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Preservice Teachers Are Creating a College Culture for At-Risk Middle School Students

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Abstract

This mid-point report from a seven-year study about building a college culture investigates how a multifaceted approach including mentoring, technology, campus visits, parent involvement, and tutoring impacts at-risk middle school students' college aspirations and eventual success gaining college acceptance. Based on NAEP report data, many young adolescents may not be adequately prepared for postsecondary education and workforce success. This longitudinal study follows a student cohort ($n = 50$) starting in their sixth grade year, uses a quasi-experimental design including three comparison groups, and collects data from surveys, interviews, written reflective statements, and student academic measures to evaluate efforts and outcomes of building a college culture. Midpoint findings suggest that experiencing college life through campus visits and vicariously through mentoring experiences with preservice teachers may be linked to improvements in at-risk middle school students' perceptions of college. Digital story-writing projects and on-campus writing marathons helped these students gain insight on their academic and career futures. Different strategies have been implemented to increase parental participation in building a college culture. Because many of these students need higher grades, the project shifts emphasis during year three to academic tutoring by preservice teachers as the students enter eighth grade.

Introduction

The Problem

Reports on the educational attainment of adults and on the college readiness of adolescents provide disturbing news, particularly regarding African Americans and Hispanics. Summarizing adult education trends, Kelly (2005) reported that among people 25–64 years old, only 59% have attained high school graduation—with a graduation rate of 49% for African Americans and 53% for Hispanics. Trends in the educational attainment among adolescents are not encouraging in terms of college readiness. Recent NAEP (National Assessment of Educational Progress, n.d.) achievement reports indicate little progress in scores and a significant gap where Hispanic and African American groups underachieve when compared to other population groups.

The reading, math, and science NAEP scores (National Assessment of Educational Progress, n.d.) of young adolescents force the question: Will they be ready for college in four years? On reading assessments the percentage of eighth graders performing at or above "basic" was higher in 2007 (74%) than in 1992 (69%), but there was only a gain of two percentage points for the "at or above proficient" category during the 15 years. Because two-thirds of the nation's middle school students are writing and reading below the proficient level, we are facing a literacy crisis in the next decade. Educators have

similar concerns in science and math content areas. In science at grade 8, there was no overall improvement from 1996 to 2005 with only 29% performing at or above the proficient level, and the score gaps between White students and their African American and Hispanic peers remain unchanged from previous assessment years. The percentage of eighth graders performing at or above proficient in math increased between 1990 and 2007; however, only about 30% scored at or above proficient. The math scores of Hispanics and African Americans continue to lag behind Whites. Overall the gap in education preparation among Whites, Hispanics, and African Americans, as evident in their scaled scores (see Table 1), will result in many minority students being poorly prepared for higher education (Spellings, 2006).

This is disturbing news because our workforce needs to be prepared with knowledge and skills in literacy, math, and science to support future national economic health in a global market. The U.S. Department of Labor (2005) forecasted a 13% growth in the national workforce between 2004 and 2014. Many of the projected jobs will require an associate or four-year college degree. Projections of the attainment of college certificates and degrees among future workers fall short of predicted workforce needs (National Association of Manufacturers, 2005). As national demographics shift during the next 10 years, the workforce will become more diverse with fewer Whites, and more Hispanic and African American workers, a scenario that is troublesome due to the achievement gap.

Many of our nation's adolescents, particularly those who are underserved or at risk for school failure, may not be adequately prepared for postsecondary education and workforce success unless schools, parents, and stakeholders commit to creating a culture that promotes college or other postsecondary education. In their American College Testing (ACT) policy report, Wimberly and Noeth (2005) recommended that postsecondary planning begin as early as the sixth grade. This notion was echoed by many educational organizations as well as the U.S. Department of Education, which recommended that students begin planning for college in the middle school years (Camblin, 2003; Marcos, 2003).

Background: Planning for College During the Middle Grades

The need to start preparation for postsecondary education during middle school has been (a) recognized for a long time, (b) funded nationally, and (c) supported at state and local levels. The literature includes handbooks and guidelines for this process, and calls to action in the case of minority and underserved populations.

The Gaining Early Awareness and Readiness for Undergraduate Program (GEAR UP) was created in 1998 and provides college-planning activities and related information to students, typically starting in their seventh grade year, and helps build long-term relationships among school districts, colleges, and other community stakeholders. Based on site visits to 20 GEAR UP partnerships and descriptive information from 18 schools, Muraskin (2003) reported that federal grants averaged about $660 per student and that tutoring was the most common type of support.

