performance and attrition rate for CAS and CTC as well. Nearly 4 of every 10 enrollees in CAS D/R courses (37.6%) did not earn credit hours by completing their course. That attrition rate is nearly double the attrition rate in D/R courses offered through CTC (22,4%).

- During Fall 2000, there were 2,348 enrollees in D/R courses and 59.4% (1,394) earned a letter grade in their course(s). The remaining 40.6% received a 'Grade' symbolizing a business transaction between UAA and the student. As a point of reference, the grade/business transaction ratio for all enrollees in all UAA courses was 76% to 24%. Just over one fourth of the D/R enrollees became attritors but those who did receive a letter grade performed, on average, at a 'C+' grade level (GPA = 2.7). Beneath these summaries are some interesting discipline profiles. For example, PWSCC employs a Pass/No Pass grading scheme for most of its D/R offerings. Yet another example is at Anchorage campus where, all 10 enrollees taking ESL D/R courses received an 'A'. Nearly 1 of every 5 enrollees in Mathematics and Chemistry D/R courses withdrew from those courses.

- The attrition rate for D/R courses within CAS (37.6%) is nearly four of every ten enrollees compared to just over two of every 10 enrollees in all CAS courses (22.3%). Twenty percent of enrollees in CAS D/R courses failed their course vs. ten percent in CAS overall. D/R enrollees in CAS earned an average grade of 'C' while the average grade for all CAS enrollees was 'B-'. By contrast, the mean GPA in CTC, even with differing N's, was identical for its D/R and total enrollees. D/R enrollees in CTC were four times more likely than total CTC enrollees to earn a 'P' grade. Both PWSCC and

Kodiak issue a substantial number of 'P' grades in D/R courses while Kenai and Mat-Su do not issue any. Similarly, 15% of all enrollees in CTC D/R courses received a 'P' grade while none were awarded in CAS D/R courses. What accounts for the difference in grading philosophies?

- Although correlations varied by course, the general relationship between overall high school academic performance and D/R course performance was small. Second, there are only a few courses where the correlation (even though small) is statistically significant. Together this limited information does suggest that High School GPA, by itself, is not a useful predictor of the likelihood of academic success in D/R courses.

- Even with limited data, it is evident that D/R enrollees have SAT scores that are, on average, about 1 Standard Deviation (S.D.) below the national mean score for both Verbal and Mathematics. It is also of interest to note the overall relationship between SAT performance and High School GPA. The general observation that students who are scoring below 84% of the students who are taking the SAT Test (-1 S.D.) are still graduating with a cumulative High School GPA of 2.7-2.8 ('B-') is striking. Further, Table 10 reveals there are no SAT or HSGPA data available for students who were taking D/R courses at PWSCC.

- When all of this information is synthesized, it can be concluded that nearly 1 of 10 enrollees does not initially enter UAA academically prepared to perform in college level coursework according to criteria established by the university. That is a finding with significant implications for both students and the university. One must ask: Assuming the UAA grading philosophy is consistent with the D/R purpose to prepare students to be successful in college level coursework, do these courses fulfill that primary purpose? This question will be addressed in the Topic Paper on Prerequisites that will be forthcoming.

INTRODUCTION

There are a host of recurring questions that ultimately seek to determine the alignment between students' ability and preparation to obtain maximum benefit from the instruction and research support provided to them through UAA. There are many facets to the alignment question and this Topic Paper focuses attention upon the first of three primary components: Performance in university-offered developmental and/or remedial courses designed to increase the probability of successful performance in college-level coursework. The other two components are General Education Requirement course performance (Topic Paper 2002-02) and Prerequisite course performance (Topic Paper 2002-03). All of these components are interrelated but they share a common theme: they are mechanisms designed to insure that students are properly prepared to take full advantage of their educational experience at UAA and beyond.

Earlier Topic papers looked globally at student attrition from courses, persistence into the second year, grading practices, and graduation/time-to-degree. All of these dimensions of student Retention are influenced by the degree of alignment between student preparedness and what the university has to offer him/her. This Topic paper extends the analysis to examine these same four dimensions in Developmental/Remedial (D/R) Courses in particular. Starting with the premise that the more unprepared a student is, the less likely that individual is to succeed, it is in the best interest of the student and the university to determine and monitor student preparedness level and subsequent performance.

This paper profiles the kinds of students enrolled in D/R courses, their aptitude/academic preparedness measures coming to UAA (if available), their grade performance and/or attrition rate from these courses, and persistence to the following Fall (2001). Statistical significance tests (ANOVA Test of Mean Difference) were employed to determine whether certain obtained GPA and Attrition differences were real or the likely outcome of chance. This paper is heuristic and descriptive rather than a prescriptive analysis. The purpose is to establish a baseline for future comparisons. There is insufficient data available to develop meaningful predictive equations. Further, student preparedness and performance are functions of many variables that lie outside the university's sphere of influence and control.

I wish to thank my OPRA staff colleagues for their significant contributions in preparing this Topic Paper. Yuan-Fang Dong did an outstanding job in coping with a number of challenges in compiling the data for analysis. Ophelia Dargen-Steed performed several statistical significance tests. Karen Haddock and Carolyn Dixon formatted and proofed the final document. I sincerely appreciate their quality and timely efforts.

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METHODS, PREMISES, AND ASSUMPTIONS

Fall 2000 was chosen to perform this analysis for several reasons. First, it was the same semester that was used to perform earlier attrition, grade, and persistence analyses so there would be a tie with the information those initial studies uncovered. Second, that semester would provide the most current grade performance data. Third, students were more likely to have SAT test and high school performance measures. Finally, Fall 2000 source data elements had already been edited which shortened the time needed to obtain information for this report.

Developmental/Remedial (D/R) Courses were identified and extracted. Enrollees in each of these courses were segmented into degree and non-degree seeker subsets. The student enrollment file was used to determine certain biographic characteristics, preparedness measures, and 'grade' earned in the class for each individual.

The report profiles course enrollees. It is a duplicate count in those instances where a student may be taking more than one course within a particular discipline. Performance and attrition in each D/R course were the primary foci so every student who was enrolled in every course needed to be included. Most summary tables aggregate to the discipline level for purposes of discussing general trends. **NOTE:** it was recognized that performance in a particular course would be of prime interest but such a detailed course-by-course analysis would be counterproductive to discern trends. However, a D/R course-by-course (not section) table is available in the Appendix for the interested reader. No individual student and his/her course performance were identified.

It was decided to compare performance of undergraduate Degree seekers and Non-Degree Seekers rather than using first-time freshmen as the comparator group. Using the latter would exclude all non-degree seeking students who were taking developmental or remedial courses. **NOTE:** UAA assigns a "Non-degree Seeking" code to any student who is not formally admitted to the university to pursue a degree. "Non-admitted" has historically been considered equivalent to non-degree seeking but they are different. The university determines admittance status while degree-seeking intent needs to be identified by each student. A student cannot be degree seeking without being admitted but a non-admitted student could still have an intent to earn a degree. To illustrate the significance of this distinction, a previous Topic Paper (2001-05) on Graduation rates revealed that over half of all degrees awarded by UAA were to students who were initially reported to be "non-degree seekers!" **NOTE:** To maintain the nomenclature that is familiar to the university for this report, it was decided to retain the terms "Degree Seeking" and "Non-Degree Seeking" with awareness that a more accurate description would be "Degree-Seeking" and "Non-admitted".

