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THE CRITICAL COMPONENTS OF A SCHOOL-COLLEGE PARTNERSHIP
FORMED TO REDUCE THE ENROLLMENT IN REMEDIAL COURSES IN
MATHEMATICS OF INCOMING FRESHMEN

by

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STATEMENT BY AUTHOR

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The purpose of this research paper is to identify the components that need to be in place in order for a school-college partnership to successfully reduce the remediation rate of incoming freshmen in mathematics. There is a problem with the college readiness level of too many incoming freshmen in mathematics at all MnSCU institutions and others around the country. Among potential solutions lies the possibility of a school-college partnership. There is promise and potential for school-college partnerships to reduce the enrollment rate in remedial courses in mathematics of incoming freshmen. In this paper, literature on developing partnerships is discussed, along with numerous case studies of school-university partnerships already in practice.

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INTRODUCTION

Statement of the Problem

After teaching a year of high school, this author came to the realization that not all of the students who took math as a senior were prepared to take college math. The school where I was employed offered an alternative to the "core" math classes: Consumer Math. The curriculum of this class, and others like it offered at high schools around the state, consists of chapters on taxes, managing finances, applying for jobs and other applied math concepts. Although some of this is useful for students who do not plan on attending college, very little of it was college preparatory.

As a graduate student at Bemidji State University, this author has seen a direct correlation between math courses taken by students in high school and their placement into college math. I have taught Math 1100, *Algebra and Math Reasoning*, Math 1110, *Beginning College Algebra*, and Math 1170, *College Algebra*. The first two are the lowest level math classes that students can take for credit towards graduation. The remedial class offered at BSU is Math 0800, *Intermediate Algebra*. Students are required to fill out an information sheet at the beginning of every semester that asks what math classes they took in high school. It also asks for any previous math classes taken in college and their placement test score. The information that I have obtained from my students on their information sheets has led me to believe that there is a strong

relationship between the level of math preparation in high school and placement into college math.

Overview of the Study

This study will first show that the level of math courses successfully completed in high school has an affect on a student's math placement in college. Next, it will be shown that the number of traditional students placed in remedial math classes in college could be lessened by a successful school-college partnership.

General Background of the Study

Studies have shown that the level of math preparation in high school makes a substantial difference in a student's ability to take college level math courses (Hoyt, 1999; Robinson & Kubala, 1999; Gamoran, Porter, Smithson, & White, 1996, 1997). Students who take several mathematics courses and courses that are academically more demanding have higher mathematics scores on college and university placement tests across the country (Hoyt, 1999; Robinson & Kubala, 1999; Gamoran, Porter, Smithson, & White, 1996, 1997; SREB Report, 1996). "Although the level of math completed in high school improved a student's test performance, a large percentage of the graduates who completed advanced math courses in high school still tested at the remedial level" (Hoyt, 1999, p. 39). Minnesota is no exception to this problem. According to the 1999 Minnesota State Colleges and Universities (MnSCU) report on placement test results in mathematics,

Over 32% (29.8% enrolled at MnSCU colleges, 43.4% enrolled at MnSCU universities) of students placed at the *Intermediate Algebra/Beginning College Math*¹ level, approximately 28% (32.3% enrolled at MnSCU colleges, 10.4%

¹ This level includes placement into college-level courses such as Business Math or Liberal Arts Math if an institution's placement scheme indicates that lower cut scores are required for these courses than for College Algebra or if an institution does not offer courses at the College Algebra or higher level.

enrolled at MnSCU universities) of students placed at the *Elementary Algebra* level, and nearly 23% (25.8% enrolled at MnSCU colleges, 8.3% enrolled at MnSCU universities) of students placed at the *Basic Math/Pre-Algebra* level. . . The remaining 17% (12.1% enrolled at MnSCU colleges, 37.0% enrolled at MnSCU universities) of students placed at the *College Algebra/Higher Math* level. (p. 7)

Of the 837 students at Bemidji State University who took the mathematics placement test in 1999, 48.3% placed in *Intermediate Algebra*, the remedial math class offered at BSU, 30.6% placed in *Beginning College Algebra* or *Algebra and Math Reasoning*, while only 21.0% placed in *College Algebra* or higher.

Remedial education in colleges and universities is now needed by about one-third of the students in states that have collegiate placement standards. If states are to increase the access to quality collegiate education, especially for minorities and adult citizens, colleges must offer some remedial education for years to come. But it is reasonable to expect that in future years school improvement efforts and college actions will mean fewer first-time college students will need remedial education. (SREB Goals for Education, 1988)

Due to the high remediation rates of incoming freshman, colleges and universities are investing a substantial amount of resources into remedial math classes to teach students skills they should have mastered in high school (Hoyt, 1999; Robinson & Kubala, 1999; Gamoran, Porter, Smithson, & White, 1996, 1997). To remedy this problem, colleges and high schools across the country have been developing cooperative programs. These programs require both institutions to get involved in lowering the remediation rates. Some have been quite successful in this goal (Justiz, 1997; SREB Report, 1988; Richey, Mathern, Pierce & O'Shea, 1997). "Initial research describing various forms of school-university partnerships are very favorable and suggest bright future for these types of relationships" (Cunningham & Gresso, 1993, p. 249). Programs that help high school students become better prepared for college are clearly needed. If

additional institutions of higher education were to focus more attention on the high school programs in their geographical area, they might be able to lower their high remediation rates for incoming freshman.

