Building Bridges for Access and Success from High School to College:

Proceedings of the Metropolitan Higher Education Consortium's Developmental Education Initiative

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Co-sponsored by General College

and the Center for Research on Developmental Education

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Table of Contents

PART 1: MEETINGS OF THE DEVELOPMENTAL EDUCATION INITIATIVE

Introduction

This proceedings summarizes a 2-year initiative of the Twin Cities Metropolitan Higher Education Consortium, featuring a developmental education initiative co-sponsored by the University of Minnesota General College (GC) and the Center for Research on Developmental Education and Urban Literacy (CRDEUL), in collaboration with the Minnesota State Colleges and Universities (MnSCU). The Metropolitan Higher Education Consortium is an outgrowth of strategic conversations between representatives from the Board of Regents of the University of Minnesota (UMN) and the Board of Trustees of the Minnesota State Colleges and Universities (MnSCU). The goal of this collaboration is to develop ways that UMN and MnSCU can work more closely together to address important higher education issues unique to the Twin Cities metropolitan area. Several projects emerged as priorities for the Consortium, including a project to enhance developmental education for underserved student populations in public postsecondary institutions.

This joint initiative of UMN and MnSCU sponsored two invitational, brainstorming meetings in January and May 2004 and culminated in a regional conference in January 2005. The first meeting on Tuesday, January 6, 2004, involved 37 participants from postsecondary institutions, representing eight Twin Cities campuses. The second meeting was held on Saturday, May 22, 2004, and involved 47 participants from postsecondary institutions and secondary schools across the Twin Cities. The developmental education initiative emphasized the fostering of cross-disciplinary conversations among Twin Cities university and college leaders and practitioners in developmental education, such as administrators, faculty, staff, and counselor advocates. The initiative also involved the participation of secondary school teachers, counselors, and administrators committed to strengthening connections across the secondary-postsecondary continuum.

The planning committee included co-chairs David V. Taylor, dean of General College, and Larry Litecky, president of Century Community and Technical College. Planners for the meetings and conference were Dana Lundell, CRDEUL director; Jeanne Higbee, professor and CRDEUL senior research advisor; Susan Hipp, reading faculty at Century Community and Technical College; Robert Copeland, CRDEUL program associate; and Kwabena Siaka, CRDEUL graduate research assistant. The project was funded by the General College.

The contents of this proceedings include reports from the invitational meetings, a summary of the conference sessions and presenters, and a list of resources. We have documented these activities to provide information and a road map for future conversations in the Twin Cities about developmental education and meeting the needs of underserved students.

Finally, the Editors would like to thank the planning committee and co-chairs Dean Taylor and president Litecky for their work and energetic vision. Thanks also to the GC Dean's office staff for their additional office assistance and funding. We also acknowledge the enthusiastic participation of all facilitators, attendees, and presenters at the meetings and conference. Finally, we thank the GC communications office for the design and copy editing of the conference postcards, conference program, and the proceedings.

Report on the First Meeting of the Twin Cities Metropolitan Higher Education Consortium's Developmental Education Initiative

Dana Britt Lundell, Jeanne L. Higbee, and Susan Hipp

ABSTRACT

This report summarizes key outcomes and discussion points from the first meeting of the Metropolitan Higher Education Consortium's Developmental Education Initiative. On January 6, 2004, 37 developmental educators from Twin Cities colleges and universities participated in think-tank sessions to begin discussions about college readiness and collaborations. Facilitators led breakout sessions focusing on thematic areas of writing and English Language Learners (ELL), math and science, and social sciences and the arts. Outcomes included a range of ideas that shaped future phases of this regional developmental education initiative.

To begin the Consortium's developmental education project, a series of two invitational meetings and a regional conference were planned to begin a discussion across the University of Minnesota (UMN) and Minnesota State Colleges and Universities (MnSCU) systems, in partnership with secondary schools interested in college preparation and access issues. The first meeting, held on Tuesday, January 6, 2004, involved 37 participants from postsecondary institutions, representing eight Twin Cities campuses. These included Anoka Ramsey Community College, Dakota County Technical College, St. Paul College, Century Community and Technical College, Metropolitan State University, Minneapolis Community and Technical College, Inver Hills Community College, and University of Minnesota General College. There were also members from the Executive Board of the Minnesota Association for Developmental Education (MNADE), as well as faculty and administrators from the UMN's Office of the Provost and Department of Educational Policy and Administration.

This first meeting set the stage for focused conversations that continued and expanded in the initiative's next phases. The primary goal was to identify common barriers and successes for underserved students entering postsecondary programs from metropolitan-area high schools. A secondary goal was to enhance collaboration between UMN and MnSCU on future work in developmental education, in partnership with area secondary schools in a future meeting.

Thematic Breakout Sessions

Three thematically focused breakout sessions were developed as a means to begin a dialogue across institutions. These included "Writing and ESL," "Math and Science," and "Social Sciences and the Arts." Participants were assigned to the group that best reflected their areas of expertise, recognizing that some teaching areas, such as reading, have a close relationship to student preparation in other academic content areas.

Two guiding documents were selected in advance as preliminary readings to provide a common starting point for discussing work across Twin Cities campuses, including the Pew Foundation's recent national report on *Understanding University Success* (Standards for Success, 2003) and a summary of the results of the *Century College Project on College Readiness* compiled by Susan Hipp (2003) from Century Community and Technical College. (Refer

to Recommended Resources at the end of this proceedings for references from the meeting reports and additional information on developmental education and college readiness.) Guiding questions were used to focus the breakout groups' conversations, which were open ended in addressing some common issues with the goal of developing or enhancing partnership activities with high schools.

Guiding questions were developed in advance for facilitators to prompt discussion. These included the following:

First Session Breakouts

1. How do the findings in the Pew report on *Understanding University Success* and the *Century College Project on College Readiness* compare with findings in your program, practice, or content area about what is necessary to succeed in college? What is similar, and what differs from those reports?
2. How are college-level expectations and skills articulated within your own institution? What else needs to be articulated more clearly? What appears to be missing in communication about skill development from high school to college for students entering your programs and courses?
3. How do you, or does your program, articulate expectations for college success outside your institution? What has been developed, what positive models exist, and what still needs to be done?
4. According to the Pew report, college skills like development of "the habits of mind" appear to cut across disciplines, in contrast to disciplinary-bound skills expected for college success. What other kinds of "habits" and academic orientations, such as critical thinking, are important to articulate and share with metro-area students entering our programs and courses?
5. Which student populations in the metro area are not adequately being served or reached in terms of communication about college-level skills and success expectations? What examples can you provide from your own practice? How might future UMN-MnSCU collaborations be developed to better support underserved and underrepresented students?

Second Session Breakouts

1. There is ongoing legislative dialogue related to the numbers of students entering college underprepared. What role could or should we play in this debate? What role should or could we play in working directly with high schools to prepare students for college in response to these legislative concerns? Simultaneously, how do we continue to improve our own developmental education programs to support and provide opportunities for college access and success?
2. What kind of "unified front" could be created among metro-area postsecondary developmental educators from both UMN and MnSCU in response to legislators and policymakers in the state who challenge and scrutinize our work?
3. Where do major challenges exist in working more closely across UMN and MnSCU systems, and secondary and postsecondary systems, related to developmental education and college skills articulation?

4. How can these assumptions be effectively communicated with secondary leaders in the future, at a second meeting, and at a larger conference with the possibility of think-tank sessions for direct involvement?

Outcomes

Each of the breakout groups discussed the guiding questions, and the following outcomes were presented in summary form at the meeting's concluding session. It should be noted that these are highly layered and complex issues that will require future work and discussion across institutions and educational systems.

Group 1: Writing and ESL

Topics addressed by this group included college articulation, the political nature of developmental education, the many ESL and ELL success stories in the Twin Cities, and the development of an action plan.

College articulation. There was a range of opinions in this group surrounding the ways that college expectations and assumptions about preparation are communicated, both in the existing documents (such as the Pew report) and in practice from high schools to college classrooms. Participants identified many things that were missing in current research and articulation documents. These included: (a) perspectives about who is not being adequately served in high school and college, (b) an awareness of what developmental education programs do in addressing college preparation issues, (c) information about how students learn, and (d) an understanding and acknowledgment of the complex social practices and cultures of our students and institutions. This group of participants identified a variety of students who are underserved in the Twin Cities area in writing and ESL programs, such as immigrant and refugee students, English Language Learners, students with a low socioeconomic status, first-generation college students, and students reentering college from the workforce who are seeking more job training and education. Although there was no consensus in the group about the merits and applicability of the Pew document itself as a useful regional tool for college articulation, there was more consensus and concern expressed about the existence of a "disconnect" that exists between college and high school for students, parents, counselors, and teachers on both ends of the continuum.

Developmental education. This group observed that the conversation around developmental education in the Twin Cities is somewhat limited and remains political. There is misinformation about it outside of the field, where it is often viewed in a negative light as a failure of some kind in the educational system. This image problem for the field was something that greatly concerned this group of participants. Debunking myths is part of the issue, and there is a need for making it clear that developmental education will always be here and not reinforcing trends that seek to eliminate it. There will always be students who need learning support in some area. Providing this support is a positive thing and an extension of the educational process and not a detriment or deficit. There also needs to be a more fluid vision of how students move from high school to college. A focus around what is working and the successes in the field needs to be communicated. Many things are working well, and demonstrating this is central to future work in developmental education.

Successes. Among the many successful writing and ELL programs in the Twin Cities

area are a variety of high-school-to-college bridge programs. College in the Schools, GC's Commanding English, TRIO's Upward Bound, high school teacher exchange programs, and community college outreach and teacher education programs are some examples. These need to be highlighted, and training needs to be facilitated around these model programs to share the best practices that have been developed for underserved students. Developmental education is very successful for supporting students and preparing them for college, as well as supporting them for transitions they make from college to the workforce.

Action. Participants determined that it is critical to seek funding for proposals and grants to foster more collaboration and bridge programs from high school to college. However, there are frequently few rewards for teachers who are doing this kind of outreach work, and administrators need to be supportive and informed. This group strongly believed that developmental educators need to increase their lobbying and dissemination efforts with legislators to foster awareness and counter misinformation and misused data. One idea arose to work toward producing a report, video, or brochure of some kind for articulating college-level expectations for high schools to share with parents, students, and teachers.

Group 2: Math and Science

Topics addressed by this group included public perceptions of math and science learning, underserved student populations in math and science programs, assessment methods and their role in placement, and the role of developmental education in supporting diverse students.

Public perceptions. A variety of societal perceptions around the teaching of math and science were addressed, including a lack of cultural awareness that exists about the barriers and differences students face when learning math and science (i.e., affective issues, anxiety level, language learning issues). There was a concern that current definitions of success in math and science revolve mostly around looking at students as individuals and not in placing them within a wider social and educational context.

Underserved students. This group of participants identified several populations of students in the Twin Cities who are underserved in math and science, especially in the transition from high school to college. This includes Native Americans, Chicanos/as-Latinos/as, students with low socioeconomic status, undocumented immigrant and refugee students, people changing careers, middle-income students not being addressed by high school and college initiatives, and returning adult students. Some specific problems these individuals face are lack of financial aid, isolation, and a lack of a welcoming climate. In the sciences, sometimes these students are overlooked altogether, as science is not often viewed in a developmental education framework. There is more research needed on how students are being served and who is being served in math and science programs specifically identifying core college preparation issues.

Assessments. There was a discussion about basic testing standards and the placement assessments used for developmental education. There needs to be more broad-based, comparative research done to determine the linkages between high school standards tests and college placements as there appears to be a disconnect and misunderstanding about what is expected in college. There also needs to be a greater emphasis on the assessment of affective variables and other potential barriers to success in college-level mathematics and sciences.

Role of developmental education. Programs and courses that focus on the process of student

learning in math and science provide the best support for students in college math and science, but there needs to be more research to confirm what is working. For underserved students, there are many kinds of models with a more flexible approach that should be considered. Specifically, approaches emphasizing multiculturalism are needed to work toward the inclusion of all students in math and science. There is a need for more communication with high schools and future projects, such as grants, that can bring these groups together for more streamlined conversations about the transitions students make into college in these subject areas.

Group 3: Social Sciences and the Arts

Topics discussed in this group included definitions of developmental education, college readiness in the arts and social sciences, and the need for more data and communication in policy making for entering college students.

Defining developmental education. This group took a broad approach across subject areas, focusing on the underlying principles and processes of learning. The issue of defining what developmental education really is was a focus point for this group, as the meanings of access and retention for underserved students are what is essentially at stake and being constantly negotiated. There is a need for more clarity and articulation of what this field does and why it is relevant for all learners. The group recognized a variety of students for whom accessing higher education is a challenge, such as students of color dealing with racism, immigrant and refugee students negotiating new languages and educational expectations, and nontraditional students such as returning adults or student parents. In social sciences and the arts, there needs to be an orientation toward recognizing the processes students use to develop their skills and understanding of the ideas they encounter in college-level classes. The mission differentiation across institutions and educational systems is important to address in the future.

College readiness. This group made a distinction between passing high school and college readiness. This sometimes seems to be a blurry line in high schools. Is passing high school the same thing as being prepared for college? These issues need to be addressed by high school and college teachers together in collaboration. There are specific "habits of mind" that seem to be expected when students come to college, but are the high schools fully aware of these expectations that drive college curricula? For underserved students, these challenges multiply as the gaps in cultural knowledge about college classrooms and assumptions are sometimes made deeper due to a lack of access to relevant, easy-to-understand information.

Need for data and communication. This group observed some policy issues that will be relevant in the future. There is a need for data and information to inform educators and legislators about what students know, how they learn, and what they expect or assume when entering college. However, most school systems and testing programs are not set up for wide-scale data collection. Communication is at the root of the issue across systems and programs. This contributes to continued public misperception about the role and successes of developmental education programs.

Executive Summary of Outcomes

Following is a concluding summary of these sessions that shaped future conversations:

Writing and ESL

1. There is a disconnect from high school to college in the articulation of what it means for students to be college ready, which disproportionately and negatively impacts underserved students.
2. Programs and professionals in the field of developmental education in the Twin Cities possess a rich base of knowledge about student learning and college preparation, yet there is a lack of shared resources and recognition about this across high school and college systems.
3. The successes of these programs and existing resources need to be disseminated to bring this knowledge into training programs and to increase communication among Twin Cities educators.
4. Action projects must be developed, funded, and implemented to articulate college-readiness expectations through a broad network of administrators, teachers, counselors, students, and parents.

Math and Science

1. There is a lack of connection between instructional practices and the real-world experiences and cultural backgrounds of underserved students, and curricula must be revised to provide access.
2. It is important to identify who the underserved students are and to embed a developmental education framework within courses to enfranchise all students with successful outcomes.
3. Current high school assessments lack feedback mechanisms for students to assess how their performance demonstrates college readiness, creating a critical informational disconnect that must be addressed in the future through research and information sharing across educational systems.
4. Flexible models for learning that exist in developmental education courses in college must be further examined for their relevance and support for underserved students, and these models must be shared with high school educators preparing students for their transition to college.

Social Sciences and the Arts Session

1. The name and field of "developmental education" must be further defined and articulated because it is misunderstood externally and is viewed publicly with stigma despite the successes and best practices evident within the profession.
2. High school graduation does not always equal college readiness, and this is a widely held misunderstanding that contributes to students' lack of preparation for college.
3. There is a need for more data and shared information for educators and legislators about what students know, how they learn, and what makes them prepared for college.

These primary conversational points from the first meeting reflect concerns and steps for future action on developmental education initiatives in the Twin Cities. The subsequent meeting reports in this volume will outline next steps that were taken by participants in this initiative, expanding these points through a second meeting that led to a regional

conference. Future initiatives in the Twin Cities concerning underserved students can use this model for completing the process that this meeting started. This "intentional," invited meeting model has been highly successful in General College and the Center for Research on Developmental Education and Urban Literacy for launching conversations, bringing individuals together for networking, and creating synergies across disciplinary areas and the K-16 continuum toward serving the same populations of students for whom higher education access is an ongoing challenge and goal.

Report on the Second Meeting of the Twin Cities Metropolitan Higher Education Consortium's Developmental Education Initiative: Meeting the Needs of Underserved Students

Dana Britt Lundell, Jeanne L. Higbee, and Susan Hipp

ABSTRACT

This report summarizes the process and outcomes of the second meeting of the Metropolitan Higher Education Consortium's Developmental Education Initiative. On May 22, 2004, 47 developmental educators from Twin Cities postsecondary institutions and secondary schools met together to continue and expand conversations that began at the Consortium's first meeting in January 2004. The meeting featured a panel presentation, breakout sessions, and thematic topic discussions. Outcomes included generating ideas for the Consortium's regional conference in January 2005.

To continue and expand conversations from the Consortium's first invitational meeting, planners convened a second invitational meeting. The goal of this meeting was to engage participants in further discussions of themes generated in the first meeting, as well as to present ideas from a regional perspective with an opening panel. On Saturday, May 22, 2004, the second meeting included 47 participants from postsecondary institutions and secondary schools across the Twin Cities. Facilitators led breakout groups on a variety of themes related to high school preparation and college readiness for underserved students.

Approximately one third of the participants represented a variety of metropolitan-area secondary schools, including Washburn, Roosevelt, Anoka-Hennepin, Minneapolis North, St. Paul Central, Edina, Patrick Henry, Brooklyn Center, and Mahtomedi. This group included guidance counselors, learning center directors, principals, and teachers from subject areas such as language arts, science, English Language Learner (ELL) resource classes, and mathematics. Approximately one third of the participants at the meeting were educators or administrators from MnSCU campuses, including Normandale, Inver Hills, St. Paul, Minneapolis Community and Technical, Century Community and Technical, the Office of the Chancellor's Equal Opportunity Division, and Metropolitan State University. The other one third of the guest list included educators and administrators from the UMN Twin Cities campus, including General College, TRIO programs, and the Multicultural Affairs Office. Additionally, there were attendees from other state or community educational services, such as the Minnesota Higher Education Services Office (MNHESO). Additional subject areas were represented at the meeting by the postsecondary educators, including writing, reading, science, math, social sciences, and logic.

