Analysis of the College in the Schools Program Impact Survey

A survey of participating teachers, principals, and guidance counselors

Report prepared for the University of Minnesota College in the Schools program by Kyla L. Wahlstrom, Ph.D. and Eric Riedel, Ph.D., Center for Applied Research and Educational Improvement (CAREI). August 24, 2004

Introduction

The College in the Schools (CIS) program delivers introductory-level University of Minnesota courses to high school junior and senior students in their high schools. These courses are taught by their high school teachers and are a means of providing advanced curriculum to those students who are ready for highly challenging content. There is a range of subject areas in CIS courses – world languages, English composition and literature, economics, history, and political science. The high school teachers are supported by professors from the University of Minnesota who provide professional development related to content and instructional methods. The classes are offered during the regular school day and meet for a semester or the entire year. There is no charge to students to take the classes; however, there is a small amount of tuition which the schools pay to the University for coordinating their participation in CIS. Students are able to earn college credit for their participation in CIS courses.

The College in the Schools (CIS) Program Impact Survey for principals, teachers, and guidance counselors was administered as a web survey from April 9, 2003 through June 17, 2003. The survey sought information from school principals, teachers, and counselors on what they saw as the impact of CIS on their school, teachers, related academic departments, and students. The survey also asked about financial difficulties in implementing the CIS program and their support for charging students tuition to participate in the program.

Sample

The survey was emailed to 335 principals, teachers, and counselors. There were 136 total respondents who completed the survey for a 41% response rate. The response rate was highest among teachers (56%) followed by principals (32%) and guidance counselors (22%). Note that 17 respondents did not indicate their title (13% of total respondents).

Methods

Analytic Strategy

This report follows a two-pronged strategy in analyzing the survey. The first prong utilizes scales, developed from close-ended questions, which summarize the overall level of positive or negative impact CIS had on the school, teachers, departments, and students as well as all four combined. The report presents the average levels of impact for each summary scale, differences in the summary scales by respondent position, and whether the average level of impact for each of the summary scales was related to support for charging tuition for CIS courses. Appendix A presents the mean response for each individual close-ended question on which these scales were based.

Three criteria were used in creating each scale: (1) responses to the individual questions used were at least moderately associated with one another (Kendall's B correlation of .40

or above); the individual questions involved appear to ask about similar things; and each of the questions used was answered by at least two-thirds of the total respondents. Each scale was standardized from 0 (indicating least positive impact) to 1 (most positive impact) for comparison purposes. Details of which items were included in each scale and the reliability of each scale are provided in Appendix B.

The analyses that follow sometimes refer to statistical significance or "p-values." A result is considered statistically significant if the probability of obtaining the particular outcome by chance is small (typically 5% or $p < .05$). Sometimes a p-value is provided which specifies exactly how likely it is to have obtained that result by chance (e.g. $p=.004$ is equivalent to 0.4%).

The second prong utilizes responses to open-ended questions on the impact of CIS to report on the specific ways that CIS impacted schools, teachers, departments, and students, as well as what respondents saw as the most important impact of CIS. Responses to open-ended question on the impact of charging tuition for CIS courses are also presented. The actual responses were aggregated for each of the six questions which invited an open-ended response. The collated responses were then analyzed for predominant themes and unique contributions, with them also being examined for the relative strength of the themes as they emerged, by question. Several sample comments which are representative of the themes of the responses are also provided.

Treatment of Nonresponses

Missing data constituted a problem for analysis of close-ended survey responses. A number of respondents chose either to not respond to a particular question or to select the "don't know" option. Analysis of non-responses revealed that guidance counselors were particularly reluctant to answer some individual questions about the impact of CIS on teachers or departments while teachers were reluctant to answer some specific questions about the impact of CIS on departments.

There was no pattern of respondents failing to respond to whole categories of close-ended questions however. In other words, the fact that a respondent failed to answer a specific question did not necessarily mean that the respondent did not answer other questions in that same domain. Missing data were handled by selecting questions that had a high response rate for analysis and replacing non-responses with the mean response for that individual item. This strategy of replacing missing data allowed a larger number of respondents to be included in the overall analysis. All statistical tests were replicated using scales that excluded non-respondents and no difference in outcome resulted whether one excluded non-respondents or replaced their non-responses with an item mean.

Response rates to open-ended questions varied from a low of 15.1% on a question asking for comments about the impact of CIS on academic departments to a high of 67.2% on a question asking for comments about the single greatest impact of CIS overall. Biases in response rates were similar to those of close-ended questions with guidance counselors generally less willing to offer comments, especially regarding academic departments or students.

Results

<u>In what areas do respondents see the strongest impact of CIS?</u>

Respondents reported that CIS had a strong, positive impact on their schools, teachers, and students. The impact of the program was rated slightly higher on schools and teachers than students and dramatically higher than academic departments. Respondents were generally more ambivalent about the impact of CIS on academic departments.