Surveys conducted by Meehan, Cowley, Chadwick, and Whittaker (2001) in the first two years of a GEAR UP project in southern West Virginia revealed that entering seventh graders had limited awareness of postsecondary institutions and regarded their parents as the most important source of educational information, although parents actually had limited

Table 1
NAEP Scaled Means Scores by Grade 8 Student Group (2005 and 2007)

Student group	Reading (2007)	Math (2007)	Science (2005)
White	272	291	160
Hispanic	247	265	129
African American	245	260	124
Students eligble for free or reduced-price lunch	247	265	130

information about college. Finch and Cowley's (2003a) Year 3 baseline study of ninth grade GEAR UP students in West Virginia reported that students were satisfied with the program, showed a gain in knowledge of college requirements since seventh grade, although only a third of the parents had knowledge of college and only a third of the students had discussed postsecondary education with school staff. In their Year 4 baseline report, conducted in north-central West Virginia, Finch and Cowley (2003b) concluded that tenth graders were satisfied with the program and their postsecondary plans had been influenced by the program. About half of the students had discussed college academic requirements with family or school staff, however, only a third of the parents felt knowledgeable on this subject.

A study of the sustainability of GEAR UP projects (Skolits, Lashley, & King, 2003) that were implemented in partnerships between the University of Tennessee and two school systems, revealed that a year after the five-year program was terminated few project interventions were sustained in schools at a meaningful level. Lack of resources, time, and overall project leadership were reported as barriers to sustaining the GEAR UP initiatives, although teachers and administrators continued to hold favorable attitudes toward the program.

Sharing similar academic preparation goals with GEAR UP, the Federal TRIO Programs (U.S. Department of Education, n.d.) are educational opportunity outreach programs designed to motivate and support students from disadvantaged backgrounds. TRIO includes six outreach and support programs designed to help low-income, first-generation college students and students who have disabilities, progress through the academic pipeline from middle school to post-baccalaureate programs.

Concern about the sustainability of GEAR UP and TRIO programs is evident in recent controversy at the federal level regarding continued financial support of the TRIO and GEAR UP programs. Dervarics (2005) reported congressional support despite President Bush's call for cuts in early college awareness programs, such as TRIO, and for the outright elimination of GEAR UP and career education funding. Subsequently, Dervarics (2006) noted that Congress approved cuts to the TRIO programs.

Predating GEAR UP are many state and locally funded programs such as Michigan's Project

Awareness and Baltimore's Early Guidance Model. Flores (1993) reported that the goal of this Michigan program is to heighten students' postsecondary aspirations through five interventions including curriculum guides, TV videos, a database on financial resources, career clubs, and newsletters. Baltimore City Schools' Early Guidance Model (Gray, 1986) for middle/junior high school students supported this early postsecondary planning goal and extended it to elementary level students, suggesting that at an early age children need academic encouragement and need to envision going to college. The Baltimore program included a college awareness day activity and 17 college awareness strategies implemented by school counselors to help young adolescents learn about college options.

Handbooks, and more recently the Internet, have been sources of strategies for early postsecondary preparation. Historically, handbooks such as Hahn's publication (1990) have focused on future options education, encouraging middle grades students to begin career and college planning. Hahn recommended a sustained, comprehensive, and age-appropriate mix of guidance and counseling with emphasis on curriculum and supplemental programs that build on the students' sense of personal resourcefulness. The intent is to build relationships between students and parents, and also other adults and institutions with the goal of developing an awareness of positive options available after high school. Another handbook, released by the Partnership for Family Involvement in Education (1998), described long-term postsecondary planning strategies and provided descriptions of college options including types of colleges, salaries of college graduates, college preparatory courses, college cost breakdowns, and web site information for financial aid.

Calls to action concerning the educational needs of minority and underserved populations were raised by Camblin (2003), who described concerns about underserved students not attending college at the same rate as their White, middle-, or upper-income peers, and suggests that this discrepancy is due to the lack of opportunity for underserved students starting in middle school. One of the challenges was for parents and schools to help students see the connection between wanting to attend college and learning how to prepare for college entrance. Camblin explained that school characteristics such as lower teacher expectations contribute to the opportunity

gap and recommended building school capacity and coaching the parents of underserved students. Calls to action regarding underserved students have been long-standing. Twenty years ago a Southeastern Educational Improvement Lab (1989) study identified concerns about the declining college enrollment of minority students and addressed the issue of pipeline problems, particularly for African American students. Ten recommendations for project development were made with emphasis on informing and organizing parent groups to better help parents support students. The report embraced a call to action for local task forces and minority educators.

The Creating a College Culture Project (McClafferty, McDonough, & Nunez, 2002) emerged from concerns about the declining number of college-bound students from a southern California cluster of 24 schools that are ethnically and racially diverse. The schools had high dropout rates and low participation by both low-income students and minority students in honors and advanced placement courses. McClafferty and colleagues recommended that schools should create a college culture—a school culture that encourages all students to consider college by introducing information about higher education opportunities during early adolescence and in high school. This concept of creating a college culture among diverse adolescents who are considered at risk underlies our current project in a middle school, which is ethnically and racially diverse, and enrolls many students who may not graduate from high school.