The primary goal of the second meeting was to continue discussions among educators from these institutions to identify common issues related to college readiness and preparation, specifically for underserved students. A secondary goal was to foster networks and collaboration opportunities for the future that extend across UMN, MnSCU, and secondary high school systems. A third outcome was planning for the metropolitan-area conference.

Opening Panel Presentation

To bring secondary and postsecondary educators together for the first time during this initiative, an opening panel presentation featuring UMN, MnSCU, and secondary educators

led the participants in a whole-group discussion. The theme was "Creating Access and Defining College Readiness for Underserved Students in the Twin Cities Metropolitan Area." Presenters included: David Arendale, assistant professor, General College; Dolores Fridge, associate vice chancellor of the Equal Opportunity and Diversity Division, Office of the Chancellor, Minnesota State Colleges and Universities; Manuel Barrera, assistant professor of Urban Education, Metropolitan State University; and Rik Svien, science and ESL resource class teacher at Edina High School. These presenters addressed issues such as the history and definition of developmental education and access programs, multicultural issues in higher education, access for underserved students such as students with disabilities, and teachable moments in a Twin Cities high school. An open discussion followed with all the participants at the meeting contributing their ideas and questions in a conversation with the presenters.

First Breakout Sessions: Preparation and College Readiness

After the opening panel presentation, four preassigned groups of approximately 12 to 13 individuals representing both secondary and postsecondary institutions met together to discuss graduation and preparation from high school to college and how secondary and postsecondary leaders can work together to prepare and support underserved students effectively. Participants were given a report from the first intentional meeting, along with a list of recommended Web sites and resources to review in preparation for the meeting. Facilitators and note takers were preassigned to the breakout groups. The conversations were very open ended in nature, with the facilitators guiding conversations to identify commonalities and differences across school systems related to developmental education issues that impact all students, teachers, support staff, and administrators. General summaries and outcomes for four breakout groups are provided below. These notes are only intended to provide a general record of the topics covered, as the conversations went in far more depth and multiple directions depending on the individual interests represented in the groups.

Group One

1. Increase field trips for students to visit colleges during high school.
2. Provide as rigorous a high school curriculum as possible for all students (i.e., all students take college preparation classes as the default choice rather than having to elect this option beyond taking standard, non college-preparatory courses.), which must be demanding, engaging, and culturally relevant for diverse learners.
3. Make accommodations within the curriculum for students with specific needs, such as English Language Learners.
4. Increase mentorship opportunities, particularly pairing students with someone from their own cultural background.
5. Redesign 12th grade as a transition year to college rather than only a capstone for high school; this requires deep social reform and a new vision.
6. Diversify the faculty and staff to reflect students' backgrounds so they can "see themselves" in their own educational worlds.
7. Invest energy and resources in educating and connecting with parents to support their children's college transitions.
8. Listen closely to the opinions and needs of students.

Group Two

1. Understand that high school graduation does not necessarily equal college readiness.
2. Diminish grade inflation for high school students with closer attention to what college expectations are in each subject area.
3. Critically examine the use of academic tracks in high school that serve permanently to separate students academically from their peers and create superficial classifications of students that contribute to the widening achievement gap.
4. Increase relationships with parents of students.
5. Provide college resources to students in high schools, especially where this information is not as easily available for students from disadvantaged backgrounds.

Group Three

1. Consider working outside the box or system to introduce a more radical approach to ongoing issues, especially for enhancing the future for students of color who remain disadvantaged.
2. Involve parents centrally in finding solutions and embarking on permanent collaborations with their child's school system.
3. Introduce high school students to a college campus through a site visit.
4. Work on developing a better understanding of the real issues students have, such as why they prefer sports that provide immediate gratification, social acceptance, and physical rewards over academic pursuits that might represent social stigma, fear, and delayed gratification.
5. Increase visits by higher education admissions representatives to provide real information to students who do not typically have access through schools or parents.

Group Four

1. Improve access to college counseling and study skills courses in high school.
2. Increase mentorship opportunities, especially with local communities.
3. Find a way to provide feedback to high school students on their college readiness.
4. Focus on talent development and outreach programs like TRIO that successfully bridge college and high school programs for underserved students.
5. Incorporate alternative learning strategies, such as "mind mapping" (i.e., creating visual models), for students from all backgrounds.
6. Consider implementing the research on learning communities within programs.
7. Provide cultural activities and clubs for students from a variety of racial, ethnic, and language backgrounds.

Developmental Education Theme Tables

Informal lunch-hour conversations, which were not recorded for this summary as they were intended to provide some collaboration and collegial time, took place, including topics such as immigrant and refugee students; bridge programs from high school to college; building secondary-postsecondary relationships; and attendance, motivation, and student success. The goal of these conversations was to encourage networking and future collaboration across secondary and postsecondary systems in the Twin Cities. These conversations were lively, informal, and included spontaneous mini-presentations and exchanges of information led by preassigned facilitators.

Second Breakout Sessions: Specific Themes on Meeting the Needs of Underserved Students in the Twin Cities

Topics identified by participants from the previous January meeting were explored in breakout sessions in the afternoon, including: affective barriers to achievement, multiculturalism and diversity, "habits of the mind" and critical thinking, writing and English Language Learners, and science and mathematics preparation. Outcomes from some of these groups are summarized below, providing a general outline of some of the main points covered in these rich discussions.

Multiculturalism and Diversity

1. Understand that this is a systemic issue for students and educators, beyond the simple recognition of surface differences among people, that includes factors such as home language, history, social power, values, race, gender, ability and disability, ethnicity, sexual orientation, and so on.
2. Involve all individuals in educational conversations about race and White privilege to enhance knowledge about the real factors in students' lives that operate in social situations.
3. Schools and curricula must reflect the true diversity of this society to enhance college preparation and readiness for the workforce beyond college or high school.
4. Unpack the meaning of racism and engage in difficult conversations.
5. Recognize that multiculturalism is about everyone, though people may be impacted and benefit differently.
6. Make a commitment to multiculturalism and diversity central to a high school or college's mission rather than an add-on requirement.
7. Recognize that society is becoming increasingly diverse, and this will soon be the number one issue for all students whether schools recognize and accept it or not. All students will be underserved if this issue is not met with seriousness in secondary and postsecondary education.

Writing and English Language Learners

1. Identify and provide an educational space where students feel they can belong.
2. Understand that there are so many types of ESL or ELL students; some are ready for college and are thriving in mainstream courses, and others are not as prepared. This step is critical given the growing immigrant and refugee populations in the Twin Cities metropolitan area.
3. Develop a cohort model, like the Commanding English program in the General College, which is proven to be very successful in research, theory, and practice.
4. Recognize that there is too much assessment of language ability over literacy, which is equally if not more important for success in all subject areas and in future jobs.
5. Offer the proper resources that are needed for career development for ELL students.
6. Work toward developing more of a connection of Minnesota high school standards testing and preparation to the real needs of ESL students.
7. Make it clear in high school that the five-paragraph essay is not sufficient preparation for the kinds of writing students do in college courses.
8. Work against budget cuts at the state and federal levels that are diminishing the ability of educators at the secondary and postsecondary levels to meet the needs of ELL students.

Affective Barriers to Achievement

1. Limit grade inflation and social promotion inside of the K-12 system because they set up false hopes for college success.
2. Find ways to make school "cool" for students and destigmatize educational achievements as these attitudes create a strong, negative, and counterproductive barrier for many students, and in some instances disproportionately impact male students and students of color.
3. Make students partners in the educational process to create more meaningful, personal connections to the material and outcomes. This will increase motivation.
4. Start a discussion with parents and community leaders about the attitudes held toward students entering postsecondary education, particularly those from working-class backgrounds who may be discouraged from entering higher education due to misunderstandings about college or very real experiences of social class discrimination and a nonwelcoming climate.
5. Teach students a more realistic sense of assessing their own abilities and talents; some students overestimate their abilities while others underestimate them.
6. Examine family, parent, and community values and discuss them as part of the process of gaining access for underserved students. They often do not feel part of these systems.
7. Focus on expectations. What do students come to expect of themselves and their role within higher education?
8. Identify gender-related barriers, as well as cultural and racial issues, that impact students' decisions in high school and college.
9. Examine and address the barrier of math anxiety, especially for students of color and women pursuing science, technology, engineering, and math careers.
10. Tear down faculty and staff attitudes and assumptions about students that perpetuate stigma.
11. Discuss civility and respect as important issues for future conversation.
12. Examine high-stakes testing and the social and individual attitudes surrounding it. Ask and solve the following question: Is the activity of passing these tests the equivalent of enhancing students' college readiness?

"Habits of the Mind" and Critical Thinking

1. Define critical thinking as it relates to the development of student curiosity, engagement, and personal investment in their learning. This must be central to both high school and college curricula.
2. Explore why some people resist thinking critically, as resistance embodies societal attitudes and stereotypes that need to be challenged.
3. Include in a definition of critical thinking the activities of problem solving, analysis, synthesis, evaluation, and ways of knowing.
4. Teach students in all courses and subject areas the skills of reflective writing, thinking, and evaluating information. The ability to synthesize main points and add original ideas is a higher-order skill that must be emphasized across high school and college courses.

Science and Math Programs

1. Begin a postsecondary "adopt-a-school" program where college math and science personnel "adopt" a high school and work as partners with the school personnel there

to increase the flow of information and help all members get a clearer picture of the gaps between math and science in the high schools and colleges.
2. Create partnerships also with college, high school, and elementary school teachers to gain a clearer understanding of the placement exam expectations that are frequently made at the 6th grade level.
3. Provide high school mathematics and college teachers with more information about technical careers and their math and science requirements.
4. Focus more on assessment issues and teacher "norming" as it relates to gaining a more shared understanding about what constitutes "A" work and content knowledge for students at various K-16 grade levels.
5. Pay equal attention to affective issues, such as students' self-esteem, in its relation to student achievement and performance in math and science courses.
6. Find additional ways to evaluate and value students' work and efforts in these courses, rather than simply focusing on grades as the only performance outcome.
7. Align curriculum from K-16 in math and science, along with standard assessment measures at the state and federal levels.
8. Address class size issues for underachieving students at the elementary, high school, and college levels.
9. Provide more centrality to cultural contributions of scholars and students in math and science areas when providing content and working on pedagogical strategies.
10. Infuse more hands-on and real-world applications of course content to students' worlds.

Next Steps

As noted in the report from the first meeting, these are highly layered and complex issues that will require future work and discussion across institutions and educational systems. This second meeting was designed to continue and foster energy, interest, and enthusiasm among educators in the Twin Cities who work together on common issues in developmental education. It was also set up to challenge educators to improve and assess their own work in the field by meeting colleagues and sharing information across educational systems. The perspectives shared were sometimes overlapping and often divergent as educators learned they might deal differently with these issues, depending on their contexts and theories about their work. It is critical to continue these collaborative opportunities for having conversation, sharing ideas, meeting potential allies, and challenging each other to enhance student learning and college preparation, as well as to increase and define college readiness. This initiative is one way to stimulate some of the dialogue among members of diverse institutions in the Twin Cities area.

Report on the Conference of the Twin Cities Metropolitan Higher Education Consortium: Building Bridges for Access and Success from High School to College

Dana Britt Lundell, Jeanne L. Higbee, and Susan Hipp

ABSTRACT

The culminating activity for the Twin Cities Metropolitan Higher Education Consortium's Developmental Education Initiative was the regional conference. The theme was "Building Bridges for Access and Success from High School to College: Meeting the Needs of Underserved Students in the Twin Cities." The conference was held on January 15, 2005 and included 115 participants from postsecondary and secondary schools. This report summarizes the events, and a list of conference sessions and presenters will follow this report in the proceedings, along with papers from some of the conference sessions. It also provides a final set of outcomes and recommendations from the developmental education initiatives.

The final phase of the Consortium's initiative concluded with a free, metropolitan-area conference on "Building Bridges from High School to College: Meeting the Needs of Twin Cities Underserved Students." There were 230 registrants for this conference on January 15, 2005, and the turnout was 115 hearty individuals who braved the minus 20-degree temperatures that befell us on that selected date. The conference was the concept of the co-chairs, Dr. Taylor and Dr. Litecky, who facilitated the opening session. The conference was hosted and sponsored by the General College and the Center for Research on Developmental Education and Urban Literacy (CRDEUL).

Featured Panel Presentation

The opening session at the conference was titled "Shaping Trends for Educational Access," which featured Beth Aune, director, Academic Standards and Professional Development, Minnesota Department of Education; Sean Kershaw, president, Minnesota Citizens League; and Carlos Mariani Rosa, state legislator and executive director, Minnesota College Access Network, Minnesota Minority Education Partnership. Dr. David Taylor, dean of General College, University of Minnesota, and Dr. Larry Litecky, president of Century Community and Technical College, provided their perspectives on the Twin Cities underserved student populations and their access in developmental education programs. This session brought together all the participants at the conference and encouraged a dialogue with teachers, administrators, and students, asking a variety of challenging questions about the future of access and student preparation for college.

Concurrent Sessions

The rest of the day included three sets of breakout sessions, totaling 23 presentations. This included a full range of topics, such as exploring college readiness, creating a Minnesota College Access Network, enhancing learning for students with disabilities, and building educational bridges for African American students and nonnative English speakers.

Breakout Sessions

The next section of the proceedings that follows this report contains a list of the conference presenters and session titles. The conference program can be viewed online at http://www.gen.umn.edu/research/crdeul/pdf/program.pdf. There were 23 session presentations at the conference, including secondary educators, postsecondary educators, and community educational organizations committed to providing developmental education for Twin Cities underserved students.

Major Outcomes of the Developmental Education Initiative

The following outcomes were summarized as follows in a final executive summary that was presented to the Consortium's developmental education co-chairs.

1. We met our objectives, hosting two intentional meetings and a regional conference.
2. We met our expectations for attendance at each event, despite the lower turnout on the day of the conference due to extreme weather conditions. Participants for all phases of the initiative together totaled nearly 200. There was additional interest expressed by others who could not attend these events but who wished to stay updated on future projects and publications.
3. We conducted a survey to research faculty and staff perspectives on college readiness.
4. We sought information from members of the Minnesota Association for Developmental Education (MNADE) concerning what developmental education programs and practitioners are doing and can do in the future to promote college readiness.
5. We produced executive summaries of all phases of the initiative and posted them on the Web site of the Center for Research on Developmental Education and Urban Literacy along with resources and the conference program.
6. We conducted a survey of General College students' perceptions and recommendations related to college readiness.
7. We published this proceedings of the conference and the outcomes of the Consortium's Developmental Education Initiative.

Future Recommendations

The following recommendations were forwarded by the planning committee to the co-chairs of the Developmental Education Initiative.

1. If action is desired by the Twin Cities Metropolitan Higher Education Consortium to continue the developmental education regional initiative, the Planning Committee recommends finding an institutionalized way to structure and fund these ongoing conversations and activities. Examples include central offices in the University of Minnesota (UMN) and the Minnesota State Colleges and Universities (MnSCU) systems that include P-16 outreach missions. This kind of activity cannot be further sustained by individual departments or funded solely by one system or staff team, such as the General College or CRDEUL, which already have full workloads and staff committed to other ongoing projects. A coordinator or staff team should be hired and given the direct charge and funding by the Consortium to identify future actions and follow up directly.
2. As K-12 and higher education budgets continue to be tightened at the state and federal levels, it seems difficult to continue this work, making it more important than ever to find a way to take action. Advocacy for sustained funding for these activities across the

Twin Cities needs to be strong and focused. If funding is not secured, it will be difficult to continue these activities in the face of current statewide policies and trends within higher education institutions to become more selective and expensive for higher education's most vulnerable entering student groups.

3. Colleges and universities in the Twin Cities, in partnership with secondary schools and community organizations, need to continue to discuss the concept of college readiness and collaborate on serving underserved students. The concept of "developmental education" should not be stigmatized and further misunderstood, but it should be embraced as the ongoing solution and source of expertise for successfully serving the state's and Twin Cities' most diverse range of students.
4. Action projects should be funded for the future. Suggestions for outreach projects included development of a preadmission video project designed to reach underserved students from Twin Cities high schools who are entering the area colleges. This video would address college readiness and preparation issues from a student-centered perspective, which would complement other admissions-based outreach activities of the UMN. Particularly, entering students such as those from Somali immigrant and refugee populations might more readily identify with information designed to address the challenges and issues they face in college preparation. Action projects such as this one and more that were suggested in conference sessions and on participant feedback forms, as well as by MNADE members, such as ongoing conferences and think-tank groups, should be funded and staffed centrally within either the UMN or MnSCU system in collaboration with the work of this committee. Additional ideas are presented later within these proceedings in "Enhancing College Readiness: Ideas From Developmental Educators."

Conclusion

This initiative met a growing need for secondary and postsecondary educators to connect and collaborate on common issues. Access, retention, transfer, and graduation are all key parts of a successful educational experience for students moving from K-16 and beyond to become fully prepared citizens for society and the workforce. The ability for professionals to share teaching, theory, and research ideas together in a sustained way is key to continuing our work across the metropolitan area. The developmental education initiative of the Metropolitan Higher Education Consortium is one part of a larger effort to connect the educational systems that all serve common interests, goals, and student populations. The work of developmental education and the outcomes of this initiative must be honored, destigmatized, and sustained in a permanent way

PART 2: DEVELOPMENTAL EDUCATION INITIATIVE RESEARCH OUTCOMES

The Twin Cities Metropolitan Higher Education Consortium Transition From High School to College Survey

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ABSTRACT

Although Minnesota public schools historically have been considered among the finest in the nation, many students complete college preparatory curricula and graduate from high school only to be placed in postsecondary developmental education programs designed for underprepared learners. This article reports the results of a survey regarding college readiness issues administered to participants in the May 2004 invited meeting of the Twin Cities Metropolitan Higher Education Consortium Developmental Education Initiative.