It was decided to consider only D/R courses taken at UAA for this analysis (e.g., a transfer student may have taken a developmental course at another institution but transfer courses were not included). It was also decided that the focus of this analysis would be upon attrition rather than successful completion. This was not done to dwell on the negative and/or minimize the importance of successful faculty efforts to assist their students or the successful efforts of students to acquire the concepts they need to pursue their academic goals. Rather, analysis of

attrition and other non-successful performance indicators identifies a problem that, when addressed, should lead to higher rates of successful student performance. Throughout, attention will be drawn to the successful performance as well to maintain a proper context.

TERMS AND DEFINITIONS

The following terms and definitions should be utilized in interpreting the tables and reading the findings.

DEVELOPMENTAL: Any course designed to assist a student who needs necessary academic and/or basic remedial skills preparation to perform successfully in initial college level coursework. These courses are primarily, but not exclusively, identified with course numbers 50-99 at UAA. Such courses are applicable to some vocational certificates but not applicable to Associate and/or Baccalaureate degrees.

ATTRITION: Any student who received a grade symbol of 'F' = Failure, 'NP' = Not Pass, 'W' = Withdrawal or 'AU' = Audit. The audit was only counted as an attrition if the student began the course with an intent to earn a letter grade and changed to audit status after the Opening Freeze census date.

ENROLLMENT: A duplicate count of students who are enrolled in classes. The count would be unduplicated in a single course section but would be duplicated if he/she took more than one course within a single discipline.

DISCIPLINE: A defined subset of knowledge and inquiry within the universe of known knowledge. NOTE: It is different from the internal governance unit (department) although the same name may be used for both.

PERSISTENCE: Students included in the Fall 2000 analysis who enrolled for the Fall 2001 semester.

OPENING CENSUS: Courses, and students enrolled in them, as of the beginning term census reporting date to the UA system. Any courses and student enrollment in any course after that opening census point is excluded. Grade performance is reported in only opening census classes as well.

SUMMARY OF FINDINGS

What percentage of the first-time students at UAA come with academic deficiencies? What is their biographic profile? How well do they perform in the Developmental/Remedial (D/R) offerings provided by UAA to prepare them to be successful in college level curriculum? How does their SAT test scores and High School GPA correlate with their performance in D/R courses? What is their attrition rate from D/R courses? What is their persistence rate into the second year compared to the university rate? Is there a significant difference in performance/attrition between degree seekers and non-degree seekers in D/R courses?

Is the Fall 2000 enrollment in D/R courses atypical or similar to other Fall enrollments? Table 1 compares both developmental and total UAA opening enrollment by college for Fall 2000 and Fall 2001.

Developmental vs. Total Enrollment by College
Fall 2000 Closing vs. Fall 2001 Opening

	Total UAA				Developmental/Remedial				D/R % Total	
College	Fall 2000 Enrl	% Total	Fall 2001 Enrl	% Total	Fall 2000 Enrl*	% Total	Fall 2001 Enrl	% Total	Fall 2000 Enrl	Fall 2001 Enrl
Academic Affairs	117	0.3%	77	0%						
Coll of Arts & Sciences	18,044	38.9%	18,479	39%	537	22.9%	563	25.2%	3.0%	3.0%
Coll of Bus/Public Policy	3,879	8.4%	3,745	8%						
Coll of Hlth/Ed/Social Welfare	4,676	10.1%	4,212	9%						
Comm/Technical College	7,985	17.2%	9,039	19%	1,111	47.3%	1,044	46.8%	13.9%	11.5%
School of Engineering	826	1.8%	798	2%						
Telecourses	1,115	2.4%	1,234	3%	26	1.1%			2.3%	0.0%
Anch Total	36,642	79.1%	37,584	79%	1,674	71.3%	1,607	72.1%	4.6%	4.3%
Kenai	3,336	7.2%	3,733	8%	203	8.6%	228	10.2%	6.1%	6.1%
Kodiak	1,236	2.7%	1,376	3%	69	2.9%	98	4.4%	5.6%	7.1%
Mat-Su	3,097	6.7%	3,268	7%	204	8.7%	223	10.0%	6.6%	6.8%
PWSCC	1,439	3.1%	1,274	3%	171	7.3%	65	2.9%	11.9%	5.1%
Military	580	1.3%	175	0%	27	1.1%	9	0.4%	4.7%	5.1%
Total UAA	46,330	100.0%	47,410	100%	2,348	100.0%	2,230	100.0%	5.1%	4.7%
% of Change			2.3%				-5.0%			

Note: * Closing enrollment used to integrate with previous Attrition Topic Paper and subsequent statistics. The difference between Fall 2000 Closing (2,348) and Fall 2000 Opening (2,275) was 73 students.

When the proportion of enrollees in each college for both total and D/R enrollment is compared between Fall 2000 and 2001, the degree of similarity is striking. This leads to the conclusion that, overall, the selection of Fall 2000 does not appear to be an atypical term for drawing conclusions about D/R performance. Nearly half of all 2,348 D/R enrollees were in D/R courses offered through the Community and Technical College. Another one-fourth were in Arts & Sciences D/R offerings. The remaining 30% were enrolled at the various community campuses, military bases, and through Telecourses. D/R courses comprised 5.1% of all UAA

enrollment. Between Fall 2000 and 2001, total enrollment increased by 2.3% while D/R enrollment decreased by 5%.

Table 2
Headcount/Enrollees by Declared Intent in Developmental Courses
(Fall 2000 - Opening Degree vs. Non-Degree Seekers)

Headcount	Total UAA				Developmental			
Declared Intent	Degree	Non-Degree	Total	% Total	Degree	Non-Degree	Total	% Total
2-Yr Degree	662	549	1,211	7.6	132	91	223	12.8
4-Yr Degree	2,152	895	3,047	19.2	224	103	327	18.7
Certificate	70	93	163	1.0	10	3	13	0.7
Graduate Degree	197	178	375	2.4	8	5	13	0.7
HS/GED	3	46	49	0.3		12	12	0.7
Job Chg/Improve	40	164	204	1.3	6	9	15	0.9
License/Certificate	7	94	101	0.6		3	3	0.2
Personal Dvlp	160	657	817	3.2	27	33	60	3.4
Transfer-Univ	138	192	330	5.2	18	22	40	2.3
Other	141	366	507	2.1	21	37	58	3.3
No Report	4,257	4,789	9,046	57.1	540	444	984	56.3
Total	**7,827**	**8,023**	**15,850**		**986**	**762**	**1,748**	
% Total	49.4%	50.6%			56.4%	43.6%		

Enrollees	Total UAA				Developmental			
Declared Intent	Degree	Non-Degree	Total	% Total	Degree	Non-Degree	Total	% Total
2-Yr Degree	2,349	1,175	3,524	7.6	202	116	318	13.5
4-Yr Degree	8,574	2,561	11,135	24.0	297	122	419	17.8
Certificate	284	190	474	1.0	23	3	26	1.1
Graduate Degree	510	317	827	1.8	9	7	16	0.7
HS/GED	16	88	104	0.2		15	15	0.6
Job Chg/Improve	120	252	372	0.8	9	10	19	0.8
License/Certificate	16	127	143	0.3		4	4	0.2
Personal Dvlp	552	1,025	1,577	2.6	34	37	71	3.0
Transfer-Univ	575	486	1,061	3.4	19	27	46	2.0
Other	527	696	1,223	2.3	30	52	82	3.5
No Report	16,586	9,304	25,890	56.0	803	529	1,332	57
Total	**30,109**	**16,221**	**46,330**		**1,426**	**922**	**2,348**	
% Total	65.0%	35.0%			60.7%	39.3%		

Why are students who take D/R courses coming to UAA? Table 2 compares the declared intent of students (HEAD) throughout all UAA and proportion who were taking D/R courses. It also indicates the corresponding number of seats occupied (ENROLLEE) for each intent and degree-seeking status. There were 1,748 students who were taking one or more D/R courses as of Fall 2000 opening census. These students were enrolled in 2,348 D/R course seats for an average of 1.3 D/R courses per student. Over half of the students taking a D/R course (56.3%) did not provide UAA with an indication why they were attending the university. There is also a revealing anomaly when comparing the student-declared intent against the university-assigned degree status. Note that 199 students (26.1%) were identified as non-degree seeking by UAA when they had declared their intent to seek either a 2-year, 4-year, or graduate degree.