<u>Figure 1. Box Plots of Impact Scale Distributions</u>

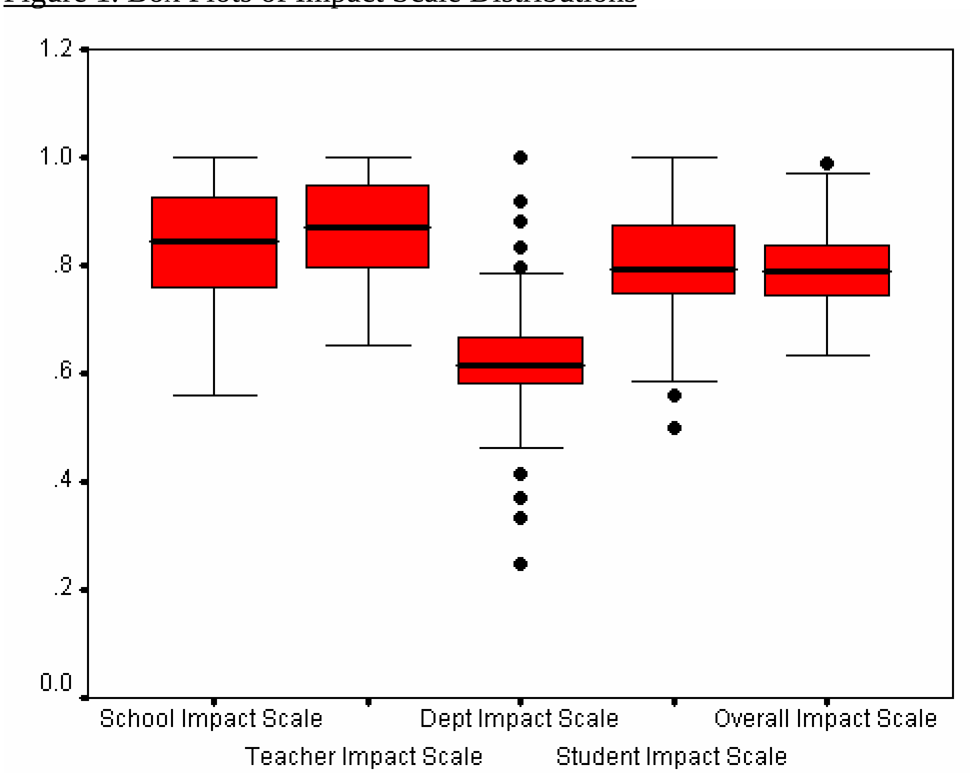


Figure 1 displays the box plots for each of the four domain scales plus the overall impact scale. For each box plot, the center bold line defines the average value (median or middle) while the shaded box shows the 25th to 75th percentile of cases surrounding the average. The top and bottom cross bars define the continuous range of values while the small dots indicate outliers. There is little difference in the school, teacher, student, or overall impact scales, either in their average (median) value or the range of responses given. Responses on the department impact scale appear much lower, however, and the range considerably greater.

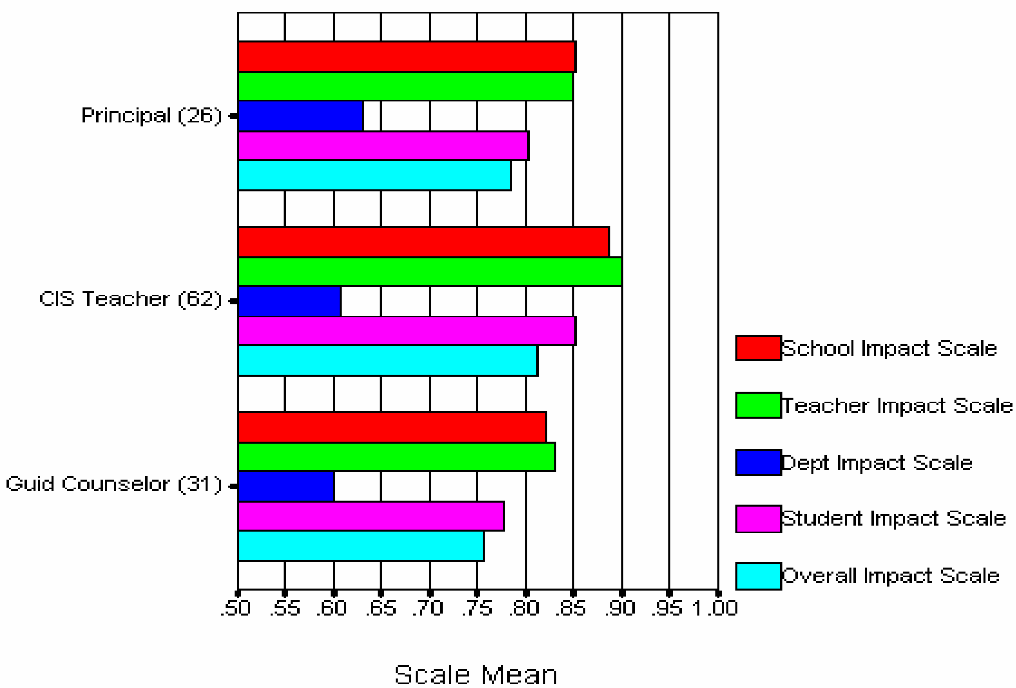
A series of one-sample t-tests confirms that the mean of the department impact scale is lower than the other scales at a statistically significant level ($p < .001$ for each comparison). To a large extent this may reflect the nature of the questions asked in this scale. These three questions asked respondents to assess the degree to which CIS changed the academic department for better or worse while questions on the other scales asked about the degree to which CIS had a positive impact. It should also be noted that this domain of questions received the largest proportion of non-responses of any category on the survey. Only 42% of respondents answered every question in the scale.