Although Minnesota public schools historically have been considered among the finest in the nation, many students complete college preparatory curricula and graduate from high school only to be placed in postsecondary developmental education programs designed for underprepared learners. As illustrated by the Hennepin County African American Men Project study (Taylor, Schelske, Hatfield, & Lundell, 2002), the Minnesota Minority Education Partnership's (MMEP) report, *State of Students of Color: Building Alliances for Student Success* (2004), the Children's Defense Fund—Minnesota report (2002), and recent research related to Native American students (Puncochar & McLean, 2002), the need for increased high school to college articulation is particularly pronounced for populations traditionally underserved by institutions of higher education in the State of Minnesota and particularly in the Twin Cities area. Although on occasion individual institutions have undertaken projects such as the *Century College Project on College Readiness* coordinated by Susan Hipp (2003), up until now there has been no unified effort on the part of Minnesota's postsecondary educational systems to address this problem. Too often postsecondary administrators, faculty, and staff communicate to secondary education collaborators in a "top-down" fashion what they might do differently to prepare students for college. Over the past year activities undertaken as part of the Twin Cities Metropolitan Higher Education Consortium's Developmental Education Initiative have endeavored to create a true collaboration among educational stakeholders.

Right now the state of Minnesota has the dismal ranking of 49th of the 50 states in ratio of high school students to counselors, currently at approximately 800 students per counselor. At more affluent high schools, the ratio may be somewhat lower (e.g., suburban schools with ratios of 600 to 1), although still appalling, while at inner-city schools the ratio can be considerably higher. Thus, high school counselors do not have time for extensive one-on-one meetings with 9th and 10th grade students to discuss the process of planning for

college. Their attention is most likely to be given to upperclassmen and to students who are assertive in seeking them out, who will often be those students whose parents are most knowledgeable about higher education already. Students who are the first in their families to plan to pursue a college education, children of recent immigrants, students whose parents do not speak English fluently, and students who must work long hours after the school day is over are among those who are least likely to seek and receive information from their high school counselors early in the educational planning process. As a result, students from populations that are already underserved by Minnesota's postsecondary educational institutions are the least likely to gain the insights they need early on in their high school careers to prepare themselves successfully for college admission and ultimately graduation. At this rate the current racial, ethnic, and socioeconomic academic achievement gap in Minnesota is only going to widen.

A number of research projects have already been conducted nationally, and on a smaller scale, locally, to explore factors related to college readiness. For example, in a study conducted at another Research I institution (Higbee, Thomas, Hayes, Glauser, & Hynd, 1998), faculty reported that the primary areas in which first-year students needed further development were critical thinking and problem solving. In a recent study (Light, 2001, 2004) conducted by a consortium of institutions examining first-year college students' perceptions, students indicated the importance of improving their writing skills. Once factors that enhance and impede academic achievement have been identified through both a review of the national literature and local research like the project reported in this article, the next step will be to determine how best to prepare prospective students to understand the challenges of the increasing expectations of higher education.

Method

A survey regarding college readiness issues was distributed at the May 22 invited meeting sponsored by the Twin Cities Metropolitan Higher Education Consortium Developmental Education Initiative. Of the 29 people who responded to the survey, out of 47 in attendance at the meeting, 22 worked in postsecondary educational institutions, 3 in high schools, 2 in the central administrative offices of public school systems, and 2 did not provide demographic information. The 62% response rate also does not reflect the fact that of the 47 participants, 4 were directly involved in the development of this survey, and others were integrally involved in the planning of the meeting or in the oversight of the initiative, and therefore did not respond.

Results

Responses to each of the 11 items on the questionnaire are summarized below.

The first item asked, "Do you equate high school graduation with college readiness? Why or why not? If not, how do you differentiate between meeting high school graduation standards and being prepared to be successful in college?" Twenty-five respondents (86%) did not equate high school graduation with college readiness. Several commented that high school graduation was never intended to be the equivalent of college preparation, that it is not assumed that all high school graduates will go to college, and that the intent of the high school curriculum used to be to prepare students generally for adulthood, whether on the farm, in the workplace, or when pursuing postsecondary education. Others noted that

even high school programs that are designed to be college preparatory do not really prepare students adequately for the rigor of college courses.

Three respondents answered yes, that high school graduation could be equated with college readiness, but all three qualified their answers and provided specific situational contexts. Another respondent indicated that high school could academically prepare students for college, but that does not mean that the students have the motivation or other attitudes vital to college success.

In differentiating between high school graduation standards and college preparation, three respondents specifically mentioned "seat time." Attendance is rewarded in high school, but not in college. Others noted that too many high school students do not take adequate course work in mathematics, science, or foreign language, and do relatively little reading and writing. Another concern was that Minnesota tests of basic skills measure proficiency at the eighth-grade level. The most frequently occurring comment, however, was that there needs to be a better "alignment" between expectations in high school and college and that high school graduation standards need to be more closely related to college entrance requirements.

Skills, Aptitudes, and Attitudes

The second item on the questionnaire asked, "What additional skills, aptitudes, and/or attitudes do college students need that they may not have acquired despite meeting high school graduation requirements?" The two most commonly occurring responses to this item, mentioned by seven respondents each, were writing skills and the ability to read critically. Five respondents discussed self-motivation and self-direction, while three wrote about self-discipline and self-monitoring skills, and another mentioned self-assessment. Four respondents addressed critical thinking skills, and another three specifically named "habits of the mind," based upon one of the advance readings for the meeting, *Understanding University Success* (Conley, 2003). Three respondents wrote about problem-solving skills, which can be interpreted widely; four specifically mentioned math competence. Three respondents discussed understanding the "culture of college." Three others addressed the need for goal setting.

The following topics were each discussed by two of the respondents: (a) curiosity, (b) the need to value learning, (c) an understanding of the importance of hard work, (d) perseverance, (e) the ability to seek out resources, (f) time-management skills, (g) good study habits, (h) test-taking skills, and (i) an understanding of the importance of class attendance. Other topics mentioned by individual respondents included the abilities to seek help when needed, to work in groups, and to engage in focused, concentrated study. Single respondents also addressed the need for research skills, vocabulary development, and knowledge of the rules of grammar.

Strategies to Enhance Access for Underserved Populations

The next item asked, "What specific strategies can be used to enhance the transition of underserved student populations (e.g., first-generation college students, students of color, students with disabilities, students who are not native speakers of English) from high school to college?" In retrospect, this question was not well constructed and could be interpreted in multiple ways. Some respondents wrote about strategies to be implemented in high schools, while others addressed college-level approaches. Some focused on what students can do, and others on what institutions can do.

In terms of institutional strategies that might be used at both the secondary and

postsecondary levels, nine respondents discussed the need to provide an orientation to college expectations and to assist students in understanding the differences between high school and college. One noted that faculty professional development is needed to "train teachers to make expectations explicit." Seven respondents provided ideas regarding mentoring programs. Three suggested bringing groups of high school students to college campuses to get a glimpse of what college life is like, and another three proposed partnerships between individual high school and college students, while two others mentioned partnerships between secondary and postsecondary institutions. One wrote,

> First, accurate and realistic information is important. Most college tours and marketing info make the assumption that incoming students know how college "works." They don't. Address how many hours students will be in class (compared to high school) and how much study time is necessary.

Four of the respondents addressed providing information about financial aid programs. One wrote about the need to assist both students and parents in understanding available resources, and another mentioned making better use of the media.

Some of the responses related to either the secondary or postsecondary levels focused more on students. One respondent wrote, "teach students how to learn from failure as well as success or progress." Two addressed the idea of rewarding students' positive work ethic: "Reward work ethic and growth rather than just test scores. Too many underserved populations feel that higher education is some product of 'luck,' rather than a well designed plan and execution." Another summarized "necessary skills," suggesting, "imbed personal planning (the responsibility), self-assessment and the development of personal effectiveness skills in all transitional programs and curricula, demonstrate relevance to goals and interests." Finally, one respondent discussed the importance of the recognition of students' individual cultural identities.

The most commonly mentioned institutional strategy for implementation at the high school level was working with families, suggested by six respondents. Strategies that were each mentioned by one respondent included: (a) raising graduation standards, (b) bringing postsecondary education option (PSEO) classes into the high schools, (c) providing bilingual programs that include English as a Second Language (ESL) preparation for college-level work, (d) expanding counseling opportunities (e.g., by reducing the student-to-counselor ratio), (e) offering reading courses, and (f) embedding more writing in the curriculum. One respondent wrote, "Make available courses that include writing and direct instruction in some of the academic approaches to writing (analysis rather than summary), know the difference ourselves." Although strategies for students were also addressed within the responses to this item, they will be discussed further later.

Proposed institutional strategies for colleges and universities focused on means for providing "academic, emotional, and social supports," including (a) various forms of learning communities, cohorts, and support networks (n=5); (b) summer bridge programs (n=4); (c) intrusive advising (n=3); (d) a diverse faculty and staff (n=3); (e) multicultural centers (n=1); (f) first-year experience courses (n=1); (g) learning centers (n=1); (h) tutoring programs (n=1); (i) Supplemental Instructions (n=1); (j) family support programs (n=1); (k) "financial aid days" (n=1); (l) opportunities for career exploration (n=1); and (m) role models within the classroom (n=1). One educator wrote, "Teach students how to recognize the relationship between the institution and the individual." Another addressed the importance for students to have the opportunity to interact with faculty outside the traditional

classroom setting. One discussed the need for a "sense of community" or "belonging."

Advice to students at the college level also included taking advantage of opportunities to get to know faculty outside of class, engaging in career exploration activities, and enrolling in reading and study skills courses. Respondents mentioned the need for students to develop communication and interpersonal skills and to practice patience.

Advice for High School Sophomores and Their Parents

Next participants were asked, "What advice would you give to high school *sophomores* to help prepare them for college?" The most common piece of advice for high school sophomores, offered by 13 respondents, was to take rigorous courses. One wrote, "Take the most challenging curriculum you can (meaning not necessarily the hardest courses available, but the hardest ones you can do and still get decent grades)." Five respondents specifically addressed the need to take 4 years of high school mathematics and science and to "challenge yourself mathematically." Another five respondents urged students to take Advanced Placement (AP) courses. Four suggested taking writing courses and developing different types of writing skills. Three mentioned pursuing the college preparatory "track," while another five advised, "start preparing for college now." One wrote, "Don't believe college is independent of high school," and another proposed, "Think of high school as the 'apprenticeship' before college." Four respondents urged sophomores to develop academic interests. One queried, "What do you love?" Another advised, "Get passionate about an area of study."

One respondent wrote, "Learn to distill important info from lectures. Don't equate reading the textbook with studying the textbook." Other specific strategies for high school sophomores included: (a) spend a minimum of 10 to 12 hours on homework per week; (b) develop study skills; (c) emphasize task completion and the ability to focus; (d) go to school, attend high school classes, "show up"; (e) develop technology skills and learn how to use technological resources; (f) develop research skills; (g) use the library; (h) learn how to use graphic organizers; (i) talk to juniors and seniors; (j) attend bridge programs; (k) talk to college students; (l) "visit a postsecondary institution, see how classes are set up and how the environment differs from high school"; and (m) "learn more about what to expect from the college experience."

More personal advice for high school sophomores included the following:

"Be aware of yourself as a learner."

"Get involved in extracurricular activities of some kind."

"Participate in all aspects of high school, curricular and co-curricular activities, and be involved in the community."

"Do not have a child."

"Be culturally responsive."

"Choose friends who lift you."

"ASK FOR HELP."

One respondent warned students not to get "tracked." Another wrote, "Don't be misled by average GPAs of 3.3." One suggested that sophomores should "push for changes in the high school curriculum."

After providing advice for high school sophomores, participants were asked, "What advice would you give to the *parents* of high school *sophomores*?" Survey respondents provided many ideas for advice to give to the parents of high school sophomores, including the need to be involved in their children's education. Representative quotations included the following:

"Be involved in planning their schedule. Know the counselor. Know the requirements for graduation and opportunities for enriched learning. Arrange tutoring and/or mentoring if necessary."
"Meet each teacher. Meet your child's friends and friends' parents. Instill belief that hard work is the only way."
"Get involved in parent organizations at schools and community. Talk to college students and their parents about their experience."
"Help your children understand the importance of taking as many rigorous high school courses as possible in order to keep their future options open. Recognize that what is needed to be prepared for your future is not what your children will need. Hard work is a more important factor in success than "innate abilities" (however they are defined)."
"Set high expectations. Most students have GPAs greater than 3. So don't put too much faith in a GPA of 3.1; don't let children be victims of low expectations. Graduating from high school doesn't mean that students are ready for college."
"Require homework discussions every day. Even if teachers don't assign work, parents should. Come to conferences/athletic events/plays, etc. Show up."
"Sit down and communicate, discuss and help your child to focus, set priorities. Monitor progress and provide support."
"Watch scheduling, don't over commit."
"Don't let your child work a part-time job during the school year (maybe only on weekends)."
"Limit T.V. Set up a quiet study area. Reward academic achievement."
"Engage in meaningful dialogue."
"Reward responsible behavior. Dole out freedom judiciously."
"Visit colleges with your child, starting sophomore year. Learn more about admission and financial aid."

Advice for High School Seniors and Their Parents

Although some educators believe that by the senior year of high school there is little students can do to prepare for college if they have not been actively pursuing a college preparatory curriculum all along, we considered it important to follow up our questions regarding advice for high school sophomores and their parents with similar questions related to high school seniors. The advice for high school seniors was not as extensive as that for sophomores. Perhaps this was because of the length of the questionnaire, but another explanation might be found in the words of one respondent: "It's too late–your critical trajectory has been set." Respondents (n=6) continued to advise students to take rigorous classes, particularly in math and science (n=6), and another six respondents urged seniors to get good grades rather than "slacking off" or becoming infected with "senioritis." One respondent reminded seniors to "make sure you are on track for graduation." Seven respondents suggested that seniors go on campus visits. Other important advice included applying early for admission and financial aid and scholarships, in addition to being aware of the costs of higher education and researching how to pay for it. One respondent pointed out, "No one will look out for you or remind you of deadlines." Another underscored that students must "understand the need for personal responsibility." Other advice included reading books from recommended college-level reading lists, staying involved in extracurricular activities, participating in bridge programs, learning

more about college expectations, and attending freshman orientation over the summer. The following quotes represent additional words of wisdom for high school seniors:

"Find one's 'bliss' in life and work."

"Volunteer in the community."

"Don't work too hard—work smart. Use energy to be more productive."

"Have your writing and reading comprehension skills evaluated at beginning of senior year. If not at a high level, find tutoring sessions to improve these skills."

"Look for 'fit' in your college. Know yourself. Do you need to work for a while? Are you ready for college?"

"College is going to require much more work than high school. College professors give Cs, Ds, and Fs; everyone doesn't make high grades. Lots of students flunk out."

"Become a savvy and informed consumer of information. Get multiple perspectives. Talk to friends, especially those who have made the transition."

Much of the advice for parents mirrored the advice for seniors. Other helpful hints and bits of wisdom included the following:

"Set high standards."

"College is not high school on steroids. Cannot use the same methods to find success. ½ effort and good behavior will get you sent home by Easter. Seek help by every faculty person. See an advisor."

"Limit work expectations—no more than 20 hrs./wk."

"Seek interest inventories to help guide your senior. Give him/her lots of feedback as to what you perceive are his/her aptitudes."

"Have a reality conversation with your child's counselor to get perspective on your child's chance for success in higher ed."

"Give your child time to make a decision. Maybe not all seniors are ready to go to college immediately. Visit colleges, be involved and advocate."

"Ask questions about the support institutions give your student."

"Help your student find bridge programs and community members who have already made the transition. Demand from the institution what your student needs."

"There are resources for you at every institution that can help you understand the mission of a higher ed institution and how you can help your child be successful there."

"Be sure your son/daughter knows that he/she can 'have fun' in their senior year without losing opportunities to learn that will help them be prepared for college. Support your child's aspirations and let him/her know you believe she/he can succeed."

"Read a nonfiction book each month with your kid."

Key Information and Skills

Participants were asked, "What is the one piece of information that you think it is most important for an incoming college student to know? Why?" Representative responses to this item included:

"Understand how college is different from high school."

"Time management, academic expectations, social climate situations are all very difficult in college from high school."

"You must have a vision/purpose why you are going to college. You cannot/will not

survive if your idea is to get a degree to get a job."

"Going to college is very hard work. What you put into the experience is what you will take from it."

"Work hard and attend class. Visit with professors. Attend help sessions. College is an opportunity and not a guaranteed diploma."

"Make each class you take worthwhile and don't expect to be entertained."

"Try all assignments. Don't expect to get it right the first time."

"The institution may not be as welcoming as it appears to be, so connect with those resources that can help you with the transition."

"Perseverance in getting what you need from the resources available is extremely important."

"Seek help as needed and don't wait."

"The point of an education is to grow, to acquire attitude and values as well as content knowledge. It's not just about meeting some students or just getting that degree and then stopping."

"You can do it, if you believe in yourself and focus. Because in the final hour, it's all about your personal desire."

"Stay chemical free. Don't ruin your first college experience."

The item about the one most important piece of information was followed by one that asked, "What is the one skill that you think is the most critical to college success? Why?" There was a wide array of responses to this item; no skill was mentioned by more than five respondents. Five discussed self-regulating behavior, self-discipline, and being a self-directed and autonomous learner, one who understands self-responsibility. Two wrote specifically about having a work ethic. Another five respondents addressed the need for tenacity and determination and to develop the ability to learn from one's mistakes and occasionally to "accept defeat." Three mentioned the need to be a skilled reader, while at least two respondents identified skills in each of the following areas: writing, mathematics, critical thinking, time management, and communication. Skill areas that were mentioned only once included the "ability to study"; computer literacy; "building a community of peers, friends, and advocates"; and seeking resources and asking for help. One respondent suggested that students need to ask themselves, "How do I learn?" Another focused on attitude rather than skill, noting the importance of believing that success in college is possible.

High School Best Practices

In response to the question, "What best practices in high schools (e.g., in teaching, curriculum, guidance) do you think are the most helpful in preparing students for college?" Best practices identified by respondents included: high academic standards and challenging college preparatory curricula; programs like Educational Talent Search, Upward Bound (both are federally-funded TRIO programs), and GEAR-UP; AP classes; tutorial services; ESL programs; sufficiently funded and staffed high school counseling offices; mentoring programs; information technology centers; learning communities; the use of diverse teaching methods; programs that foster strong literacy, higher-order thinking skills, writing, research, and interpersonal skills across disciplines; and programs that model the college experience. Respondents also addressed students' work ethic and the need to fail students when they do poorly and have not mastered skills. One suggested, "teaching students to become more independent, guiding students toward taking responsibility for their own learning; providing natural consequences for students' choices."