The objective of this study is to identify and evaluate the principle components that have been used in successful school-college partnerships whose goals include lowering the remediation rate of traditional freshman.

The research question to be answered is: "What are the critical components of school-college partnerships successful at decreasing the number of traditional students that need to take remedial math classes?"

Limitations and Assumptions

An assumption will be made that all versions of the MnSCU math placement test, which is the placement test given at Bemidji State University, yield accurate indications of which class a student should be placed into in college.

This research paper will be limited in the number of case studies found for analysis.

Definition of Terms

Non-traditional students: College students who have been out of high school four years or more.

Remedial college courses: Courses offered below the 1000 level.

School-college: High school and colleges and/or universities.

Traditional students: College students who have graduated from high school within the past four years.

REVIEW OF LITERATURE

Components of Successful Partnerships

This review of literature will look at some popular literature on how to establish successful partnerships. Books that describe what it takes to make successful partnerships such as Cultural Leadership (1993) by William C. Cunningham and Donn W. Gresso, and Paths to Partnership (1998) by Michael Knapp will be discussed. Also included will be a book by Jac Fitz-Enz that devotes a chapter to collaboration as one of the eight practices of exceptional companies.

The book Cultural Leadership addresses the blueprints for the reform needed in order to make American schools world class. One of the criteria discussed is building school-university partnerships. In 1988, Kenneth Sirotnik and John Goodland detailed a summary of results from school-college partnerships across the country. Many successful qualities that these programs share were found. Dr. Goodland proposed that in order for school improvement to occur,

1.) there must be a core of teachers, principals, and other stakeholders engaged continuously in inquiry about the nature, quality, and relevance of the education enterprise; 2.) there must be time away from daily demands for periods of sustained dialogue and reflection; 3.) it is highly desirable and perhaps even necessary for interpretation with other cohort groups – alternative drummers – and countervailing ideas; 4.) certain concepts, such as renewing capacity for staff (especially those closest to students), schools as the center for change, access to alternative and relevant knowledge, and the process of collaborative inquiry are more seminal and important than others; and 5.) juxtaposition of the action-oriented culture of the school and the inquiry-oriented culture of the university offers promise of shaking loose the calcified programs of both. The more these conditions exist, the less likely the school district's success will be sacrificed to "packages" or "quick-fix panaceas." (Cunningham & Gresso, 1993, p. 249-50)

Dr. Ronald Havelock studied three different school-university partnerships: The University of Maryland, Mayville State College, and a statewide network in North

Dakota. In a paper prepared for a seminar for the Danforth Foundation, he drew some general implications. He concluded that school-university partnerships can be successful. They can also be sustained over a long period of time. This is, of course, beneficial for the school district and its teachers. The university has a number of excellent resources for public schools. But Dr. Havelock found that universities and faculties also gained a number of benefits. They have an opportunity to communicate with and listen to educators at various levels within school districts. School-university partnerships also give university faculty the chance to develop curriculum that will better address the needs of future school teachers and leaders after having been part of a partnership. Dr. Havelock stated,

Districts should look beyond inservice training needs and traditional knowledge acquisition activities and seriously consider the potential for collaboration with universities for problem-solving, curriculum and instructional reform, and other desirable changes in the process of schooling. They should also look to the involvement of personnel other than teachers and they should allow teachers and others to become involved in collaborative activities in a more prolonged and intense way. Finally, if they find that the rewards of collaboration are clear and positive, they should be prepared to back up their verbal support with long-term financial commitments. (Cunningham & Gresso, 1993, p. 257)

The book Paths to Partnerships discusses the challenges that a collaborative will most likely encounter in the development stages. The author, Michael Knapp, has been involved in building a collaborative at the University of Washington. Some of the difficulties discussed are about identifying a common focus, sharing leadership, and communicating across differences in role, status, and disciplinary perspective.

Building a collaborative between a college and high schools presumes that the institutions are at least minimally supportive of collaborative work. "There is the rub-the typical culture and structure of training institutions (in particular, of universities) are

generally indifferent or hostile to collaborative efforts of many kinds" (Knapp, 1998, p. 139). Given this fact, individuals or groups who venture into a collaborative not only have the challenge of creating the collaborative itself, but are also in charge of developing an institutional environment that will support the program over time.

When at the University of Washington, Knapp learned that a collaborative can be a painful but rewarding struggle.

Out of this struggle emerge lessons regarding predictable personal dilemmas for participants, a picture of identifiable stages in the development of university-based collaborative teams, and descriptions of the organization and incentives that can sustain this kind of activity in the university environment. In other institutional settings, these lessons may not manifest themselves in the same way or as intensely as at UW. . . . But it is likely nonetheless that the issues examined below will be encountered in some degree no matter what the setting. . . . In establishing itself as a collaborative group, the team confronted seven challenges:

1. Identifying a common focus.
2. Sharing leadership
3. Communicating across differences in role, status, and disciplinary perspective.
4. Developing and affirming group norms.
5. Structuring joint work and getting it done.
6. Shedding old roles and assuming new ones.
7. Cultivating support among multiple constituencies.

