

Concurrent Credit: K-12 Outreach, Recruiting, or Both?

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Dual Credit Programs: K-12 Outreach, Recruiting, or Both

Abstract

Recruiting consumes considerable resources for any post-secondary institution. Many institutions also have a mission of K-12 engagement. A dual credit program helps an institution fulfill its K-12 outreach mission and also provide valuable recruiting opportunities. This paper explores the process of creating and implementing a dual credit program at Purdue Polytechnic Anderson, a regional location Purdue University's statewide program.

Traditional dual credit programs are concurrent enrollment models, whereby high school courses are taught by high school faculty and for which high school juniors and seniors can also earn college credit. Other dual credit arrangements permit high school students to take college classes delivered by university faculty on the university's campus. Neither of these options met the requirements of Purdue University. Concurrent enrollment with high school teachers was a concern due to the level of education and experience required for teaching at Purdue University. Adherence to University-level course content, academic rigor, and faculty preparation were important aspects in program delivery. Second, while an on campus delivery made Purdue University courses a possibility for high school students, very few were geographically close enough to campus to take advantage of the opportunity. The challenge was to create a mechanism that would satisfy Purdue's concerns regarding a high quality and academically rigorous dual credit experience and still keep the courses accessible to high school juniors and seniors. Purdue Polytechnic Anderson implemented a dual credit program in which university faculty deliver university courses on the high school campuses. High school juniors and seniors enroll in these courses as part of their conventional high school schedule. The students begin to build a university transcript and, in addition, the high school awards high school credit for the university course.

The implementation of several courses in information system development, leadership, and design are presented as examples. Specific topics include establishing a relationship with high schools, identifying dual credit courses and scheduling opportunities, scheduling, university faculty involvement and commitment, success factors, and K-12 outreach and recruiting outcomes.

Introduction

Dual credit programs, in which students take high school courses for both high school and college credit, have been in existence for over 30 years and continue to grow. According to the Center for Education and Data Research, more than two million students participate annually in dual-credit programs, and these programs have become the second most popular college preparatory program nationally, after Advanced Placement. (Cowan & Goldhaber, p. 425)^[1] Purdue University realizes the importance of early contact and collaborative relationships with high schools in an effort to attract and retain future students to our regional, statewide campuses. K-12 administrators are committed to a better-educated and globally competitive workforce. They identified dual credit as one of the ways (along with Advanced Placement and Common Core Standards), to ensure "college and career readiness" and to offer a seamless bridge between secondary and postsecondary curricula and assessment. Finally, since most of the original dual credit programs targeted already college-bound students, many new programs have been designed to ease the transition for students who otherwise might not have been considered (or

who did not consider themselves) college-eligible. In short, a rapidly growing number of high school students are fulfilling requirements through a variety of programs, and starting college with credit for first-year classes already completed.

Traditional dual credit programs are concurrent enrollment models, whereby high school courses are taught by high school faculty and for which high school juniors and seniors can also earn college credit. According to the National Center for Education Statistics, 67 percent of schools who had students enrolled in dual credit courses with a career/technical/vocational focus were taught in the secondary schools by high school faculty. (Thomas, Gray, and Lewis, p. 4)^[2] Other dual credit arrangements permit high school students to take college classes on campus with university faculty. Neither of these options met the requirements of Purdue University.

Concurrent enrollment with high school teachers was a concern due to the level of education and experience required for teaching at the University. Adherence to University-level course content, academic rigor, and faculty preparation were important aspects in program delivery. Second, while an on campus delivery made Purdue courses a possibility for high school students, very few were geographically close enough to campus to take advantage of the opportunity. The challenge was to create a mechanism that would satisfy Purdue University's concerns regarding a high quality and academically rigorous dual credit experience and still keep the courses accessible to high school juniors and seniors. Purdue Polytechnic Anderson implemented a dual credit program in which university faculty deliver university courses on the high school campuses. High school juniors and seniors enroll in these courses as part of their conventional high school schedule. The students begin to build a university transcript and, in addition, the high school awards high school credit for the university course. Purdue capitalizes on the ability to provide a more rigorous curriculum while being onsite with these high schools, with students, and with parents in an effort to provide an affordable jumpstart to their post-secondary educational journey.

Working with High Schools

In order to begin the program, articulation agreements were reached with three area high schools prior to implementation. School administration and university representatives outlined the program details, price structure, and overall registration guidelines. Courses are approved by the Purdue University Provost and the Indiana State Department of Education, and can be used in any Polytechnic major – as either technical or general electives. Classes were specifically designed to provide students with a polytechnic, cross-disciplinary approach whereby faculty across departments work together to create challenging course requirements and outcomes. Class offerings occur each fall and spring to eligible high school juniors and seniors.