Reforming Standards

Finally, we asked, "If you were put in charge of reforming high school graduation standards for the State of Minnesota, what is the first recommendation that you would make?" This item yielded some interesting responses. Some were very general, indicating the importance of setting higher expectations, offering more difficult and challenging courses, or changing assessment methods and their uses (e.g., "Tests as resources for the institution, not the student"). One respondent discussed the need to eliminate grade inflation, stating, "It gives students a false sense (in many classes) of their true ability at that point in their educational career." Three respondents addressed the make-up of a committee to determine standards, including suggestions to invite involvement from high school and college faculty and college students "and leave the legislature out of it." Two respondents proposed that standards "mirror the Profile of Learning." One wrote, "Focus on skills in a manner more like the Profile of Learning than current MN Academic Standards—in the sense of less emphasis on seat time and more connections to being able to demonstrate knowledge, etc." Five respondents discussed the need for high school standards and basic skills tests to be more closely aligned with college readiness. One respondent specifically mentioned offering high school reading courses, while two proposed the inclusion of thinking skills in the standards. Two respondents addressed the needs of "special populations" and second language learners in particular, suggesting the formulation of standards that accommodated these students. One respondent suggested, "All students should have the opportunity to go to high-standard pre-school at age 3." Finally, one respondent urged, "Give schools more resources to help them improve curriculum."

Implications

Potential public policy implications for this research are numerous. The State of Minnesota has recently rejected one set of high school graduation standards and is seeking to replace it with another. The first meeting of the Twin Cities Metropolitan Higher Education Consortium's Developmental Education Initiative focused its small group discussions on academic content-area issues stemming from the American Association of Universities (AAU) and The Pew Charitable Trust's *Understanding University Success* (Conley, 2003) because it is important to recognize that research has been conducted on the national level to explore appropriate standards. A more complicated question, and a contributing factor in the failure of many states' secondary school policies, is how to implement standards in a meaningful way. Policy makers and the public at large often equate high school graduation with college preparation, even if educators do not. At the present time in the state of Minnesota, meeting high school graduation standards is not synonymous with being ready for college, whether at a 2-year or 4-year institution. It is imperative that educators and public policy makers understand this distinction and communicate it to prospective college students and their parents. It is also critical that those officials involved in establishing high school graduation standards reexamine whether these benchmarks should also ensure college readiness. Certainly the Citizens League report (Erickson et al., 2004) indicates that a highly educated populace is essential for the future growth of the State of Minnesota. Has the time come to reconsider what high school graduation really means? Finally, it is absolutely crucial that steps be taken to create greater access to postsecondary education for those populations that traditionally have been underrepresented in academia. Particularly

for prospective first-generation college students, it is necessary to educate both parents and students about collegiate policies, procedures, and expectations.

Although this research project has barely addressed the tip of the iceberg in overcoming barriers to postsecondary access and success, it is an important first step. In addition, it is a step on which high school and college educators should be able to find some agreement, because it does not lay blame at the feet of either group. Instead, it focuses on positive action that can be taken to help prospective college students understand how best to prepare themselves for the challenges ahead.

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College Readiness: Thoughts and Advice From General College Students

Jeanne L. Higbee
University of Minnesota

ABSTRACT

This article provides a brief summary of the responses of University of Minnesota General College students to questions regarding college readiness and what advice they would give to high school students to assist them in preparing for college. A more extensive report on the findings of this research is forthcoming in the next Center for Research on Developmental Education and Urban Literacy monograph, Student Standpoints About Access Programs in Higher Education.

An open-ended questionnaire was administered online to 68 first-semester University of Minnesota General College (GC) students enrolled in GC 1086: "The First-Year Experience" during November, 2004. Although students were required to complete this assignment to earn course points, participation in this research study was voluntary. Forty-one students (65%) signed consent forms allowing us to report their responses, which were submitted confidentially and tabulated anonymously.

The Relationship Between High School Graduation and College Readiness

The first item on the survey was, "Do you think that graduating from high school means that you are ready for college?" Four students responded yes, or at least said that this should be the case. Seventeen students were emphatic in indicating that high school does not provide adequate preparation for college, many giving as the primary reason differences between high school and the college experience. Three of the students specifically answered "yes and no" and addressed aspects of high school that assisted college preparation and other aspects that could be improved. Ten students in some way conveyed that whether or not graduating from high school prepared one for college depended upon the individual student and the choices the student makes. Several wrote about motivation as well as skill development. Four students wrote about the difference between being academically prepared for college and being mature enough to handle the independence and responsibility of being a college student, especially if living away from home for the first time. Two respondents thought that it depended upon the high school one attended. Finally, one student wrote that taking a year off between high school and college made all the difference and contributed to valuing the college experience.

Advice for High School Freshmen and Sophomores

Next GC 1086 students were asked, "What advice would you give to high school freshmen and sophomores to help prepare them for college?" Fourteen respondents advised high school freshmen and sophomores to get good grades and begin building a high grade point average (GPA) early. Thirteen wrote about enrolling in difficult and challenging courses and taking advantage of opportunities to take honors, writing-intensive, and advanced placement (AP) courses as early as possible. Two specifically mentioned taking as much math and science as possible. Ten students urged freshmen and sophomores to work hard and develop good study habits and said that a strong work ethic is important. Eight respondents suggested researching

colleges early. Seven discussed the importance of getting involved in extracurricular activities such as clubs and sports. Two specifically mentioned engaging in volunteer work. Six students wrote about "staying on top of" homework and articulated the importance of doing high school homework assignments in preparation for college. Four advised enjoying free time. Three urged taking high school classes seriously, and another three wrote about planning ahead. Three others discussed the importance of exploring career options in preparation for choosing a major, but one wrote not to get worried "if you don't know yet what you want to do." Two addressed attendance issues: "Don't ditch classes." Two college freshmen encouraged preparing for the SAT or ACT and taking admissions tests early. Two students wrote both about saving money and exploring financial aid options early. One student said, "Read, read, read!" Another urged using a planner. One wrote that high school "gym is irrelevant." A student proposed "be prepared for change." One student suggested, "Take classes that inspire you!"

Advice for High School Seniors

The third question on the survey of GC 1086 students was, "What advice would you give to high school seniors to better prepare them for college?" Much of the guidance provided for high school seniors mirrored the advice given to freshmen and sophomores. However, in this set of responses there was a greater emphasis on researching colleges, taking tours, learning application procedures, keeping abreast of deadlines, applying early, and pursuing opportunities for financial aid. Other advice mentioned by several respondents that was specific to the senior year included learn "when to, and not to party," "don't slack off, " "enjoy your last year at home," and "try new things." The following quotes from two of the college freshmen are representative. One reflected,

> Well, everybody knows that your senior year is basically "slack time." All seniors take courses that are easy As and don't really require much effort. Probably half their schedule consists of gym activities, and the other half is probably an early release schedule. I know that's how my senior year was. Yeah it was nice at the time, but when college came around I was totally behind in subjects and couldn't really recall anything I had learned because it had been so long since I actually had a hard course. So I guess what I am trying to say is that you should take some difficult courses throughout your senior year as well, to keep your brain thinking and going for college. Trust me it will be a lot easier to be able to just keep going then having to go back and try to relearn things in college.

Another advised,

> My advice for high school seniors is to be willing to try new things. If you don't try new things you will have a hard time succeeding and adjusting to college. You also have to realize that even if you were the "coolest" person in high school, no one is going to care in college. You should also have a good study habit down by the time you are a senior in high school, and you can add to that when you get to college. Also, learn how to balance your social life with your academic life and list your priorities accordingly.

What Every New College Student Should Know

Finally, GC 1086 students responded to the question, "What is the one piece of information that you think it is most important for an incoming college student to know? Why?" Fourteen specifically mentioned time management: "Good time management is the key to success in college." Other words of wisdom included:

"College is supposed to be the best time of your life, you make it what you want it to be."
"Go to class."
"Be prepared to be a little lonely. Do not think that college is all about parties . . ."
"Get out there and meet new people."
"Know where and how to get help."
"Do not be afraid to ask any questions about anything—everyone is in the same boat."
"You need to read a ton."
"To be successful in college you do not have to be the smartest. You just have to be willing to do what needs to be done in order to succeed."

Discussion

The parallels between the suggestions college freshmen would provide for high school students and what we as educators—or as parents, for that matter—would say are striking. Given that high school students are not always receptive to advice from authority figures, whether parents, teachers, or other adults, we would be wise to let college freshmen do this work for us. As mentioned elsewhere in these proceedings, there are any number of ways this might be accomplished. It is time for postsecondary educational institutions to enlist the assistance of their students in advocating high school behaviors that will enhance college readiness.

Enhancing College Readiness: Ideas From Developmental Educators

Jeanne L. Higbee and Kwabena Siaka
University of Minnesota

ABSTRACT

This article reports the responses of developmental educators attending the 2004 meeting of the Minnesota Association for Developmental Education (MNADE) to survey items related to how we can assist in enhancing college readiness. This group of developmental educators was very interested in collaborating with secondary educators and provided many practical ideas for doing so.

One of our recurring concerns in hosting the series of meetings for the Twin Cities Metropolitan Higher Education Consortium Developmental Education Initiative was that we did not want the only outcome to be a series of meetings. As we worked on defining the issues surrounding college readiness, particularly for traditionally underserved student populations, we also wanted to begin identifying solutions. We especially wanted to explore what developmental educators can do to assist in reducing and some day eliminating the academic achievement gap. We asked participants in the October 2004 conference of the Minnesota Association for Developmental Education (MNADE) to respond to three items on an open-ended questionnaire and return the form to the conference registration table. This article summarizes the ideas provided by MNADE members.

What Can Developmental Programs Do?

The first question we asked was, "What can postsecondary developmental education *programs* do to educate high school students about the differences between high school and college and other factors to enhance college readiness?" Several respondents wrote about having developmental education faculty members and college students who are currently or have in the past taken developmental education courses make presentations in area high schools. One respondent wrote, "They can visit high schools more and try to talk with more teachers—not just counselors—so the teachers can pass on the messages." Another suggested,

> Send teams of developmental education instructors and college students to area high schools for panel presentations on the differences [between high school and college] starting at the sophomore level, then again junior year and again senior year. Provide concrete information about the sorts of decisions (classes to take, study habits, etc.) high school kids should be making at each of those levels. Invite parents—make it fun.

In regard to the topics that developmental educators visiting the high schools might address, one MNADE member wrote,

> Go into the high schools—explain that rarely is there extra credit, excused absences, and other kinds of hand holding in college. Students in high school need to understand they must purchase textbooks, come to class the first week, and be on time!

Another suggested providing examples of college-level syllabi, readings, and writing assignments to illustrate the differences in expectations between high school and college. One respondent thought that developmental educators should share more aggregate data with high school counselors, teachers, parents, and students about how students and, if possible, specifically students from that high school, "fare" once they get to college. For example, developmental educators might provide data on differences in collegiate

mathematics placements depending upon how many years of math students took in high school or the highest level of math taken or grades earned. Students might be more motivated to take mathematics courses through the senior year of high school if they hear that otherwise in college they are more likely to have to pay for mathematics courses that do not count toward graduation.

One developmental educator noted, "Have current college students articulate the differences they perceive (high school students are reluctant to listen to serious adult advice on a topic like this I suspect)." In a separate study (Higbee, 2005), we determined that college students participating in a developmental education program would, in fact, give advice that is very similar to what we ourselves might say to high school sophomores and seniors to help them better prepare for college. Thus, the notion of having college students speak for us, whether in classes or at special programs aimed at both high school students and their parents, seems like a sound idea. Creating a video of college students providing advice for their high school counterparts is also an idea that merits further attention.

When we presented the results of this survey at the January 2005 conference, "Building Bridges for Access and Success From High School to College: Meeting the Needs of Twin Cities Underserved Students," one member of the audience suggested creating a fund to provide honoraria for college student presenters. Her idea was during college break periods to have students return to their own high schools, where they could have the greatest impact and share their experiences. Upon their return to campus, these college students could then submit a voucher signed by the high school principal or counselor in order to receive remuneration. Another idea that came out of the discussion at that session was to create teams of student presenters, made up of student leaders, and provide a stipend for students who serve in this capacity, sharing their experiences with high school students both by visiting the high schools and by hosting students visiting the campus.

Several respondents expanded on the idea of bringing high school students to college campuses, and some suggested that this activity should start in middle rather than high school. One wrote, "Give high school (maybe younger) students plenty of opportunities to experience, see and 'do' college while in high school." Meanwhile, other respondents focused on how postsecondary institutions can do more to "bring college to them" (i.e., high school students). Ideas included (a) offering Postsecondary Education Option (PSEO) courses in the high schools instead of having students come to one of our campuses, (b) creating more programs like the University of Minnesota College of Continuing Education's "College in the Schools," and (c) providing "classes in the schools on college readiness" that might include more reading and writing.

Other ideas for involvement included developing community partnerships, such as collaborations with various after-school programs targeted at high school students, or using "e-mail, discussion boards, or chat rooms to create connections between high school students and college students (maybe even mentorships)." Finally, one respondent encouraged further dissemination at the high school level of a pamphlet MNADE has produced to address college readiness issues.

What Can Individual Developmental Educators Do?

Our second question asked, "How can *individual* developmental educators collaborate with high schools and other constituencies to enhance college readiness?" In asking this question we wanted to indicate that there is a need for individuals, not just programs, to take action. One respondent offered

many different ideas, including: (a) teach a high school course; (b) partner with a high school teacher to offer a course; and (c) offer on-campus (i.e., at the college or university) college readiness courses like the Upward Bound or PSEO models. The same respondent suggested

> connecting with guidance counselors and admissions professionals to encourage guided and critical visits and information sessions about community colleges and universities. What are the academic expectations at these institutions? What is developmental education, and how can it aid high school students? These questions should be explored as early as possible in high school to help "bridge" an academic track.

Several respondents suggested forming relationships with local high school teachers in the same discipline to compare assignments and expectations and to provide sample syllabi, assignments, readings, and grading rubrics to let high school students "see them, use them, and practice with them." Although face-to-face relationships—such as those that might be made possible via reciprocal site visits—would be preferable, one developmental educator also suggested that much of this could also be accomplished via e-mail.

Several of the developmental educators responded about creating professional development opportunities. One wrote, "Push for high schools to offer staff development programs for high school content teachers to provide textbook reading instruction, etc. in the content classes." More specifically, one proposed, "Help area high schools develop specific reading classes for students, not based only on reading literature." Another noted, "Pamela Flash (University of Minnesota College of Liberal Arts Center for Writing) has a PowerPoint presentation on how college writing differs from high school writing." Others suggested two-way professional development activities that invited collaborations between secondary and postsecondary educators: "Involve both in collaborative projects and in joint sessions at conferences." Another reminded us that "Time is always so difficult! The teaching loads of both groups are going to be a challenge. Could pre-semester workshops include some opportunities to 'mix'?"

One idea with many potential means of implementation was related to service learning: "I think the field of service learning offers some possibilities—how about college students mentoring high school students as part of a service learning component in a course?" Participants in the "Building Bridges for Access and Success From High School to College" conference were able to brainstorm many creative ideas for how high school and college educators and students could be involved in projects to enhance college readiness, pointing out, for example, the body of research that indicates that students who serve as tutors also enhance their own learning.

We liked one response in particular because this developmental educator spoke to what she or he personally could do:

> I think establishing partnerships with high schools and developmental educators is a start. I would be happy to visit a high school to talk with students, and I would be happy to have high school students sit in on my classes. I could also have my developmental education students use e-mail to chat with high school students.

Current Projects

For our third question we asked, "Are you currently involved in any projects to assist high school students in preparing for college?" Unfortunately, only a handful of respondents answered, "yes." Three of these were in some way involved in the General College's Commanding English program (Christensen, Fitzpatrick, Murie, & Zhang, 2005; Murie & Thomson, 2001), while another works in outreach partnerships through

PSEO. One volunteers as a tutor at a community center after school program that "has a goal of mentoring students for college." One MNADE member wrote, "I bring 'college connection' U of M students to visit high school classes to talk about college expectations and the admission process (approximately 12 visits a year)." Another member served on the Century College Readiness Committee for 2 years. Finally, one wrote about activities but also articulated a common source of frustration, which was a lack of time given other responsibilities: "I attended the intentional meetings [i.e., the Developmental Education Initiative meetings held in January and May, 2004] last year, and I communicate intermittently with some of my institution's liaison programs. I'd like to do more, but it would be on top of all my expected duties."

Discussion

What we concluded from these responses from MNADE members is that there are many ways in which both individual developmental educators and developmental education programs can work in collaboration with high schools to enhance college readiness. Developmental educators already have numerous creative ideas for programs and projects. However, unless this type of activity is made an explicit goal at both the secondary and postsecondary levels, and release time or other forms of remuneration are provided, little will be done. So now the question becomes, How important is this work? Is it important enough to allocate resources to make it happen? Are we really committed to improving college readiness and reducing both the proportions and actual numbers of students required to take developmental courses once admitted to college, and if so, are we willing to fund programs to assist in these efforts?

Two of the ideas that would not cost an excessive amount but which could have far-reaching results are the creation of a video of college students providing advice for high school students and their parents, and an alumni fund for remunerating college students who present programs or speak to classes in their own high schools during college breaks. One idea that would cost time, but not much money, is the development of online partnerships between high school and college educators in the same disciplines. If each institution, both secondary and postsecondary, assigned just one faculty member release time or some form of overload pay to coordinate these e-mail partnerships and compile reports on follow-through and evaluate the impact of these efforts, then the task of communicating with faculty partners would not require much extra time or effort on the part of individual faculty members. Through these partnerships other suggestions, like the sharing of syllabi, assignments, and readings, could easily be accomplished.

Given the low cost of many of these ideas, it certainly seems like they would be worth trying, especially when compared to the costs of providing developmental education courses in reading, writing, and mathematics for one third of all high school graduates who pursue a college education. Senior administrators at the high school and college levels should consider how they might support these efforts.