Aside from responses to the department impact, respondents largely felt positive about the impact of CIS for their school, teachers, and students with mean scores of .86, .87, and .82 respectively (on scales ranging from 0 to 1.0). The mean score of the school impact scale is higher than the student impact scale at a statistically significant level ($t=3.895$, $p < .001$) as is the mean score of the teacher impact scale ($t=6.178$, $p < .001$). The mean ratings of the school and teacher impact scales did not differ at a statistically significant level ($t=1.840$, $p < .10$) from one another.

<u>How do reports of CIS impact differ by respondent position?</u>

Teachers report a more positive impact of CIS on the school, teachers, and students than either principals or guidance counselors. There is no statistically significant difference among the three positions in how they rate the impact of CIS on academic departments.

<u>Figure 2. Impact Scale Means by Position of Respondent</u>



A series of one-way analysis of variance tests were performed using each scale as the dependent variable and position of respondent as the independent variable. The analysis was weighted to produce equal sample sizes of each type of respondent and appropriate statistics were used to account for the fact that the variance in each scale differed by type of respondent.

The mean ratings on the school impact scale differed by position at a statistically significant level (Welch statistic=6.029, $p < .01$) and post-hoc tests indicate that teachers rated school impact significantly higher than guidance counselors (based on Tamhane's T2 test).

The mean ratings on the teacher impact scale differed by position at a statistically significant level (Welch statistic=10.307, $p < .01$) and post-hoc tests indicate that teachers rated teacher impact significantly higher than principals and guidance counselors (based on Tamhane's T2 test).

The mean ratings on the department impact scale did not differ by position at a statistically significant level (Welch statistic=1.559, $p < .25$).

The mean ratings on the student impact scale differed by position at a statistically significant level (Welch statistic=9.297, $p < .01$) and post-hoc tests indicate that teachers rated student impact significantly higher than principals and guidance counselors (based on Tamhane's T2 test).

<u>What comments did respondents make about the impact of CIS on their school?</u>

Three-quarters of the comments were positive and addressed increased opportunities for students, student climate, students' futures, and general curriculum. Competition with Advanced Placement courses emerged as a common negative theme.

A total of 49 comments were written, which is slightly greater than one-third of the total number of respondents, with 48 of the 49 commenting on the impact, and one comment noting that it was too early in their experience with CIS to tell. Thirty-six of the 48 comments (75%) were positive in tone, and 12 (25%) indicated a concern with some aspect of the impact of CIS.

The positive comments tended to fall into four major themes—increased opportunity and options for students (n=13); benefit for school climate (n=13); benefit for students' future (n=7); and benefit for the general high school curriculum (n=3). The increased opportunity/options remarks were similar to the following:

- *"The CIS courses are an important way to meet the needs of our high achieving students."*
- *"This is such a wonderful program. It has opened up the world for myself and my students."*

- *"I know definitely that some kids have opted for CIS rather than take advantage of PSEO offerings. They appreciated being able to stay at the high school."*

The primary benefit for school climate appears to relate to keeping the academically able students within the student body, instead of having them leave the school building in order to take a class at a nearby college. The climate for learning was also noted by many respondents.

- *"CIS has enabled our best students to participate in the life of our high school…instead of leaving high school to begin taking college courses. Our school climate benefits from the contribution of these students. They serve as role models for the student body."*
- *"I believe students like having their high school teachers as their instructors. They generally have a strong relationship with them, and the teachers have good [instructional] strategies for addressing the age level of the students."*

The comments relating to the benefit for the future of the students centered most often about the adjustment that students must make to the rigors of college expectations. Representative comments would include:

- *"The CIS programs allow…high-powered students to understand what sort of workload will be expected of them in college…As a result, I believe they will also be better students at their college."*
- *"[It] is a great way to ease the high school to college transition."*

The three responses about general curricular benefit noted that CIS has positively affected the strength of various programs in a school:

- *"We have gone from a two-year program to a four-year program."*
- *"[CIS] has rebuilt our French program."*
- *"The CIS course in our English department provides a strong complement to our advanced placement offerings."*

Of the negative responses to this question, most (6) were concerned with "competition" with other advanced-level classes, such as Advanced Placement (AP) classes. The competition was viewed as having a negative effect on the school climate noted four of those six respondents, since they were "competing for the best students." Climate was also seen as adversely affected by the problems of scheduling the CIS classes among the other classes for the day, since often students have to choose to eliminate a regular class to accommodate the timing of the CIS class.