(Knapp, 1998, pp. 146-147)

An early and continuing task for any collaborative team is to identify a common focus. Beyond agreeing on the overall mission for a program, a group needs to come up with conceptual models so as to not exclude (or include too many) of the elements of the collaborative that might affect its success. For example, the UW collaborative decided that its primary goal was training teachers and that other activities, such as efforts to enhance collaboration at field sites, had to be left aside. The UW collaborative program suggests that ". . . the politics of collaborative groups make focusing difficult, and the

lines of least resistance are to broaden the focus until all agendas are included” (Knapp, 1998, p. 149).

In a collaborative, it is important to realize that not only leadership, but also authority and responsibility, need to be shared. At first, the person who has taken the lead in getting the program going acts as the program director. As time goes by, different people within the collaborative take on different leadership roles in their collective groups. The UW collaborative found that “Shared leadership in such collaborative programs means that a balance is struck between centralization and decentralization of control and authority, but the balance between these two may vary over time” (Knapp, 1998, p. 150).

Collaboration of any kind requires a great deal of communication. As with most university collaboratives, the UW collaborative members consisted of both high school and university faculty, professional staff, students, and community representatives. Hence, they had to learn to communicate across differences in status and role, not to mention the differences in personality and style. In the beginning stages of a collaborative one can expect that the “. . . unevenness in the communication pattern surfaces—lower-status individuals are listened to less than higher-status individuals; some task-group members get important messages while others don’t; informal communication outside of the numerous task-groups meetings happens sporadically or not at all” (Knapp, 1998, p. 52). It is important to remember that communication in a collaborative takes time. Eventually, the UW team improved their pattern of communication and built a foundation for a more fully collaborative pattern of interaction.

It is inevitable that any group will develop norms that guide their behavior.

“Group members come to share a largely unconscious set of assumptions and expectations about members’ conduct with one another” (Knapp, 1998, p. 153). Whether the group realizes it or not, they develop their own understandings about how differences will be treated, how they incorporate others’ ideas and efforts into actions or products, how decisions will be made, people are listened to, and anger is expressed. In an effort to improve communication, the UW team came up with stages to recognize that it had developed norms that governed their behavior, but that didn’t always support their goals.

They are as follows:

- We will remember that we are not experts in collaboration, and that this is a learning process for ourselves just as it is for others. We will be comfortable with our mistakes and failures, and will celebrate the opportunity to learn from them.
- We will also value and enjoy the opportunity to learn from others. We will treat everyone involved in TIC as an equal partner in the process, with valuable insights and contributions.
- We will remember that this endeavor is a cooperative nurturing of ideas, not a competition of ideas. We will set personal and communal goals accordingly.
- We will set realistic goals for ourselves. We will balance the need to ensure that commitments are met with the need to acknowledge when expectations are unrealistic.
- In our dealings with others, we will ask ourselves: Am I being truly collaborative? Am I really listening to and responding in an appropriate way to what others have to say? (Knapp, 1998, p. 154)

One of the biggest challenges the UW collaborative faced was structuring joint work and getting it done. Groups who take on ambitious goals find it difficult to not only structure their work, but to carry it out also. Underneath all this tension lies the desire to share responsibility and the practical need to divide the work up. In the beginning stages of collaboration there seems to be confusion about who is responsible for what. This results in things getting done at the last minute, or in some cases not at all. The UW collaborative went through an “evolution” of task group structure.

- *Planning year:* Separate task groups (with some overlapping membership) are created to tackle curriculum development and site development. The two work relatively independently, creating the first version of the training curriculum and identifying two community sites that would collaborate with the program during its first pilot year.
- *First pilot year:* The two groups carry on but change function somewhat (e.g., the newly named “curriculum design” group addresses questions of how the initial curriculum design could be adapted for in-service training purposes). A third task group devoted to student learning experiences is created, as it becomes clear that numerous operational matters (student assignment, student complaints, connections between course delivery and internship supervision) are not being attended to by the two initial groups.
- *Second pilot year:* As the numerous connections between curriculum decisions and student-learning experiences become clearer, the team decides to merge these two into a combined curriculum design and delivery task group. The site-development group is still separate, but evolves its focus from “development” to “partnership,” and puts greater emphasis on managing the relationship between university and community in existing sites, particularly with regard to the projects student cohorts undertake and the identification of placements for individual internships.
- *Third pilot year and beyond:* The task groups concerned with curriculum design and delivery and site partnership discover they are dealing with flip sides of the same coin—both are working to support student learning in community-based cohorts and maximize the contribution of cohorts to the community. The task groups start meeting together (and even consider formalizing the merger). In effect, a single task group has evolved dealing with student learning in the context of community partnership. (Knapp, 1998, p. 156)

University faculties seem to have the hardest time with shedding old roles and assuming new ones within a collaborative. They needed to change “from solo intellectual entrepreneur to collaborative colleague” (Knapp, 1998, p. 158). University faculties need to realize that by taking their place on a team, they are dropping the old university professor role of making individual contributions and discoveries for the scholarly literature, and assuming a new role that de-emphasizes these things. They are going from being an expert in their field to a learner on the team. Although these transitions are hard for everyone, it was noted in the UW collaborative that the university faculty had the toughest time in the transitions to their new roles.

The last of the seven challenges discussed in Paths to Partnership is cultivating multiple constituencies that support collaborative practice. It is important to include parties outside of the collaborative, such as institutional leaders of universities, leaders in the community, and financial sponsors. But when the number of constituents and their diversities becomes large, it can complicate the performance of the collaborative and increase the workload.

