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# *Collegiate Connection: A Program to Encourage the Success of Student Participation in High School/University Dual Enrollment*

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## **Abstract**

*This project is a comparative exploration of academic success rates for high school students enrolled in a high school/university dual enrollment program. Four-hundred-eighty-four high school student grades in university courses were compared to grades of the general university population and university freshmen (n = 4,552) in specific courses. In several specific courses, the earned grades of high school students participating in the program were found to be significantly greater than the grades of university freshmen in matching courses. The Collegiate Connection dual enrollment program is explained in detail and suggestions for additional future research are also included.*

## Introduction

One of the primary challenges facing educators today is the development of flexible programs geared to specific characteristics of student populations. Students often differ from their age-peers with regards to the pace at which they learn, the ability to process information, and the interests they hold. Assembling programs that correspond to these characteristics in a manner that is comprehensive and meaningful has occupied a great deal of discussion in the field of education for many years.

For high school students, there is growing evidence that dual and/or concurrent college enrollment may improve both high school graduation rates and college continuation rates (Puyear, 1998). Although the concept of dual enrollment (in which high school students are simultaneously taking college courses at a local university) is not new, few programs target the high school population using a dual enrollment model. Costs, transportation, potential state revenue loss, and the rigors of advanced level course offerings are among the factors that deter such partnerships.

This longitudinal study was undertaken to determine if a dual enrollment program can lead to a successful experience for the students and university. To this end, data were collected on a number of factors deemed potentially enlightening to the analysis of success in the high school/university dual enrollment model.

This study sought to determine the effectiveness of the dual enrollment model as interpreted in the Collegiate Connection (CC) program at Indiana University—Purdue University Fort Wayne (IPFW) and if there were certain factors that predicted student success. Specifically, the study explored the academic achievement of Collegiate Connection students as compared to the success/failure rates of tradi-

tional university freshmen and the general university population. Future analysis of additional data will explore the relationship of the success of Collegiate Connection students to other factors unique to the university population. As we continue this longitudinal exploration, we plan to investigate additional factors including: student gender, SAT scores, class percentile rank, use of IPFW student resources, on campus vs. in high school course location, post-secondary education selection, participation in high school activities, and hours worked in employment situations.

Understanding the connection between dual enrollment programs, future collegiate success, and program support structures will likely enhance the possibility of student success in such programs across the educational spectrum. The result may be a much-needed structure through which students of high ability, talent, and/or motivation can find educational experiences appropriate to their learning needs.

## Literature Review

Clayton (1999) has stated that more high school students will be attending college part time in coming years. Their lack of motivation is often due to their home school's failure or inability to offer enrichment programs targeted to their academic needs. Early admission to college or dual enrollment is not a new idea. Some programs have been in existence for more than 25 years (Olszewski-Kubilius, 1995), while others are still in the process of being developed and refined. McCarthy (1999) reported that twenty-two states offer dual enrollment options to high school students according to a 1998 Education Commission of the States report. Twelve states have comprehensive programs in which students pay little or no tuition, credits count toward both college and high school graduation, and there are few admission restrictions.

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## Program Structures

Dual enrollment programs can take on a variety of forms. In each of the models below, students may earn only high school credit, only college credit, or both high school and college credit. The awarding of credit varies from state to state, and school district to school district. Models include:

1. A university credentialed high school teacher using a college syllabus teaches the college course at the high school during the school day (Puyear, 1998);
2. The college course taught at the high school by a university professor/instructor who is not a high school teacher (Puyear, 1998);
3. The college course taught at the university where high school students are mixed with other university students (Cullen and Moed, 1988; Crossland, 1996; Greenberg, 1991; Katz and Fisher, 1991; Puyear, 1998);
4. The college course taught by a university professor/ instructor at the college, but only high school students are in the class (American Association of Community Junior Colleges, 1991; Puyear, 1998); and
5. University personnel teach the college course via a distance education medium such as via Internet, television, video, correspondence, etc. (McCarthy, 1999).

## Student and Program Success

Henry (1997) cited a 1997 study by the Statewide Higher Education Executive Officers' Association that reported 41 of the 44 states responding to their study approved of and promoted high school students participating in post secondary education course work through a concurrent or dual enrollment model. It is surprising, then, that limited quantitative research exists to suggest that dual enrollment students experience similar amounts of success when compared to traditional college students. Several researchers (Chiang, 1998; Clayton, 1999; Galloway, 1994; Evelyn, 1998; and Windham, 1997) have suggested that dual enrollment students can experience success in college course, while others (Koelling, 1997; Smith, 1999) suggest caution in allowing students these opportunities.