A negative perception of CIS was also noted by three respondents in the allocation of credits. Said one respondent, *"CIS credits don't always transfer, but AP does."* Another person noted that some students take AP and CIS classes because they award more credits, and consequently those students do not take the regular literature classes in the next semester. The remainder of the negative responses dealt with uneven dissemination of information about the CIS classes, or that it was difficult at times to recruit teachers to do the CIS classes, even though there was a demand for them. The non-willingness of teachers to participate was reported to cause ill feelings among some staff.

What comments did respondents make about the impact of CIS on teachers?

The majority of comments were positive and addressed professional development, communication with others, and professional satisfaction. Limitations on class size for CIS classes emerged as the predominant negative comment.

Thirty-eight responses were written to address this question. The majority (22/38 or 57%) indicated a positive impact, with the strongest benefit being seen in the improvement of teaching. The comment, "*It's the best professional development workshops I have ever attended*" represents the strongest theme among 22 respondents. Teachers reported learning more about their discipline and learning more new, effective instructional strategies through CIS than most other workshops. The new strategies are also able to be applied in non-CIS classes, which teachers appreciate.

The next most frequent response centered on the benefits CIS brought to teachers' communication with others—colleagues, parents, and students.

- *"The contact that I have had with other language teachers has been invaluable!"*
- *"I have less discipline and attendance problems, and good communications with the parents."*
- *"[CIS] fosters networking."*

Finally, many of the other positive comments concerned the feeling of support and encouragement that accompanied the teaching of CIS classes:

- *"Nothing has done more to influence my success and excitement as a teacher than the CIS program."*
- *"I am very pleased with the support and encouragement I've gotten from participating."*

The theme most prominent when examining the negative impact on the teachers is the issue of limitations on class size for CIS classes. Half of all of the negative comments (8/16) were about this issue. There is "fallout" from being limited to a certain number of students because that causes other non-CIS classes to become larger as a result. "*While it is ideal, it is not practical,*" noted one. This is seen as a workload inequity across the teaching staff in the high schools, especially since AP classes do not impose those enrollment restrictions.

The other strong theme in the negative impact concerns the issue of demand on a teacher's time to prepare for a CIS class.

- *"While I may be a phone call or email away for assistance, what is required of the class results in a workload that at times is rather intimidating."*
- *"The [CIS] course work means much more work for the teachers, without having additional preparation time."*
- *"The time needed to prepare the material is longer and more intensive than non-CIS classes, so I oftentimes have less time to do things with my department or in co-curricular activities…it's a balancing act."*

The remainder of the comments which spoke of things which were not positive about CIS concerned the perception that the CIS classes were *"elitist"* and *"can be lonely at times."* Also, one respondent noted that CIS meetings take teachers out during class time, which causes peers to be impacted by those absences.

<u>What comments did respondents make about the impact of CIS on their department?</u>

Only a small proportion responded to this question in a relevant manner. Those who did either described a general enhancement of professional community or reported there was no impact on their department.

Although 19 people responded to this question, only 11 responses were relevant answers. The eight replies which were unrelated to departmental impact were comments about general school climate (e.g., *"inertia is as inertia does"*) or other high schools' programs, but had no discernible relationship to the impact of the CIS program upon their own schools' academic departments.

There were five responses to this question which described a positive impact on their academic department. Two of them noted similarly that *"having CIS fosters a sense of pride among our staff and community"*; and two others believe that now they "*have better ways of teaching overall,"* especially when "ideas are shared in the department meetings." Finally, one respondent remarked, "I now hold my non-CIS students to a higher standard."

Six respondents indicated that CIS had no discernable impact on their departments. One response noted that it was *"too soon to tell,"* and the sixth response re-stated the concern about "*confusion in my department about the role of CIS in relationship to AP classes."*

<u>What comments did respondents make about the impact of CIS on their students?</u>

Most comments (87%) were positive and addressed preparing students for the future and offering academic challenges. The rest of the comments were neutral or undecided in describing the impact on students.

There were 23 relevant comments made about how CIS had affected high school students. Of those, 20/23 or 87%, speak clearly to the positives that students have experienced. Eight of the 20, or 40%, noted that CIS prepares the students for the future:

- *"CIS offers the opportunity for students to experience college, yet stay in high school."*
- *"[Students] get their 'feet wet' in a supportive environment."*
- *"Students learn to read a syllabus!"*

Instructional benefits are seen by five respondents who assert that CIS offers additional high expectations.

- *"It challenges horizons."*
- *"Students get better instruction in high school than they do in college."*
- *"[CIS] encourages students to work on their own, as they will have to do in college"*

Personal benefits for the students are noted as well. Two respondents think that CIS raises levels of student self-confidence, and that students enjoy studying more. Another respondent noted that *"students apply [study] skills learned in CIS courses to other subjects."* The presence of more options or choices for students was also mentioned, and one respondent thinks that *"students see greater growth in CIS classrooms."*

Only two of the 23 comments (9%) noted that *"No impact is seen"* or "*I'm not sure, since our curriculum is already quite challenging*."

<u>What did respondents describe as the single greatest impact of CIS?</u>

The majority of respondents answered this open-ended question. Their comments emphasized the role of CIS in raising the academic standards of the school, offering more academic choices to students, and preparing students for college.