In summary, a review of the literature identified a variety of programs at national, state, and local levels that support middle school students through tutoring, engaging their parents, providing information about college, and encouraging early postsecondary planning. These programs were relatively short-term in relation to students' trek from sixth grade to high school graduation. Our current project is longitudinal; it supports and studies a cohort of students, starting in sixth grade and continuing through their high school senior year. A literature review did not reveal longitudinal research studies that evaluated the impact of a comprehensive set of programs designed to build a college culture for at-risk students with implementation from sixth through 12th grade, on these students' college readiness in their high school senior year. The goal of our study is to evaluate the impact of a set of support programs for students at

risk, which extends from sixth through 12th grade, on students' college readiness in their senior year. Currently, we are at a midpoint in the study and our research goals include (a) evaluating students' perceptions about college, their education, and their career goals, (b) examining how the project impacts the participating preservice teachers' perceptions about teaching and about middle school students, (c) exploring how to engage parents in helping to build a college culture, (d) evaluating the impacts of two project components, digital storytelling and writing marathons, on students' motivation to write, and (e) evaluating the impact of a tutoring program on students' academic achievement levels.

Purpose

The purpose of our seven-year research study is to determine if creating a college culture through long-term mentoring and other components of support for students at risk academically and economically, starting in their sixth grade year and continuing through high school, has a positive impact on these students' education. The research question that guides our study is: Will a multifaceted set of strategies that includes mentoring, technology, campus visits, tutoring, and parent involvement have a positive effect on middle school students' aspirations to attend college and their success in gaining admission to a postsecondary institution? These strategies are introduced and sequenced in a planned and intentional approach that responds to the background of these at-risk students and to the developmental characteristics of young adolescents (NMSA, 2003). The strategies support the overarching design of this research study, illustrated in Table 2, Goals and Strategies to Build a College Culture by Grade Level, which presents four student goals including (a) to understand the nature of college, (b) to recognize that a college education may be important to future success, (c) to gain positive perceptions and aspirations about college, and (d) to prepare academically for college admission.

This longitudinal research study uses a quasi-experimental design involving randomly selected participants for the treatment and control groups, a series of data collection steps over the long term of the study, and data sources that include surveys, interviews, written reflective statements, and student academic performance measures.

Methodology

Participants

The participants include 137 students who attend a middle school in a rural school district located 10 miles outside a major metropolitan area. Students in the treatment and control groups entered the study in fall 2005, when they were in the sixth grade. The school district's guidelines for academically and economically at-risk students, which include 13 statutory criteria such as low grades in two foundation subjects, were used to identify students for the treatment and control groups. With the assistance of school administrators, 100 students were randomly selected from the pool of about 120 at-risk students—50 to participate in the treatment group and 50 to participate in a control group for this quasi-experimental research design. Since the start of the study, a change in school boundaries has led to subject attrition, resulting in a treatment group of 42 students and a control group of 26 students. A third student group ($n = 35$), all students who were on the school's fall 2006 honor roll (students who achieved all A and B grades), serve as a second comparison group. Another comparison group, students who were neither at risk nor on the fall 2006 honor roll, includes 34 students who we have categorized as the routine group. The composition of the participants in this study is 60% Hispanic, 30% White, and 7% African American.

The participants also include preservice teachers, typically college juniors and seniors, enrolled in two teacher preparation classes that are taught in a blended approach on the middle school campus rather than at the university campus. Each semester a different group of about 30 preservice teachers meets on the middle school campus twice a week for half a day. Typically, the preservice teacher group is about 75% White and 20% Hispanic. While at the middle school the preservice teachers observe teachers, work with students, and teach lessons. Each semester the preservice teachers are paired as mentors with one or two of the middle school students in the at-risk treatment group of this study.

Other participants include the parents of the at-risk students, the school's principal and the curriculum coordinator, who are active planners and administrators in this project, and an English course instructor at the university who invites the treatment group students into her undergraduate English class during the students' visit to the university.

Field Procedures

This long-term study is being conducted during the middle school students' normal school day and as part of the preservice teachers' scheduled professional development courses that are hosted two days each week at the middle school. The treatment group middle school students are pulled out of their daily advisory period for an hour twice a week to work with their mentor preservice teachers. Typically, the student, or sometimes a pair of students, and a preservice teacher work together in a school computer lab or the library. Parent permission signatures are collected for students' participation in the project, for each university visit, and for students' use of the NiceNet e-mail system. The process for approval of this e-mail system began with discussions with school district personnel and then the school's technical specialists. The school provides bus transportation for the students' visit to the university—a mid-week, all-day field trip in April.

Key Components of Creating a College Culture in the Current Study

Our project currently combines several key components including mentoring, technology, campus visits, and parent involvement to create a college culture for at-risk middle school students.