Data available from a variety of programs across the nation support the premise that students in dual enrollment programs can be successful. At the University of Minnesota-Twin Cities campus, dual-enrolled students earned an average GPA of 3.1 while the college average was 2.7 (McCarthy, 1999). In Oregon, a 1993 study, conducted by the Oregon Department of Education, revealed that the mean GPA of college freshmen who had participated in dual-enrollment programs was 3.53 as compared with other first-time, first-year students of 3.21 (Smith, 1999). The average GPA of the University of Washington's *Running Start* students was approximately 2.8, nearly the same as the average of regular college freshmen (Crossland, 1994). University of Washington research data also showed that *Running Start* students, who transfer to the university, continue to be very

successful when compared to regular entering freshmen students. They earn higher grade point averages and take higher credit hour loads than regular entering freshmen or other transferring students (Crossland, 1994).

## Motivation and Benefits

Students, their parents, and college administrators who participate in dual credit programs report many benefits. Among these are: (a) reduced amount of time students spent in college; (b) college costs saved by the family; (c) lines of communication opened between high schools and colleges (Crossland, 1996; Greenberg, 1988, 1991); (d) colleges able to add sections of existing classes (AACJC, 1991; Crossland 1996); (e) a cure for senior boredom; (f) parents who might have doubted the ability or motivation of their child to successfully cope with college-level study have a chance to learn how prepared their children really are (Greenberg, 1988, 1991); and (g) challenging students while still allowing them to participate in their high school activities and socialize with their peers (Reiss and Follo, 1993).

Dual enrollment programs also provide high school students with the opportunity to compare their capabilities and talents with those of regular college students. Students experience the process of negotiating normal college routines and procedures, such as registration, buying textbooks and becoming familiar with a college vocabulary (electives, credits, concentration), thus increasing their knowledge of the college organization, services and academic requirements. Although these are secondary aspects of a dual enrollment program, they provide a solid foundation for future success in college (Katz and Fisher, 1991).

Students report (Crossland, 1991) very particular reasons for seeking out and enrolling in dual enrollment programs. The most frequently cited reasons high school students gave for selecting dual credit were:

- a. earning credits to apply to their college educations;
- b. saving costs for college courses; and
- c. learning dual credits by getting high school credit for college courses.

These practical reasons for considering dual enrollment programs correspond neatly with those reported by parents and sponsoring post-secondary educational institutes (Chiang, 1998; Clayton, 1999; Crossland, 1991; Reiss and Follo, 1993). This meshing of purposes is one fundamental reason suggesting the potential for program success.

## Enrollee High School Achievement

While many dual enrollment programs are targeted at academically high achieving students, two of New York's programs work with a different student base. *Bridge* is aimed at moderate-achieving students and *Middle College High School* works with low-achieving students. These programs have demonstrated that low- or moderate-achieving students can also be successful in college. Students in both programs

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averaged college GPAs of C+ (Greenberg, 1988). Additional data available through the Minnesota Department of Education indicates that dual-enrollment participants do not have to be in the top 10% of their class. Sixty percent were B, C, and D students in high school, yet more than half of those participating received a grade of A or B in their college courses (McCarthy, 1999).

### *Cautions*

Although preliminary research supports dual enrollment, even supporters suggest caution in allowing some students these opportunities. Others question the removing of barriers between high school and college experiences. Koelling (1997) was concerned that dual credit programs will devalue education and that blurring the lines between high school and college will be an injustice to both organizations. He specifically was concerned about the dual enrollment model in which the high school teacher is credentialed by the local college and teaches the course. Koelling pointed out that credentialing high school teachers may be a way for the universities to raise the number of students attending their institutions and increase revenues through more tuition dollars. Another concern expressed was a fear that colleges will lower placement standards in order to qualify more students for courses.

Some institutions such as Brigham Young, Notre Dame, Rice, Colorado College, and the University of Southern California do not accept dual credit, particularly if the program is held at the high school and taught by a high school teacher serving as an adjunct college instructor. Such dual enrollment programs may not be closely supervised and do not provide college level instruction (Schwalm, 1991). These unsupervised programs have weakened the transferability of credits to some institutions. Other colleges have dealt with this problem by revamping their dual credit program (Vivion, 1991).