Of the 136 people who returned this survey, 83 (61%) provided a response to this final question. There were a total of 79 responses which are considered to be a response about impact, with the four remaining responses indicating "Thanks!" or something similar.

Within the 79 responses, there were two themes that were prominent. The first theme concerns the establishment of high standards of excellence and academic rigor as a result of the school participating in CIS. There were 33/79 (42%) of the responses which noted that with CIS there are new, higher standards for performance for both students and teachers.

- *"[Students can now be] part of a culture that embraces achievement and can lift each other to higher results."*

- *"Students have been challenged to their limit and they have succeeded. This course is pivotal for developing confidence and in effecting intellectual growth."*
- *"A higher standard of learning takes place."*
- *"I believe that CIS has raised the morale of staff and students and provides a greater level of expectation of accomplishment."*
- *"The greatest asset of CIS at our school is teacher involvement with curriculum…and with colleagues around the state."*
- *"The professional development provided the teachers…[CIS] has given me the chance to discover many new ideas and content…others in my department share this wealth of information as well."*

The second prominent theme is that CIS brings more options/choices to the school. Having more choice allows the most academically able students to find something that meets their needs and interests, thereby keeping them in the high school rather than leaving in order to take classes at a nearby college under the Post-secondary Enrollment Option (PSEO). Nearly 33% (26/79) of the comments directly remarked about the benefit of having an in-school option to challenge the most academically able students with college-level courses.

- *"I feel it provides students with the opportunity to take college courses and still remain in their high school setting in their all-important senior year."*
- *"I believe CIS is a better option than PSEO for many of our students. There is no drive time or cost incurred by students and their families and there are no chances of car accidents."*
- *"[CIS classes] keep high achieving students in our high school through their senior year/"*
- *"To me it is that we are able to challenge high school students and allow them to take advantage of remaining in a high school setting with their peers, participating in high school activities."*
- *"We have more students taking advantage of [CIS] than would be able to do PSEO…We are reaching more students in this way and challenging students who have real aptitude…"*
- *"CIS has allowed us to keep some of our brightest and best students and leaders in the classroom without losing them to the colleges through the PSEO program."*

A third theme also emerged in about 19% of the comments. This theme centered on the benefit of having CIS as a form of preparation for college for many students:

- *"It is another bridge between high school and college, making the transition easier for students to adapt to college."*
- *"Making CIS courses available to urban learners is critical to their making the transition from high school to college. I believe that CIS programs give urban students the confidence to make the transition."*
- *"[CIS] provides students with a taste of college before they actually get there."*
- *"Students face challenges that expand their experiences before leaving high school."*

- *"[The students] are able to begin the wearing of their identities as college students—practice that assists them in making the full transition to the full-time college culture."*
- *"There is no doubt that they [the students] have been stimulated in their pursuit of post-secondary education through participation in CIS."*

Finally, several of the comments not included in categories above noted that their schools are now attracting top students from neighboring districts, and that they make their already-top-rated school even more rigorous and diverse in course offerings.

How do attitudes towards CIS relate to support for charging tuition?

Principals who oppose charging tuition for CIS rate the program impact more positively than principals who support tuition. There is no relationship between ratings of the program and support for charging tuition among teachers or guidance counselors.

Question 38 on the survey asked, "If it were allowable under Minnesota law, do you feel that charging students for their participation in CIS is a reasonable policy? (Assume that a scholarship program is in place for students who cannot afford to pay CIS tuition.)" Fifty-eight percent of respondents agreed that it was reasonable while 26% felt it was not and 15% responded "don't know." There was more support among principals (77%) and teachers (71%) for this than guidance counselors (54%), although this difference did not reach statistical significance. Reports of past and future financial constraints (Q36 & Q37) on the school's ability to implement CIS did not appear to have any impact on support for charging students tuition.

We sought to determine to what degree the reported impact of CIS affected a respondent's willingness to support charging tuition for CIS. A series of independent sample t-tests comparing those supporting tuition with those who did not revealed no statistically significant differences in the ratings of CIS impact in each of the four domains. Nor was there a statistically significant difference between supporters and detractors when looking at the overall impact scale.

However, when the respondents are separated out by position, an interesting pattern appears. Principals who oppose charging tuition generally rate the impact of CIS as more positive than principals who support charging tuition (see Figure 3). This difference is statistically significant for the department and student impact scales as well as the overall impact scale ($p < .05$ for each). The same patterns are not found for teachers or guidance counselors. (See Figures 4-5.)