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PART 3: CONFERENCE SESSIONS AND PRESENTERS

ABSTRACT

This list of conference sessions and presenters is reprinted from the conference program for the Twin Cities Metropolitan Higher Education Consortium. The conference them was "Building Bridges for Access and Success From High School to College: Meeting the Needs of Twin Cities Underserved Students." There was an opening panel presentation featuring regional speakers, and there were 24 concurrent sessions focusing on regional programs, initiatives, research, teaching, and collaborations.

Conference on Building Bridges for Access and Success From High School to College: Meeting the Needs of Twin Cities Underserved Students

Saturday, January 15, 2005
Continuing Education & Conference Center
1890 Buford Avenue, St. Paul, MN
University of Minnesota

FEATURED PRESENTATION
9:00 – 10:30 a.m.

SHAPING TRENDS FOR EDUCATIONAL ACCESS
Presenters:

Beth Aune, Minnesota Department of Education, *Director, Academic Standards and Professional Development*
Sean Kershaw, *President, Citizens League of Minnesota; Chair, 2004 Citizens League Report on Higher Education in Minnesota "Trouble on the Horizon"*
Carlos Mariani Rosa, *State Legislator and Executive Director, Minnesota Access Network, Minnesota Minority Education Partnership, Inc.*
David V. Taylor, Facilitator, *Dean of the General College, University of Minnesota, Twin Cities*
Larry Litecky, Facilitator, *President, Century Community and Technical College*

CONCURRENT SESSIONS I
10:45 a.m. – 12:00 p.m.

ONE PARTNERSHIP BETWEEN THE UNIVERSITY OF MINNESOTA AND AREA HIGH SCHOOLS
Presenters:

Susan Henderson, *Director, College in the Schools (CIS), University of Minnesota, Twin Cities*
Barbara Hodne, *Teaching Specialist and CIS Faculty Coordinator, General College, University of Minnesota, Twin Cities*
Sanna Towns, *Teacher, St. Paul Central High School*

COLLEGE CLUB
Presenters:

Heidi Gilles, *St. Olaf Educational Talent Search*
Dan Jackson, *Academic Advisor, St. Olaf Educational Talent Search*

COLLEGE READY, SET, GO!
Presenters:

Steve Mumma, *School to Career Coordinator, Inver Hills Community College*
Kathy Palmer, *CTE Director, Eden Prairie Public Schools, West Suburban Tech Prep Consortium*
Judith A. Simon, *Coordinator, Dakota County Tech Prep Consortium*

SETTING PROGRAM GOALS THAT OPEN DOORS
Presenters:

Catherine Christian, *Summer Program Coordinator, Minneapolis Employment and Training, City of Minneapolis*
Graham Hartley, *Director, Native Academy, MIGIZI Communications*
Linda Hoover, *Education Program Manager, Summer Youth Program, Loring-Nicollet-Bethlehem Community Centers*
Teri Grey Owl, *Technology Instructor, Tech Intern Program, MIGIZI Communications*

CREATING A SYSTEM OF HIGH PERFORMING SCHOOLS: THE PROMISE OF SCHOOL CHOICE FOR MINNESOTA'S STUDENTS
Presenter:

Erica Maas, *Research/Outreach Coordinator, Partnership for Choice in Education*

CAREER DEVELOPMENT IMPLICATIONS FOR COLLEGE READINESS AND PREPARATION
Presenters:

Mesut Akdere, *Formerly Human Resource Education, University of Minnesota, Twin Cities*
Rex D. Foster, *Doctoral Student, Human Resource Education, University of Minnesota, Twin Cities*

ENHANCING HISTORY INSTRUCTION: A SECONDARY-UNIVERSITY COLLABORATION
Presenters:

Renee DeLong, *Writing Teaching Specialist, General College, University of Minnesota, Twin Cities*
David Ghere, *Associate Professor, History, General College, University of Minnesota, Twin Cities*

PROJECT ACCESS: ACHIEVE CAREER AND COLLEGE SUCCESS
Presenters:

Adele Hansen, *Project ACCESS, Hennepin Technical College*
Kelly Marchwick, *Project ACCESS, Hennepin Technical College*
Ken Schindler, *Project ACCESS, Hennepin Technical College*
Jonathan Stuart, *Project ACCESS, Hennepin Technical College*

CONCURRENT SESSIONS II
1:45 – 3:00 p.m.

"WALKING THE TALK": INSTRUCTIONAL PARTNERS WORKING TOGETHER FOR UNDERSERVED STUDENTS
Presenters:

Daryl Parks, *Assistant Professor of English Education, Urban Teacher Program, Metropolitan State University*
Michael Thompson, *Assistant Director of Secondary Schools, Saint Paul Public Schools*

BUILDING BRIDGES AND STRENGTHENING ACADEMIC ACCULTURATION: POSTSECONDARY OPTIONS PARTNERSHIPS FOR BILINGUAL STUDENTS
Presenters:

Laurene Christensen, *Graduate Instructor, Commanding English Program, General College, University of Minnesota, Twin Cities*
Margaret D. Kelly, *Teaching Specialist, Commanding English Coordinator, General College, University of Minnesota, Twin Cities*
Robin Murie, *Director of Commanding English Program, General College, University of Minnesota, Twin Cities*

BEST PRACTICES FOR COLLEGE READINESS: WIDE READING ONLINE AND OFF
Presenter:

Ann Ludlow, *Instructor, Reading/Study Skills Department, Minneapolis Community and Technical College*

FROM ACCESS TO SUCCESS: A TEAM APPROACH FOR STUDENTS WITH DISABILITIES' TRANSITION TO POSTSECONDARY EDUCATION
Presenters:

Betty Benson, *Disability Specialist, Disability Services, University of Minnesota, Twin Cities*
Barbara Blacklock, *Disability Specialist, Disability Services, University of Minnesota, Twin Cities*
Tim Kamenar, *Disability Specialist, Disability Services, University of Minnesota, Twin Cities*

UNDERSTANDING REMEDIAL/DEVELOPMENTAL COURSE TAKING IN MINNESOTA PUBLIC HIGHER EDUCATION INSTITUTIONS
Presenters:

Cindy Crist, *Systems Director for P-16 Collaboration, Minnesota State Colleges and Universities*
Mark Davidson, *Professor and Director, Office of Educational Accountability, University of Minnesota, Twin Cities*
Geoffrey Maruyama, *Assistant Vice President and Professor, University of Minnesota, Twin Cities*
Craig Schoenecker, *Systems Director of Research, Minnesota State Colleges and Universities*

CONTENT AREA LITERACY AND ACADEMIC LITERACY SUPPORT AT PATRICK HENRY HIGH SCHOOL: A Three-Year Project Funded by a Comprehensive School Reform Grant, Patrick Henry High School, and Minneapolis Public Schools

Presenters:

David O'Brien, *Professor, Curriculum and Instruction, University of Minnesota, Twin Cities*
Brock Dubbels, *Curriculum and Instruction, University of Minnesota, Twin Cities*

CREATING A MINNESOTA COLLEGE ACCESS NETWORK

Presenters:

Carlos Mariani Rosa, *State Legislator and Executive Director, Minnesota Access Network, Minnesota Minority Education Partnership, Inc.*
Bruce Vandal, *Associate Executive Director, Minnesota College Access Network, Minnesota Minority Education Partnership, Inc.*

VISITING THE NEIGHBORHOOD AND ITS IMPACT ON THE ACADEMIC SUCCESS OF AFRICAN AMERICANS

Presenter:

Na'im H. Madyun, *Formerly Psychology Teaching Specialist, General College, University of Minnesota, Twin Cities*

CONCURRENT SESSIONS III

3:15 – 4:30 p.m.

EXPLORING COLLEGE READINESS: WORDS OF WISDOM FROM STUDENTS AND FACULTY

Presenters:

Jeanne L. Higbee, *Professor, General College, University of Minnesota, Twin Cities*
Kwabena Siaka, *MHECC Graduate Student, Educational Policy and Administration, University of Minnesota, Twin Cities*

READING, WRITING, AND RHYTHM: ACCESSING THE BASIC THROUGH MUSIC CLASSES

Presenter:

Yolanda Y. Williams, *Teaching Specialist, Minneapolis Community and Technical College*

AVOIDING RETENTION ROULETTE: SELECTING PROGRAMS THAT WORK

Presenter:

David Arendale, *Assistant Professor, General College, University of Minnesota, Twin Cities*

CAREER EMPOWERMENT

Presenter:

Omar E. Salas, *Diversity Recruitment Specialist, System Human Resources, Fairview Health Services*

BUILDING BRIDGES FOR COLLEGE ACCESS AND SUCCESS THROUGH MATHEMATICS EDUCATION K-16+

Presenters:

Rose Chu, *Assistant Professor, Urban Teacher Program, Metropolitan State University*
Irene M. Duranczyk, *Assistant Professor, Developmental Mathematics, General College, University of Minnesota, Twin Cities*
Lydia Lee, *Board Member, Board of Education, Minneapolis Public Schools*
Terry Wyberg, *Associate Education Specialist, Graduate School, Curriculum and Instruction, University of Minnesota, Twin Cities*

LIVING WITHIN BOUNDARIES: PROGRAMS, KIDS THAT FALL BETWEEN PROGRAMS, AND SCHOOL PARTNERSHIPS

Presenters:

Heidi Barajas, *Assistant Professor, General College, University of Minnesota, Twin Cities*
Michael Bradley, *High School Coordinator, Roosevelt High School*

SUCCESSFUL OUTREACH TO CHICANO-LATINO-HISPANO YOUTH

Presenter:

Jaime Ramirez, *Founder & Director, Admissions Department, College of Saint Benedict/ Saint John's University Fast Forward Youth Program*

PART 4: CONFERENCE PAPERS FROM REGIONAL CONFERENCE ON "BUILDING BRIDGES FOR ACCESS AND SUCCESS FROM HIGH SCHOOL TO COLLEGE"

Project ACCESS: A Student Success Model for English Language Learners

Adele Hansen, Kelly Marchwick, Ken Schindler, and Jonathan Stuart
Hennepin Technical College

ABSTRACT

The retention and completion rates of English language learners at Hennepin Technical College indicated that the traditional approach to language teaching, which emphasizes a progressive improvement of general language skills, was not creating success for these students. Thus the decision was made to design an English for special purposes curriculum. This article outlines the development process and content of the new courses that were designed as part of Project ACCESS, a grant-funded program aimed at bridging English language students into technical career programs.

In the 1990s there was unprecedented growth in immigration into the Twin Cities metropolitan area. English language learners (ELL) were entering postsecondary institutions in large numbers, but it was found that retention and completion rates remained low. In an effort to increase success for ELL students wanting to study in a technical degree program, Hennepin Technical College (HTC) was given a 3-year grant from the U.S. Department of Education's Fund for the Improvement of Post-Secondary Education (FIPSE).

The goal of the project is "to improve the access, retention, completion, and employment rates of ELL students in HTC degree programs by improving the kinds, quality, availability and cultural-appropriateness of services available to ELL students, both academic and support services." In order to meet this goal, special service centers were created to assist ELL students, faculty development was undertaken, and community collaboration was sought. This article will outline the academic courses created to meet the goal.

English for Specific Purposes

The acronym ESP (English for Special Purposes) describes an approach to language education aiming to give language a specific context—to clarify a set of linguistic notions that are needed to achieve a particular goal. In our case, Project ACCESS courses would be designed to provide support for students as they progressed to their future vocational studies. The rationale was that such specialized language training helps the language learner achieve a certain goal: in this case, our students are hoping to study technical courses that would provide entry to a career.

ESP classes can be divided into two major types: general and goal-specific. General ESP focuses on the language needed to function in a general area that in our situation is the language needed to function at the vocational college. In the goal-specific ESP courses, a homogenous group of students works toward a common goal (e.g., a group of vocational students learn English in order to study in a nursing program). The ACCESS curriculum includes both general and goal-specific classes.

Curriculum Design

At the curriculum design stage, decisions have to be made about the number of hours allotted to the general courses versus those allotted to the more specialized courses. We made the decision to create a two-tier approach to the Project ACCESS curriculum. General courses would be offered during the first semester, and students would enroll in those courses concurrently. During the second semester, the students could choose the goal-specific classes as well as begin their vocational program prerequisites.

A key part of the ESP approach to language teaching rests on information gathering. It is important to identify the nature of the learner's needs. First we looked at the population we were serving. In general, the ELL students at HTC are older than the normal community college or 4-year university students. Some may have come to the U.S. as older teenagers, and their American high school education was of limited duration. Some may have studied in adult basic education programs, and some may have earned the General Educational Development (GED) degree. Most are working full time, and few are able to study "full-time" English. Most have very similar goals, such as entering vocational programs that can rapidly lead to more productive careers. As we thought about the curriculum, we made a decision to develop Project ACCESS classes for the "intermediate-level" student.

It was clear that this student population needed to have language skills that would enable them to matriculate successfully at HTC, so our next step was to look at the vocational context. Because the ELL students identified manufacturing and nursing as two popular choices for study, we surveyed faculty in the general education, manufacturing, and nursing programs to learn more about their own expectations and classroom practices. We learned that many of the courses at HTC are referred to as "hands-on" courses, and many of the students have kinesthetic learning styles. We also talked with instructors about the types of activities and assessments performed in the classes. Finally, we looked at the course textbooks and other materials our students would need to use in their classes.

A third source of information came from external research. Information from the Secretary's Commission on Achieving Necessary Skills (SCANS) report (United States Department of Labor, n.d.) provided us with information about specific skills that had been identified as necessary for success in the workplace. Other ESP and workplace English research, particularly about the field of nursing, provided us with additional information about workplace needs. Thus two distinct levels of courses, one of General Purpose and the other Specific Purpose were created.

General Purpose Courses

The first level of the Project ACCESS, made up of four general purpose courses, is framed around the English skills of writing, reading, listening, and speaking. Unlike traditional English as a Second Language (ESL) programs, however, it was designed in order to meet the unique needs of a target audience.

Standardized assessment tests are given to students upon their acceptance into HTC. Based on the results of these tests, they are made aware of what general education courses they should take. A more traditional, foundational ESL program was kept in place to serve students scoring in the lower range on these assessments. If students score at an intermediate level they are qualified to enroll in the four courses offered in the general purpose courses. What follows is an explanation of each of these courses.

Reading for Career Education Course

The reading skills class was developed with authentic texts that came from technical program areas. These areas included Culinary Arts, Carpentry, Manufacturing, Computer Careers, Nursing, Photography, and so on. Before, during, and after reading exercises were developed around the content of one-to two-page readings. In this way students are taught intensive and extensive reading skills such as scanning, skimming, understanding main idea and intended audience, summarizing, highlighting, and guessing word meaning from context, while broadening their understanding of the different program areas that they may be interested in pursuing.

The Career Project has proven to be a very important part of this course. Once the various program areas have been touched on through the readings and exercises, it serves as a capstone to point students into one of the technical program areas offered at HTC. Many students are able to confirm a career choice by completing this project, while other students often reconsider what they had presumed and alter their plan according to the new information they have learned.

Vocabulary for Math, Measurements, and Materials (MMM) Course

This course gives students practical, hands-on experience working with vocabulary in the areas of math, measurements, and materials. One major premise used to build this course is that students will learn the content most effectively if it is connected to a tangible concept they already practice in their everyday life. Therefore, mathematics is not overtly taught. However, foundational math content such as equations, symbols, and fractions are incorporated into relevant story problems or related to a tangible topic such as money.

Most lessons are set up in such a way that student homework is checked with a partner or as a large group. This is followed by a hands-on activity of some kind, and finally an assessment is given. The assessments (i.e., quizzes and tests) are arranged to allow for students to demonstrate knowledge both by taking a paper and pencil test and by doing some kind of application or oral section. Successful completion of the course assumes students will be better equipped with the language needed to do mathematics, and after taking this course some have been able to retake the math assessment and test out of one of the college's required math courses.

Listening and Communication Skills Course

Listening and Communication Skills is another general purpose course. Like other classes in this level, the course provides support and information for students who are exploring different career paths at HTC. Students practice informal conversational and more formal discussion skills as well as give short informative presentations. Students also learn and practice note-taking skills as they watch and listen to videotapes.

The videos provide students with information about HTC resources as well as about different careers. This course was developed by filming authentic segments that would introduce the students to the college. Examples include registering for financial aid and an introduction to the Project ACCESS support services. Professionally produced videos are also shown, and examples of these include looking at the daily schedule of a nurse and the skills needed to be a chef.

Writing Through Technology Course

This course combines the basics of writing with computer skills needed to succeed in a technical college. Here students apply information about basic writing to using a keyboard and mouse to create, edit, save, and print simple Microsoft Word documents. The Internet is also introduced. Specific units include how to browse the Web, register for classes, use e-mail, and access grades.

The course was designed for those with little or no experience using a computer. Therefore computer vocabulary is taught, resources on the HTC homepage are explored, and an e-mail account is set up. One specific assignment calls for students to e-mail an HTC program instructor and ask about a technical program of interest. All of the general purpose courses aims to link an introduction to HTC and an overview of technical program areas with foundational English skill areas.

Specific Purpose Courses

A major component of the Project ACCESS grant called for courses to be developed that would effectively bridge ELL students into manufacturing and nursing programs. When students complete the first level of ACCESS courses they are given a broad introduction to technical fields as they improve their skills in English reading, writing, listening, and speaking. The second level, consisting of the specific purpose courses, provides content that serves as a direct bridge into their chosen program field.

There are six courses in this level. Students can sign up for one of these courses if they have an equivalent assessment score or if they have passed a related course from level one with a grade of C or better. Two of these courses focus on English skills such as oral proficiency, writing, and reading that can be utilized regardless of the technical field students choose. Four of them were specifically developed for students entering or thinking about pursuing a manufacturing or health career program.

Health Career Courses

Three Project ACCESS specific purpose courses focus on health careers. Our research showed that nonnative-speaking health careers students have difficulty in both oral and written communication. We also have data that ELL students who enter nursing classes often have problems coping with the vast amounts of vocabulary, which in many cases are unfamiliar. The first course, Client Communications for Health Careers, was developed to prepare them to communicate more effectively with clients in a variety of healthcare settings such as nursing homes, primary care clinics, or dental clinics.