On the one hand, the process of cultivating external constituencies garners resources, gains a sounding board for ideas, and develops connections with practitioners and consumers. On the other hand, the cultivation process introduces a diverse set of expectations and agendas, which magnifies the task (Knapp, 1998 p. 159).

After discussing the seven challenges most collaborative efforts are likely to encounter, Knapp offers some insight on the rewards and trade-offs of the joint endeavor.

First, and perhaps most important, the learning process develops a mutually supportive professional community, which offers both collegiality and friendship to its members. . . . Second, the interface between adjacent disciplines is an intellectually exciting place to be, and intellectual excitement is a central motivation for people's working lives in universities. Although one must be creative in finding the proper outlets for work that does not correspond to established disciplinary traditions, there are numerous opportunities for scholarship, potential for grants, and discoveries to be made. . . . Third, interprofessional education leads one to continuously confront difficult and important issues of contemporary practice in a way that stretches each discipline to its limit, and even beyond. For those who care about encouraging each profession to do its best, the opportunity to engage in this kind of work has obvious appeal. (1998, p. 162-163)

It is important for faculty thinking of getting involved in a collaborative program to understand the trade-offs. While working on the collaborative, university faculty risk removing themselves from teaching within their discipline. As stated in all the research on the subject, any collaborative effort is going to involve a substantial amount of time

with other collaborators. The time will be taken away from working on the next journal article, interacting with students, or keeping up to date in one's field.

According to Jac Fitz-Enz, author of The 8 Practices of Exceptional Companies, collaboration is one of the key ingredients to a successful business or organization. The others are value, commitment, culture, communication, partnering, innovation and risk, and competitive passion. These seven practices, along with collaboration, are what make a company exceptional, according to Fitz-Enz. He describes collaboration as "... a form of collective support that goes beyond mere cooperation" (p. 138). In his chapter on collaboration, he states,

The point is the same as in partnering. By calling on others who have a stake in something you get the benefit of their ideas and resources, which help you to bring out a better plan or product and accomplish it more quickly. Probably the greatest value of collaboration lies in the insights that others bring to your function. (Fitz-Enz, 1997, p. 139)

Fitz-Enz has also come up with a collaborative partnering checklist (see Appendix A) to maintain good collaborative practices.

Based on the literature, there are many components that need to be in place in order for a collaborative to be successful. The collaborative team needs to have members that represent all of the institutions involved in the collaborative and they need to be on equal levels. The team needs to come up with goals and a common focus. A model of what is to be achieved helps to keep the focus centered on what the collaborative initially set out to do. There needs to be a commitment to the collaborative in order to accomplish long term goals, which many school-college partnerships have.

School-College Partnerships

The concept of a school-college partnership is a new and emerging idea.

“Colleges and high schools benefit from developing cooperative agreements to share information for research purposes to inform local high schools about their effectiveness in teaching students math skills and preparing them for college” (Hoyt, 1999, p. 43).

Programs for collaboration have been developed at different levels, from state mandated and regulated to locally developed and operated.

College readiness programs that involve a partnership between high schools and universities already exist in many states such as Florida, Georgia, Louisiana, Maryland, North Carolina, South Carolina, Tennessee, and Texas (SREB Report, 1988). These Southern Regional Education Board (SREB) states have enacted college-readiness reporting programs in which the colleges report to the high schools on how their former students are doing academically. “The more that high schools know about the academic strengths and weaknesses of their graduates, the better they can make the curricula and counseling to prepare future graduates for beginning college-level courses” (SREB Report, 1988, p. 2). The reporting programs vary from state to state in the type of information reported and the detail provided. Some involve state level coordination while others rely on individual colleges and universities to report directly to school districts.

Members of the collaborative in Tennessee include the State Board of Regents, the University of Tennessee system, the College Board, and the Tennessee Board of Education. Here, all entering freshman are required to take a placement test if their American College Testing (ACT) score is below a certain level. The results of the

placement test, along with other student information, are given to high school principals, counselors, and administrators in a report.

The reports include individual student assessment and placement data (released only with the permission of each student), systemwide data, statewide group data from each college and university, group data for each high school from each Board of Regents' institutions and enrollment data. The reports not only identify the numbers and percentages of students required to take the placement test, but the numbers and percentages of students placed in remedial and developmental courses in each of the areas tested. The reports go one step further in identifying academic skill weaknesses within the major area tested. (SREB Report, 1988, p. 3)

The goals of the collaborative program dedicated to reporting to high schools on students' readiness for college formed in Tennessee are "to improve high school curricula, student preparation for college, and learning in public schools and higher education" (SREB Report, 1988, p. 5).

In Maryland, reports are sent to high schools that contain credit hours attempted and passed and grade point average. The students are not identified and there are not any summary reports. Institutions of higher education in South Carolina provide individual student transcripts to high schools. Some colleges recognize students by name, others do not. Florida's reports include referrals to remedial education along with student transcripts, but little or no group data is provided. Colleges in Louisiana report group information for individual high schools to local districts. Included in these reports are ACT scores, the number of students enrolled in remedial classes by subject area, and the number of students in good standing. These are listed in developmental and non-developmental categories.