Figure 3. Impact Ratings by Principals by Support for CIS Tuition

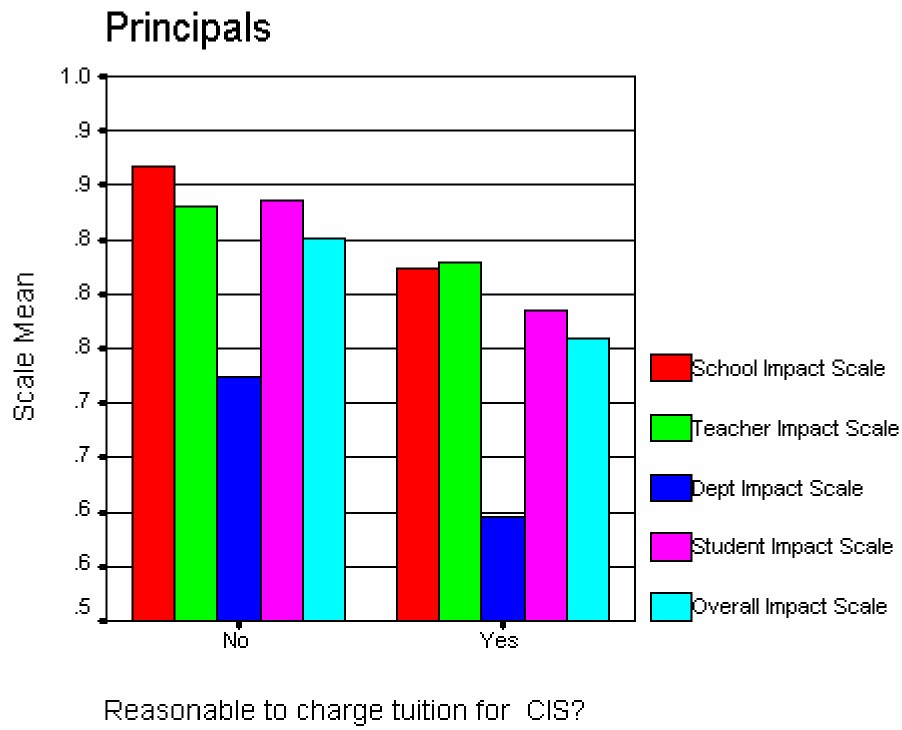


Figure 4. Impact Ratings by Teachers by Support for CIS Tuition

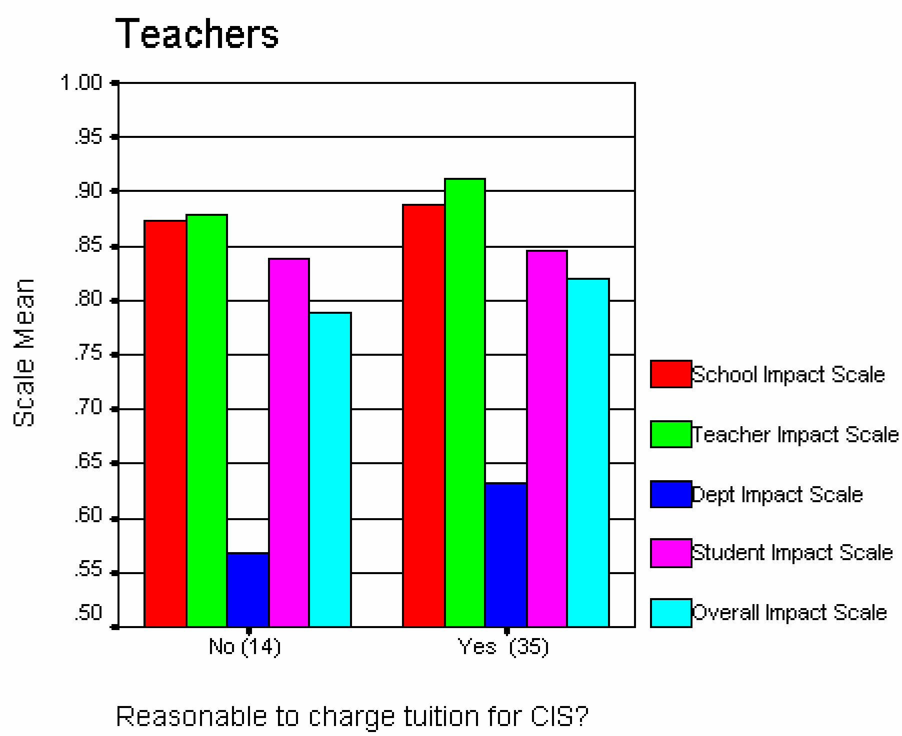
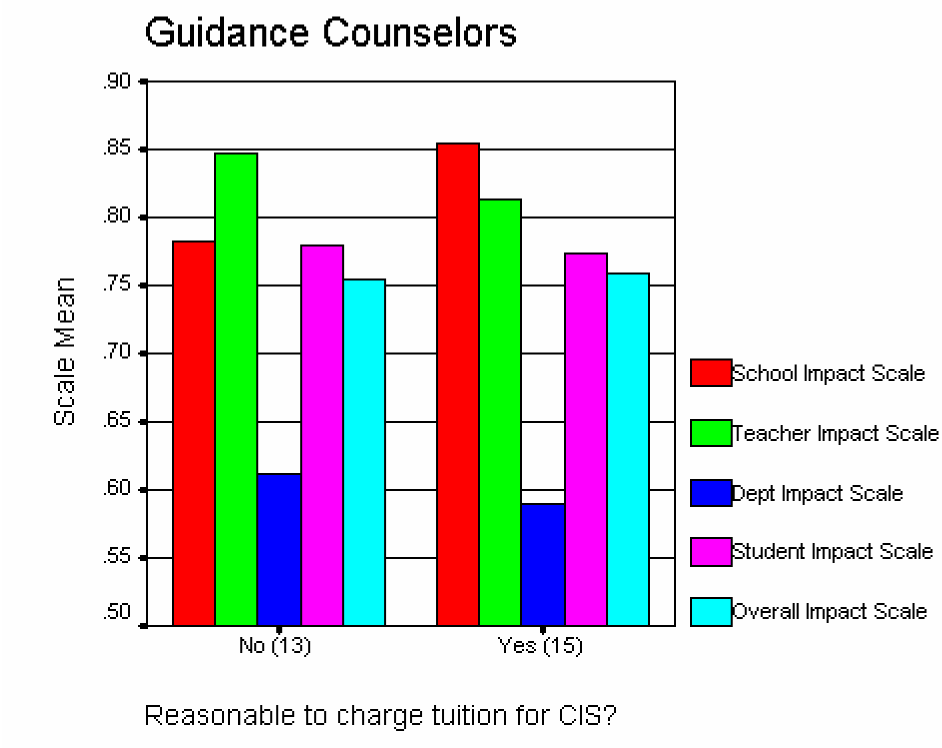