The mentoring component. Mentoring, the first key component, involves pairing middle school students with preservice teachers and engaging these partners in a variety of educational activities that help create a college culture. Mentoring middle school students is strongly supported in the research. Ference and Rhodes (2002), describing a program very similar to our project, reported that a mentoring program for at-risk middle school students at a professional development school site using preservice teachers enrolled in methods classes improved the grades of two-thirds of the young adolescents and was a positive experience for the mentors. Herrera, Vang, and Gale (2002) investigated three mentoring programs for middle school students and report associated improvements in students' academic performance and attitudes. After evaluating the impact of mentoring on middle and high school student achievement, attendance, and behavior, Illig (1999) cautiously suggested that academic mentoring may provide some benefits for children and concluded that additional research is needed. Mentoring is the foundation for creating the college culture in the current study. Each of our 30 preservice teachers is assigned to mentor one or two middle school students.

The technology component. The second key component in building our college culture is the use of technology. The ability to read and write in multimodal and digital forms as well as being able to communicate online are particularly critical skills for today's college-bound students. College students reported that they spend an average of 8.1 hours a week online and a survey of 500 universities showed that campuses provide high-speed Internet in 63% of dorms while private research universities provide access in every dorm room (Gretes & Green, 2000). Although 73% of middle schools have Internet access, access in school does not guarantee that students who are most at risk of not attending college are learning technology skills. Access at home is critical as well. Unfortunately, students representing the demographics of our subjects are not likely to have that kind of support at home and consequently may have little online communication experience.

To provide meaningful and guided use of the kind of technology that college students use for learning and communicating, our study includes various uses of technology: creating digital stories, communicating through the NiceNet Internet student assistant e-mail system, and writing college campus visit reflections on AlphaSmart word processors. Reasons for engaging students in digital storytelling include (a) to strengthen their writing/literacy skills, (b) to engage them in reflecting about career interests, (c) to help them recognize that college may be important to their career preparation, and (d) to encourage them to develop high academic aspirations. Recent literature supports the use of digital stories in the classroom. Bull and Kajder (2004) described digital storytelling in language arts class, Hull and Nelson (2005) discussed the expressive power of digital storytelling, Kajder, Bull, and Albaugh (2005) explained the nature of digital stories, and Salpeter (2005) detailed the growing popularity of this technology based strategy. In our study, for three consecutive semesters preservice teachers created a digital story and then mentored one or two middle school students who also created a digital story.

Regular communication through a protected e-mail system, another important element of technology in our study, allowed the middle school students and preservice teachers to form a community as they communicated with their mentors and peers, and responded to prompts crafted to help the young adolescents develop an understanding of and aspiration toward postsecondary education. An example of an e-mail prompt is "what questions do you have after our campus visit?" Research on the use of e-mail in the development of mentor communities for adolescents has shown that students improve academically and their attitudes toward school improve (Hounsell, 2001). Online communication practices in the classroom increase intrinsic motivation to read and write and help to facilitate positive classroom interactions (Boulware, 2002; Tao & Reinking, 2000). Carico (2000) investigated the effects of e-mail correspondence on literature discussions between preservice teachers and eighth graders, and found that it helped foster relationships between mentor-student pairs. In a study of the effect of e-mail based correspondence between preservice teachers and middle school students, Schoorman and Camarillo (2000) found a positive effect on increasing multicultural awareness, though cautioned that e-mail correspondents should be allowed to meet at the beginning of the correspondence program.

An additional element of technology in our study is the use of AlphaSmart word processors by the middle school students during an all-day tour of a college campus in which their mentoring preservice teachers guide them. AlphaSmarts are portable, lightweight word processing devices that allow wireless transmission of documents to a computer for editing. We think that the use of AlphaSmarts provides a mechanism for middle school students to construct an understanding of their college visit through writing about it electronically and then conveniently sharing this new knowledge within a small group of peers and mentors while on-site. The writing retains a permanent and sharable record of their perceptions about the college visit. A broad body of research on writing and technology suggests that the use of computers has a positive impact on students' literacy (Andrews, Freeman, & Hou, 2007; Dixon, Cassady, & Cross, 2005).

The college visit and writing marathon component. The third key component in our project to build a college culture is a college visit in which touring middle school students attend and participate in a college class and engage in a writing marathon as they explore the campus. The writing marathon presents a model for engaging young writers in a free writing response using word processors as they explore the university campus, an unfamiliar and exciting space—one that may trigger thoughts of attending college some day.

Louth (2002) described a writing marathon as a visit to a rich and unfamiliar setting where small groups of writers walk and explore, then stop to write and share their writing. This process is repeated a small number of times, the sharing period is brief, and no particular response is requested from the listeners. A simple "thank you" or "I enjoyed hearing that" is enough. Marathoners write freely, spontaneously, and without a particular purpose or audience in mind. Writing becomes a response to the exploration of the context that the writers are experiencing. In our study, the writing marathon is an integral part of the college campus visit and is conducted with small groups; four young writers from the middle school and two preservice teachers are paired to form each of about 12 small groups that tour the university campus.