Purdue offers various credit options from our course catalog which fit with the approved high school's specific instructional outcomes. In addition, students must adhere to an application process, and the Purdue Registrar's office applies the same admission guidelines as anyone applying to the program.

According to the articulation agreement, below are the standards that must be met by the students who apply: (University Dual Credit Guidelines) ^[3]

- To receive credit, dual credit students must complete an application, be accepted as a non-degree high school student, pay tuition to the Bursar by the designated due date, and pass the course according to University standards.

- Student applications will be reviewed individually. Students are admitted according to the same holistic admission standards used by Purdue University. Students must also be recommended by the appropriate teacher, guidance counselor, or a principal.
- Tuition will be charged at a rate of \$25 for each credit hour as determined by the State.
- Students who qualify for free and reduced lunches and meet the standards for admission will have their tuition waived upon providing documentation.
- Students who qualify as children of disabled veterans and meet the standards for admission will have their tuition waived upon providing documentation.
- Students will be billed directly by the Office of the Bursar and will not receive a transcript until credits are paid.

In addition to the articulation agreement between the university and local high school, university faculty must also adhere to high school policies. Other requirements of university faculty include the following:

- Faculty member provides instruction as per the school district's annual calendar. Grades and attendance expectations on the high school software is required. Training provided to the faculty member prior to the start of school.
- Rooms and proper equipment/software provided to the faculty member.
- Separate background checks required by each school district may be required.
- Faculty member provided a handbook and provided other relevant training in areas such as emergency plans and procedures.

Courses and Scheduling

The implementation of several courses in information system development, leadership, and design were implemented as part of our program. These courses, along with a brief course description, are listed below.

- **Introduction to Systems Development**
 - This course introduces information systems development. Topics include types of information systems, system development, database management systems, and problem solving. Students will read/create UML, ERD, and data flow diagrams to model information system objects, data, processes, and logic. Labs emphasize modeling and SQL/QBE querying to prepare students for later systems, programming, and database classes. Given user requirements students will design, construct, and test a personal computer information system. PC literacy required.
- **Design Thinking in Technology**
 - Students will engage in critical analysis of real-world problems and global challenges. They will demonstrate the ability to recognize opportunity and to take initiative in developing solutions applying the principles of human centered design. Students will be able to communicate effectively and to work well on teams. We examine problems and solutions from societal, cultural, and ethical perspectives.

- **Gateway to Technology Leadership and Innovation**
 - This course serves as an introduction to the various Technology Leadership & Innovation (TLI) programs. Students study the interface between technology and people, while developing strategies to lead, innovate, and solve problems in a technology-rich, systems environment. Concepts of globalization, ethical practices, and life-long learning explored.
- **Foundations in Technology Leadership**
 - A survey of individual and organizational behavioral concepts and principles that provide a foundation for leadership in technology organizations. The focus will be toward the understanding of behaviors necessary for effective technology leadership, including concepts of work in a technology-rich environment.
- **Technical Graphics Technology**
 - This course is an introduction to the graphic language used to communicate design ideas using CAD. Topics include sketching, multi-view drawings, auxiliary views, pictorial views, working drawings, dimensioning practices, and section views.
- **Production Design and Specifications**
 - The design, evaluation, and documentation of engineering specifications required of manufacturability and assembly discussed. Emphasis is on CAD-based details, assemblies, design layouts, equipment installations, and related industrial practices.

The courses often support Project Lead the Way curriculum currently offered at these high schools. These courses are first-year requirements for many degrees and can be applied to degree requirements in the same manner as any other course on the students' transcript. As part of a Purdue University transcript, these courses may be transferred to other universities through established transfer policies.

University Faculty Involvement and Commitment

Each dual credit course is delivered with the same level of academic integrity as all other classes at Purdue University. Each course offered must be equivalent to the course taught on campus in content, assignments, prerequisites, labs, exams, texts used, class size limitations, and other possible course requirements. The university identifies a faculty member from the appropriate department to teach the course(s) and work in collaboration with the appropriate high school curriculum coordinator.

University faculty use a flipped course delivery model. Lecture and group projects are delivered on Monday, Tuesday, and Wednesday. Homework and lab assignments are given as project work for Thursday and Friday, which allows students to work on assignments from study hall and over the weekend as necessary.

University faculty travel to the high school's site, adhere to the school's daily bell schedule, adjust lesson plans to a 50-minute session, and act as a mentor in terms of preparing students for the psychological and physiological changes often associated with their first year of college. University faculty also attend various high school meetings and recruitment events in order to discuss our degree options and admittance standards.