Figure 5. Impact Ratings by Guidance Counselors by Support for CIS Tuition



What comments did respondents make about charging tuition for CIS?

Most comments took a position in favor or against charging tuition. Approximately half of these opposed charging tuition for CIS, mainly because there was not a charge for other PSEO classes. Of the comments taking a stand, approximately a third of the comments favored charging tuition, mainly as a way of addressing budgetary problems. Other comments offered alternative financial arrangements besides the charging tuition.

Since this question immediately followed questions about the charging of tuition for CIS, 30 of the 34 responses (88%) focused on the issue of whether or not to charge tuition. The remaining 4 responses (12%) were not for or against tuition being charged, and, instead, provided comments about financial aspects of CIS.

There were 16 comments (53%) which did not support the charge of tuition for CIS classes. The most prevalent answer (n=12) noted that there should not be a charge for CIS since there was not a charge for PSEO classes. Several respondents in that group believed that if CIS began to charge a tuition fee, then students would do PSEO instead.
The resulting decrease in enrollment in CIS would ultimately cause fewer CIS classes to be offered. Two respondents noted that K-12 public education is supposed to be “free,” and that charging tuition would violate that premise. Two others suggested that, since

special education students receive alternative classes at no charge, “academically able” students should be able to attend academically enriched classes at no charge as well.

Of the other 14 comments written regarding tuition, 9 of them (30%) specifically stated they were in favor of doing so. Seven of the nine respondents noted that schools everywhere are having budgetary problems, and that charging tuition is a necessary thing to do. Several suggested that making scholarships available would then permit any student to enroll who wanted to. An additional two respondents noted that charging tuition is a sign of commitment to the CIS class and can be a motivating factor to produce increased achievement. Five of the fourteen respondents who were generally supportive of initiating some kind of charge believe that parents would be willing to pay for CIS classes, since those credits would be cheaper than if they had to be paid in college tuition next year.

There were four comments that did not take a stand one way or the other about the charge of tuition. Two respondents requested, if tuition would be charged, that the high school teachers should get some extra pay for teaching content which is beyond the normal high school curriculum. One person suggested that the student pay half and the district pay the other half, if there is to be a charge for the classes. Finally, one person noted, with appreciation, the low fee that the University charges the district to offer College in the Schools.

Discussion

The overall impact of CIS on teachers, students, and schools was clearly positive, with the impact of CIS on academic departments being a mixture of positive and negative effects. Teachers, more than principals and guidance counselors, generally had the strongest positive attitudes about the program.

The mixed effect of CIS on academic departments emphasized several common positive themes including an increased sense of professional community and professionalism among teachers, higher academic expectations in the school, and increased academic opportunities for students. Concerns about the demand of CIS classes on teacher and department resources emerged as the main negative theme in the open-ended responses. There is ordinarily not extra compensation provided to CIS teachers for teaching these classes while the limitation on CIS course enrollment sometimes leads non-CIS teachers to complain about unfairly large enrollment in their classes.

Finally, responses to questions about whether or not to charge tuition for CIS courses reveal differences by respondent-type. We first sought to determine to what degree the reported impact of CIS affected a respondent's willingness to support charging tuition for CIS. A series of independent sample t-tests comparing those supporting tuition with those who did not revealed no statistically significant differences in their ratings of CIS impact. Also, there is no statistical relationship between program supporters or detractors and whether or not they support or do not support charging tuition. However, when the respondents are separated out by position, an interesting pattern appears. Principals who oppose charging tuition generally rate the impact of CIS as more positive than principals who support charging tuition. This appears to be mainly an issue of fairness to students, since the most frequent reason given for opposing tuition given in the open-ended comments was that tuition was not charged for other PSEO courses.