Reporting to high schools on students' readiness for college seems like a good idea, but it has its problems. One of the problems these states have run into in their readiness

reporting programs is that there is no consistent form for the reports. School districts are receiving different kinds of reports that offer different data elements from each college. Another problem is that school districts are receiving the reports throughout the year. There is no concise period of time when the reports are delivered. Some states report on *all* entering freshman, regardless of graduation year. Because of the increasing number of older students entering college, the group data may not reflect the current high school program. Other problems they have run into have been attributed to “a lack of communication between higher education and the public schools”(SREB Report, 1988, p. 5).

The Southern Regional Education Board made the following guidelines after reviewing their own programs and the problems they encountered when the program had been in place for three years.

- Accurate and useful data must be provided in a manageable form and in a timely manner.
- Strong joint leadership and direction are important. Schools *and* colleges must determine cooperatively what should be reported, how it should be reported, and when it should be reported.
- A system for follow-up and evaluation should be jointly developed to assure that the program's goals are being met and that changes, if needed, can be agreed on and adopted.
- While information on how students perform in their first year of college does reflect high school preparation, it is more difficult to use in identifying specific areas of strengths and weaknesses. There is greater potential for college-readiness reporting programs in states where placement assessments measure reading, writing, and mathematics skills of entering college students.
- College-readiness programs are intended to help high school students get ready for college. They should not be viewed as a way to determine “good or bad” schools. There will be positive and negative publicity on the information reported, but this is a reasonable price to pay for better prepared college students. (SREB Report, 1988, p. 6)

In 1994, the College of Education at The University of Texas at Austin (UT) formed a partnership with educators in the Austin Independent School District (AISD)

(Justiz, 1997). Although there is no mention in this case study that one of the goals of the collaborative is to increase college readiness, it is important to include this example in the data because it discusses the components of a successful school-college partnership and some of the difficulties as well. The UT/AISD collaborative was developed to increase the quality of teacher education at the university and share technological resources with the high schools in the Austin district. In the early stages of development there were five action teams formed whose members consisted of university faculty and students, high school teachers and principals, and program coordinators. After only three years, the collaborative has made substantial progress. In the area of teacher education, the collaborative has managed to restructure many aspects of the university teacher preparation program as a result of discussion from team meetings. For example, UT has infused more technology into all teacher preparation courses, revised courses to consist of teaching children with special needs, and added a new course to the program that covers topics such as legal and ethical issues in education, multiculturalism, parent involvement, community outreach and preventing violence in schools. This course is taught by a team of faculty from the university and high school. However, the UT/AISD feels its most significant achievement in the area of teacher preparation is the development of a Professional Development School (PDS). They have also developed a mentoring program for first year teachers and a teacher-leader master's degree program offered by the university. The collaborative has also been successful in sharing technology resources, facilities, and expertise. "The collaborative has inspired several successful research and development efforts in technology, some of which have received national recognition" (Justiz, 1997, p. 35).

The UT/AISD Collaborative has resulted in significant achievements in the areas of teacher education and the sharing of technology resources. The partnership has fostered the growth of mutual support and respect between College of Education faculty and teachers in local public schools. Both partners have benefited, as has our common constituency—the students of Texas. (Justiz, 1997, p. 36)

Some lessons learned from the UT/AISD partnership valuable to other institutions that are considering a collaborative endeavor with local schools are listed below.

- Understand that the partnership is an emerging concept. It requires sustained effort over time. Successful partnerships require the ongoing involvement of faculty who engender trust by working cooperatively with schools on projects of interest to practitioners.
- Expect that issues of trust, respect, and competence will be raised as part of the collaborative process. Representatives of each institution will have questions about who will benefit, who will be rewarded, and what each partner has to offer.
- Start small, then move to larger challenges. For example, address needed changes in the teacher education curriculum before tackling larger issues such as school quality and student achievement. Do what is possible; success will breed success.
- Be flexible. Be prepared to take risks and be willing to cross institutional boundaries. Cultivate a high tolerance for ambiguity. Understand that goals and purposes will not always be clear, particularly early in the partnership, when relationships are developing and lines of communication are being established.
- Actions speak louder than words, and symbolic gestures must lead to tangible support. Respond immediately when the other partner asks for help, and follow through on commitments of human and financial resources.
- The committed involvement of top administrators is essential. The president of the university, the dean of the college, and the superintendent of schools must be publicly committed to the collaborative.
- To sustain the partnership, all entities must be kept informed. Disseminate regular reports, newsletters, and pamphlets, and use the media when possible. Make presentations to the school board, the university administration, college faculty, classroom teachers, and legislative groups. (Justiz, 1997, p. 35)

Another successful school-college partnership began development in 1988 between Owens Community College and Findley High School located in Ohio (Richey, Mathern, O'Shea, & Pierce, 1997). They are involved in the Early English Composition Assessment Program (EECAP), which is an outgrowth of the recommendations made by

the Ohio Board of Regents after reviewing the status of their graduating seniors' math and writing skills in 1981. "Among the conclusions reached by this commission were that graduating high school students lacked basic math and writing skills necessary for them to be fully successful in college entry-level courses and that these students also were deficient in critical thinking, analytical, and problem-solving skills" (Richey Mathern, O'Shea, & Pierce, 1997, p. 63). In order to better prepare the Findley High School students for college, the Owens and Findley team developed a plan that required students to do a complex project in high school. There is one collaboratively developed full-process writing assignment for each high school grade level. These assignments are read and graded by a team of Findley High School English teachers and participating faculty and administrators from Owens Community College. In just three years, the Findley and Owens team was able to see the benefits of their efforts.