There were 2,348 enrollees in 142 Developmental or Remedial course sections across 11 disciplines. Table 3A and 3B below show the enrollment and average section size by discipline and college.

Table 3A

Average D/R Section Size by Discipline
Fall 2000

Discipline	Enrollment	% Total	Sections	Avg Section Size
BA	10	0.4	1	10.0
CED	17	0.7	1	17.0
CHEM	161	6.9	8	20.1
CIOS	4	0.2	4	4.0
ESL	10	0.4	1	10.0
HCA	33	1.4	4	8.3
HS	25	1.1	6	4.2
ITEC	76	3.2	7	10.9
MATH	1,256	53.5	60	20.9
PER	6	0.3	1	6.0
PRPE	750	31.9	52	14.4
TOTAL	**2,348**	**100.0**	**142**	**16.5**

Table 3B

Average D/R Section Size by College
Fall 2000

College	Enrollment	% Total	Sections	Avg Section Size
CAS	537	22.9	16	33.6
CTC	1,111	47.3	56	19.8
KENAI	203	8.6	17	11.9
KODIAK	69	2.9	14	4.9
MAT-SU	204	8.7	13	15.7
MILITARY	27	1.1	2	13.5
PWSCC	171	7.3	23	7.4
Telecourses	26	1.1	1	26.0
TOTAL	**2,348**	**100.0**	**142**	**16.5**

D/R courses had an average section size of 16.5. Chemistry and Mathematics were the largest in average size and, combined, accounted for nearly 60% of all D/R enrollments. D/R English preparation (PRPE) courses constituted an additional third. Together, English and Mathematics accounted for two-thirds of all D/R enrollments at UAA. Nearly half of all D/R enrollment was in CTC sponsored courses. Just over 70% of all D/R enrollment was taken on the Anchorage campus.

Students enroll in D/R courses because it has been determined they are deficient in necessary skills to successfully pursue college level work and could profit from additional assistance these courses provide. What are the characteristics of those students taking D/R courses compared with the UAA total student body? Are there differences in grade performance and attrition between various student cohorts in D/R courses? Table 4 provides a summary to address these questions. It compares the proportion of each student characteristic in the UAA student body with the corresponding proportion among students enrolled in D/R courses. Likewise it compares the attrition rate (see definition) from courses throughout UAA against D/R attrition. Finally the mean GPA of each student cohort in D/R courses is provided to show differences in performance among them. ANOVA Tests of Mean Difference between GPA's were computed on selected courses to discover if there were significant differences in performance within student characteristic cohorts. The results appear in Table 5. (See End of Report for **Table 4**)

Table 5
Significance Levels Among Student Cohorts in Selected Developmental/Remedial Courses
Fall 2000 Opening

Course	CourseID	First-time	Age	Gender	Full / Part Time	Degree Seeker
1001	CHEM_A055	0.168	0.146	0.746	0.257	0.633
1002	CHEM_A055L	0.023*	0.294	0.848	0.048*	0.253
1003	HCA_A055	0.344	0.398	0.478	0.478	0.516
1004	MATH_A054	0.971	0.156	0.019*	0.606	0.035*
1005	MATH_A055	0.850	0.000**	0.001**	0.266	0.123
1006	MATH_A060	0.440	0.184	0.248	0.403	0.258
1007	PRPE_A064	0.495	0.789	0.219	0.789	0.789
1008	PRPE_A074	0.049*	0.482	0.424	0.231	0.515
1009	PRPE_A076	0.677	0.051	0.362	0.395	0.223
1010	PRPE_A084	0.673	0.016*	0.877	0.021*	0.539
1011	PRPE_A086	0.935	0.002*	0.063	0.842	0.629

		Ethnicity						
Course	CourseID	Afr Amerc	AK Native	Am Indian	Asian	Hispanic	Other	White
1001	CHEM_A055	n/a	0.042*	0.910	n/a	0.637	0.685	0.05*
1002	CHEM_A055L	0.683	0.096	0.530	0.023*	0.530	0.385	0.407
1003	HCA_A055	0.043*	0.478	n/a	n/a	0.949	0.035*	0.042*
1004	MATH_A054	0.332	0.148	0.968	0.530	0.772	0.332	0.026*
1005	MATH_A055	0.228	0.263	0.506	0.267	0.615	0.945	0.034*
1006	MATH_A060	0.522	0.180	0.669	0.162	0.467	0.819	0.959
1007	PRPE_A064	0.272	n/a	n/a	0.272	n/a	0.495	0.219
1008	PRPE_A074	n/a	0.424	n/a	0.328	0.938	n/a	0.081
1009	PRPE_A076	0.989	0.092	n/a	0.367	0.222	0.786	0.723
1010	PRPE_A084	0.115	0.244	n/a	0.553	0.272	0.506	0.673
1011	PRPE_A086	0.686	0.372	0.817	0.553	0.499	0.612	0.402

Notes:
1. Data representative of Anchorage campus courses only (including Elmendorf AFB, Fort Richardson, and Eagle River).
2. n/a = Fewer than two groups - statistics cannot be computed for the split.
3. * = difference between means is statistically significant at the 0.95 level or above.
4. ** = difference between means is statistically significant at the 0.99 level or above.

Turning attention to Table 5 first, the statistical test of significance between attritors and non-attritors among various biographical characteristics confirmed the findings of the previous study on attrition (Topic Paper 2001-01). There were no stable biographic characteristics found that were predictable in differentiating between attritors and non-attritors in D/R courses. Again, caution should be exercised about forming a profile based on any biographic characteristic (e.g. observe that there was a difference between traditional and non-traditional students (age) and males vs. females (gender) at the 0.01 level of confidence in Math A055). However, there is no difference between them in either Math A054 or Math A060. The infrequency of significance level findings throughout D/R courses strongly suggests that there are other, currently unidentified, factors at work that accounts for performance differences associated with student biographic characteristics. **NOTE:** attempts to identify these other factors will be described in subsequent tables.

Even acknowledging that biographic characteristics play little or no predictable role in influencing performance in D/R courses, the differences between attrition in these courses compared to the total student body is noteworthy (Table 4). For example, student attrition across the entire curriculum is 18.7% but D/R course attrition is 25.8%. Even though the students taking D/R courses earned an overall mean GPA of 2.7, one in every four (587 students) did not earn credits in these courses. They either failed, withdrew, received a 'no pass' or changed their status from credit seeking to audit during the semester. The latter is typically done to avoid a failing grade. The higher attrition level in D/R courses can be interpreted as a confirmation of the student's non-readiness to handle college level curriculum in the appropriate disciplines (assuming the attritions due to withdrawals and audits are done for academic reasons) and/or the D/R courses themselves are not meeting the student's actual individual needs for whatever reason.