Client Communications is primarily an oral communication course. Written materials are used to introduce units, but much of the assigned work requires students to participate in role playing, give short presentations, explain procedures, and demonstrate effective telephone skills. Students also practice note taking, not only during lectures and while watching videos, but also during a change of shift report and during a telephone conversation. The final unit focuses on interpersonal relationships, and students can learn some of the causes for problems for staff within a health care setting. They then read case studies and share opinions about solutions to the conflicts. Assessments in the course are for the most part oral, but the midterm and final examinations have a written section of multiple choice questions like those appearing in HTC nursing and dental assistant classes.

The second course, Cross Cultural Issues in Nursing, is designed to prepare students to

use their nursing textbooks effectively. In many ways, it mirrors a developmental reading course, but the course content is solely nursing. Because our prenursing students are required to take writing courses, the course combines reading and writing assignments. Students study different rhetorical patterns appearing in nursing texts, and then are asked to complete a multidraft writing assignment using similar rhetorical patterns.

In addition to relying on nursing texts, students read excerpts from several books dealing with cross-cultural health issues and then write short, in-class reactions to what they have read and discussed. The texts range from topics such as birth, using an excerpt from *The Spirit Catches You and You Fall Down*, to death, as in *Tuesdays With Morrie*. We hope that these shorter readings will engage our students, enhance their reading skills, and provide information about different cultural attitudes toward health and well-being.

The final course, Vocabulary for Nursing, is taught prior to matriculation in the required prenursing classes of medical terminology and anatomy and physiology. The class introduces students to many Latin and Greek prefixes and roots as well as to some common medical terminology that most native-born Americans have grown up hearing. During class students practice a variety of techniques for vocabulary study and also review some of the common grammatical patterns frequently appearing in academic texts. Once again, the grammar is introduced and reviewed with an ESP approach using the context of nursing.

Leadership for ELL Course

As one of the two broader-based content courses, this class was so named because it includes material that encourages social interaction skills. It focuses on such things as teamwork, decision making, delegation, active listening, critical thinking, and group activities. The two main English skills built into this course are oral communication and reading. In addition, during each week one of the two class periods focuses on a different aspect of pronunciation.

Reading material is the major way the leadership-related content is delivered. Students are required to analyze a text and give an oral explanation or discussion of some kind. Shorter assigned texts also incorporate case study situations, interpersonal and workplace communication issues, leader biographies, and other leadership topics. Students are given a choice to read a book on either Colin Powell or Nelson Mandela. Both for this course and the Cross Cultural Issues in Nursing class, we are currently piloting a process whereby students will take a written final exam that will be assessed by a general education writing instructor. Students who pass the exam will be exempted from the first developmental writing course in the general education sequence.

Grammar Through Writing

This course bridges ELL students into HTC's 900-level English writing courses while it builds on the skills and strategies taught in the Project ACCESS general-purpose writing course, Writing Through Technology. Set once again in the computer lab, it is facilitated in part through Desire to Learn (D2L).

The content of this course stresses important grammar structures within technical and academic writing at the paragraph and introductory-essay levels. Course assignments focus on writing for a specific purpose for an authentic audience. Students are assessed by combining a body of their writing into a portfolio.

Manufacturing Course

The main goals of the Manufacturing Course are to encourage students in pursuing a manufacturing degree and give an accurate presentation of what students can expect in program courses. These manufacturing programs, such as Plastics Technology, Fluid Power, Electronics, and Engineering Computer-Aided Design (CAD) are highly technical and require a great deal of background vocabulary. To assist ELL students who want to enter one of these programs, this course provides both a hands-on project and extensive review of terminology.

To meet these goals students are given textbook-type readings and taught skills to aid in comprehension and vocabulary organization. Blueprint reading, using visuals and manufacturing symbols, and basic troubleshooting are also covered. Another important skill for manufacturing students is the ability to describe a process. Therefore the project component of building a working robot was designed where students practice working with different tools from the manufacturing fields. A language instructor delivers most of the content, but an instructor from one of HTC's manufacturing programs helps to organize the hands-on project and lead field trips to the program areas.

Conclusion

As of January 2005 Project ACCESS had run the general purpose courses for three consecutive semesters. Although most of the specific purpose courses have been offered, spring semester 2005 was the first time that all the courses were opened. Our internal data indicate that this ESP approach for technical college ELL students has been successful thus far.

The grant period will come to an end in fall 2005, but we are hopeful that HTC will maintain Project ACCESS in an effort to see improved access, retention, and program completion rates for our ELL student population. We are also continuing to look for opportunities to replicate this program and find partnerships with high schools and technical colleges where specific purpose courses can be developed and offered.

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Career Development: Implications for College Readiness and Preparation

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ABSTRACT

The rate of change in the present world economy requires that businesses and educational institutions pay close attention to how individuals chart their future career paths. The fields of career counseling, career planning, and career development are playing an increasingly significant role in this process. This article proposes that career-related fields in high schools, in colleges, and in the workforce must collaborate in order for individuals and the economy to achieve the greatest benefits from their services. Collaborating to develop our nation's human resources can offer a more holistic approach to addressing career paths. One of the earliest phases in such a plan includes the transition for a student between secondary and postsecondary education. This article addresses concepts associated with this transition and proposes that career development can assist with readiness for postsecondary endeavors. Of the reviewed literature, it appears that there is a gap in knowledge and information regarding career development during the transition from adolescence to adulthood. A model that illustrates this gap and provides a framework from which to develop future investigation is also presented.

Rapid changes in the world economies in the past couple of decades forced the fields of both business and education to reconsider their traditional stances and approaches to individual career planning and development. This trend is closely related to economic challenges faced by the United States in regard to increasing global competition. Many nations are changing and adapting to change at a rapid pace. As a result, businesses have to struggle not only with the challenge of keeping up with technology and cost effectiveness, but also with the growing cultural diversity in the workforce (Brown, 1996, 1997, 1998; Feldman, 2002; Judy & D'Amico, 1997; Sullivan, 1999; van Dijk, 2004). This nation's youth are its future, and preparing them adequately for their life ahead remains one of the biggest challenges for our businesses and educational institutions. The economic future and success of the United States significantly depends upon higher levels of educational attainment among those now at the bottom of the economic ladder (College Board, 1986, p. 1). A workforce that is constantly benchmarking and updating its skills is one that not only responds to change, but anticipates it (Waterman, Waterman, & Collard, 1994).

Career development is an important process in allowing people to choose their career directions and subsequent field of expertise. Presently organizations continue to include career development in their strategic planning, and employees greatly benefit from the services offered by career development professionals. This article looks beyond career development in organizations and explores the implications of career development in secondary and postsecondary education. The article proposes that career development is not limited to the workplace and that it should be extended to and implemented in secondary educational settings. Many individuals make decisions about their potential professions during high school and the early years of college, and the paths chosen at these early stages can significantly influence the level of satisfaction when they enter the workforce. Furthermore, this article argues that when career development is utilized in high school and

college, individuals will get more exposure to different careers, gain better understanding about these careers, and make more informed career choices. In high school, this can impact the level of college readiness as well as motivation to pursue higher education. In college, this can influence curriculum selection, motivation to finish college, and decisions such as internship selection. Hence, the transition from high school to college can be integrated into a career goal, and students will not only have another purpose for attaining a college degree, but will also be more likely to pursue professional preparedness for success in their respected careers.

Career Development

As an academic field of study, career development is a product of vocational guidance, which is "the process of assisting the individual to choose an occupation, prepare for it, enter upon it, and progress in it" (Hoppoch, 1976). Many scholars define career development based on their unique academic backgrounds. As a result, there are many definitions of career development. Another reason for this has to do with the changing dynamics of the workplace, technology, and the global economy. According to Kroll, Dinklage, Lee, Morley, and Wilson (1970),

> Career development is a balancing operation—recognizing and meeting the needs of the individual while recognizing and responding to outer forces and a lifelong process of working out a synthesis between the self and the reality opportunities and limitations of the world. (p. 28)

In this case, career development is defined as a process with two separate functions: one for the individual and the other for the organization. A decade later, Kolb and Wolfe (1981) provided another definition of career development, indicating the shift and change in the field:

> Career development involves one's whole life, not just occupation. As such, it concerns the whole person, needs and wants, capacities and potentials, excitements and anxieties, insights and blindspots, warts and all. More than that, it concerns him/her in the ever-changing contexts of his/her life. The environmental pressures and constraints, the bonds that tie him/her to significant others, responsibilities to children and aging parents, the total structure of one's circumstances are also factors that must be understood and reckoned with. In these terms career development and personal development converge. Self and circumstance—evolving, changing, unfolding in mutual interaction—constitute the focus and the drama of career development. (p. 34)

As clearly stated in this definition of career development, individuals are responsible for their own career-related problems, issues, and challenges. This takes the responsibility away from the business and puts the individual in charge of his or her career choices, directions, and decisions. The concept of a "job for life" has been replaced with the idea of the "survival of the fittest"; this is, in part, a result of global economic recessions, downsizing, and outsourcing (Loughlin & Barling, 2001). The competitive global challenges force the business to be more concerned with short-term profitability and long-term survival in which career development is mostly viewed as a financial burden and responsibility for the organizations. As a result, careers are becoming more unpredictable (Defillippi & Arthur, 1996). Furthermore, organizations do not take the responsibility to protect employees from market fluctuations and economic turmoil, expecting employees to take control of their own careers (Feldman 2002; Leane, 2002; Upton, Egan, & Lynham, 2003; van Dijk, 2004).

This trend, however, is also changing as organizations became more aware of the value of their human capital. Some organizations use career development to align individual subjective career aspects and more objective career aspects. This practice allows organizations to achieve the best fit between individual and organizational needs as well as personal characteristics and career roles (Boudreaux, 2001, p. 806). A similar definition offered by Cummings and Worley (2001) suggested that "career development helps individuals achieve their career objectives, and it follows closely from career planning and includes organizational practices that help employees implement those plans such as skill training, performance feedback and coaching, planned job rotation, mentoring, and continuing education" (p. 357). There is some recognition of adaptability and employability on the part of the employee in this definition. However, it is suggested that this is supported by the organization through various forms of learning activities.

Adaptability, from a career development view, may be defined as employees' level of ability to adapt to new conditions by acquiring new skill sets and gaining a broader understanding of their careers from an interdisciplinary perspective. Employability, on the other hand, may be defined as employees' level of attractiveness to employers as a result of their distinctive qualities and present success in their current positions. In theory, no organization would consider letting its employees go to other organizations. However, in today's economy, during an unexpected downsizing, organizations may provide their employees with additional skill sets so that other organizations would be more interested in hiring them. This is not only to the advantage of the employee, but also for the organization in terms of maintaining the morale of the remaining employees. The resulting adaptability and employability will help individual employees who "travel career paths that are discontinuous and go beyond the boundaries of a single firm" (Sullivan, 1999, p. 464).

Implications of Career Development for College Readiness and Preparation

So far, we have presented career development from the business perspective. However, career development in high school and other secondary educational settings takes the form of career counseling, which focuses heavily on providing students with current information about jobs, employment trends, the status of the labor market, and helping students identify their own career interests and goals. Fouad and Smith (1996) argued that early career intervention is important for developing students. These individuals may be at a critical point during which career interests and self-efficacy have begun to form, and lifelong career choices could be at hand. Furthermore, Jackson and Nutini (2002) suggested that there is a strong relationship between postsecondary education attainment and occupational level.

Career counseling, or career planning, has been offered to students as a resource for learning and exploring their career options and to help prepare them for college. In addition to this, career counselors could help students develop various educational and career interests that they might not have considered. With this information, and given appropriate social support and opportunities, students could explore these options (Jackson & Nutini, 2002). Munter et al. (1998) defined career advisement as helping students with academic and career planning problems using information. Gender, race, academic performance, grade level, and quality of career counseling are important variables influencing students' future

outlook and career opportunities (Dellana & Snyder, 2004).

The transition from high school to college is already challenging for many students in the U.S. In fact, many high school students are ill prepared for college, and even some who are college educated are ill equipped to function well in a technological society (Cecil & Cobia, 1990, p. 22). So the issue is not only who can better provide career counseling to students but also how to provide state-of-the-art education at the secondary level so that students, going to college are adequately prepared and ready to pursue higher education. In this respect, career counselors are responsible for assisting students as they decide, plan, and pursue post-high school education (Rowe, 1989, p. 260). Traditionally, career counselors are professionals who are knowledgeable about educational and vocational opportunities and who can offer guidance (Hutchinson & Reagan, 1989, p. 272). As this definition implies, career counselors are not expected to be experts in every career field, but rather they possess a broad understanding of careers available in the current labor market. Consequently, there is a gap between the practice of career counselors and their ability to prepare students for a rapidly changing workplace. This is where career development can supplement the work of career counselors to ensure that students are informed about such changes and are provided with the necessary orientation and training to help them be equipped with the skills and background that would prepare them for their future careers. In this regard, Peterson, Sampson, and Reardon (1991) suggested that career development is the implementation of a series of interrelated career decisions that collectively provide a guiding purpose or direction in one's work life occurring through an ongoing pattern of decisions that constitute a general direction or purpose in life.

The other issue that both of the fields are facing is the rapid diversification of populations both in the workplace and in schools. Career counselors sometimes struggle with responding to the challenges of academically disadvantaged students who come from diverse backgrounds. Career development practitioners, on the other hand, are experiencing similar challenges and issues in the workplace as a result of a more diverse workforce. Thus, these two fields also need to integrate diversity into their core values and missions so as to provide guidance and support to these populations.

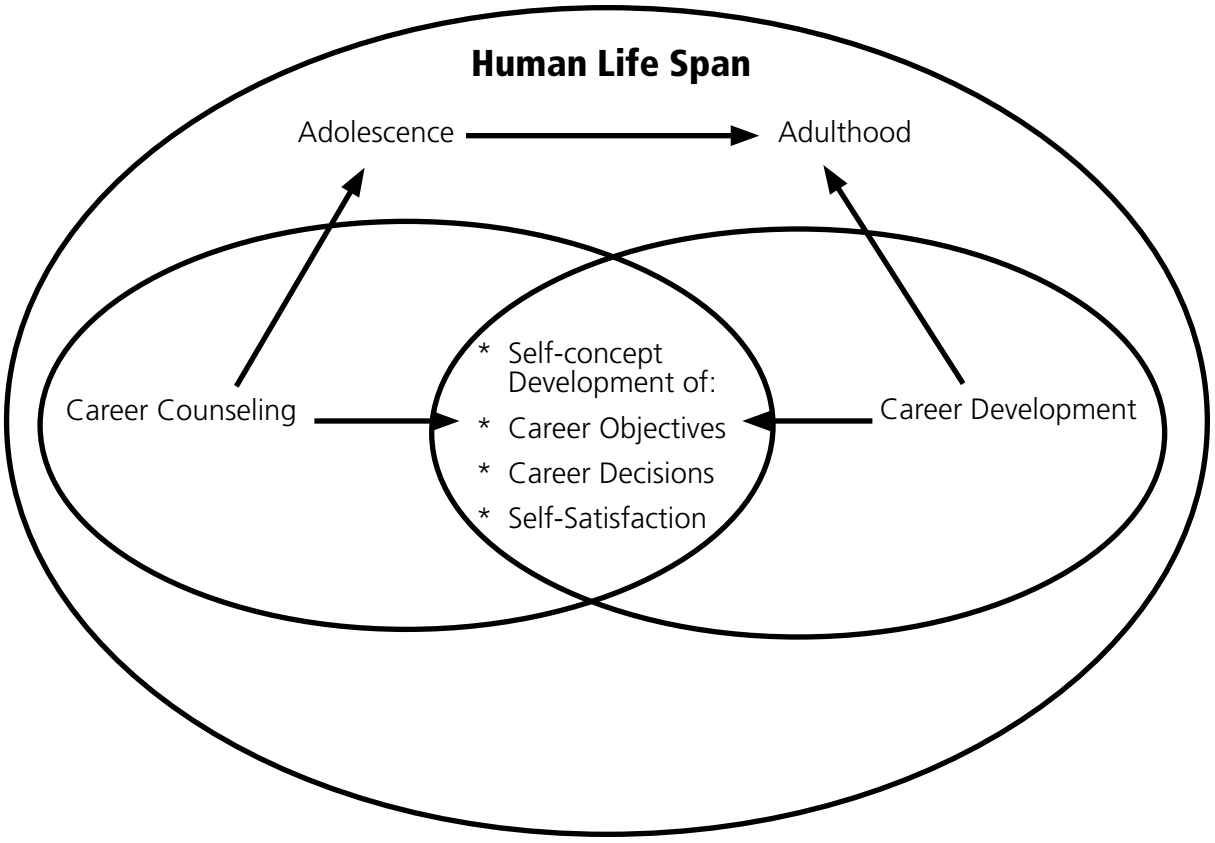
Conclusion

Because career development is related to the significant area of career decision making, it is proposed in this article that a collaboration of the fields of career development and career counseling is necessary to achieve the goals of both of these disciplines. Nevertheless, the literature review of both fields did not reveal such collaborations between the disciplines. In a time when interdisciplinary approaches and collaborations among various disciplines are the norm, it is relatively surprising to find out that such an approach or worldview does not exist between the fields. It is true that career development deals with adult learners and career counseling deals with the youth; however, there are many interrelated phenomena involved.

We believe that career development and career counseling would greatly benefit from each area's expertise and background in preparing youth for future careers. There is also much to be gained in the business and work environment from collaboration. Figure 1 illustrates how these two fields are interconnected. As illustrated in Figure 1, the human life span may be viewed in two parts: adolescence and adulthood. The adolescence phase

is in the realm of career counseling, whereas the adulthood phase is associated with career development. However, what is missing in this link is the transition phase, which includes development of self-concept, career objectives, career decisions, and self-satisfaction (Upton, Egan, & Lynham, 2003). These variables of individual outcomes are the elements that need to be taken into account by both fields to ensure that career related processes of individuals are adequately addressed, the transition from high school to college is achieved, and students are sufficiently prepared for their college education with a broader and more substantial idea of their career options and opportunities. Furthermore, given the nature of the phenomenon, it is necessary to conduct both quantitative and qualitative empirical research to study the phenomenon from multiple dimensions and modes of inquiry. Quantitative studies could focus more on the policy and administrative side of career development, whereas qualitative studies could focus on the meaning and experience of career development for individuals. Regardless of the methodology, there is a significant need for future studies that may go beyond conceptual inquires.