The high school English department has gained consistency in teaching and evaluating student writing. In addition, it has raised the level of instruction in writing for the so-called *general* student by virtue of comparing *all* students of a grade level on the same 0-4 scale in the spring of each year. (Richey, Mathern, O'Shea, & Pierce, 1997, p. 70)

However, the road to developing this partnership was "messy". There was a serious time commitment in the first two years of the implementation that had not been anticipated in the beginning. Record keeping and tracking of students was another problem not foreseen by the team that required a solution. Findley found themselves in need of new file cabinets in most rooms, and finding funding for them was difficult. The high school teachers also had a difficult time selling the idea to their students because their initial reaction was that this was a statewide writing sample that had no bearing on their grade or graduation from high school (Richey, Mathern, O'Shea, & Pierce, 1997).

From the perspective of the teachers at Findley High School, the success of their collaboration with Owens Community College has been due to

. . . the diplomacy and genuineness of the Owens Community College faculty. The community college faculty were serious, well prepared, and sincerely interested in helping Findley High School teachers. Never did they appear condescending. At meetings, both responsibility and input were shared and decisions were democratically made. . . This collaboration worked because of the dedication of both the community college and the high school team members to their profession, the warm interpersonal relationships that developed, and the willingness of team members to prepare for sessions and to work hard. Similar collaborative projects should consider the following recommendations:

- Start on a small scale.
- Involve as many people from the departments as possible.
- Keep communication lines open with those not directly involved with the project.
- Expect to work hard.
- Evaluate the project every year, asking for input from all involved—including the students. (Richey, Mathern, O'Shea, & Pierce, 1997, p. 69)

The book Partnerships in Teacher Education, edited by Thomas Warren, consists of 21 case studies about school-college partnerships. "They tell of efforts to reform, build bridges, enhance practice, and increase diversity" (Warren, 1996, p. xiv). Grinnell College in Iowa developed partnerships with local schools in an effort to provide a field experience for their student teachers that bridged the gap between college classroom learning and student teaching. They also realized there was a great difference in perspective between the methods instructors at the college and school teachers that was creating a serious lack of continuity for student teachers. A group of elementary teachers and two Grinnell faculty received a grant from the Iowa Department of Education to develop a school-college partnership that would design and implement better field experiences for preservice teachers in Grinnell's teacher preparation program. The group

met during the summer and came up with a plan to get their education students more experience teaching before actually going out student teaching.

It was very important in this school-college partnership that there were both college faculty and public school teachers on the collaboration team. They were able to find a common ground between information from educational research and information teachers obtain through their own practice. From their discussion they made a list of criteria for best practice in different disciplines. "The list was clearly grounded in the research, but it included criteria suggested by teachers, and much of our discussion focused on developing consensus around the precise wording of each of the criteria" (Voyles, et al. 1996, p. 76). The group came up with a plan for their education students to do unit lessons while still in college courses, supervised by faculty at both institutions and their peers. The collaborative endeavor was a success in better preparing future teachers.

Madonna University in Michigan and local school districts received a grant for their program to integrate the humanities into the schools. A university professor is paired up with a K-12 teacher in a similar content area in order to make curricular connections and share pedagogical strategies. At the onset of the program, it was assumed that the professors would direct the curricular connections and the school teachers would best provide the pedagogical strategies. Of course, the actual sharing of information was a two way street. This initial collaboration was just the beginning to the connections that would be made between Madonna University and K-12 classrooms. Since then, there have been two other programs in which more professors, administrators, and teachers got involved doing similar things.

There was the recurring problem of not enough time present in this case study also. In 1996, Marjorie Checkoway, Richard Sax, and Ernie Nolan stated,

It is clear that a college professor can be given released time to participate in such a project; for elementary and secondary school teachers, however, it becomes problematic to drop a class or to get a frequent substitute, even if the school district is willing to provide such support. (p. 121)

William Woods University, a private, women-centered liberal arts institution in Missouri, has been involved in several collaborative projects for educational reform and renewal. In particular, the Science and Mathematics Are For Everyone program which is a three-week training session for school teachers funded by Eisenhower Mathematics and Science grants. The program began in 1993 and was deemed a success by the forty participants involved in the 1993-1994 projects. The chair of the William Woods Department of Education personally collaborated with four superintendents in the Callaway county school district and the assistant superintendent at the Missouri School for the Deaf for the planning of the 1995-1996 sessions. The program has two main goals. The first is to integrate technology into the classroom to foster critical thinking and the second is to facilitate special education and regular education teachers to incorporate various teaching and learning strategies into their classrooms. The curriculum for the 10 day training sessions was developed by a team of college professors and school teachers and administrators.

The collaborative process presented several difficulties to be overcome at William Woods University. The first was that bringing together such a large and diverse group created many scheduling problems. The collaborative process of devising curriculum continued up to the first day of the sessions. Another issue they encountered was that the

Missouri frameworks were under development and available only in draft form throughout the planning phase. The third and most difficult problem they encountered was matching the technological requirements of the course with the capability of existing equipment. Acquisition of enough suitable computers and technology devices has been a continuing problem for the collaborative, but they found the William Woods librarians to be an invaluable resource for them.