Although the glass is "¼ empty," it is also "¾ full." Three of every four students taking D/R courses perform successfully, which presumes that they are now prepared to advance to college level work in the appropriate disciplines. **NOTE:** This assumption will be explored further in a subsequent Topic Paper (TP 2002-3), which focuses upon performance in prerequisite courses.

A comparison of student proportions between total student enrollment and D/R enrollments is informative. It has already been established that biographic characteristics play no predictive role, but it is still informative to learn if there are different proportional distributions because it suggests areas where additional research may be needed. The same holds true for the following comments about attrition differences. **NOTE:** keep in mind that enrollment is a duplicate count of seats occupied rather than an unduplicated headcount. To illustrate, females occupy 60% of the seats in all UAA courses and males occupy the remaining 40%. The gender proportions are the same for D/R enrollees. Thus, it appears that students taking D/R courses have the same relative gender distribution as the university overall. At the same time, both males and females have about 7-8% higher attrition from D/R courses than their counterparts in all courses throughout the university. Females who successfully complete D/R courses are, on average, performing about one-half a grade higher than males in D/R courses.

A higher proportion of part-time students are enrolled in D/R courses compared to the total UAA but their attrition rate and grade performance are the same as full-time students. There are

marked differences when one examines traditional vs. non-traditional students in D/R courses. The proportion of traditional/non-traditional enrollees approaches 50-50 across the entire curriculum but traditional age students outnumber non-traditional students in D/R courses by a 3-2 ratio. Although traditional students are in the majority in D/R courses, they are much more likely to attrit and those who do complete the course perform less well than their non-traditional classmates. It does suggest that maturity, reasons for taking D/R courses, and intrinsic motivation could likely be contributing factors if one assumes there is no significant difference between them. This was established to be the case in all selected D/R courses except MATH A055, PRPE A084 and PRPE A086 (See Table 5).

Minority students were much more likely to be taking D/R courses than White students compared to their counterparts throughout the curriculum. Nearly one in five enrollees taking D/R courses was of Indian descent, either AK Native (17.9%) or American Indian (1.7%) compared to a combined (8.2%) minority enrollees throughout the curriculum. Black and AK/AI enrollees were much more likely to be unsuccessful in D/R courses than Asian or Hispanic enrollees. Asian enrollees had the lowest attrition rate (21.1%), which was even better than White enrollees (25%). Black and AK/AI students also had the lowest average GPA among those who successfully completed D/R courses. These findings further corroborate the knowledge that Blacks and AK/AI, as groups, are the most at-risk academically. Further research is needed to document the root causes and search for appropriate intervention strategies.

Throughout the UAA curriculum during Fall 2000, just over 60% of all seats were occupied by degree-seeking enrollees. The proportion was nearly the same among D/R enrollees. There was not much difference in attrition rates between degree seekers and non-degree seekers (i.e., nearly one of every five enrollees did not complete the course they initially enrolled in at the start of the semester). The attrition rate was higher for D/R enrollees (1 in 4) but there was minimal difference between degree seeking and non-seeking as well. Degree seekers who did complete the course performed slightly better than non-degree seekers but the difference was statistically significant (see Table 6) when performance in all D/R courses as a group were considered. **NOTE:** For this reason, the remaining information in this Topic Paper profiles degree seekers vs. non-degree seekers (admitted vs. non-admitted--see Methods section above).

At UAA, class standing is determined for degree seeking students only. Sixty two percent of all enrollees were individuals who were degree seeking (28,877) and the proportion of enrollees in D/R courses was nearly the same. Not unexpectedly, nearly 85% of all degree-seeking enrollees taking D/R courses were either first-time freshmen or individuals who were still considered freshmen based on cumulative credits earned. Further, as expected, the number of enrollees in D/R courses goes down significantly as student standing increases. However, an examination of the attrition rate for the various class standings produces some findings of note. First, the attrition rate for first-time freshmen in D/R courses (22%) is lower than the attrition rate for first-time freshmen in all of their courses (25.4%). However as the number of total credits earned goes up so does the attrition rate in D/R courses. This is counterintuitive on the surface because one would expect that as a student has more experience in a collegiate learning environment they would be more likely to be successful in all of their coursework. To some degree this hypothesis is borne out when one observes the increasing mean GPA of students who successfully complete D/R courses as their student standing increases. It would appear that juniors and seniors are enrolling in D/R courses for reasons other than the intended purposes of

such courses and that non-alignment ultimately results in a higher attrition rate for them. Further research is needed to test this hypothesis.

Transfer students, although a small proportion of the total enrollees, perform better and are less likely to become attritors in D/R courses than students who originally enrolled at UAA.

Table 4 presented overall attrition and GPA performance in D/R courses by student biographic characteristics but such global statistics may mask variations that exist at more detailed levels. The next series of tables (Tables 6-11) will view attrition and grade performance from the discipline/course perspective. Table 6 contrasts these statistics between Degree and Non-degree Seekers at the discipline level and determines whether any such differences reach statistical significance. **NOTE**: Since it has been previously established that differences in D/R performance based on student characteristics is not statistically different in any substantial way, similar tables at the discipline level for the other characteristics are in the Appendix for information purposes only. **Caution**--particular attention should be paid to the enrollment upon which each GPA is based. Further, a GPA is calculated only for those students who earned 'A-F' grades. Thus, if all students received a 'Pass', 'Incomplete', 'Audit', etc. grade there will be no GPA reported even though it shows students enrolled (See ITEC in Table 8). By contrast, CIOS shows 4 enrollees with a GPA of 0.0 in Table 6. This indicates that all four students failed in their D/R coursework.

Table 7 displays the average section size in D/R courses by discipline. Table 8 reports on the Grade Distribution in D/R courses by discipline. Table 9 compares the 'Grade' performance in all courses vs. just D/R courses within each college. Table 10 reports the degree of correlation between High School GPA and D/R course performance. Table 11 displays the SAT scores and HSGPA of D/R enrollees along with their attrition rate and mean D/R GPA by discipline. First Table 6:

Table 6
Developmental Enrollment / GPA by Discipline - DEGREE STATUS
Fall 2000 Opening

	Seeker		Non-Seeker		Total*		Significance	
Discipline	Enrolled	GPA	Enrolled	GPA	Enrolled	GPA	GPA	Attrition
BA			10		10		N/A	
CED	3		14		17		N/A	0.056
CHEM	110	2.6	51	2.6	161	2.6	0.773	0.583
CIOS			4	0.0	4	0.0		
ESL			10	4.0	10	4.0	N/A	N/A
HCA	10	3.3	23	3.5	33	3.5	0.516	**0.027**
HS	1		24		25		N/A	0.627
ITEC	3		73		76		N/A	N/A
MATH	763	2.7	493	2.4	1,256	2.6	**0.005**	0.235
PER			6		6		N/A	N/A
PRPE	536	2.9	214	2.8	750	2.9	0.415	0.151
TOTAL	1,426	2.8	922	2.6	2,348	2.7	**0.007**	0.740
% Total	60.7%		39.3%					

Notes: 1. * Total includes any "Unknown."
2. Bolded values represent significance at the 95% level of confidence.

The first point of note is that a significant difference exists (0.05 confidence level) between degree and non-degree seekers when one includes all of their D/R coursework GPA. However, when that total is broken down by discipline, the only discipline showing a significant GPA difference between the two groups is Mathematics. For all other disciplines there is no difference in GPA performance. Further, except for the HCA discipline, there is no significant difference in attrition rate between the degree seekers and non-degree seekers.

What is the average section size in D/R courses? What is the grade profile in D/R courses? Tables 7 and 8 provide the information.