The parent involvement component. The fourth key component in our project, involving parents in building the college culture, is strongly supported in the literature as one of the elements in motivating and helping students develop positive perceptions about college and college-bound study habits. For example, McClafferty, McDonough, and Nunez (2002) included family involvement as one of their nine principles essential for a college culture; a Southeastern Educational Improvement Lab (1989) report recommended organizing parent support groups; and Camblin (2003) advised helping parents of underserved students. According to Gray (1986), parents must be provided with higher education information. In our study, we hosted two evening meetings with parents, intend to host more parent meetings, and have regularly informed parents of the project through student take-home notes and project authorization slips.

Data Collection

Data were collected using a variety of tools including written surveys, structured written reflective reports, an online survey program, structured interviews, unstructured interviews, and digital stories prepared with Microsoft PowerPoint.

During the fall of 2006, we investigated students' perceptions about college through written surveys that included 12 Likert-type questions such as "How difficult do you think getting accepted into college is?", "How well do you think you could take care of yourself in college?", and "How difficult do you think paying for college is?" The surveys allowed us to compare treatment group students' college perceptions at two different times in the study, most notably before and after visiting the university, and also to compare the treatment group's responses to the survey results of the control, routine, and honor roll groups.

Data were collected directly from the treatment group students about their college perceptions through their responses to an online survey created in www.surveymonkey.com. The survey questions included "How interested are you in going to college?", "How much do your parents want you to go to college?", and "What is the most important thing to do now in order to attend college later?" Students also shared future plans as they responded to "How do you prepare for the career, profession, or job that you described in your digital story about your future?" During the first three semesters of the study, the treatment group students created three digital stories, responding to three different prompts including "Describe an interest or positive experience at school", "What career or job do you want during your twenties?", and "What must students do to be successful in middle school?" The content of the stories provided insight into students' career goals and perceptions of how to get there. To gather the preservice teachers' perceptions of the young adolescents' experience with digital storytelling during spring 2006 and fall 2006, the preservice teachers wrote reflections based on six questions including "To what extent was the digital story project valuable to your students?" and "What have you learned about yourself based on this project?"

The treatment group students were interviewed to investigate their experiences with the writing marathon, which was a key element of their college campus tour. The interview questions posed by the preservice teachers to the middle school students included "What is one thing you remember about your visit" and "Would you like to go back again?" We also collected the preservice teachers' written reflections about marathons. They responded to prompts such as "How did the visit impact students' ability and motivation to write?", "How did the visit to the university impact the students' perceptions of attending a university?", and "How did the visit impact your perceptions of middle school students?" At the end of the second year of the study, we used an unstructured interview approach with the principal to explore her perceptions of the need for the study, the impacts of the research project components, and the benefits for her students.

Data Analysis
The numerical data were analyzed using SPSS (Statistical Package for the Social Sciences) statistical test software. Data gathered from open-ended questions on surveys and interviews were reviewed and discussed thoroughly by the authors who worked collaboratively to reach consensus on the meaning of these qualitative data.

Results

Our research results after two and a half years' progress in this long-term study may be summarized in five categories that include (a) comparisons of students' perceptions about college, (b) students' reports about their educational and career goals, (c) impacts of digital storytelling and writing marathons on students' motivation to write, (d) preservice teachers' conclusions regarding what they learned about their teaching readiness and about middle school students, and (e) engaging parents in the college culture program.

Students' perceptions about college became more positive after being involved in the activities designed to build a college culture. The overall impact of the project on the treatment group students' perceptions about college, based on a post-then format survey in which students responded to 22 Likert-like questions dealing with how the students' perceptions about college changed between their first and second year in the project, revealed that these students initially had positive perceptions, and that their perceptions became more positive during this study. The difference between the mean scores representing year one and year two perceptions was statistically significant, $t(41) = -4.651$, $p = .000$, with the year two scores ($M = 44$) exceeding the year one scores ($M = 41$). A mean score above 33 is interpreted as suggesting a positive perception about college. The three-point gain in scores (7%) over the course of a year has some practical significance. The preservice teachers who guided the students during the campus visit consistently reported that the students were excited and positive about their visit and about the prospect of college. Several students were pleased to learn about the availability of financial aid to low income families.

The treatment group students' perceptions about college were more positive than the perceptions of students in the control, routine, and honor roll groups. Based on mean scores on a survey with 11 Likert-like questions dealing with students' perceptions about college, where a higher mean score suggests a more positive perception, the treatment group had the highest score ($M = 44$), followed by the honor roll group ($M = 42$), the routine group ($M = 40$), and the control group ($M = 39$). ANOVA test results for differences in perceptions of treatment, control, routine, and honor roll groups revealed a statistically significant difference, $F (3, 133) = 4.173$, $p = .007$, in mean scores for the groups. Tukey HSD post-hoc tests suggested that treatment students' perceptions about college were more positive than control group and the routine group students' perceptions.