Lieb (1999) reported that Arkansas legislators have recently expressed concern about the quality of college-credit courses taught in high schools and the practice of providing state funding to both high schools and colleges for the same course. This practice of funding both institutions, "double-dipping," has several states examining the funding aspects of these programs (Koelling, 1997; Lieb, 1999).

Other difficulties may result due to the complexity of educational organizations. For example, a three-credit and a five-credit college science course might be taken by two different students, yet both students might receive the same high school credit (McCarthy, 1999). The displacement of adult students in college courses was another concern expressed by some college administrators (Crossland, 1991). Teachers are also concerned that the best students are leaving high school classrooms. Additionally, some school districts view dual enrollment as a loss of control over both budget and curricular decisions, and a potential loss of revenue (McCarthy, 1999).

Potential social and emotional difficulties for students in early dual enrollment programs must also be examined. Students may miss the extracurricular activities and social experiences of high school such as attending a prom or participating in athletics (McCarthy, 1999; Sayler, 1992). In a rush to help talented children perform academically, and save on college costs, parents might push their children into social environments beyond their years (Clayton, 1999). In addition, early entrants need to be prepared to take more responsibility for their learning and may be unaware of the amount of reading, the level of detail and analysis expected, and the amount of time outside the classroom needed to prepare for university-level course work. Students who have problems managing their time, lack personal organizational skills, or are unmotivated may not succeed in the college arena (Sayler, 1992; Schumacker and Sayler, 1995).

### *Summary*

Overall, the literature supports dual enrollment structures for high school students. Studies of such programs universally show these students do as well or better than students entering at the traditional college age (Crossland, 1991). Early entrance to college, whether it is through early admission, dual credit, or dual enrollment, provides academically advanced students with a viable educational choice. Students are provided with an intellectual challenge and stimulating environment (Sayler, 1992). At present, the majority of the programs only admit the top third of a high school class or students who have been identified as gifted. Most of these students have exhausted or will soon exhaust the advanced course work available at their sending high school.

Dual enrollment programs provide exceptionally able, well-motivated high school students the academic acceleration and enhanced social development they need. Many go on to graduate or professional schools and for those whose career paths lead to them to becoming physicians or majoring in more than one area, saving a year or two can be especially helpful. Even more important, however, is that accelerated programs prevent boredom and strengthen academic motivation (Boothe, Sethna, Stanley and Colgate, 1999).

The Collegiate Connection Program, sponsored by Indiana University—Purdue University Fort Wayne and neighboring local school agencies is one program that approaches this challenge with success. Over the past four academic years, IPFW has worked in coordination with area school district personnel to build a dual enrollment program through which high achieving students attend university classes and receive college credit while concurrently enrolled at their local high schools. To date, over 400 students from 27 different public and private high schools in the Fort Wayne metropolitan area have completed course work in ninety three different IPFW courses alongside traditional university students.

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## Purpose for the Study

The central purpose of this initial segment of the longitudinal study focused on the academic achievement of the Collegiate Connection Program participants. Academic achievement of Collegiate Connection students, as measured by grade point average (GPA), was analyzed and compared to the success/failure rates of traditional university freshmen and to the general university population.

## Method

### *Program Description*

Indiana University—Purdue University Fort Wayne (IPFW) piloted the Collegiate Connection, a dual enrollment program, with a single high school in the spring semester of 1997. The program was designed to meet the needs of a growing population of students who were completing their high school requirements early and needing additional challenges. Collegiate Connection was also aimed at first generation college students, many of whom are from minority backgrounds, and who may not have considered it feasible or necessary to attend college.

Collegiate Connection students are conditionally admitted to IPFW and attend university courses on campus. For admission into the program, eleventh and twelfth grade students must be in the top third of their high school class academically, or in the top half with a letter of recommendation from their guidance counselor. Occasionally exceptions have been made for younger students in need of accelerated course options. Students may attend a special orientation session designed to assist them in making the transition from high school to university life. The orientation emphasizes college survival skills, what professors expect, and the special university services available to them. Midway through the semester a form and note of explanation is sent to each student's instructor checking on academic progress. This is usually the first time the instructor learns there are high school students in the class. If the student is performing at less than a C level, the IPFW program coordinator contacts the student and options such as tutoring, talking with the instructor, peer study groups or possible withdrawal are discussed.

