
Comparing the Impact of Televised and Face-to-Face Dual Enrollment Programs on Student Satisfaction and Subsequent Enrollment Choices

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Abstract

A concurrent enrollment partnership (CEP) offers qualified students in high school the opportunity to take university courses. A CEP is usually between a postsecondary institution and a school district. In a CEP the postsecondary institution is contracted to provide college-level courses in the district's high schools and is called the sponsoring institution. Concurrent (dual) enrollment courses may be distance delivered via televised broadcasts or face-to-face. Prior research concluded that CEP programs benefit all stakeholders, including the sponsoring postsecondary institution, which receives early access to qualified students to encourage their continued enrollment. However, research is not clear on whether televised distance delivery of CEP courses is as successful in attracting CEP students to the sponsoring institution as face-to-face courses. For this study, researchers collected data from 153 high school students taking CEP classes face-to-face and 212 high school students taking televised CEP classes. Results showed that students in the two groups were equally motivated to attend college or a university. However, a higher percentage of CEP students receiving televised CEP classes felt less prepared for college, felt that their classes were not equivalent to on-campus classes, and were less satisfied with the education that they received through the dual enrollment program. Also, fewer students taking televised CEP classes distance-delivered said that they planned on attending the sponsoring institution.

Introduction

Concurrent enrollment partnerships (CEPs) between postsecondary and secondary institutions offer college courses to high school (HS) students. CEP courses use the same curriculum as a sponsoring postsecondary institution distributed through a variety of media, including directly through teachers (face-to-face), online, satellite, poly-com, or interactive video. Regardless of the modality, the hosting postsecondary institution is usually under contractual obligation to provide quality courses, including ensuring faculty credentials, course content, and student assessments (Hoffman, 2005; Dounay, 2008).

States vary in their definition of programs that offer college-level courses to students enrolled in high school (Dounay, 2008). According to the National Alliance of Concurrent Enrollment Partnerships (NACEP), concurrent enrollment is defined as approved HS teachers teaching CEP classes equivalent to those of a sponsoring postsecondary institution at a HS.

Nationally, about 60% of postsecondary institutions in 40 states have dual enrollment programs

(Hoffman 2005; Kleiner and Lewis 2005), and, as of August of 2007, 46 states have approved statewide policies for governing post-secondary institutions' partnerships with school districts or directly with secondary schools (Blanco, Prescott, Brinker, & Schneider, 2007; Education Commission of the States, 2008).

Purpose

The purpose of the research was to assist administrators of a CEP program in making an informed decision concerning televised distance delivered CEP courses. Increasing demand and a fixed budget were forcing the university and one of its regional campuses toward the decision of how and where to continue to offer CEP classes via televised distance delivery. Three factors converged on their decision: (a) administrators' desire to continue offering CEP courses to HS students in rural and frontier communities throughout the State, (b) competing opportunities for course delivery offered by distance education (such as the Internet), and (c) the influence of the CEP program on undergraduate enrollment.

Problem

A number of recent studies have shown that students who take CEP classes are more likely to continue on to postsecondary education upon completion of high school (Hoffman, Vargas & Santos, 2008; Karp, Calcagno, Hughes, Jeong & Bailey, 2007; Judd & Lafferty, 2006). The problem researched in this study was whether the delivery method for CEP students affected their intention to attend a postsecondary institution and, in particular, the sponsoring postsecondary institution for the CEP courses. The overarching question was then, what similarities and differences exist between televised distance delivered and face-to-face CEP students that may affect their subsequent enrollment in the USU undergraduate program?

Prior Evaluations

Namsook, Krug, and Zhang (2007) compared student achievement in online distance education and face-to-face education at the post-secondary level in a meta-analysis of research published between 1995 and 2004. Analysis included a number of prior meta-analyses. Results indicated no significant difference in student achievement except when the studies were grouped according to whether a pre-test was administered. That is, the online distance education students significantly outperformed those in face-to-face settings in the course when a pre-test was administered. The authors concluded that a pre-test provides online instructors with a better understanding of students' academic ability, which then allows the instructor to adjust the level of difficulty of the course content.