Figure I. **The Career Transition Model**



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Using Objective Criteria to Analyze Interventions: Navigating Through Student Retention Literature

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ABSTRACT

Many developmental educators have been assigned increased responsibilities for campus-wide enrollment management activities. A new system is needed for educators to sort through more accurately and analyze the rapidly growing database of information related to student retention. This will enable the reader to identify promising practices for further investigation more quickly. This article provides a series of criteria scales to evaluate the likelihood of success among potential programs and identify the resources needed by the institution to implement change successfully. Scrutiny of potential retention programs must be increased by asking more questions early in the investigation process.

Developmental educators are increasingly called upon by their institutions to serve in positions of influence with enrollment management task forces that are charged with increasing student persistence and graduation rates. Being an expert with this topic has become more challenging as there has been an exponential growth in the professional literature. Several organizations host national conferences each year that are devoted to student persistence, including the American Association of Collegiate Registrars and Admissions Officers, Educational Policy Institute, and Noel-Levitz. At least two national publications publish in this area of scholarship, the *Journal of College Student Retention* and the *Recruitment & Retention in Higher Education Newsletter*. A number of publications identify best practices in this area (e.g., Habley & McClanahan, 2004; Noel, Levitz, & Saluri, 1985; Thomas, Quinn, Stack, & Casey, 2003; Upcraft, Gardner, & Barefoot, 2005). There are more than 4,000 citations in the national Educational Resources Information Center (ERIC) database that contain the term "student retention" in a postsecondary setting (ERIC, 2005).

Sorting through all these conference presentations, reports, articles, books, brochures, and other descriptive literature is a challenge for any educational leader. Some of the literature describes home-grown student retention programs that have only operated at a single institution. Other publications describe programs that have been replicated at other institutions in addition to the one that first created the academic intervention program. A better system is needed to help educators select from among this burgeoning database of programs and practices that all claim effectiveness for increasing student persistence and graduation rates.

Traditional System for Selecting Intervention Programs

There are common patterns that many educators follow when seeking an intervention system to address the premature departure of students. Often a delegation of one or more is sent to a national conference to listen to a sample of concurrent presentations describing student retention programs. A decision about which session to attend is based on short presentation titles and 50-word summaries from the conference program book. Too often the speakers do not provide research and results of evaluation studies, detailed cost breakdowns, and barriers to implementation. A similar pattern is replicated in written

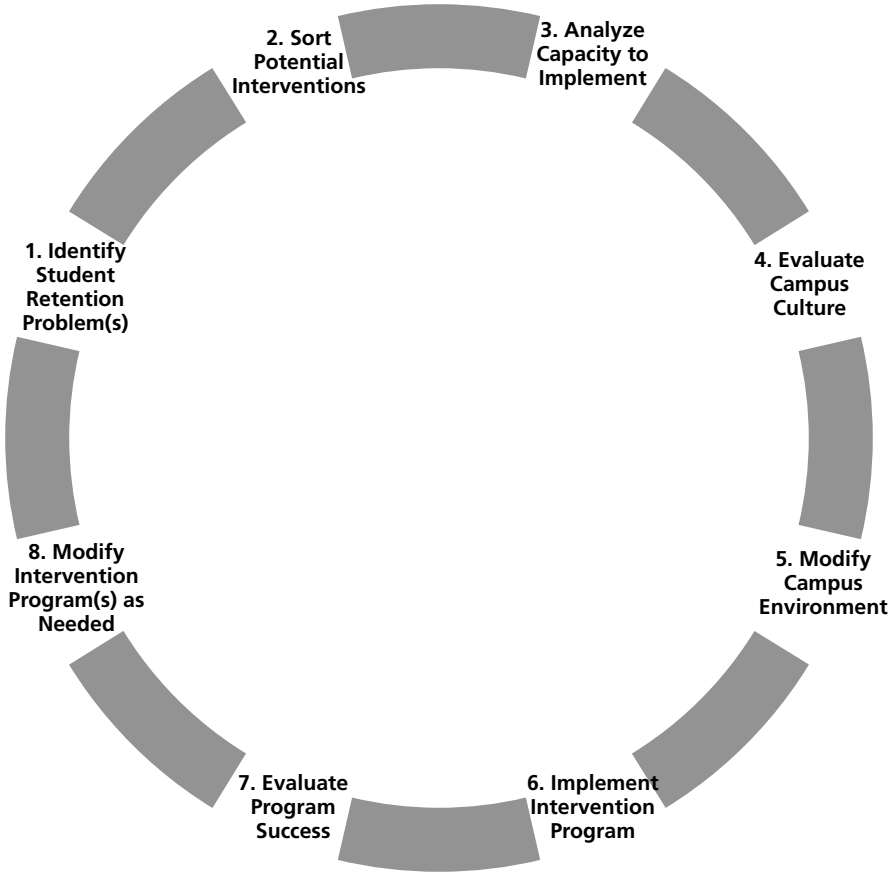
reports or articles that describe the interventions. Little follow-up occurs between the speakers, authors, and audience members. Institutions commit resources of time, personnel, and money to implement intervention programs on the basis of several articles or listening to a conference presentation. A better system is needed to be more accurate, timely, and cost-effective in selecting new programs to adopt.

New System for Selecting and Implementing Intervention Programs

Selecting the appropriate academic intervention or making a change in institutional policies is contingent upon many factors. What are the unique academic and cultural issues at the institution, and which academic interventions are best fitted to meet those needs? Is there clear evidence that the intervention is transportable and will contribute to higher academic achievement at a new adopting institution, as well as the reported success at the institution where it was first developed? What is the capacity of the institution to implement the intervention or policy regarding administrative support, faculty support, skill level of the intervention program, and the cost to implement and continue the program?

Based on 20 years of experience as a learning center director, enrollment management leader, and director of the National Center for Supplemental Instruction at the University of Missouri-Kansas City, I have developed a different perspective for facilitating change regarding improved student graduation rates. An academic intervention or policy decision on one campus may not be effective on another one due to a variety of reasons. The following model presents a decision-making process that enables institutions to implement change, monitor its success, and make modifications to improve results more effectively.

Figure 1. **Transformation Cycle for Successful Implementation of Student Retention**



This intervention implementation model has eight stages of activities. The stages are arranged in a circle because after implementing an intervention program, it may be necessary to implement new or revised programs based on a careful evaluation of the current intervention program, review of the campus culture, and identification of new student subpopulations to serve more effectively. This will require going through the cycle of intervention implementation. These eight stages require the institution to:

1. Identify the student retention problem by determining the characteristics of the students who are dropping out of the institution.
2. Sort through potential intervention programs by evaluating their likelihood of success at a particular institution and the requirements for implementation.
3. Analyze the capacity of a particular institution to implement the intervention program.
4. Evaluate an institution's campus culture and to what degree it will embrace and support the student subpopulation identified previously that it wants to retain (stage 1 of this process).
5. Modify the campus culture by taking specific action steps that change it to be more supportive of the identified student population and conducive of its success.
6. Implement the identified intervention program designed to increase student retention at the campus.
7. Evaluate the outcomes from the intervention program through rigorous formative and summative evaluation that may include quantitative and qualitative data analysis.
8. Modify as necessary the intervention program based on careful and on going evaluation (stage 7). A possible result of this evaluation stage may be identification of additional student populations to serve, implementation of a new or additional intervention program, and changes in the campus culture to meet the needs of its students more effectively. This process would require going through the intervention cycle again (stages 1 to 8).

Sorting and Analyzing Potential Interventions

This article focuses on one element of the intervention cycle, sorting of potential interventions (stage 2). The attention in this activity is solely directed to understanding the elements and nuances of the potential intervention programs. To make this process more objective and less swayed by the personalities promoting the potential interventions, five sets of objective criteria are used to evaluate potential programs or policies supporting higher student achievement and persistence towards graduation accurately. The criteria permit the user to compare among possible actions or intervention programs. The intervention implementation model presented previously (Figure 1) employs four of these same criteria during stage 3 when comparing the identified elements for successful implementation with the capacity of the institution to meet or exceed these requirements.

Stage two is focused on sorting potential interventions. The most objective way to go about this activity is to discern the type of evidence that is cited to support the efficacy of the intervention program. The scale listed with the likelihood of success is arranged in order of increasing evidence. Each of the other four continuum scales are arranged in increasing levels of energy and involvement required by the institution to implement the program with 1 representing the lowest level of energy or change required. Interventions or policy changes with high scores require more time and resources to implement than others with lower scores.

Criteria Scale 1: Likelihood of Success: Evidence of Effectiveness

A prerequisite to selecting an academic intervention or making changes in campus policies is to evaluate carefully the evidence for effectiveness and the capacity of the individual or institution that originally created the practice to provide additional information and training. Time limitations often preclude answering all of the following questions during a conference presentation, but it is reasonable for them to be addressed in professional articles, conference handouts, and during follow-up discussions with presenters. Lack of answers to these questions may be a good prompt for encouraging investigation of other intervention programs.

The following scale provides an increasing level of evidence of the likelihood of success in implementing the practice.

1. There is little evidence or documentation that the practice is effective or is based on current research-based educational theory.

2. The practice is based upon sound educational theory and other previously validated successful practices.

3. The practice has undergone rigorous evaluation at one institution.

4. The practice has undergone evaluation at one institution over a period of time with consistent results of positive outcomes.

5. Validation of the practice has occurred through one or more external agencies (e.g., accrediting agencies, peer-reviewed publications, national awards competitions).

6. The intervention has been replicated successfully at several other institutions in addition to the one that originally created it.

7. There are additional sources of information, consultation services, and training workshops about successful implementation of the practice.

Considering the potential economic and social impact of implementation of a potential new program or policy, it is critical to understand more fully the challenges with implementation and ongoing operation. Considering the total cost of starting and operating a new program, this is a small investment of time and money.

Criteria Scale 2: Institutional/Administrative Involvement

This scale indicates the level of involvement at the institution-wide level needed to implement the intervention successfully. The scale is roughly arranged from no involvement to very high involvement. It is possible that multiple responses will be required to implement a specific intervention. Obviously there must be strong support at the senior administrative level and perhaps from the governing board of the institution for some interventions that require institution-wide support.

The following scale indicates increasing levels of support required by the institution to implement the intervention.

1. There is no need for institutional support to implement this activity or policy.

2. Actions are taken by individual faculty members and academic departments. There are no significant institution-wide activities or policies needed to support the academic intervention.

3. Policies related to academic intervention programs require adherence to appropriate national standards in the areas of academic advising (Council for the advancement of Standards [CAS], 2005); adjunct instructional programs (National Association for

Developmental Education [NADE], 2005); tutoring (Council for the Advancement of Standards [CRLA], 2005; NADE, 2005); developmental credit courses (NADE, 2005); learning assistance programs (CAS, 2005); mentoring (CRLA, 2005); new student orientation (CAS, 2005); and TRIO and other similar educational opportunity programs (CAS, 2005). These standards prescribe compliance issues that require significant institutional response.

4. Institution systematically collects and disseminates cognitive and motivational information about all students when they enter the institution to all appropriate college personnel such as the academic advisors, academic intervention program managers, and other key campus individuals. These data sources may include the ACT (American College testing Service [ACT], 2005) and SAT (College Board, 2005) standardized exams, Cooperative Institutional Research Program survey (CIRP, 2005); high school graduation percentile rank, Learning and Study Strategies Inventory (Weinstein & Mayer, 1986); Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991); Noel-Levitz College Student Inventory (Noel-Levitz, 2005), and various vendor-produced, standardized course content assessments.

5. Individual course professors administer course content assessments on the first day of class to confirm appropriate class enrollment and encourage participation in voluntary intervention programs.

6. Institution systematically conducts evaluation studies regarding the effectiveness of its academic intervention programs using rigorous procedures as suggested by the American Educational Research Association (AERA, 2005); American Evaluation Association (AEA, 2005); Council for the Advancement of Standards (2005); and the National Association for Developmental Education (2005).

7. Institution uses college pre-entry information about students to recommend placement into courses and participation in academic intervention programs.

8. Institution uses college pre-entry information about students for mandatory placement into courses and mandatory participation in academic intervention programs.

9. Institution has committed sufficient local economic resources and political power to implement academic interventions deemed essential by campus policymakers, faculty members, staff members, and students.

Criteria Scale 3: Faculty Member Support and Involvement

This scale indicates the level of involvement at the classroom level needed to implement the intervention successfully. Some intervention programs may require multiple levels of involvement by faculty members. In recent years more intervention programs are requiring higher levels of involvement by faculty members for successful implementation, thereby significantly impacting their workload and job expectations.

Each succeeding item on the scale progressively requires more involvement by the faculty member:

1. Not supportive of academic interventions because the faculty person believes that the course is designed to serve as a gatekeeper to eliminate or redirect (from faculty member's perspective) inappropriately enrolled students in the class to another lower-level course, to change academic major, or even to select another institution to attend.

2. Indifferent to academic interventions due to priorities in other areas and does not have time to do any additional work.

3. Mildly interested in academic interventions, but has little time to do additional work. Mildly supportive of services available for students in the class.

4. Strongly interested in academic interventions, but has little time to do additional work. Highly supportive of services available for students in the class.

5. Strongly interested in academic interventions, but has limited time to develop and administer a course placement assessment instrument on the first day of class. The results of the assessment could confirm correct course placement, encourage transfer to more appropriate course, or encourage student to seek academic assistance.

6. Strongly interested in academic interventions and has moderate time to engage in supplemental course activities such as administering a course placement assessment, developing student worksheets, assisting with training a student paraprofessional, or developing additional curriculum materials.

7. Strongly interested in academic interventions and has extensive time to engage in supplemental course activities such as administering a course placement assessment, developing extensive student worksheets, training a student paraprofessional, providing on going mentoring and supervision of the student paraprofessional during the academic term, and developing additional extensive curriculum materials.

8. Strongly interested in academic interventions and will integrate them into the course lecture sessions. Examples of this commitment level include integrating critical thinking activities with course content material, modeling use of learning strategies with content material during class sessions, and developing extensive additional curriculum materials.

Criteria Scale 4: Skill Level of Direct Service Provider

This scale indicates the level of expertise and skill of the person who provides direct and indirect service to the targeted students. A number of intervention programs require multiple responses from this scale because the program requires not only student paraprofessional service providers who provide the direct service with the targeted students, but also professional staff or faculty members to supervise and train the student paraprofessionals. A key factor in the success of most intervention programs that depend upon student employees is the quality and quantity of the student worker training program and the provision of periodic direct supervision of paraprofessionals by a qualified staff or faculty member during the academic term as they provide service to others (Arendale, 2001).

Each scale item progressively requires more expertise of the person who provides service to the targeted students.

1. No prerequisite skill level required. Either the intervention program requires no direct contact with the targeted students, or the expertise level needed by the provider of the service could be met by nearly any person of college age or older.

2. Undergraduate student skill level is required to work in the intervention program.

3. Graduate or professional student skill level is required due to one or more of the following reasons: the need for additional academic content knowledge, an age or maturity difference between them and the students served, or the meeting of institutional expectations that only graduate students provide service for undergraduates.

4. Full-time faculty or staff member skill level is required due to one or more of the following reasons: the need for additional academic content knowledge, an age or maturity difference between them and the students served, or the meeting of institutional

expectations that only full-time faculty or staff members can train or supervise student paraprofessionals.

Criteria Scale 5: Financial Investment Level

This scale indicates the level of funding for effective implementation of the intervention. Some intervention programs require relatively little financial investment because they are primarily policy changes or rearrangements of current budgets. Other interventions may require multiple responses due to complicated funding needs such as salary for the direct service provider, often a student paraprofessional, work release or supplemental funding for the full-time faculty or staff members who supervise the program, curriculum materials, and other ongoing expenses.

This area of analysis is often underestimated by policymakers who may fund initial pilot implementation of the intervention or find support through external grant funds, without budgeting sufficient resources for its institutionalization and long-term support. Without stable support from the institution, the likelihood of continued success is jeopardized. With the diminished availability of state or federal grants to support implementation of institutional programs, optimistic reliance upon these sources is unwise.

Each scale item requires progressively more financial resources for the successful implementation of the intervention.

1. No significant financial costs required for implementation of the intervention program or policy.
2. Minor expenses are required that are related to supplies needed for the intervention program, assuming that the personnel costs are paid by other sources.
3. Salary and fringe benefits for one or more undergraduate student paraprofessionals are required.
4. Salary and fringe benefits for one or more graduate student paraprofessionals are required.
5. Release time, or overload salary and fringe benefits for faculty or staff members in addition to any paraprofessional staff.
6. Addition of one or more new full-time faculty or staff member to teach or to supervise the academic intervention is required in addition to any paraprofessional staff.

Reconnecting the Criteria to the Cycle for Implementing Interventions

This article has focused on only stage two of the eight-stage intervention implementation cycle (Figure 1). These five sets of criteria make the process of sorting potential interventions a more objective process. At first glance, this article seems to be an endless series of lists. Hopefully the reader will find that it is much more than that. The goal is to present a new approach to thinking about and sorting through the rapidly growing literature concerning student intervention programs. With the tremendous growth of information in this area, especially among non-peer-reviewed venues such as Internet-posted documents, ERIC publications, and the like, new tools are needed for analysis and sorting.

Much more work is needed regarding these criteria because they are not precise enough yet nor are they all arranged in a perfect ascending order of complexity or demand. However, they are a first start. Additional publications are needed to explore the other seven stages of the implementation cycle. A directory of interventions needs to be rated using the

five sets of criteria presented in this article. This can help move the field forward in terms of its accessibility and effectiveness by the education community.

Conclusion

I am reminded of the expression, "we are drowning in data but are starved for knowledge and wisdom." Although we may have ready access to articles, reports, and presentations on student retention, we need to increase our scrutiny of these information sources. We must ask more questions early in the investigation process, probe for the essential components of a program, and vigorously scrutinize the research studies that evaluate the retention program. These activities will enable educators to sort more quickly and accurately through the confusing data and emerge with more likely prospects to enable our institutions to be more successful with assisting students achieve their aspirations and dreams.