Students in need of financial assistance can receive special private funding obtained through a local foundation. Any student who qualifies for free and/or reduced textbooks or lunches may take up to two classes per semester tuition-free. The student is responsible for transportation and books only.

Students are then dually enrolled in both high school and college and receive university credit while they complete their high school requirements. As of fall 2001, students were enrolled from nine northeastern Indiana counties and enrolled in classes ranging from English composition, psychology, and speech courses to advanced third-year foreign language courses, linear algebra and graduate statistics.

## *The University Setting*

Indiana University—Purdue University Fort Wayne (IN) is an urban state-assisted institution serving Indiana's second largest city and the surrounding region. It is the only comprehensive university in northeastern Indiana and offers 170 diverse academic programs resulting in certificate, associate, baccalaureate, and master's level degrees. The total undergraduate and graduate student population is traditionally around 10,000 students for the fall and spring semesters. Typically half of these students are full time. The average student's age at IPFW is 27 years old. IPFW is a commuter campus with no on-campus student housing.

### *Student Participants*

High school students entering the program tend to live within a one hour driving distance from the campus. The majority of Collegiate Connection students are enrolled in the Fort Wayne Community Schools, an urban school district. Other students attend a wide variety of public, private, and parochial schools located in rural, suburban, and urban settings. While most students are ranked in the top third of their high school class, some students have been ranked as low as the eleventh percentile of their graduation class. Composite SAT scores also represent a wide spectrum ranging from a low of 710 to a high of 1,560 (out of 1600 possible) with the majority reporting composite scores above 1,000.

For this study, 484 course-grade data points were analyzed from those earned by (male participants = 212, female participants = 272) Collegiate Connection students over the past 5 semesters. These course grades were compared to grades matching course grades from university freshmen and non-freshmen (registered sophomores through seniors) completing the most recent university semester (Spring, 2000; n = 4,552). University instructors were not aware of specific students attending their classes under the Collegiate Connection dual enrollment program until the midterm grade checks were sent out.

## Results

In an effort to determine how successful the Collegiate Connection (CC) students were in comparison to the college level students taking the same course, average grades in the course for CC students were compared to average grades of IPFW freshmen and non-freshmen. Table 1 offers descriptive statistics of mean grades earned for Collegiate Connection, university freshmen, and university non-freshmen students. In this table, the data has been collapsed into general content categories for comparative purposes. Notes following this table indicate individual courses that constitute the collapsed content areas.

Due to the small overall Collegiate Connection student enrollment in some courses, it was decided to include only the courses where Collegiate Connection enrollment totaled

Table 1

*Descriptive Statistics for Collegiate Connection Students, University Freshmen, and General University Population by Collapsed Content Courses*

	Collegiate Connection			University Freshmen			University Non-Freshmen		
	x	sd	n	x	sd	n	x	sd	n
English	3.94	1.08	49	3.53	1.24	617	4.00	1.07	115
History	3.68	1.04	22	2.84	1.26	347	3.30	1.23	277
Math	4.09	1.17	58	3.19	1.33	387	3.34	1.22	151
Science	3.82	1.78	11	3.07	1.23	229	3.41	1.03	242
Political Science	3.94	1.11	18	2.89	1.30	192	3.38	1.24	149
Foreign Language	4.52	0.59	25	na	–	–	na	–	–
Computer Science	4.23	0.73	13	na	–	–	na	–	–
Fine Arts	4.00	1.60	15	na	–	–	4.13	1.23	75
Philosophy	4.37	0.96	19	3.43	1.27	428	3.79	1.18	311
Psychology	3.62	1.20	131	2.78	1.33	722	3.38	1.32	310
Public Affairs	3.38	0.74	8	na	–	–	na	–	–

Notes: Grades based on A = 5, B = 4, C = 3, D = 2, F = 1.