Table 7
Average Section in D/R Courses by Discipline and by College

Discipline	Enroll	% Total	Sections	Avg Section	GPA	Attrition
BA	10	0.4%	1	10.0		0.0
CED	17	0.7%	1	17.0		23.5
CHEM	161	6.9%	8	20.1	2.6	32.3
CIOS	4	0.2%	1	4.0	0	100.0
ESL	10	0.4%	1	10.0	4	0.0
HCA	33	1.4%	4	8.3	3.5	6.1
HS	25	1.1%	6	4.2		20.0
ITEC	76	3.2%	7	10.9		0.0
MATH	1,256	53.5%	60	20.9	2.6	31.1
PER	6	0.3%	1	6.0		0.0
PRPE	750	31.9%	52	14.4	2.9	19.6
TOTAL	**2,348**	**100.0%**	**142**	**16.5**	**2.7**	**25.8**

College	Enroll	% Total	Sections	Avg Section	GPA	Attrition
CAS	537	22.9%	16	33.6	2.1	37.6
CTC	1,111	47.3%	56	19.8	3.1	22.4
KENAI	203	8.6%	17	11.9	2.8	21.2
KODIAK	69	2.9%	14	4.9	3.1	14.5
MAT-SU	204	8.7%	13	15.7	2.7	31.9
MILITARY	27	1.1%	2	13.5	2.5	18.5
PWSCC	171	7.3%	23	7.4	2.5	10.5
Telecourses	26	1.1%	1	26.0	3.5	50.0
TOTAL	**2,348**	**100.0%**	**142**	**16.5**	**2.7**	**25.8**

For the past two years the 'all campus' undergraduate average section size at UAA has been 16.4. The D/R section size is nearly identical although there is some variance within the disciplines. Just over half of all D/R courses offered during Fall 2000 were in Mathematics and Nearly one-third were in English. Mathematics and Chemistry have the largest section sizes while English D/R courses are approximately the same size as the university-wide average.

Average D/R course section size is smaller at the community campuses than on the Anchorage campus. Kodiak campus had an average of 5 enrollees in their D/R fourteen course sections. Within Anchorage campus, D/R courses offered through Community and Technical College (CTC) are 41% smaller, on average, than counterpart D/R courses offered through the College of Arts and Sciences. CTC enrollees were averaging one letter grade higher (B) than CAS enrollees (C) in D/R courses. There is a correlation between GPA performance and attrition rate for CAS and CTC as well. Nearly 4 of every 10 enrollees in CAS D/R courses (37.6%) did not earn credit hours by completing their course. That attrition rate is nearly double the attrition rate in D/R courses offered through CTC (22,4%). The D/R course offered through Telecourse had a unique profile. There were 26 enrollees in the course. Half of them (13) were attritors. The remaining half that earned a letter grade performed at a 'B+' to 'A-' level. How much this profile is a function of the information delivery system inherent in telecourses, the ability level of the enrollees, the discipline that was offering the telecourse, etc. is unknown.

Table 8
Developmental Grade Distribution by Discipline
Fall 2000 Opening

		Grade					Action							
Discipline	**Enrolled**	**A**	**B**	**C**	**D**	**F**	**I**	**P**	**NP**	**W**	**AU**	**Blank**	**GPA**	**Attrition %**
BA*														
Grade	10							10						0.0
% Total								100.0						
CED*														
Grade	17							13	1			3		23.5
% Total								76.5	5.9			17.6		
CHEM														
Grade	161	38	42	23	1	20	3			31	3		2.6	32.3
% Total		23.6	26.1	14.3	0.6	12.4	1.9			19.3	1.9			
CIOS														
Grade	4					2				1		1	0.0	100.0
% Total						50.0				25.0		25.0		
ESL														
Grade	10	10											4.0	0.0
% Total		100.0												
HCA														
Grade	33	9	4	2			2	14				2	3.5	6.1
% Total		27.3	12.1	6.1			6.1	42.4				6.1		
HS*														
Grade	25							20	1			4		20.0
% Total								80.0	4.0			16.0		
ITEC*														
Grade	76							76						0.0
% Total								100.0						
MATH														
Grade	1,256	325	205	119	55	153	154			218	21	10	2.6	31.1
% Total		25.9	16.3	9.5	4.4	12.2	12.3			17.0	1.7	0.8		
PER*														
Grade	6							6						0.0
% Total								100.0						
PRPE														
Grade	750	128	137	89	12	20	59	173	10	110	4	8	2.9	19.6
% Total		17.1	18.3	11.9	1.6	2.7	7.9	23.1	1.3	14.7	0.5	1.1		
TOTAL														
Grade	**2,348**	**510**	**388**	**233**	**68**	**195**	**218**	**312**	**12**	**356**	**28**	**28**	**2.7**	**25.8**
% Total		**21.7**	**16.5**	**9.9**	**2.9**	**8.3**	**9.3**	**13.3**	**0.5**	**15.2**	**1.2**	**1.2**		
% Total		**59.4**					**40.6**							

Note: * Taught at PWSCC plus 2 Math courses.

Table 8 examines the grade profile behind the mean GPA by discipline reported in Table 6. A further level of detail (Grades by course (not section) within discipline) are provided in the Appendix.

During Fall 2000, there were 2,348 enrollees in D/R courses and 59.4% (1,394) earned a letter grade in their course(s). The remaining 40.6% received a 'Grade' symbolizing a business transaction between UAA and the student. As a point of reference, the grade/business transaction ratio for all enrollees in all UAA courses was 76% to 24%. Just over one fourth of the D/R enrollees became attritors but those who did receive a letter grade performed, on average, at a C+ grade level (GPA = 2.7). Beneath these summaries are some interesting discipline profiles. For example, PWSCC employs a Pass/No Pass grading scheme for most of its D/R offerings. Yet another example is at Anchorage campus where, all 10 enrollees taking ESL D/R courses received an 'A'. And nearly 1 of every 5 enrollees in Mathematics and Chemistry D/R courses withdrew from those courses.

How does student performance in D/R courses offered by a particular college/campus compare with performance in all course offered within that same college? Table 9 provides that comparison. **NOTE:** only those colleges that offered D/R courses are included in this table. Also the percentages represent relative proportions based on different N's so this table should be interpreted in relative rather than absolute terms (e.g., enrollees in CTC D/R courses were twice as likely to receive a 'W' as in all CTC offerings -- of which D/R courses were included). Remember, however, that the 16.9% is based on an N of 1,111 while the corresponding 8.4% is based on an N of 8,320.