Data showed that most treatment group students want to go to college, they have reasons for this goal, their parents want them to attend college, and these students know that getting good grades and working hard in middle school is how you get to college. An analysis of treatment students' responses ($n = 30$) to on-line survey questions found that 76% reported they were "very interested in going to college" and 14% indicated they were "a little interested in going to college." Fourteen of 30 responding students explained that they wanted to go to college to help them get a job, and three students stated a specific job title such as "pediatric nurse." The second most common reason to attend college was to make more money. Two-thirds of the survey respondents confirmed that their parents wanted them to go to college, and several students elaborated that this was "so I can get a job." A second student survey ($n = 42$) confirmed the high level of parental support: responses to a Likert-like question about parents indicating that 64% of these students' parents "very much want me to go to college" and 31% "want me to go to college." In response to an open-ended survey question about what is the most important thing to do now in order to get to college, almost all students stated, "good grades" with a few offering personalized responses such as "I need to bring up my grades," "I need to pass tests," and "I need to be in activities."

Many of these students have career aspirations, some of their career goals seem practical, and others may be fantasy careers. A review of the students' digital stories and descriptions of their stories, as they reported in an online survey, suggests that a majority of the students have specific career aspirations. Survey responses ($n = 27$) reveal that two-thirds of the students created a digital story about a desired career, such as computer technician, pediatrician, or

chef. The remaining students had a hard time picking a career, changed their career goals, or picked a career to "just get the story done" as observed by a preservice teacher. Some of the digital stories might be for fantasy careers such as design and sell my own clothes in stores, or become a professional football player in the NFL, but as researchers, we recognize that today's leaders in fashion and this season's football stars were all once middle school students. In support of their career goals, students explained in survey responses how they would prepare for their careers, sharing strategies such as getting good grades, going to college or trade school, and working hard. When we asked the preservice teachers how these students responded to the digital storytelling project we found that a majority of the students were excited about the project and liked the focus on their careers. A few students were initially interested in the project, but later lost interest, and a few students who were initially not interested, later "got into it." About a fifth of the students approached their work with some apathy.

Creating digital stories during the school day appeared to increase students' motivation to write. Motivation to write, however, was not as evident during the writing marathon activity that was part of the students' visit to a college campus. An analysis of students' responses ($n = 27$) to online survey questions found that 90% enjoyed one or more aspects of the digital story project and they were most enthusiastic about finding pictures and planning their future. The preservice teachers' written reflections about the project suggested that the students' enthusiasm for collecting pictures positively influenced their motivation to write. Many students needed help in the form of the preservice teacher encouraging, coaching, assisting, and guiding their writing. Frequently the students approached the writing element of the digital story project with shyness and some reluctance. The preservice teachers explained that the students who did not like the writing aspect of the project were often poor spellers, had poor handwriting, and as bilingual learners, faced a moderate language barrier. Preservice teachers reported that the projects typically ended on an upbeat note with students feeling pride in their digital story, appreciative of the individualized attention from the preservice teachers, and having gained writing and technology skills, and insight into their lives.

After the students' college visit that featured the writing marathon, we asked the preservice teachers to describe how the visit affected students' motivation to write. Motivation varied considerably with some students showing an interest in writing, but the majority were not very motivated to write, some being much more interested in the tour and others simply not wanting to do the writing exercise.

The preservice teachers who helped create the college culture learned about their own teaching disposition and about the nature of middle school students. As reported by the preservice teachers, their mentoring experience led to affirming and positive conclusions: "I will be a good teacher," "I CAN teach," and "I like these kids." The following comment captures the most common conclusion and offers some insight into the challenges of helping at-risk students grapple with writing and technology: "I have more patience than I thought." The most frequently reported observations about the nature of at-risk middle school students concerned how these students have potential but they need help and encouragement. Leading the college campus visits helped expand the preservice teachers' understanding of young adolescents as suggested by a teacher who summarized "I got to see how they were outside of school and they were a lot different. It helped me understand them as individuals." Several preservice teachers were surprised at the high interest that their at-risk students had in a college future and reported that the college visit had a huge impact on their students.

We found it difficult to attract parents to school site meetings about building a college culture for their young adolescents. Parent attendance at our first evening meeting was dismal; only one parent and her daughter attended in spite of the school administrators' efforts to support and publicize the meeting with take-home notes and reminders during morning announcements. For our second meeting we used different strategies to attract parents including hosting the meeting on the same night that parents were invited to attend the annual Back to School Night event, and having the students in our study use computers to present their digital stories to their parents during the meeting. Turnout was still low, about 20% of our students attended with their parents; however, we were encouraged by the parents' high level of interest in their child attending college, and we learned that the parents would like another evening meeting that focused on college admission and financial aid topics. In addition, some of the parents wanted to accompany their student the next time that the students visit our college campus.

Discussion

This study responds to the need for students to start preparation for postsecondary education during middle school. As previously noted, the need for this preparation has been recognized and funded nationally as well supported at state and local levels. In this ongoing study, a group of young adolescents participated in activities that led them to reflect on their career interests, write about their current school experiences, and learn about the nature of college.