Although the evaluations completed by the program participants showed favorable ratings in their increased knowledge of technology and new teaching strategies, the real beneficiaries of the collaborative are the students.

However, we believe true success of this project can only be measured by increased student learning in the classrooms of the project's participants. This increased student learning will occur to the extent that the participants (the classroom teachers) develop appropriate adaptations of the technology and relevant teaching strategies for their students. Working to achieve these goals will be the focus of the on-going collaborative planning process for the second summer of our project. (Tutt & Foley, 1996, p. 177)

The Master of Arts in Teaching programs at Quinnipiac College in Connecticut began in 1989 as an institutionally-based program only. Three years later the college began a partnership with 10 local school districts to:

... create a program which would involve local school districts in a way that would lead to effective teacher education; to provide enrichment for area public school teachers and administrators; to enable the college faculty to learn and grow through their participation with graduate students and educational practitioners; and to provide educational and economic opportunities for M.A.T. students. (Clarckson, 1996, p. 147)

Three years later a collaborative had been established that offered a year internship for students teachers. This has enabled students to spend an entire year in the public school system and to have their college tuition fees waived.

The collaborative consists of faculty and administrators from all institutions. The teachers in the middle and high school grades are not only supervising student teachers and becoming mentors, but they are also given the opportunity to help in teaching methods classes, developing an educational technology course, or serving on an advisory committee. They have been able to see the benefits of the collaborative in seeing their former students working in the school districts they interned in. Some former students are even finding themselves in advisory roles already because they are so supportive of the program that they came through and are willing to work with it as middle and high school teachers.

Clarkson attributes the success of the partnership to a commitment from all institutions to keep the lines of communication open. This partnership goes beyond signatures and "legalese". He says that after 6 years of working on this partnership, they are still learning about new ways to help their student teachers, which, in effect, helps our educational system as a whole.

In most of the case studies reviewed, one of the main goals of the collaborative groups has been to improve teacher training. By improving the quality of the teachers we send out to our public schools, we are improving the quality of education the students in those schools receive. This in turn will lead to students whose college readiness skills are improving every year.

DISCUSSION

Establishing a Collaborative

Where does one turn to for blueprints and frameworks to make the kinds of changes our educational system needs to better prepare high school students for college?

What are the assurances that a collaborative will prove to be a creative, purposeful, and successful enterprise? The case studies previously described have the answers. They are a vivid and diverse collection that outlines the nature of school-university collaboration. And we can learn from them. After examining case studies on school-college partnerships, there are some critical components of successful ones that stick out (Appendix B), along with some recurring difficulties that need to be discussed.

The first thing that needs to be established in a collaborative is a common focus. This may seem like an easy task, but group members are likely to be coming from different walks of life and may be expecting different things out of the collaborative. The group needs to decide what its goals are, what it hopes to accomplish, and then stick with that. "In practice, collaboration is a far richer process than teamwork's handing off on an idea. . . . It's the creation of value" (O'Sullivan, Tannehill, Knop, Pope & Henninger, 1999, p. 225). In the early stages of development, it is imperative that the group not take on more than they can handle. Once a common focus is obtained, the group can start working on accomplishing what they've decided to do.

Individuals who come together to work on a collaborative team are going to have differing ideas and personalities. Learning to work with people whose expertise varies greatly from one's own is key. This may seem obvious, but it did not occur to all of the collaborative teams looked at in the case studies at the onset of their programs. One would think, as I did at the beginning of this research project, that people coming together to work on a team would have the same goals and attitudes towards the collaborative. This is not necessarily the case. One of the challenges faced by collaborative groups is to transform all of the individual knowledge brought to the group

by its members into collective understandings, routines, and accomplishments. A common focus needs to be formed by the group that everyone agrees on and feels is important.

One of the keys to success mentioned in all of the successful collaborations is there cannot be a sense of a "higher level" faculty coming in to straighten out the "lower level" faculty. A successful school-college partnership cannot include a superior attitude from faculty at either institution. All members need to shed their old roles and assume new ones as learners in a group. They must be open to new ideas from all members of the group.

[I]n order to make this collaboration work we had to change traditional rules, roles, and relationships, as well as values, beliefs, and knowledge. We had to become a part of each other's cultures and work within the confines of the structures that bound us. (O'Sullivan, Tannehill, Knop, Pope & Henninger, 1999, p. 238)

Members need to settle into a state of equality with each other. The realization that every member of the collaborative is important is another key component. There is no room for a hierarchy in a collaborative team. The initial leadership roles need to be shared between members of the group. They cannot belong only to the university faculty. After the group has a few years of experience under their belt, they will be less likely to need a leader and can all share leadership.

In order for a collaborative between a college or university and a school district to be successful, there needs to be substantial involvement at both institutions. This is not a component that can be compromised. Members of the collaborative need to be supported by deans and principals and know that their efforts are taken seriously. In the UT/AISD collaborative program, one of the reasons given for university faculty not caring about the

program was that there wasn't the support needed from those in authority positions. Even if deans, principals, and superintendents can't be on the collaborative team, their support of the collaborative efforts needs to be made known. Not only to the group members, but to all of the faculty of the institutions involved.