Table 9
Comparison of Total and D/R 'Grade' Distribution (%) by College
Fall 2000 Opening - Undergraduate Level

		Grade					Action								
College	Enrolled	A	B	C	D	F	I	P	NP	NG	W	AU	Blank	GPA	Attrition %
CAS															
Total	17,761	29.2	21.9	14.3	5.1	9.4	2.2	0.6	0.1	0.0	11.5	1.8	3.9	2.7	22.3
D/R	537	18.8	17.9	14.3	7.8	19.7	2.8				16.2	1.9	0.6	2.1	37.6
CTC															
Total	8,320	39.6	19.5	8.2	2.0	6.6	6.5	4.6	0.3	0.0	8.4	3.1	1.2	3.1	18.0
D/R	1,111	21.8	16.0	6.8	0.6	3.7	16.7	15.0	0.6		16.9	0.9	0.9	3.1	22.4
Kenai															
Total	3,414	42.8	17.7	8.6	2.9	4.6	3.0	3.7	0.2	3.6	8.0	4.9	0.0	3.2	16.5
D/R	203	34.0	20.0	20.7	1.5	7.9	2.0				10.3	2.5	1.0	2.8	21.2
Kodiak															
Total	1,361	44.4	19.9	9.8	2.4	4.3	2.9	5.7	0.5	2.0	4.0	0.7	3.2	3.2	13.4
D/R	69	21.7	21.7	7.2		2.9	5.8	29.0	1.4		5.8		4.3	3.1	14.5
Mat-Su															
Total	3,378	36.1	17.9	9.0	2.2	7.3	4.4	4.3	0.2	1.3	7.1	2.0	8.1	3.0	17.3
D/R	204	28.9	21.1	11.8	4.9	10.3	0.5		1.0		18.6	1.5	1.0	2.7	31.9
Military															
Total	659	36.6	33.1	14.7	3.3	3.0	3.0				6.1		0.2	3.1	14.7
D/R	27	25.9	25.9	18.5	7.4	11.1	3.7				3.7		3.7	2.5	18.5
PWSCC															
Total	2,248	17.4	7.4	4.2	2.8	2.6	1.7	54.4	1.0		2.8	0.8	4.8	3.0	12.2
D/R	171	7.0	3.5	1.8	2.3	2.9		73.1	1.2		2.3		4.1	2.5	10.5
Telecourses															
Total	1,110	33.4	15.6	8.0	3.4	16.8	6.8				14.7	1.2	0.1	2.6	19.5
D/R	26	19.2	7.7	3.8			19.2				50.0			3.5	50.0
Total															
Total															
D/R	2,348	21.7	16.5	9.9	2.9	8.3	9.3	13.3	0.5		15.2	1.2	1.2	2.7	25.8

Source: Topic Paper 2001-03, Table 2 and Topic Paper 2002-01, Table 7

Even with the caveats just cited, Table 9 is informative of developmental course performance as a component of the total college curricular offerings for Fall 2000. Observe that the attrition rate for D/R courses within CAS (37.6%) is nearly four of every ten enrollees as compared to just over two of every 10 enrollees among enrollees in all CAS courses (22.3%). Two of every ten enrollees in CAS D/R courses failed their course vs. one of every 10 enrollees in CAS overall. D/R enrollees in CAS earned an average grade of 'C' while the average grade for all CAS enrollees was 'B-'. By contrast, the mean GPA in CTC, even with differing N's, was identical for its D/R and total enrollees. D/R enrollees in CTC were four times more likely than total CTC enrollees to earn a 'P' grade. Both PWSCC and Kodiak issue a substantial number of 'P' grades in D/R courses while Kenai and Mat-Su do not issue any. Similarly, 15% of all enrollees in CTC D/R courses received a 'P' grade while none were awarded in CAS D/R courses. What accounts for the difference in grading philosophy?

What indicators can be utilized to identify students that would be most likely to need and profit from D/R courses? How predictive is the student's High School GPA in determining D/R course performance?

The number of students with reported High School GPA's (See **Table 10**, located at end of report) was quite small which greatly limited the utility of the reported Pearson Correlation values. However, two general observations were revealed. First, although correlations varied by course, the general relationship between overall high school academic performance and D/R course performance was small. To illustrate, examine the 'r2' column. That tells how much of the variance in D/R course grades was accounted for by variance in High School GPA (e.g., Math 055 has a correlation r = 0.17 and an r2 = 0.03). Thus, only 3% of the performance of students in Math 055 can be accounted for by variance in their High School GPA). Most of the numbers range show nearly zero relationship. Second, there are only a few courses where the correlation, even though small, is statistically significant. Together, this limited information does suggest that High School GPA, by itself, is not a useful predictor of the likelihood of academic success in D/R courses.

Table 11
SAT / H.S. GPA for Developmental Enrollees by Discipline

	Discipline	SAT				H.S. GPA		Discipline Attrition	
Discipline	Enrolled	N	Verbal	Math	Combine	N	H.S. GPA	GPA	Rate %
BA	10								0.0
CED	17								23.5
CHEM	161	36	494	479	974	81	2.8	2.6	32.3
CIOS	4							0.0	100.0
ESL	10							4.0	0.0
HCA	33	2	270	300	570	12	2.7	3.5	6.1
HS	25	2	420	450	870	1	2.3		20.0
ITEC	76								0.0
MATH	1,256	251	441	410	851	584	2.7	2.6	31.1
PER	6								0.0
PRPE	750	131	379	390	469	413	2.8	2.9	19.6
TOTAL	**2,348**	**422**	**426**	**410**	**835**	**1,091**	**2.7**	**2.7**	**25.8**

SAT Legend

Test	Mean	SD
Verbal	500	100
Math	500	100
Comp	1000	200

Can SAT scores be used to predict likelihood of success in D/R courses? As with High School GPA, the number of students with reported SAT scores who were taking D/R courses proved to be small which greatly limits the conclusions that can be drawn with confidence. Table 11 displays the average SAT scores and High School GPA, where available, for students taking D/R courses by discipline. NOTE: it is known that aggregating individual courses into discipline summaries will mask course variations but the limited data only allowed for general observations (e.g. Among the 750 enrollees taking any D/R courses in PRPE, only 131 (17.4%) had taken the SAT test).

Even with limited data, it is evident that the D/R enrollees have SAT scores that are, on average, about 1 S.D. below the national mean score for both Verbal and Mathematics. It is also of interest to note the overall relationship between SAT performance and High School GPA. There is not a one-to-one relationship although it is reasonable to assume that those who took the SAT also provided UAA with their High School transcript and are, thus included in the GPA statistics as well. The general observation that students who are scoring below 84% of the students who are taking the SAT Test (-1 S.D.) are still graduating with a cumulative High School GPA of 2.7-2.8 ('B-') is striking. Further, Table 11 reveals, indirectly, there are no SAT or HSGPA data available for students who were taking D/R courses at PWSCC.

Are students who are taking D/R courses more or less likely to persist into the second year of college than the college-wide average? Table 12 presents the findings.

Table 12
Persistence of Students Taking D/R Courses

	Fall 2000 Closing		Fall 2001 Opening	
	Head	**% Total**	**Head**	**% Returning**
Total UAA	18,534		7,390	39.9
Degree Seeker				
1st Freshman	359	20.5%	173	48.2
Freshman	448	25.6%	215	48.0
Sophomore	102	5.8%	59	57.8
Junior	45	2.6%	25	55.6
Senior	32	1.8%	20	62.5
Subtotal	986	56.4%	492	49.9
Non-Degree Seeker	653	37.4%	203	31.1
Other*	109	6.2%	53	48.6
Total	**1,748**	**100.0%**	**748**	**42.8**

Note: * Non UAA degree seeking students taking UAA courses.

There were 18,534 students enrolled at UAA as of Fall 2000 closing census. Of that group, 39.9% returned and were registered as of Fall 2001 opening census. During Fall 2000, 1,748 students (9.4%) were taking one or more D/R courses. Nearly 43% of them returned for the subsequent Fall semester. However, degree seekers were much more likely to return (49.9%) than non degree seekers (31.1%).

SUMMARY

A reflective examination of the findings, with full knowledge that they represent a single and possibly atypical snapshot, still prompts several questions. Given the purpose of D/R courses to prepare a student to successfully perform in subsequent college level coursework, there are consistent patterns of lower letter grade performance, higher attrition, failure, incomplete, and withdrawal rates. Combine this with significantly greater use of 'P' grades by some colleges and none by others for courses with the same purpose. Then consider that no pattern of statistically significant differences exists between attrition and grade performance among various student cohorts taking D/R courses. Incorporate this with correlations that could be determined between high school GPA and performance in D/R courses by discipline, which ranged from nonexistent ($r = 0.0$) to low moderate (r = low 0.40's). Further, only 3 courses with sufficient N's had statistically significant correlations between high school performance and D/R performance. SAT Verbal and Mathematics scores were nearly one S.D. below the respective national means yet students graduated from high school with a 'B-' cumulative average. Those who completed D/R courses also earned 'B-' grades but there was higher D/R attrition than for UAA students as a whole.