Houdeshell and Chudde (2007) presented comparisons of student performance and perceptions in face-to-face, distance education, and blended course delivery environments. They found that distance education students preferred face-to-face learning except for the convenience of distance education classes; these same students perceived, at a very significant level, that it would be easier to get questions answered within a face-to-face environment; also, distance education students scored their learning styles and social interaction as a less important motivator when compared to the face-to-face students' motivations.

Deka and McMurry (2006) examined whether variables including background, preparedness, and self-perceptions assessed within the first week of class contributed to the success of students completing one-way teleclasses (n=35) versus students completing the same classes in face-to-face, on-campus environments (n=64). Also, contact with the instructor was measured in actual instructor-initiated contact and student-initiated contact. They found that successful distance learners spent more than double the amount of student-initiated contact time with instructors.

Significance of the Evaluation

Previous research reported that 90% of HS seniors taking CEP classes face-to-face intended to enroll in the sponsoring university after HS graduation (Judd & Lafferty, 2006). However, it is not known if enrollment in the sponsoring university is equally likely for students in secondary schools receiving courses through the televised distance delivery system. If data gathered from this research study were to show that televised distance delivery courses were equally successful at encouraging students' enrollment in the host institution, as were face-to-face courses, then it may do the following:

1. Justify expenditures for televised distance delivery,
2. Encourage expansion of CEPs using televised distance delivery, and
3. Support the rationale of using televised distance delivery to leverage faculty resources.

Methodology

Population

In 2006-07, the population of HS students enrolled in the CEP program of the sponsoring institution was 6,774, of which 65 percent were in rural schools administered through regional campuses. The challenge facing CEP programs at regional campuses was to serve CEP students enrolled in 40 schools scattered across two states. To reach these students with quality CEP classes the CEP program had to offer its courses via televised distance delivery. Pressure was on program administrators to offer more televised CEP courses to HS students, however, this call for additional courses would require significant funding, and would, therefore, need to be justified (Woolstenhulme, 2008).

Criteria Influencing Decision to Attend

Twelve quantitative questions from a survey questionnaire (see appendix) measured factors important in deciding which undergraduate program to attend. These 12 questions were developed from focus groups conducted by an outside research firm (Dan Jones and Associates, 2002), using a published methodology (Blankson & Kalafatis, 2004), and were confirmed in a previous study (Peterson, 2006).

Results

The study included 153 students who reported receiving only CEP classes face-to-face and 212 students who reported receiving classes only televised distance delivered. Results are reported by evaluation question (EQ):

EQ1. To what degree do students differ in their intention to enroll in a postsecondary institution?

Preparation for and enrollment in postsecondary education is a fundamental goal of any CEP. A cross-tabulation between a question asking "do you intend to enroll in a college or university," and results by delivery type for those who answered "face-to-face" ($n = 153$) or "televised" ($n = 207$) was performed. A comparison of percentages answering "Yes" showed less than one percent difference (.6%) between the two groups of CEP students. Given the margin of error for a sample this size ($\pm 5\%$); there is no practical difference in students' intention to enroll in a postsecondary institution when groups are compared.

Additionally, a chi-square test of independence (X^2) was performed to test for differences between the two groups. The purpose of X^2 is to determine whether the observed values for the cells deviate significantly from the corresponding expected values for those cells. The X^2 value was 2.495 with 2

degrees of freedom. This is a low value and indicates that the groups do not differ significantly.

EQ2. How do factors affecting the decision about which university to attend differ between CEP students that receive CEP classes by the two delivery methods?