Problems Encountered

One of the recurring difficulties of the school-college partnership is the unforeseen amount of time that needs to be invested in order for collaboration to be a success. "The collaborative process requires a considerable amount of time, an already scarce resource for educators. Those directly involved in collaborative venues inevitably report that the amount of time needed is grossly underestimated" (Sandholtz & Finan, 1998, p. 23). Many of the team members involved in the case studies discussed ended up abandoning previous duties to devote time to the collaborative. A successful collaborative is not something that can be done in one's spare time. There needs to be a level of commitment, especially in the beginning stages. Team members can expect to work hard and be constantly changing for about the first three years until a group norm is established.

Another problem that has occurred in many of the collaborative endeavors is that there are professors from the universities who don't feel the collaborative is important. They don't believe as though it is offering them anything. "Many university faculty believe service to the collaborative is a poor investment of their time, because such activities are undervalued by top administrators and lacking in tangible rewards" (Justiz, 1997, p. 36). But, according to Cunningham & Gresso (1993) it is important for faculty to realize collaboration between colleges and high schools is important. "School

improvement is an essential area of knowledge for today's professors due to the growing pressure to improve the effectiveness of American schools" (p.252).

A recommendation has been made that all collaborative endeavors are evaluated on a yearly basis (Knapp, 1998; Cunningham & Gresso, 1993). Most of the case studies looked at took at least 2 years before any sort of change was made in the educational system they were working within. It is important to realize that the benefits and rewards will not be immediate and that does not mean the collaborative is a waste of time. It needs time to develop.

There is much to be learned about collaboration. Not only from the literature but from case studies of actual collaborative efforts between schools and universities. It is important for any institution thinking about forming a collaborative to understand the successful components that need to be in place and the difficulties that will inevitably be encountered.

CONCLUSION

One Size Does Not Fit All

When venturing into a collaborative endeavor it is important to keep in mind that one size does not fit all. All of the case studies looked at were different, but there were recurring components in the successful ones. It is the suggestion of this author, after reading through several case studies on collaboration, that it is essential to start on a small scale in order to design a collaborative whose goal is to reduce the remediation rate of incoming freshmen in mathematics. Because we are starting small, I am going to make one recommendation for lowering the remediation rate of incoming freshmen in mathematics. I believe that what is being done in the SREB states, reporting to schools

on students' readiness for college, is a great idea. In my opinion, the reason this hasn't been as successful as they had hoped is because their collaborative does not include the successful components described above. There is not enough communication between the schools and the universities. The universities have come up with their own reporting forms without the involvement of the schools. If a collaborative group of school and university faculty came up with a reporting form that was approved by both institutions, I think this could be a great way for us to make a start in getting involved in a collaborative with local schools designed to reduce the remediation rate of incoming freshmen.

When venturing into a collaborative endeavor, institutions need to realize that they are not taking on an easy task. Not one of the case studies said it was easy. Their collaborative efforts have been described as "messy", "painfully slow", and an "enduring challenge". It takes time and commitment, both of which are hard to give, especially when a team may not even see the results of their efforts for the first couple years.

The rewards are real, and school-college partnerships do work. Professor Robert L. Sinclair, Director of the Coalition for School Improvement, stated,

We found that the finest and most lasting reform comes through cooperation between educators from various institutions working together as equals to improve their schools. We are convinced that is the most successful way to make constructive and enduring changes. (Cunningham & Gresso, 1992, p. 256)

As justification for the Madonna University collaborative to continue in spite of difficulties, Checkoway, Sax, and Nolan stated,

In order to continue and build on these initiatives, we need to foster the concept of K-16 education on a regional basis. Especially considering the fact that we teach at a university that is comprised principally of students from local communities, it behooves us to dissolve the artificial, as well as the physical, structures that divide a university from the K-12 schools that send it students—and to which the university will send back prepared teachers. (1996, pp. 122-123)

Everyone agrees that something needs to be done, reformed, if you will, in our educational system to ensure that our students are better prepared for college. Many professionals are looking towards school-college partnerships to make the changes necessary. "The tie between our schools and colleges cannot be more obvious. . . neither could function without the other, and neither can be much better in quality than the other" (SREB, 1988, p. 2). Colleges survive on the students high schools send them. Successful solutions to improving college readiness suggest that school-college partnerships have a promising future. This is an idea worth looking into.

Appendix A

Collaborative partnering checklist.

(From The 8 Practices of Exceptional Companies, by Jac Fitz-Enz (1997, p. 150).)

1. What is the *business problem* or *opportunity* we are considering? Describe in ten words or less how it is adversely affecting our customers.
2. Can the problem be traced to one of the following categories: productivity, quality, or service? Describe the current deficiency by stating it in quantitative terms.
3. How does/will it affect our requirement to support the company's key strategic imperatives? Describe the link between the productivity, quality, or service issue and our corporate strategic goals.
4. What is the potential gain or loss in product, service, or employee factors and in cash?
5. Is the source of the problem or opportunity known at this time? Describe where it exists.
6. Which functions within our company are or should be involved in solving the problem or exploiting the opportunity?
7. What is the projected resource commitment from each function in terms of people, time, equipment, material, information, and facilities?
8. How do we sell them on committing resources to this case?

Appendix B

The Critical Components of a Successful School-College Partnership

1. A common focus.
2. Shared leadership.
3. Involvement (or at least support) from those in authority positions. (e.g. deans, principals, superintendents)
4. A sense of equal status among members of the collaborative.
5. Time allotted for work on the collaborative, it can't be done in one's spare time.

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