When all of this information is synthesized, it can be concluded that nearly 1 of 10 enrollees does not initially enter UAA academically prepared to perform in college level coursework according to criteria established by the university. That is a finding with significant implications for both students and the university. One must ask: Assuming the UAA grading philosophy is consistent with the D/R purpose to prepare students to be successful in college level coursework, do these courses fulfill that primary purpose? This question will be addressed in the Topic Paper on Prerequisites that will be forthcoming.

Supplemental Topic Paper Tables

Table 4
Fall 2000 Attrition by Student Characteristic*
(Total Enroll vs Developmental Enroll)

	UAA Total			Developmental Courses			
Characteristic	**Enrolled**	**% Total**	**Attrition %**	**Enrolled**	**% Total**	**Attrition %**	**GPA**
Total	46,330	100.0	18.7	2,348	100.0	25.8	2.7
Gender							
Female	27,943	60.3	16.7	1,412	60.1	24.0	2.9
Male	18,316	39.5	21.7	929	39.6	28.2	2.4
Unknown	71	0.2	29.6	7	0.3	57.1	1.5
Class Load							
Full-time	28,508	61.5	18.7	1,325	56.4	26.1	2.7
Part-time	17,822	38.5	18.6	1,023	43.6	25.3	2.7
Age							
Traditional	25,419	54.9	21.3	1,436	61.2	30.0	2.5
Non-Traditional	20,911	45.1	15.5	912	38.8	19.1	3.0
Ethnicity							
African America	1,776	3.8	26.5	159	6.8	28.3	2.5
AK Native	3,793	8.2	27.8	420	17.9	28.3	2.5
American Indian				40	1.7	30.0	2.7
Asian	2,354	5.1	21.2	128	5.5	21.1	2.7
Hispanic	1,792	3.9	21.5	125	5.3	25.6	2.7
White	34,330	74.1	16.8	1,330	56.6	25.0	2.8
Unknown	2,285	4.9	20	146	6.2	26.0	2.5
Class Standing**							
FT Freshman	4,001	13.9	25.4	576	40.4	22.0	2.8
Freshman	7,610	26.4	23.1	639	44.8	28.0	2.7
Sophomore	5,818	20.1	17.9	116	8.1	25.0	2.9
Junior	4,666	16.2	13.9	55	3.9	32.7	2.9
Senior	6,782	23.4	12.4	40	2.8	27.5	3.2
Graduate	1,232		5.5				
Degree Status							
Seeker (UG)	28,877	62.3	18.4	1,426	60.7	25.5	2.8
Non-Seeker	16,221	37.7	20.2	922	39.3	26.1	2.6
Entry Status							
Original	40,467	87.3	18.9	2,139	91.1	26.2	2.7
Transfer	5,863	12.7	17.3	209	8.9	21.1	2.9

**Degree Seeker Only

*Based on Fall 2000 Opening courses only.

Table 10
Correlation Between H.S. GPA & D/R Course Performance

Discipline	N	r	r2	2-tail sign	
CHEM 055					
Anchorage	31	0.23	0.05	0.224	
Comm Campuses	1				
Total	32	0.19	0.04	0.291	
CHEM 055L					
Anchorage	23	0.44	0.19	0.037	(*)
Comm Campuses	1				
Total	24	0.43	0.18	0.034	(*)
HCA 055					
Anchorage	6	0.32	0.10	0.535	
Comm Campuses					
Total	6	0.32	0.10	0.535	
MATH 054					
Anchorage	93	0.16	0.03	0.124	
Comm Campuses	25	0.42	0.18	0.038	(*)
Total	118	0.21	0.04	0.020	(*)
MATH 055					
Anchorage	201	0.15	0.02	0.035	(*)
Comm Campuses	52	0.21	0.04	0.130	
Total	253	0.17	0.03	0.008	(**)
MATH 060					
Anchorage	22	0.23	0.05	0.299	
Comm Campuses	4	-0.66	0.44	0.339	
Total	26	0.17	0.03	0.403	
PRPE 064					
Anchorage	5	0.74	0.55	0.150	
Comm Campuses					
Total	5	0.74	0.55	0.150	
PRPE 074					
Anchorage	4	0.21	0.04	0.788	
Comm Campuses	1				
Total	5	0.21	0.04	0.731	
PRPE 076					
Anchorage	60	0.03	0.00	0.838	
Comm Campuses	6	-0.18	0.03	0.736	
Total	66	0.02	0.00	0.886	
PRPE 084					
Anchorage	26	0.27	0.07	0.185	
Comm Campuses	9	-0.12	0.01	0.761	
Total	35	0.26	0.07	0.135	
PRPE 086					
Anchorage	74	0.27	0.07	0.023	(*)
Comm Campuses	12	0.30	0.09	0.348	
Total	86	0.26	0.07	0.016	(*)

Appendix

Appendix

Developmental Enrollment / GPA by Discipline - COURSE LOAD
Fall 2000 Opening

	Full-time		Part-time		Total*	
Discipline	**Enrolled**	**GPA**	**Enrolled**	**GPA**	**Enrolled**	**GPA**
BA			10		10	
CED	2		15		17	
CHEM	99	2.7	62	2.4	161	2.6
CIOS			4	0.0	4	0.0
ESL			10	0.0	10	0.0
HCA	2	4.0	31	3.4	33	3.5
HS	1		24		25	
ITEC			76		76	
MATH	692	2.5	564	2.6	1,256	2.6
PER			6		6	
PRPE	529	2.9	221	2.8	750	2.9
TOTAL	1,325	2.7	1,023	2.7	2,348	2.7
% Total	56.4%		43.6%			

Note: * Total includes any "Unknown."

Appendix

Developmental Enrollment / GPA by Discipline - ETHNICITY
Fall 2000 Opening

Discipline	Black	AK Native	Am Indian	Asian	Hispanic	White	Other	Total*
BA								
Enrolled		6	1			1	2	10
GPA								
CED								
Enrolled		1				14	2	17
GPA								
CHEM								
Enrolled	5	16	8	2	11	113	6	161
GPA	2.5	1.5	2.7	0.0	2.7	2.8	2.5	2.6
CIOS								
Enrolled		1		1	1	1		4
GPA		0.0		0.0	0.0	0.0		0.0
ESL								
Enrolled				4	1	3	2	10
GPA				4.0	4.0	4.0	4.0	4.0
HCA								
Enrolled	4	2			5	20	2	33
GPA	2.5	4.0			3.5	3.8	2.0	2.5
HS								
Enrolled						21	4	25
GPA								
ITEC								
Enrolled		9		2	1	55	9	76
GPA								
MATH								
Enrolled	96	157	23	59	61	787	73	1,256
GPA	2.3	2.3	2.6	2.4	2.4	2.7	2.2	2.6
PER								
Enrolled						6		6
GPA								
PRPE								
Enrolled	54	228	8	60	45	309	46	750
GPA	3.0	2.8	3.0	3.1	3.0	2.8	2.8	2.9
TOTAL								
Enrolled	159	420	40	128	125	1,330	146	2,348
GPA	2.5	2.5	2.7	2.7	2.7	2.8	2.5	2.7
% Total	6.8%	17.9%	1.7%	5.5%	5.3%	56.6%	6.2%	

Note: * Total includes any "Unknown."