Findings from the study suggest that experiencing college life through campus visits and vicariously through working with preservice teachers may be linked to improvements in young adolescents' perceptions of college. These students, who created digital stories about their school experiences and career interests, visited a college campus, and have been mentored by college seniors, have more positive perceptions of college than students in the study's comparison groups, including the honor roll student group. Although the strength of these findings is limited because they are based on students' self-reports, there are multiple descriptive and statistical measures in this study and they have consistency indicated very positive perceptions about college among treatment group students.

Creating digital stories, an important component in this study's goal of leading students to reflect about their education and future, also provided an opportunity for the students to work on writing skills. We were pleased that the digital story projects had a positive impact on students' motivation to write, but were perplexed that the on-campus writing marathon did not have a similar positive impact on their motivation to write. We conclude that these young students were distracted by college life during their visit, and consequently, we are planning some changes to the writers' marathon activity. Prior to the next college campus visit, we will help establish the routines of a writers' marathon by engaging the middle school students and their preservice teachers in a practice writers' marathon at their middle school site. We also intend to encourage the preservice teachers to take a more active lead in the writing aspect of the marathon and to model the role of a focused writer.

This study had several positive impacts on preservice teachers who reported that the project increased their motivation to become middle school teachers and strengthened their self-efficacy as a teacher. A special benefit was that the mentoring experience provided the preservice teachers with an individual connection with a middle school student and an authentic learning experience about a young adolescent's academic ability levels and educational aspirations. This benefit is not possible when preservice teachers are limited to attending teacher education classes on a college campus and this benefit is limited in traditional professional development models where preservice teachers focus on classroom teaching and helping small groups of students in a cooperating teacher's classroom.

In spite of the middle school students' positive experiences in this project and their aspirations to go to college, we had difficulty attracting their parents to the evening meetings that we hosted about creating a college culture. We are in our third round of planning how to engage parents, and our updated strategy for attracting more parents to the next parent night meeting is to feature the school counselor and address topics that have been popular in our first two meetings: college admission procedures and financial aid opportunities. We also plan to invite the pre-service teachers who mentor the students and will limit preservice teacher attendance to maintain parity among the numbers of attending students, parents, and preservice teachers.

An overall benefit of the project, one that we had not foreseen, was the optimum timing of mentoring middle school students with preservice teachers. This is an excellent time for a preservice teacher to become deeply engaged in teaching and mentoring an individual young adolescent because the teachers are only one step from starting their profession and being in their own classrooms; they are thinking seriously about and are interested in the nature of middle schoolers. This was also an opportune time for the middle school students to be mentored by successful college students because these young adolescents are at the developmental stage where they explore adult roles. Being mentored by a successful young adult provides an authentic model. As we continue this longitudinal study, we intend to learn more about how this connection works and at which grade level it is strongest.

Each semester, when a new cohort of preservice teachers began to work with the group of middle school students, the preservice teachers asked why their students were categorized as at risk. Although

Table 2

Goals and Strategies to Build a College Culture by Grade Level

Students' Grade Levels	Four Project Goals			
	Understand the nature of college	Recognize that a college education may be important to my future success	Gain positive perceptions and aspirations about college	Prepare academically for college admission
Grade 6	Visit a college campus using a writers' marathon approach	Create a Digital Story about a positive school experience	Visit a college campus using a writers' marathon approach Have a mentoring relationship with preservice teacher	
Grade 7	Visit a college campus using a writers' marathon approach	Create a Digital Story about my future career	Create a Digital Story about my future career Visit a college campus using a writers' marathon approach Have a mentoring relationship with preservice teacher Engage parents	Create a Digital Story about how to be successful in middle school
Grade 8	Visit a college campus using a writers' marathon approach	Presentations of college students and college admissions & financial aid representatives during a college visit	Visit a college campus using a writers' marathon approach Have a mentoring relationship with preservice teacher Engage parents	Provide academic tutoring by preservice teacher
Grade 9		Create a project about my future career	Create a project about my future career Have a mentoring relationship with preservice teacher Engage parents	Provide academic tutoring by preservice teacher
Grade 10	Visit a college campus using a writers' marathon approach	Presentations of college students and college admissions & financial aid representatives during a college visit	Visit a college campus using a writers' marathon approach Have a mentoring relationship with preservice teacher Engage parents	Provide academic tutoring by preservice teacher
Grade 11			Mentoring relationship with preservice teacher Engage parents	Provide academic tutoring by preservice teacher
Grade 12			Mentoring relationship with preservice teacher Engage parents	

the school district has many criteria for identifying at-risk students, most of our students were classified as such, because they had failing scores in one or more of the state mandated content tests. Repeatedly we concluded that the label of at risk was an impediment to our efforts to support students' self-concept and self-esteem that are consistent with college aspirations. We are concerned about what we are risking when we label these students as at risk.

At this interim stage in our long-term research, it is important to review the findings in the context of the four overarching goals (see Table 2) that guide our efforts to build a college culture for at-risk students. During the first two and a half years of this project, as students progressed from the sixth to the eighth grade, the project strategies included mentoring, technological support, campus visits, and parent involvement. The strategies targeted the first three of these four student goals (a) to understand the nature of college, (b) to recognize that a college education may be important to my future success, (c) to gain positive perceptions and aspirations about college, and (d) to prepare academically for college admission.