Appendix A: Individual Close-Ended Question Means

The presence of CIS classes in my school has: (1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree)	Mean	N
Q1. Encouraged high school seniors to elect a more challenging academic schedule.	3.70	131
Q2. Enjoyed strong support from parents.	3.55	130
Q3. Enhanced our school's public image.	3.46	125
Q4. Resulted in fewer students leaving the high school for PSEO classes.	3.13	115
Q5. Attracted students from other districts to attend this high school.	1.97	70
Q6. Led to course scheduling difficulties that strain relationships among teachers and administrators.	1.98	126
Q7. Contributed significantly to student and school morale.	3.04	104

As a result of participating in CIS, teachers: (1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree)	Mean	N
Q9. Are re-energized professionally.	3.51	108
Q10. Receive support from U of M faculty/staff and other CIS teachers.	3.54	108
Q11. Learn new content information in CIS workshops.	3.42	105
Q12. Learn new pedagogical approaches in CIS workshops	3.30	96
Q13. Find this content and/or pedagogy to be useful in their non-CIS courses, too.	3.36	90
Q14. Feel more connected with their academic discipline.	3.50	102
Q15. Feel that CIS provides a strong, supportive professional community.	3.50	103
Q16. Experience greater job satisfaction.	3.44	104
Q17. Have had more difficulty negotiating with school administrators because of the CIS class size limits. (Answer only if the CIS class your school offers has a class size limit.)	2.41	73

The presence of CIS classes in our school has impacted related high school academic departments. The presence of CIS classes have: (1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree)	Mean	N
Q19. Changed non-CIS teachers' expectations for student performance.	2.43	74
Q20. Introduced new materials into non-CIS curriculum.	2.92	86
Q21. Changed pedagogical approaches in non-CIS classes.	2.57	77
Q22. Caused a redefinition of course objectives in non-CIS classes to include prerequisite skills and knowledge for taking CIS classes.	2.57	87
Q23. Resulted in reorganization of course content in my high school department.	2.39	97
Q24. Added new content to strengthen course offerings in grades 9-12.	2.79	110
Q25. Produced or occasioned collegial professional discussions.	3.08	111

As a result of participating in CIS, students: (1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree)	Mean	N
Q27. Developed better study habits.	3.24	118
Q28. Learned to manage time more effectively.	3.25	113
Q29. Became more willing to meet academic challenges and more confident in their ability to do so.	3.33	124
Q30. Became excited about learning.	3.20	114
Q31. Learned to express themselves better in writing.	3.42	117
Q32. Learned to express themselves better verbally.	3.28	117
Q33. Are especially well prepared to succeed in college.	3.39	119
Q34. Have a better chance of getting into the college of their choice.	3.03	91

Appendix B: Scale Construction

The scales were constructed by adding the responses for selected items listed below. For each item, respondents were asked to indicate whether they strongly disagreed, disagreed, agreed, or strongly agreed. Higher scores indicated greater agreement with the item. The "don't know" option was treated as non-response.

School Impact Scale (alpha reliability=.68)

- The presence of CIS classes in my school has encouraged high school seniors to elect a more challenging academic schedule. (Q1)
- The presence of CIS classes in my school has enhanced our school's public image. (Q3)
- The presence of CIS classes in my school has resulted in fewer students leaving the high school for PSEO classes. (Q4)

Teacher Impact Scale (alpha reliability=.86)

- As a result of participating in CIS, teachers are re-energized professionally. (Q9)
- As a result of participating in CIS, teachers receive support form U of M faculty/staff and other CIS teachers. (Q10)
- As a result of participating in CIS, teachers learn new content information CIS workshops. (Q11)
- As a result of participating in CIS, teachers feel more connected with their academic discipline. (Q14)
- As a result of participating in CIS, teachers experience greater job satisfaction. (Q16)

Department Impact Scale (alpha reliability = .74)

- The presence of CIS classes has changed non-CIS teachers' expectations for student performance. (Q19)
- The presence of CIS classes has caused a redefinition of course objectives in non-CIS classes to include prerequisite skills and knowledge for taking CIS classes. (Q22)
- The presence of CIS classes has resulted in reorganization of course content in my high school department. (Q23)

Student Impact Scale (alpha reliability = .86)

- As a result of participating in CIS, students developed better study habits. (Q27)
- As a result of participating in CIS, students learned to manage time more effectively. (Q28)
- As a result of participating in CIS, students became more willing to meet academic challenges and more confident in their ability to do so. (Q29)

- As a result of participating in CIS, students became excited about learning. (Q30)
- As a result of participating in CIS, students learned to express themselves better in writing. (Q31)
- As a result of participating in CIS, students learned to express themselves better verbally. (Q32)

Overall Impact Scale (alpha reliability = .63)

- School Impact Scale
- Teacher Impact Scale
- Department Impact Scale
- Student Impact Scale

One extreme outlier on the teacher impact scale was recoded as the next lowest value on that scale. Each scale was recoded from 0 to 1 in order to compare across scales. If a respondent gave "strongly disagree" responses to all questions in a scale he or she would have received a .25 on the scale. The same computation results in a score of .5 for all "disagree" responses, a score of .75 for all "agree" responses, and a score of 1.0 for all "strongly agree" responses.