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Widening the Twin Cities Mathematics and Science Education Pipeline

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ABSTRACT

This article highlights the mathematics and science-related discussions and challenges that were addressed at the Twin Cities Metropolitan Higher Education Consortium Conference. This conference completed a 2-year discussion between secondary and postsecondary educators and stakeholders. The mathematics and science faculty identified common issues and made recommendations for future changes to enhance the experience of underserved populations of students in the Twin Cities—49% of all high school graduates.

Mathematics and science constituents of the Twin Cities Metropolitan Higher Education Consortium met three times during 2004-2005. The first meeting of the consortium on January 15, 2004 involved 10 mathematics and science faculty members from six public and private colleges and universities in the Twin Cities area. Ten mathematics and science representatives from five public and private colleges and universities and a middle school and high school teacher from the Minneapolis public school district attended the second session on May 22, 2004. Six of the college and university members attended both sessions. The consortium culminated its 2 years of activities with the "Building Bridges for Access and Success From High School to College: Meeting the Needs of Twin Cities Underserved Students" conference on January 15, 2005. Over 26 mathematics and science educators from 19 public and private prekindergarten to postsecondary institutions (P-16) attended the all-day conference.

Background on the Present State of Mathematics and Science Education in Minnesota

All Minnesota public postsecondary institutions admit some students who have need for developmental instruction, and all of Minnesota's public postsecondary institutions offer at least one course in developmental mathematics, reading, or writing. Nationally, 92% of public institutions offer some remedial or developmental courses (Parsad & Lewis, 2003). In Minnesota only 15% of the Black students are ready for a credit-bearing first-year college algebra course as indicated by their ACT scores compared to 53% of White students. All racial and ethnic groups score 12% to 38% lower than Caucasian American students (Minnesota State Colleges and Universities, 2005).

National studies indicated that this high need for developmental studies at the postsecondary level can be summarized by three important educational points (Kirst, 1998; Venezia, Kirst, & Antonio, 2003): (a) the lack of authentic student assessment measures to indicate or predict college preparation, (b) the misalignment between secondary student preparation and college admission and placement standards, and (c) the understandings or misunderstandings of components of college readiness and performance expectations by students, parents, and educators.

Current Minnesota Initiatives

Minnesota has adopted a number of initiatives to address the gap between high school mathematics and science preparation and college-level entrance requirements and expectations.

1. Addressing the misalignment between secondary and postsecondary institutions, in 2000 the state legislature passed Minnesota Statute 135A.081 allowing postsecondary institutions to bill K-12 schools for the cost of developmental education of their graduates. This law was repealed in 2001, maintaining the requirement that all Minnesota postsecondary educational institutions continue to provide an annual report on the number of students from each Minnesota school district taking remedial courses within 2 years of their graduation (Data Practices Act, 2004). The K-12 school districts are also to be informed by postsecondary institutions of the number of graduates from their high schools who test into developmental courses so that they can use that data to conduct studies and improve instructional practices and policies.

2. Addressing the need for better communication regarding college readiness skills, the Minnesota Higher Education Services Office (2004) maintains information and ideas for parents, students, and teachers on preparing for college, selecting a college, and paying for college.

3. Addressing the need for better communication and research among institutions, the Minnesota P-16 Education Partnership was founded in April 2003 to provide opportunities for the University of Minnesota, the Minnesota State Colleges and Universities, and other educational partners such as the Minnesota Department of Education, Minnesota Private College Council, Minnesota Higher Education Services Organization, Minnesota Career College Association, Minnesota Parent-Teacher Association (PTA), and other K-12 and teacher education groups to work collaboratively on research. Some of the target areas are: (a) research supporting the development of an aligned math assessment that would evaluate late high school learning and college readiness, (b) a major research study on the factors leading to high levels of placement into developmental or remedial college and university courses, and (c) reviewing the findings and recommendations of The Teaching Commission (2004) for guidance revisioning how to achieve excellence in teaching.

4. Addressing the need for authentic assessment, there is work underway at the Minnesota Department of Education to align the Minnesota Comprehensive Assessment (MCA) for 11th grade mathematics to higher education mathematics placement tests.

5. Addressing the need to reduce the loss of students transferring between postsecondary institutions, there is an initiative addressing lower division general liberal education requirements to ease transfer between all public colleges and universities in the state.

These initiatives address the admission and placement policies recommended by the National Center for Postsecondary Improvement (Kirst, 1998). The lack of initiatives to address the growing educational gap based on race, ethnicity, and family income is notable. The number of students of color in Minnesota public schools is growing (Minnesota Minority Education Partnership, 2004). The educational gap will have a greater impact in the state as time passes unless initiatives directly related to race, ethnicity, and family income are addressed in science and mathematics pedagogy and practices. The discussion that follows will highlight mathematics and science educators' and practitioners' concerns. The primary focus of this conversation was on ways to reduce the number of recent high school graduates who are not academically prepared for college-level algebra or calculus work.

Round Table Discussions

An afternoon round table discussion was held during both of the Twin Cities Metropolitan Higher Education Consortium meetings allowing the participating mathematics and science

teachers to exchange ideas, experiences, and knowledge of the accomplishments and needs for addressing the fact that 31% of public college and university students who graduated from Minnesota public high schools take one or more developmental courses (Minnesota Higher Education Services Office, 2004). The roles mathematics and science faculty could or should actively engage in include (a) influencing state legislators, state policymakers or K-12 education partners related to the numbers of students entering college underprepared; (b) identifying specific strategies for increasing college readiness and enhancing and expanding developmental mathematics and science education for the underprepared and underserved; (c) identifying the major challenges that exist in working across postsecondary systems related to developmental education and college skills articulation; and (d) creating a unified front among metro-area postsecondary developmental educators in response to legislators and policymakers who challenge and scrutinize the outcome of secondary and postsecondary education.

The afternoon mathematics and science discussions during the first session began with participants commenting on the *Standards for Success* report sponsored by the Association of American Universities and the Pew Charitable Trusts (Conley, 2003). There was no disagreement with the mathematics and natural sciences foundation and standards as presented in the report. Conversations focused on understanding the *habits of mind* (critical thinking, analytic thinking, problem solving, inquisitive nature, openness to critical feedback or failure, ability to cope with ambiguous learning tasks, etc.) as described in the report; the stark absence of the cultural aspects of teaching, learning, course content, and student engagement; the absence of attention to affective barriers to achievement in the sciences and mathematics; and the impact of grading and class rank as the focus of learning. Participants verbalized that these were the real issues to be discussed, studied, and evaluated if progress is to be made towards the goal of widening the pipeline in mathematics and the natural sciences for urban, low-income, and underrepresented ethnic and racial populations at the postsecondary level. The second round table discussion focused on making specific recommendations for institutional change and these suggestions are highlighted in the recommendation section of this report.

The Conference

Only one session at the January 15, 2005 conference dealt with mathematics across the K-16 system, "Building Bridges for College Access and Success Through Mathematics Education K-16+." This session focused on ways to build ongoing relationships among educators to address and close the educational achievement gap and improve educational access for underserved populations. A second session, "Understanding Remedial/Developmental Course Taking in Minnesota Public Higher Education Institutions," presented Minnesota data and studies that shed light on the current state of mathematics education. There was no presentation or discussion of natural science education at the conference.

Understanding Remedial/Developmental Course Taking

Geoffrey Maruyama and Mark Davison, University of Minnesota, and Cyndy Crist and Craig Schoenecker, Minnesota State Colleges and Universities, presented data from three Minnesota studies. The first two studies involved 416 students taking developmental education courses at the University of Minnesota (UMN) or the Minnesota State Colleges and University (MnSCU) Community and Technical Colleges (C/TC) in 1998 or 1999. These students were from a single

urban school district in Minnesota. Over 90% of the UMN students and 80% of the MnSCU C/TC students were enrolled in the district when they entered high school. The remaining students were more likely to be male, students of color, enrolled in English Language Learner (ELL) programs, and from a low-income household. The data indicated that: (a) only about 60% of the students who took developmental mathematics courses passed, (b) about 60% of the 1998 students and 54% of the 1999 students were not mathematically on track entering high school as indicated by the 8th grade basic skills test, (c) the attendance of students in this study's high school was slightly above the overall district average attendance rates, (d) and fewer than 50% of the C/TC students and about 65% of the UMN students took mathematics during their fourth year of high school. The third study looked at all students admitted to UMN. The first-year class was 5,205 including about 60% who were graduates of public high schools in Minnesota. Of this first-year cohort, 430 (8.2%) took one or more developmental classes. Students at the General College taking developmental mathematics were more likely to persist in college to their second term than students not taking developmental mathematics (94% vs. 89%). Female students taking developmental mathematics achieved even greater gains in persistence to their second college term than females who did not take developmental mathematics (95% vs. 88%).

Building Bridges Through Mathematics Education K-16+

In keeping with the mission of the Twin Cities Metropolitan Higher Education Consortium, this session sought to build ongoing relationships among educators to address and close the educational achievement gap and improve educational access for underserved populations. The presenters, Rose Chu (Assistant Professor, Urban Teacher Program, Metropolitan State University), Lydia Lee (Board Member, Minneapolis Public Schools), Terry Wyberg (Associate Education Specialist, UMN), and Irene Duranczyk (Assistant Professor, General College, UMN) presented their knowledge and research about the connects and disconnects, as well as the strengths and weaknesses of the Twin Cities K-16 mathematics preparation for underserved populations as it relates to college readiness and access. Participants and presenters emphasized the impact and need for more extensive research and support for programs starting at the fifth-grade-level to mentor, support, and engage students and their families in science and mathematics activities to enrich their educational experience, enhance self-confidence, and increase exposure to science, technology, engineering, and mathematics (STEM) related careers. There was also strong support for engaging K-16 students in more authentic assessment activities to evaluate mathematics and science skills and reasoning processes.

Research based on state and national data (Armstrong, 2000; Byrnes, 2003; George & Aronson, 2003; Levine, 1994; Lubienski, 2001; Tate, 1997; Thomas, 2000; Tinto & Goodsell-Love, 1993; U.S. Department of Education, 2001) indicate that: (a) placement test scores are not predictive of course performance outcomes; (b) the interaction of student traits, instructional treatments, and instructor practices may have a greater effect on student performance than the skills measured by assessment tests; (c) educational standards are maintained by the college, not determined by the entering ability of its students; and (d) variance of 45% to 50% in 12th grade mathematics performance can be accounted for by socioeconomic status (i.e., income and parents' education level), exposure to learning opportunities (coursework, high school program, teaching pedagogy), and positive perceptions of one's own ability and of math.

There is also research compiled from Virginia that indicates that when college-level mathematics courses are aligned, students who take college-level mathematics courses immediately after successful completion of the prerequisite developmental mathematics course do well or better than students who directly placed into a college-level course (Waycaster, 2001). Similarly, statistically significant increases in retention rates for developmental (61.9% to 80.6%) and nondevelopmental (42.1% to 61.9%) mathematics courses over a 3-year period were attributed to beginning college-level coursework in small classes of 20 to 25 students with counseling and advising (Waycaster). Research (Cooney, et al., 1990; Drew, 1998; Tinto & Goodsell-Love, 1993) has continued to indicate that interventions at the middle school, high school, or college level can ameliorate the effects of past educational deficiencies.

Recommendations

The following highlights reflect the compiled recommendations made by presenters and participants at all the consortium meetings;

1. Begin a postsecondary "adopt-a-school" program where college math and science faculty work in partnership with local high school teachers and middle school teachers to share information and experiences aimed at closing the socioeconomic, racial, and ethnic educational gap that exists in Minnesota.

2. Create opportunities for P-16 constituents to focus on assessment and grading issues as they relate to student expectations, course-taking options, and high educational standards for all students.

3. Focus more attention on affective issues that impact students' science and mathematics course taking and achievement throughout the P-16 system as well as preservice and inservice teacher education.

4. Address class size issues in mathematics and science throughout the P-16 system particularly for students most at risk of underperformance.

5. Provide more support and centrality to cultural contributions of underrepresented scholars and students in mathematics and the natural sciences though pedagogical strategies and through the presentation of historical, non-European roots of mathematical and scientific topics in P-16 coursework.

6. Bridge the students' world to mathematics and natural science course content through the use of hands-on and real-world applications.

7. Begin college preparation activities in elementary school through high academic expectations, mentoring activities, family involvement in college-going strategies, rigorous academic programs, and interactions with college-bound high school students on a regular basis.

8. Create a system of beginning college algebra courses with extended time, Supplemental Instruction (SI), and regularly scheduled cluster-group tutoring for first-year college students who would choose additional support as they enter college-level mathematics.

9. Create a more extensive list of quantitative literary and reasoning college-level courses for students not seeking science, technology, engineering, or mathematics-related careers.

10. Create a strand of college-level quantitative reasoning for "college in the school" to allow high school students who have already determined that they will not be entering a STEM career an opportunity to take a college-level mathematics course that is not algebra-

or calculus-based and will prepare students with data literacy—a critical skill necessary for democracy and social justice.

Summary

A consensus was reached among conference attendees that what is required to widen the mathematics and science pipelines is a multi-pronged approach to addressing the fact that only 51% of Minnesota high school graduates are ready for success in a first-year college-level algebra course. The discussions and research of the constituents of the Twin Cities Metropolitan Higher Education Consortium addressed all phases of teaching and learning: teacher education, in-service teacher support, high school and middle school curriculum, parent education, transitions such as linkages between high school exit skills and college expectations and linkages between high school testing and college entrance exams, incentive programs to promote high achievement in mathematics and science for students, and greater community involvement in community-based activities for parents and students to prepare realistically for college. Continued discussions and activities with all stakeholders are necessary to widen the mathematics and science education pipeline for all students regardless of family income and racial and ethnic background.

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Best Practices in College Readiness: Wide Reading in Online and Printed Mass Media

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ABSTRACT

This article explains the value of requiring students to read newspapers as part of the weekly activities in a college developmental reading course. In addition to enhancing reading speed and comprehension, reading newspapers provides students with background information they need to be successful in college and in life.

Reading *USA Today* and other newspapers online at least four times each week is an important activity in my Reading 1 course. It helps students acquire the reading speed, vocabulary, and background knowledge they will need to keep current on long-term trends, ideas, and changes. Research done at Minneapolis Community College (Moore, 1993) suggested that immigrants in professional jobs who cannot read easily and widely to update their background knowledge will be frustrated in their ability to advance professionally. The same has long been true for people born in the U.S. In the future, college graduates who lack broad-based, up-to-date information will perform more poorly on the job and may also have less control over their personal lives.

Although online news is still in its infancy, it has already become the principal source of news for college students under the age of 30. Therefore, if at all possible, I have students read an online version of a newspaper. Reading the printed version of a newspaper is also acceptable. Especially at the beginning of the semester, I suggest that Reading 1 students read *USA Today* online because it uses shorter sentences and assumes less prior knowledge than many newspapers. Even so, *USA Today* uses college-level vocabulary and concepts. It also covers world, U.S., business, medical, and technology news reasonably well. For my course, students usually also read other newspapers after several weeks.

Assignment

Students are expected to read at least 20 full-length news articles each week. Ideally, they read *USA Today* or another newspaper online and in English, just as college graduates would normally read a U.S. newspaper. The students are expected to read at least five full-length articles that interest them four times each week from the "Top News," "World," "Nation," "States," "Washington," "Politics," "Editorial/Opinion," "Health," "Census," "Columnists," "Money," or "Technology" sections in *USA Today*—subject areas that increase the background knowledge of most Reading 1 students. I encourage them to skip most articles that do not interest them. Typically, sports, entertainment, variety, local, and metro news articles do not count as one of the 20 required articles, although I encourage students to read in these subject areas as well.

Assessment

To document their reading, students keep weekly reading logs (see Figure 1). I want them to spend most of their time reading online, so I have tried to keep the amount of time students

spend writing during these assignments to a minimum. They spend most of their writing time copying the headlines of the articles they read and completing the right-hand columns of the log sheets. Students are encouraged to use arrows when possible to indicate repeated information. The exact form of the logs changes somewhat every 1 to 2 weeks. Possible culminating activities include an essay comparing two news sources or a report on sharing articles with a person in the community.

Figure 1. **Sample Reading Logs**

Date	Newspaper Name	Headline	Type of Material	Finished? Yes/No	Reason for Liking or Disliking

Date	Newspaper Name	Headline	Type of Material	Finished? Yes/No	One Big Question

Date	Newspaper Name	Headline	Type of Material	One Big Question + One Critical Question	Answer? Yes/No

Date	Newspaper Name	Headline	Type of Material	One Big Question + One Critical Question
		15 articles + 5 editorials		

Date	Newspaper Name	Headline	Type of Material	One Big Question + Future Use of the Information
		15 articles + 5 editorials		

Advantages

Students reap numerous benefits from reading newspapers extensively online or in printed form. Reading media news is authentic literacy. Students read widely and choose their own reading material, an important aspect of lifelong learning. They expand their vocabulary and background knowledge beyond their personal experience. In addition to learning to read faster, students develop skimming and scanning skills and metacognitive questioning techniques that can serve as both motivational tools and as aids to attention and retention. When using online media sources like *USA Today*, students can still print texts as desired, but meanwhile develop strategies for reading online extensively. Another benefit is that costs are low compared to subscription fees for many print publications.

Cautions and Conclusion

No instructional method is perfect. For achieving student goals, some potential bottlenecks in implementing this method include the following:

1. Some students may primarily develop skimming skills.

2. Initially some students only ask and read for answers to critical questions related to their background knowledge, while others only ask and read for answers to factual questions.

3. When first engaging in this process, some students have difficulty asking questions correctly, which is one of the most complex aspects of English grammar. However, sporadic positive feedback on grammatically correct questions and corrections of grammatically incorrect questions tend to prevent the fossilization of grammatically incorrect questions.

For teachers, the primary drawback of implementing this strategy may be that scanning and grading logs can be somewhat time consuming. However, the advantages far outweigh the time commitment. As an alternative, students might become engaged in peer review of reading logs to assist in decreasing both conceptual and stylistic errors.

(Note: Readers interested in exploring the reading research and theory underlying wide reading online can contact the author directly at ann.ludlow@minneapolis.edu.)

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PART 5: RECOMMENDED RESOURCES

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