Success Rates

Research indicates that low income and at-risk youth in career focused dual credit courses overall had better academic outcomes. They

- Are more likely to graduate from high school;
- Are more likely to transition to a four year college;
- Are more likely to persist in postsecondary education;
- Are less likely to take basic skills courses in college;
- Accumulate more college credits. (Broadening, p.6) ^[4]

In addition, research suggests that early college designs, which immerse high school students in a “college for all” culture and support their progression into dual credit courses, have produced dramatic results nation-wide, beating typical outcomes for students of color and low-income youth.

- 90% of early college students earn a high school diploma versus national rates of 66% African Americans, 69% Native Americans, and 72% Latinos.
- 30% of early college students earn an Associate’s degree or other postsecondary credential along with their high school diploma.
- 71% of early college graduates enroll in college the semester following graduation versus 67% of African American students and 67% of Latinos, and 54% of low-income students, based on national averages. (JFF, p.2) ^[5]

Since beginning the program in 2006, we have two high schools who are considered college preparatory institutions. The third school does not claim that distinction. Students tend to already be committed to some type of post-secondary experience or at least have some idea as to what their plans beyond high school will be. Many students struggle with the autonomy provided by the flipped model approach, and often times fail to complete the necessary assignments. They also tend to have issues with acquiring the necessary text and materials in a timely manner, and most do not like to write quality papers in a prescribed format. However, by the end of a semester, most of the serious students will respond well to the rigor, format, and pace, and their work is often equal to that submitted by regular college freshmen.

Many of these students also consider other forms of continued education. Their choices include trade schools, vocational institutions, community colleges, and military careers. While undecided when they enter the program as juniors, a positive experience within the college setting helps them evaluate their options as well as determine the best course of action for their individual situations. Some students find the process of higher education confusing, cumbersome, and expensive. Most are concerned with the cost to attend college and realize the long-term impact of taking on high debt. Students in the program have the advantage of one-on-one contact with university faculty to help them work through their concerns.

The table below provides some demographic information regarding the student participation in the regional, statewide location program to-date.

Table 1. Summary of Dual Credit Enrollment Demographic Information

Semester Term	Number of High Schools	Number of Students	Total Credit Hours	Free and Reduced Lunch	Number of Diverse Students
Fall 2013	1	19	57	16	11
Spring 2014	1	11	33	6	6
Fall 2014	1	14	42	8	8
Spring 2015	1	9	27	7	5
Fall 2015	3	48	147	17	27
Spring 2016	3	27	81	11	9
Fall 2016	3	44	132	8	7
Spring 2017	3	34	102	5	10

Ninety-five percent (95%) of the students included as part of the table data take the entire series of dual credit classes offered. Survey data from students indicate they become accustomed to the requirements, deadlines, and rigor, and look forward to the challenges. These students are on track to receive either a Core 40 diploma or Academic Honors Diploma when graduating high school.

K-12 Outreach and Recruiting Outcomes

Outreach efforts should target both students and families, providing information on career path opportunities, and establishing partnerships between the high school, community colleges, and four-year institutions. Purdue’s presence in these high schools provides a direct link to students and parents, especially when the university participates in outreach opportunities hosted at the high school. Funding for this type of program at the state and/or federal level would certainly motivate participants at all levels to develop coordinated, sustainable programs for outreach

Recruiting is more effective when students can apply the classes taught to a project, career, or degree path. The ability for educators, administrators, and institutional leaders to collaborate on a pathway that is coordinated, well-designed, and measurable will strengthen partnerships that allow for a complete and successful transition from high school to college.

Our data indicates that, thus far, the effort is worth the benefits received.

- Three students enrolled in programs at Purdue Polytechnic Anderson;
- Nine students enrolled in programs at Purdue University’s main campus;
- Two students enrolled in programs at another statewide location;
- Students who were undecided when starting the program often enrolled in some form of higher education prior to graduation;
- Student enrollment continues to grow in these courses, and student word-of-mouth appears to be the best form of marketing.

Conclusion

Recruiting consumes considerable resources for any post-secondary institution. Many institutions also have a mission of K-12 engagement. Purdue University has developed a Concurrent Credit program which helps fulfill our K-12 outreach mission and also provides valuable recruiting opportunities. Higher education choices are highly competitive, and partnerships with the area high schools are critical in creating pathways for students to learn about all the options associated with Purdue University in general, and Purdue Polytechnic Anderson specifically.

Adherence to university-level course content, academic rigor, and faculty preparation are important aspects of program delivery. The challenge was to create a mechanism that would satisfy Purdue University's concerns regarding a high quality and academically rigorous dual credit experience and still keep the courses accessible to high school juniors and seniors. The Concurrent Credit program at Purdue Polytechnic Anderson has met this challenge.

References

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