Table 1 shows a comparison of results from the two groups. Numbers in parenthesis are provided so that readers can refer to the wording in the questionnaire (see appendix):

Table 1

Independent Samples Test, Arranged by t Values in Descending Order

Questions	AV Mean Difference (scale 1-5)	t test for equality of means		
		t values	df	2-tailed Sig. (p < .05)
Tuition (5)	0.01	0.10	361	0.920347
CEP credit (11)	0.09	1.06	353	0.288022
Financial aid (10)	0.15	1.69	314	0.091994
Morals (6)	0.19	2.15	346	0.032545
Quality prog (7)	0.28	2.45	360	0.014642
Reputation (13)	0.23	2.50	360	0.012804
Scholarships (8)	0.25	2.58	361	0.010373
Social opp (14)	0.24	2.59	348	0.009944
Teachers (4)	0.31	3.34	356	0.000925
Employ opp (12)	0.32	3.39	334	0.000778
HS friends (15)	0.47	4.01	357	0.000074
Better job (9)	0.48	5.41	356	0.000000

In measuring the importance of factors in the student's decision to attend an undergraduate program, the group means, *t*-values, and 2-tailed significance show that the greatest difference between the two group, differentiated by delivery methods, occurred for the three factors: "employment opportunities", the decision of HS friends, and education for a better job. These three were grouped as social variables and seem to confirm the finding of Houdeshell and Chudde (2007) that social interaction is less important for distance learners.

The three factors at the top of Table 1 (Finanaid, CEP credit, and Tuition) show the least difference in response between the two groups. These three decision factors were grouped as financial variables. This finding adds external validity as the cost of financing a college education was previously reported to be of primary importance to CEP students and parents (Judd & Lafferty, 2006a, 2006b).

EQ3. To what degree do CEP students taking classes televised distance delivered and face-to-face differ in their evaluation of CEP classes?

The next section of the survey contained six questions that asked students to evaluate their experience in CEP classes. These questions were adapted from the "1 Year Out Survey" developed by the Research Committee of the NACEP and are available through the organization's website (www.nacep.org). Table 2 compares results from the two groups:

Table 2

Independent Samples Test, Arranged by t Values in Descending Order

Questions	AV Mean Difference (scale 1-5)	t test for equality of means		
		t values	df	2-tailed Sig. (p < .05)
Realistic (18)	0.10	1.20	361	0.232854
Writing (21)	0.21	2.01	356	0.045035
Analythink (20)	0.23	2.54	355	0.011654
Studyhabs (19)	0.30	2.87	341	0.004375
Equal (17)	0.32	3.36	351	0.000852
Academic (16)	0.36	3.73	351	0.000225

In Table 2, the variable with the least difference was being “more realistic about the academic challenge of college” after taking CEP classes, and the variable with the greatest difference was feeling “better prepared academically for college.” Results from a cross-tabulation showed that a greater portion of CEP students who received televised classes felt less prepared academically for college and said that their CEP classes did not seem to be educationally equivalent to on-campus classes.

EQ4. To what degree do students taking classes televised distance delivered and face-to-face differ in their satisfaction with CEP classes?

The two quantitative variables used to answer EQ4 are standard questions for measuring satisfaction (Vavra, 1997). Table 3 shows the results when the two groups were compared.

Table 3

Independent Samples Test Arranged by t Values in Descending Order

Questions	AV Mean Difference (scale 1-5)	t test for equality of means		
		t values	df	2-tailed Sig. (p < .05)
Recommend (23)	.438	4.77	360	0.000003
Satisfied (22)	.447	4.74	359	0.000003

Table 3 shows a statistically significant difference in the two groups' satisfaction with the education they received through the CEP and their willingness to recommend the program. Results of a cross-tabulation are presented in Table 4 and show the degree that the two groups differed in their response to the satisfaction questions.

Table 4

Cross Tabulation of Survey Question 22 by Delivery Type

Numbers surveyed by modality type		22. I am satisfied with the education I am receiving through CEP classes			
		Disagree/strongly	Neither	Agree/strongly	Total
Face-to-Face	Count	5	11	135	151
<i>n</i> = 151	% within type	3.3%	7.3%	89.4%	100%
Televised	Count	20	49	142	211
<i>n</i> = 211	% within type	9.5%	23.2%	67.3%	100%
Total	Count	25	60	277	362
<i>n</i> = 361	% of Total	6.9%	16.6%	76.5%	100%

The group who received face-to-face CEP instruction had a larger percentage (89%) who said they agreed that they were satisfied with the education they were receiving through CEP classes. Sixty-seven percent (67%) of students receiving televised CEP instruction agreed that they were satisfied with the education received through CEP. The difference in “Agree/strongly agree” percentage between the two groups was 22 percentage points (33%).