English = (ENG W103, ENG W130, ENG W131, ENG L102, ENG W233)

History = (HIS 105, HIS 106, HIS 113, HIS 114, HIS 216, HIS 232, HIS 210)

Math = (MAT 101, MAT 102, MAT 113, MAT 153, MAT 154, MAT 163, MAT 164, MAT 213, MAT 229, MAT 261, MAT 262, MAT 490, MAT 351)

Science = (AST 105, BIO 100, BIO 295, CHM 115, CHM 290, PHY 131, PHY 152)

Political Science = (POL 103, POL 105)

Foreign Language = (FRN 113, FRN 203, FRN 204, FRN 305, FRN 306, FRN 318, GER 105, GER 113, GER 306, GER 318, GER 470, SPA 203, SPA 204, SPA 210, SPA 311, SPA 312)

Computer Science = (CPS 106, CPS 114, CPS 160, CPS 161)

Fine Arts = (FIN 101, FIN 121, FIN 123, FIN 273, FIN 112, THR 134, THR 201, MUS 113)

Philosophy = (PHL 110, PHL 111, PHL 120, PHL 150, PHL 328)

Psychology = (PSY 120, PSY 240, PSY 350)

Public Affairs = (PEA 101, PEA 321)

Table 2

*Descriptive Statistics (Mean Earned Grades) for Collegiate Connection Students, University Freshmen, and General University Population for Individual Courses with Collegiate Connection Enrollment Totaling Greater Than 10 Students*

	Collegiate Connection			University Freshmen			University Non-Freshmen		
	x	sd	n	x	sd	n	x	sd	n
PSY 120	3.62	1.21	129	2.78	1.32	642	3.33	1.32	158
COM 114	4.14	1.15	71	4.08	1.20	727	4.64	0.68	132
ENG 131	4.00	1.03	44	3.53	1.24	609	3.89	1.19	66
HIS 106	3.83	0.83	12	2.83	1.22	144	3.32	1.32	97
MAT 153	3.73	1.32	22	3.16	1.33	372	3.28	1.28	99
POL 103	3.69	1.18	13	2.87	1.31	181	3.36	1.23	127
SOC 161	4.41	1.05	27	3.47	1.39	561	3.86	1.24	116

Note: Grades based on A = 5, B = 4, C = 3, D = 2, F = 1

at least 12 or more students. Table 2 presents descriptive data for Collegiate Connection and university students in the 7 courses where enrollment numbers allowed meaningful comparisons.

Table 3 and Table 4 are also displayed in an effort to show mean grade differences for Collegiate Connection students based on gender and economic background. Due to the low sample sizes, specific internal grade comparisons of Collegiate Connection students were not appropriate based on these descriptive subcategories. This information is offered for information only and in an effort to establish preliminary baseline data for future comparison.

To compare mean grade differences in the 7 selected high enrollment courses among Collegiate Connection students, university freshmen, and university non-freshmen students, an analysis of variance (ANOVA) was used. In addition to these initial comparisons, Sheffe's method was used for post hoc group comparisons. Table 5 displays ANOVA findings and post hoc comparison information.

For the *Introduction to Psychology* course (PSY 120), ANOVA results revealed an initial significant difference among the three groups  $F(2,926) = 16.37, p < .01$ . When post hoc comparisons were explored, grade averages for Collegiate Connection students were significantly greater than those of university freshmen  $F(2,926) = 12.6, p < .001$

Table 3

*Descriptive Statistics (Mean Earned Grades) for Collegiate Connection Students by Gender and Course*

	Mean	SD	n
PSY 120			
M	3.89	1.18	43
F	3.49	1.21	86
COM 114			
M	4.17	1.00	24
F	4.13	1.23	47
ENG 131			
M	4.06	1.11	18
F	3.96	0.99	26
HIS 106			
M	4.33	1.15	3
F	3.37	0.71	9
MAT 153			
M	4.0	1.49	10
F	3.5	1.17	12
POL 103			
M	3.75	1.39	8
F	3.75	0.95	13
SOC 161			
M	4.43	0.79	7
F	4.37	1.16	19

Note: Grades based on A = 5, B = 4, C = 3, D = 2, F = 1

and similarly, university non-freshmen grade averages were also significantly greater than those of university freshmen  $F(2,926) = 11.7, p < .001$ .

When *American History* (HIS 106) was explored, ANOVA results again revealed significant mean grade differences among the three groups  $F(2,250) = 3.48, p < .01$ . Post hoc comparisons revealed that mean grades for Collegiate Connection students were significantly greater than university freshmen  $F(2,250) = 3.05, p < .05$  and that mean grades of university non-freshmen were significantly greater than university freshmen  $F(2,250) = 3.00, p < .05$ .