The focus on goals one through three has been intentional and sequential, and responds to the background of these at-risk students and to the developmental characteristics of young adolescents. According to the administrators and teachers in the school, and as confirmed in our conversations with the at-risk students and their mentors, most of these students' parents do not have college degrees and these students do not know much about college. Consequently, the initial priority in our study was to help the students understand the nature of college (goal one). To meet this goal we organized college campus visits for these students three years in a row and used a writers' marathon strategy to engage them in their daylong visits. During these visits, the students met with representatives from the college admissions department and the financial aid office who explained many aspects of planning for college. Our findings indicate that the students have gained an understanding of college (goal one). Interviews with the students after their campus visits captured the following comments that reveal their learning: "this will help me select a college," "it's a good look at a day in college," and "we got to learn what you might do in college." The written reflections submitted by the preservice teachers after each of the college visits consistently reported gains in the at-risk students' understanding of college such as: "this visit helped

them realize it's not so hard" and "my students were pleased at the availability of financial aid."

The characteristics of young adolescents, as described in *This We Believe* (NMSA, 2003) include (a) students are often preoccupied with self, (b) students seek to become increasingly independent, searching for adult identity, and (c) students develop an increasingly more accurate understanding of their personal abilities. In response to these characteristics, we next placed priority on goal number two, to recognize that a college education may be important to my future success, and on goal number three, to gain positive perceptions and aspirations about college. To meet these goals the preservice teachers helped the students create two digital stories about themselves. In their first story, the students described and illustrated something positive about their current education, then in their second story, they illustrated and wrote about a career that they would like to have in their twenties. As each preservice teacher guided a student in writing these stories, the pair discussed college in the context of the student's current education and their plans for a preferred future career. Also, during the at-risk students' college campus visits, they heard college student speakers tell their own stories about growing up, thinking about college, and eventually making decisions and efforts to enable them to attend college. We intentionally invited college speakers who had overcome personal challenges during adolescence and were now enjoying success in college. Finally, for three years, from sixth through eighth grade, the at-risk students had a preservice teacher as a mentor. These pairs casually and informally talked about growing up and the option of going to college.

The findings indicate that the students understand that a college education may be important to their future success (goal two). An anonymous survey of the at-risk students, conducted during the second year of our study and after the digital story projects and campus visit, revealed that 76% of the students were "very interested in going to college." Half of the survey respondents explained that they want to go to college to help them get a job. The second most common reason to attend college was to make more money. These findings are consistent with the content in some of the students' digital stories about their careers that included attending college as part of their vision. Finally, the findings suggest that the students are gaining positive perceptions and aspirations about college (goal three). An analysis of the results from the post-then survey of the at-risk students indicates

that their perceptions of college have become more positive during the term of this study. A comparison of the written reflections submitted by the preservice teachers after each of the three college visits indicates a shift in the at-risk students' conversations about college. During their first visit, the students talked mostly about the campus, commenting on the large number of books in the library, the hilly campus, the long walks, and the intra-campus bus rides. In the later visits, the students' conversations shifted to comments about wanting to come to this college and the fun-filled nature of college social life.

Because many of the at-risk students need to improve their content knowledge and skills our project shifts emphasis in year three to focus on goal four, to help students prepare academically for college admission. During these students' sixth and seventh grade years, we have engaged them in activities that encouraged them to think about their futures, specifically their careers as young adults, and we have helped them learn about and gain a positive perception of college. Reflecting on the future and holding positive aspirations about college are important, but getting good grades, particularly in language arts and math, is critical to college acceptance. Starting in the eighth grade, the students have been paired with a preservice teacher, who has either language arts or math content strength, depending on the content area where the middle school student is academically weak. The preservice teacher is tutoring the middle school student twice each week in the targeted content area with the goal of helping the student improve their academic performance level.

Conclusion

In conclusion we see evidence that the set of strategies that includes mentoring, technology, campus visits, tutoring, and parent involvement are helping us meet the four overarching goals of this long-term study and are having a positive effect on middle school students. We continue to be challenged with how to attract parents to attend a meeting about college options and preparing for college, and we are revising our presentation to feature topics that have been popular in our first two meetings, college admission procedures and financial aid opportunities.

The shift in the emphasis of the program to academic tutoring in eighth grade is a critical strategy and we are encouraged by our initial observations of the tutoring process, which finds that the preservice teachers are very committed to tutoring the students and the at-risk students are willingly engaged in being tutored. As we continue this longitudinal study, following and supporting this group of students through secondary school, we will collect additional information and publish our findings regarding how to build a college culture among adolescents who are not expected to succeed in school. We will evaluate how the support elements in this study affects this cohort's readiness for postsecondary education and how these students' potential for success in the workforce might compare to that of students with similar demographic characteristics.

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