EQ5. To what degree do students taking classes televised distance delivered and face-to-face differ in their decision to attend the CEP sponsoring institution?

Table 5 shows a cross tabulation addressing EQ5. This table contrasts responses from the two groups of CEP students on the question of whether they have decided to attend the sponsoring institution.

Table 5

Cross Tabulation of Survey Question 2 by Delivery Type

Numbers surveyed by modality type		2. Have you decided to attend USU (the sponsoring institution)?			Total
		No	Undecided	Yes	
Face-to-Face	Count	54	39	60	153
<i>n</i> = 153	% within type	35.3%	25.5%	39.2%	100%
Televised	Count	42	137	28	207
<i>n</i> = 207	% within type	20.3%	66.2%	13.5%	100%
Total	Count	96	176	88	360
<i>n</i> = 360	% of Total	26.7%	48.9%	24.4%	100%

Table 5 shows that 39% of the students in the CEP program who were receiving instruction face-to-face had decided to attend the sponsoring institution, and that 14% of the students receiving televised CEP classes had decided to attend the sponsoring institution. From this, it appears that students taking televised CEP classes are less likely to decide to attend the sponsoring institution.

Findings

1. Results indicate that CEP students in general intend to continue their post secondary education and the delivery method of their CEP class does not affect that intention.
2. Regardless of whether they take CEP classes face to face or via distance education, CEP

classes assist HS students to become more realistic about the academic challenges of attending a university.

3. When the two groups responded to what factors most influenced their decision about which university to attend, they were most similar when the factor concerned finances. They differed to the greatest degree in the importance of obtaining an education to prepare for a better job.
4. Combining both groups, three out of every four CEP students agreed that they were satisfied with the education they received through CEP classes. However, the group of students receiving CEP televised courses was significantly less satisfied (33%) with the education that they were receiving through the CEP.
5. Significantly fewer students taking televised CEP classes felt prepared academically for college. Only half of the students taking televised CEP agreed that these classes seemed educationally equal to on-campus classes.
6. One out of every three CEP students taking televised classes say that they are not satisfied with the education that they received. Also, students taking televised CEP courses were much less likely to answer yes to the question "Have you decided to attend USU (the sponsoring institution)?"

Conclusions and Implications

Findings from this study demonstrate that the CEP program benefited the sponsoring institution by directing students toward the undergraduate program. An examination of the opinions of the two groups identified by modality, however, showed significant differences. Differences appeared in students' satisfaction and their intention to attend the sponsoring institution. On several key measures students receiving televised CEP classes differed from those receiving CEP classes face-to-face. A higher percentage of CEP students receiving televised classes felt less prepared for college, felt that their classes were not equivalent to on-campus classes, and were less satisfied with the education that they received through the dual enrollment program. Also, fewer students taking televised classes said that they planned on attending the sponsoring institution.

Though satisfaction with distance delivered classes appeared lower than face-to-face delivery, it is irrefutable that the demand for distance delivered coursework will continue. Sustainability of any undergraduate program ultimately depends on recruitment; therefore, the practical implications presented in this article impact the recruitment of CEP students into the sponsoring institution. These findings lead to the following implications:

1. Every CEP student needs the opportunity to experience the highest quality of education offered by the sponsoring institution, regardless of the modality by which CEP courses are delivered. Implementing systematic evaluation of CEP courses and professional development of CEP instructors, such as those required for NACEP accreditation, can ensure that distance delivered course quality is equivalent to on-campus courses.
 2. Overall, televised distance education appeared to be less effective for undergraduate recruitment. These findings hold implications for the improvement of the televised CE courses. One area of needed improvement may be enhancing the interaction of students and teachers/faculty in these distance delivered CE courses, such that students feel that their needs are being watched after. This would likely improve CE students' satisfaction and their interest in continued enrollment at the sponsoring institution.
 3. Future research could build upon this study by gaining student permission to access records and by tracking application or enrollment behavior, rather than relying on students' intention.
 4. With the increasing use of Internet courses on-campus, research is needed to compare these two modalities of distance learning: televised broadcasts and online courses. Research could investigate which of these two modalities best supports student learning and enrollment at the sponsoring institution.
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Appendix

Survey Questionnaire

USU CONCURRENT ENROLLMENT PROGRAM SPRING 2007 STUDENT SURVEY

Thanks for your willingness to supply your opinion by completing this survey. Be sure AND read the information letter.

- | | | | |
|---|------------|-----------|------------------|
| 1. Do you intend to enroll in a college or university? | Yes | No | Undecided |
| 2. Have you decided on a college or university to attend? | Yes | No | Undecided |
| 3. Have you decided to attend USU? | Yes | No | Undecided |

Indicate the extent that you agree or disagree with the following statements:

	Strongly	
DISAGREE		AGREE
		Strongly
4. USU teachers/faculty show concern for students.....	1	2
3 4 5		
5. Cost of tuition at USU.....	1	2
3 4 5		
6. USU fits my morals and values.....	1	2
3 4 5		
7. USU offers a quality program for the career I've chosen.....	1	2
3 4 5		
8. Availability of scholarships at USU.....	1	2
3 4 5		
9. At USU I can get the education I need for a better job.....	1	2
3 4 5		
10. Strong financial aid program.....	1	2
3 4 5		
11. I can get credit for USU high school (concurrent enrollment) classes.....	1	2
3 4 5		

12. Employment opportunities are available if I attend USU. 1 2
3 4 5
13. Reputation of USU for placement after graduation. 1 2
3 4 5
14. Ample social opportunities at USU..... 1 2
3 4 5
15. My high school friends chose to attend USU..... 1 2
3 4 5

Evaluate your experience in the USU classes that are taking in high school (in the concurrent enrollment program).

Strongly

DISAGREE Strongly **AGREE**

16. I feel better prepared academically for college..... 1 2
3 4 5
17. USU classes seem educationally equal to on-campus classes.....1 2
3 4 5
18. I am more realistic about the academic challenge of college..... 1 2
3 4 5
19. I strengthened my study habits, such as time management, note-taking skills.....1 2
3 4 5
20. I strengthened my analytical thinking skills..... 1 2
3 4 5
21. I strengthened my writing skills..... 1 2
3 4 5

Tell us how satisfied you are with your student's experience with USU Concurrent Enrollment.

22. I am satisfied with the education I am receiving through USU classes..... 1 2
3 4 5
23. I recommend to other students that they take USU classes. 1 2
3 4 5

Now, tell us about your high school experience.

24. Please indicate your current high school standing: **Freshman** **Sophomore** **Junior**
Senior

25. Which are you currently taking OR have taken?

1. Face-to-face USU concurrent enrollment class in high school.
2. Televised USU concurrent enrollment class at a high school.
3. Other USU classes

If other, please

explain _____

Tell us how you feel about attending college.

Strongly **DISAGREE**

Strongly **AGREE**

26. Becoming a college student is my destiny..... 1 2
3 4 5
27. I can picture myself as a successful college student..... 1
2 3 4 5
28. I think about attending college nearly every day..... 1
2 3 4 5
29. I am capable of earning the money needed to attend college..... 1

2 3 4 5
30. I have the financial support I need to go to college.....1
2 3 4 5

Finally, a few questions about you.

31. What is the highest level of education that you want to complete? **Please, mark only one.**

1. High school degree
2. Two-year college degree
3. Four-year college degree
4. Master's degree
5. Doctorate degree

32. What is your gender? **Male** **Female**

33. Have you completed this survey in another class? **Yes** **No**

Thank you again for completing this survey.