Analysis of Variance also revealed a significant difference in mean grade averages among the three groups in the *Introduction to Sociology* course (SOC 161)  $F(2,701) = 4.82, p < .01$ . Post hoc comparisons revealed that mean grades for Collegiate Connection students were significantly greater than university freshmen  $F(2,701) = 3.17, p < .05$ . Important to also note was that for *Introduction to Communication* (COM 114) and *Introduction to Political Science* (POLY 103), ANOVA results revealed significant mean grade differences among the three groups  $F(2,927) = 4.28, p < .05$  and  $F(2,318) = 3.67, p < .05$  respectively. In each of these post hoc comparisons among individual groups, university non-freshmen mean course grades were significantly greater than university freshmen grades in both courses  $F(2,927) = 4.14, p < .05$  and  $F(2,318) = 2.89, p < .05$ .

It is also important to note that in Table 1 (collapsed content areas) and Table 2 (7 specific high-enrollment courses) mean grade averages for Collegiate Connection stu-

Table 4

*Descriptive Statistics (Mean Earned Grades) for Collegiate Connection Students by SES and Course*

	Mean	SD	n
PSY 120			
Low SES	3.00	1.33	28
High SES	3.80	1.11	101
COM 114			
Low SES	3.85	1.46	26
High SES	4.31	0.90	45
ENG 131			
Low SES	3.65	0.99	17
High SES	4.22	1.01	27
HIS 106			
Low SES	3.50	0.71	2
High SES	3.90	0.88	10
MAT 153			
Low SES	3.56	1.42	9
High SES	3.85	1.28	13
POL 103			
Low SES	1.00	—	1
High SES	3.92	0.90	12
SOC 161			
Low SES	4.00	1.67	6
High SES	4.52	0.81	21

Notes: Grades based on A = 5, B = 4, C = 3, D = 2, F = 1. Low SES was defined as participants receiving some form of financial aid or those that were placed on a payment plan. High SES was defined as those participants who paid fees at the time of enrollment.

dents exceeded university freshmen in every case for individual courses and collapsed content subject areas. In addition, Collegiate Connection student course averages either compared favorably or in some cases were slightly greater than university non-freshmen grade averages in all courses and content areas that were explored.

## Discussion

This study assessed the extent to which high school students enrolled in the Collegiate Connection program at Indiana University—Purdue University Fort Wayne (IN) were successful (as measured by course grades) in university level courses. The results of this report suggest that the CC students were, in fact, successful in their university courses and earned grades that surpassed freshman level university students in selected courses.

We are encouraged by the initial results as it appears that the Collegiate Connection Program is effective in assisting high school students experiencing dual or concurrent enrollment. It would appear the program and the participants are showing levels of success that indicate high school students are able to complete university level course work offered through Collegiate Connection. In addition, the collaborative nature of the university and local school corporations in their support of this program appears to be successful.

Table 5

*Analysis of Variance (ANOVA) and Post Hoc Comparison Results for Student Achievement for Collegiate Connection Students, University Freshmen and General University Population by Specific Courses*

	Source of Variation	Sum of Squares	df	Mean Square	F
Psy 120	Between	48.94	2	24.5	16.37**
	Within	2.99	926	0.003	
	Post Hoc Comparisons	CC > FR, $F(2,926)=12.6^{***}$ NFR > FR, $F(2,926) = 11.7^{***}$			
Com 114	Between	17.81	2	8.91	4.28*
	Within	4.16	927	0.004	
	Post Hoc Comparisons	NFR > FR, $F(2,927) = 4.14^*$			
Eng W131	Between	7.76	2	3.88	2.16
	Within	3.59	712	0.005	
His 106	Between	10.65	2	5.30	3.48**
	Within	3.06	250	0.01	
	Post Hoc Comparisons	CC > FR, $F(2,250) = 3.05^*$ NFR > FR, $F(2,250) = 3.00^*$			
Mat 153	Between	3.68	2	1.84	1.14
	Within	3.21	490	0.006	
Poly 103	Between	11.35	2	5.68	3.67*
	Within	3.09	318	0.009	
	Post Hoc Comparisons	NFR > FR, $F(2,318) = 2.89^*$			
Soc 161	Between	17.21	2	8.61	4.82**
	Within	3.57	701	0.005	
	Post Hoc Comparisons	CC > FR, $F(2, 701) = 3.17^*$			

Note: \* < .05, \*\* < .01, \*\*\* < .001. The Scheffe' test was used for all post hoc comparisons