Developmental Enrollment / GPA by Discipline - CLASS STANDING
Fall 2000 Opening (Degree Seekers Only)

Discipline	1st Time Freshman	Freshman	Sophmore	Junior	Senior	Total*
BA						
Enrolled						0
GPA						
CED						
Enrolled		1		2		3
GPA						
CHEM						
Enrolled	10	55	25	10	10	110
GPA	1.6	2.6	2.9	2.3	3.5	2.6
CIOS						
Enrolled						0
GPA						
ESL						
Enrolled						0
GPA						
HCA						
Enrolled		6	2		2	10
GPA		3.0	4.0			3.3
HS						
Enrolled				1		1
GPA						
ITEC						
Enrolled		2	1			3
GPA						
MATH						
Enrolled	283	347	80	29	24	763
GPA	2.7	2.6	2.9	2.9	3.0	2.7
PER						
Enrolled						0
GPA						
PRPE						
Enrolled	283	228	8	13	4	536
GPA	2.8	3.0	3.2	3.3	3.3	2.9
TOTAL						
Enrolled	576	639	116	55	40	1,426
GPA	2.8	2.7	2.9	2.9	3.2	2.8
% Total	40.4%	44.8%	8.1%	3.9%	2.8%	

Note: * Total includes any "Unknown."

Appendix

Developmental Enrollment / GPA by Discipline - ENTRY STATUS
Fall 2000 Opening

	Original		Transfer		Total*	
Discipline	**Enrolled**	**GPA**	**Enrolled**	**GPA**	**Enrolled**	**GPA**
BA	10				10	
CED	17				17	
CHEM	134	2.7	27	2.4	161	2.6
CIOS	4				4	
ESL	10	4.0			10	4.0
HCA	29	3.5	4	3.5	33	3.5
HS	25				25	
ITEC	75		1		76	
MATH	1,151	2.5	105	2.8	1,256	2.6
PER	5		1		6	
PRPE	679	2.9	71	3.2	750	2.9
TOTAL	**2,139**	**2.7**	**209**	**2.9**	**2,348**	**2.7**
% Total	**91.0%**		**9.8%**			

Note: * Total includes any "Unknown."

Appendix
Developmental Grade Distribution (%) by Course/Discipline

Discipline/Courses (Sections)	Enrolled	A	B	C	D	F	I	P	NP	W	AU	Blank	GPA	Attrition %
MATH														
050A														
Total (1)	4	50.0				50.0							0.0	50.0
050B														
Total (1)	4	75.0				25.0							3.0	25.0
050C														
Total (1)	4	75.0				25.0							3.0	25.0
054														
Total (20)	435	30.8	15.9	5.1	2.5	8.5	18.4			17.5	0.5	0.9	2.9	26.9
055														
Total (28)	693	21.9	16.3	12.1	4.0	13.4	10.1			18.6	2.7	0.7	2.4	34.8
060														
Total (4)	87	23.0	21.8	13.8	17.2	16.1	1.1			5.7		1.1	2.2	23.0
054*														
Total (3)	12	50.0	8.3		8.3	8.3	8.3			16.7			3.1	25.0
055*														
Total (2)	17	29.4	17.6	5.9		23.5	11.8			11.8			2.4	35.3
Total														
Total (60)	**1,256**	**25.9**	**16.3**	**9.5**	**4.4**	**12.2**	**12.3**			**17.0**	**1.7**	**0.8**	**2.6**	**31.1**
CHEM														
055														
Total (4)	98	18.4	22.4	17.3	1.0	14.3	2.0			23.5	1.0		2.4	37.8
055L														
Total (4)	63	31.7	31.7	9.5		9.5	1.6			12.7	3.2		2.9	23.8
Total														
Total (8)	**161**	**23.6**	**26.1**	**14.3**	**0.6**	**12.4**	**1.9**			**19.3**	**1.9**		**2.6**	**32.3**
PRPE														
052														
Total (4)	67						18.4	62.7	4.5	19.4		3.0	0.0	25.4
054														
Total (4)	66						9.1	65.2	6.1	18.2		1.5	0.0	24.2
060														
Total (1)	8							50.0	50.0				0.0	50.0
064														
Total (7)	7	28.6	42.9						14.3	14.3			3.4	14.3
A072														
Total (3)	45						13.3	75.6		8.9		2.2	0.0	11.1
074														
Total (4)	30	33.3	16.7	16.7		3.3				26.7		3.3	3.1	33.3
076														
Total (6)	117	33.3	26.5	17.9	0.9		11.1			9.4		0.9	3.2	10.3
082														
Total (6)	60						1.7	83.3	5	8.3	1.7		0.0	13.3
084														
Total (8)	121	25.6	31.4	21.5	4.1	0.8	3.3			10.7	1.7	0.8	2.9	13.2
086														
Total (13)	221	20.4	26.2	15.8	1.4	8.1	10.0			17.6		0.5	2.7	26.2
076*														
Total (1)	3	33.3		33.3	33.3								2.3	0.0
084*														
Total (1)	5		40.0	20.0	40.0								2.0	0.0
Total														
Total (52)	**750**	**17.1**	**18.3**	**11.9**	**1.6**	**2.7**	**7.9**	**23.1**	**1.3**	**14.7**	**0.5**	**1.1**	**2.9**	**19.6**
CIOS														
082														
Total (1)	**4**					**50.0**				**25.0**		**25.0**	**0.0**	**100.0**
ESL														
066														
Total (1)	**10**	**100.0**											**4.0**	**0.0**
HCA														
055														
Total (2)	17	52.9	23.5	11.8			5.9					5.9	3.5	5.9
095														
Total (2)	16						6.3	87.5				6.3	0.0	6.3
Total														
Total (4)	**33**	**27.3**	**12.1**	**6.1**			**6.1**	**42.4**				**6.1**	**3.5**	**6.1**

Appendix
Developmental Grade Distribution (%) by Course/Discipline (Continued)

Discipline/Courses (Sections)	Enrolled	A	B	C	D	F	I	P	NP	W	AU	Blank	GPA	Attrition %
BA														
094*														
Total (1)	**10**							**100.0**					**0.0**	**0.0**
CED														
081*														
Total (1)	**17**							**76.5**	**5.9**			**17.6**	**0.0**	**23.5**
HS														
080*														
Total (2)	13							61.5	7.7			30.8	0.0	38.5
080A*														
Total (1)	6							100.0					0.0	0.0
080B*														
Total (1)	1							100.0					0.0	0.0
081*														
Total (2)	5							100.0					0.0	0.0
Total*														
Total (6)	**25**							**80.0**	**4.0**			**16.0**	**0.0**	**20.0**
ITEC														
051*														
Total (1)	12							100.0					0.0	0.0
052*														
Total (1)	11							100.0					0.0	0.0
055*														
Total (2)	29							100.0					0.0	0.0
087*														
Total (2)	5							100.0					0.0	0.0
094P*														
Total (1)	19							100.0					0.0	0.0
Total*														
Total (7)	**76**							**100.0**					**0.0**	**0.0**
PER														
084*														
Total (1)	**6**							**100.0**					**0.0**	**0.0**
Total UAA														
Total														
Total (142)	**2,348**	**21.7**	**16.5**	**9.9**	**2.9**	**8.3**	**9.3**	**13.3**	**0.5**	**15.2**	**1.2**	**1.2**	**2.7**	**25.8**

* Taught at PWSCC