CC = Collegiate Connection Students

FR = University Freshmen

NF = Non-Freshmen

As with many experimental educational programs, a point of caution should be noted. To a great extent, this select group of CC students was comprised of motivated and talented students. It is certainly the case that one might expect positive results based on those two characteristics alone. Academic talent and motivation are characteristics that would seem to predict a high level of success in any academic program. However, dismissing the results on that basis would be an error as the CC program includes students with low SATs, low class percentile ranks, and low GPAs, who also successfully completed university courses. It is of particular interest that the CC students received grades in IPFW courses that statistically exceeded those of the university freshmen, their close-in-age contemporaries. Clearly, the CC students were successful in navigating a university system of courses and expectations at a similar level to most students enrolled at IPFW.

The typical IPFW student is a commuter, living off campus, and employed in at least one job. They take their course work seriously, but usually have work and family obliga-

tions to juggle with their university load. Collegiate Connection students often work, but the primary focus of these students is on their education. It is highly conceivable that CC students will have fewer distractions and obligations to manage. This may result in an increased ability to study and to earn higher grades when compared to IPFW students. While there may be a temptation to discount the comparison of grades based on this characteristic, many CC students also work, participate in extra-curricular activities, and are younger in age and less experienced than typical IPFW students. At this time, the analysis of these additional factors has not been completed. We continue to explore the impact of these additional variables.

An additional caveat should be expressed in regard to the number of CC students in this study as compared to the IPFW groups. The current sample of over 400 CC students is approaching a size that will give future researchers more confidence in interpreting their results. At this time, it can be said that there is guarded optimism that findings will become more generalizable as the CC sample grows with each new



semester. There are emerging data that support this optimism for both the effectiveness of the program and the role that the CC administrative structures play in student success.

At present, of particular interest is the consistency of the data focusing on student GPA by group. In classes chosen for analysis, the CC students significantly surpassed the grades of freshman IPFW students in five of seven courses. Equally consistent are the data suggesting that CC students earn grades that are statistically equal to the IPFW student sample comprised of all students. If these findings were arrived at for a course or two, it would be far less meaningful. Replicating findings with consistent results and patterns of achievement for five of seven comparisons offers additional support for this program.

At this point in the study, investigators are encouraged to see data seemingly supporting the dual enrollment effort at IPFW. With the program now in its fourth year and findings indicating student success when measured by course GPA's, the Collegiate Connection program seems to be having a positive impact on its students. The increased number of students taking higher level courses will also provide information about student success in more complex courses. Further data gathering, including student surveys and evaluation data is anticipated as it will bring ancillary information to the analysis and provide a better context for analysis.

Until that time, the current data provide a sense of guarded support as to CC effectiveness when representing program viability to parents, educators, and potential students. With this effectiveness comes an additional programmatic option for students referred to the program. These expanded program options are needed for students who have exhausted the high school curricula. To have the chance to enroll in courses commensurate with their knowledge and ability is a promising opportunity. Being able to earn substantial college credits at the same time is an added bonus.

### Conclusion

It is not atypical to find talented high school students who can easily complete selected university classes at a young age. Dual enrollment literature discussed earlier examined a variety of programs. Many universities and colleges permit motivated students to enroll in one or two classes while completing high school. These programs provide students with an opportunity to select both high school and college-level courses that satisfy a student's individualized needs. With enrollment in such programs comes the opportunity to shorten the time spent in traditional secondary schooling and the possibility of completing post-secondary education more quickly. Not only is this a savings to families in an economic sense, but, it also puts these talented students on a career path to bring their skills to the world earlier.

The research that explores these types of dual enrollment programs seems to indicate that there may be viable programming options for high ability students in collabora-

tions between local institutes of higher learning and area high schools. Data reported on the Collegiate Connection program appears to show that CC high school students meet and often exceed their classmates in final course grades. If grades are a measure of success, IPFW's Collegiate Connection appears to be successful. We are pleased with these initial results as they suggest that similar types of programs can effectively support high school students' early entry into the college arena.

Further analysis and study of the Collegiate Connection program promises to bring clarity to some interesting questions currently hanging in the balance. Will attendance in the CC program effect the number of program students that select IPFW as their college choice? Do the CC students change their occupational plans after completing the CC program? What impact does high school employment have on program success? What impact does gender have on program success? How do economic status and GPA interact? Are scores on the SAT or percentile rank in high school strong predictors of CC program success? These and other questions need further investigation.

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