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REAL Camp: A School– University Collaboration to Promote Post-Secondary Educational Opportunities Among High School Students

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Abstract

The REAL Camp-NIU Experience established at Northern Illinois University serves as a model to afford high school students an experience in science- and mathematics-related careers. The participants' perceptions of the college-based camp curriculum were very favorable, as were the perceptions from preservice teachers and practicing teachers concerning the overall effect of the camp on student participants. Data indicated that the camp has shown success over time, with 21 of the 26 participants enrolling in some form of post-secondary education.

Key words: *higher education, professional development, secondary education, teacher education and certification.*

Research indicates that middle school, typically sixth grade through eighth grade, is a time of fast growth and perceived vulnerability for mid-adolescent students—particularly in the areas of middle school academic and social environments and students' developmental dispositions (Eccles et al. 1993; Gray-Little and Hafdahl 2000). By the time students reach high school, defined here as ninth through twelfth grades, students are in the stage of late adolescence, where concepts such as student autonomy (Ellis and Caldwell 2005), career development

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(Gottfredson 2005), and academic self-efficacy (Bandura et al. 2001) tend to be ruminated and often manifested. Also during late adolescence, student development may entail matriculating in a post-secondary institution to further education and skills needed in adulthood.

In the United States, nearly 30 percent of adults, defined here as age 25 years and older, graduate with a bachelor's degree (Liming and Wolf 2008). However, about 70 percent of high school graduates are considered not academically college-ready, and more than 30 percent of college students drop out after the first year (Burchard 2008). The following question is posited: Beyond fiscal- and time-related issues, what factors are involved in this seemingly difficult transition for some students from high school to post-secondary education?

In the scholarly literature, general markers of educational adjustments for adolescents that tend to play a role in their transition from one educational level to another are noted as follows: school engagement and belonging, academic competence, motivation, and educational expectations (Redd, Brooks, and McGarvey 2001). One factor in this particular period in a student's development from late adolescence to adulthood and the advent of a post-secondary experience may be his or her understanding and acceptance of the idea of "school belonging." Pittman and Richmond (2008, 344) operationalized this construct as "connectedness to one's school or perceived school membership ... individuals' perceptions of fitting in and belonging with others at the same institution."

Goodenow and Grady (1993) looked at school belonging among urban adolescent students and found that their idea of belonging was related positively to school-based social and personal relationships and friendships, as well as motivation toward academic work and an overall educational expectation of success. In another study pertaining to students' positive perceptions of school engagement and belonging, Pittman and Richmond (2007) found that the notion of "friendship quality" was related to the concept of school assimilation. Further, research suggested that positive engagement in a school setting was critical for academic success, as well as an amalgamation of students' perceptions of belonging and academic competence opportunities provided by the school to develop socially, emotionally, and educationally (Roeser, Midgley, and Urdan 1996; Kuperminc, Leadbeater, and Blatt 2001). Uwah, McMahon, and Furlow (2008) determined that school engagement and belonging was an important factor in the positive association with educational expectations and scholastic self-competence.

Thus, according to the literature, school engagement and belonging, academic competence, motivation, and educational expectations all emerge as significant factors in many students' transition from high school to post-secondary education. About the concept of school belonging and engagement, which is frequently cited as a requisite factor in this intermediary period, Pittman and Richmond (2008, 345) pointed out:

In the developing literature, researchers are suggesting that, at younger ages, a sense of school belonging at the university may be an important component in a comprehensive model predicting college students' adjustment.

Context and Purpose

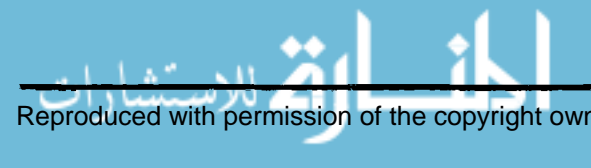
Project REAL, an acronym for the Rockford Education Alliance, is a school–university collaboration among Northern Illinois University (NIU), Rock Valley College (RVC), and Rockford Illinois Public School (RPS) District 205. The partnership was created in a high-need, urban district as a mechanism to improve K–12 student achievement. Project REAL received a five-year United States Department of Education Teacher Quality Enhancement grant of \$4.89 million to finance the activities undertaken.

The urban high school involved in this study had a graduation rate of 64 percent, which was lower than the overall RPS District rate of 78 percent and substantially lower than the state graduation rate for all Illinois students of 87 percent. In the RPS District, nearly 20 percent of adults age 25 and older have a bachelor’s degree, as compared to the U.S. national average of 30 percent. Additionally, according to the administration and faculty at the high school, if the study’s participants enrolled in post-secondary education, they would be considered “first-generation students” or defined by the National Center for Education Statistics [NCES] (Chen and Carroll 2005, iii) as “the first members of their families to attend college.”

NCES data indicated that eight years after high school graduation, 24 percent of the overall first-generation students enrolled had received a bachelor’s degree, while 43 percent had not obtained a degree. Of the 400 students at the study’s high school who were tested with the American College Testing’s (ACT) College Readiness Benchmark (CRB), only seven percent and 15 percent met the CRB in science and mathematics, respectively. Put another way, nationally, 70 percent of high school graduates are considered not academically college-ready, 93 percent and 85 percent of this study’s students were identified through testing as not academically college-ready in science and mathematics, correspondingly (Kolkey 2007; Illinois State Board of Education 2009a, 2009b).

Thus, the REAL Camp-NIU Experience was developed to give high school students an intermediary collegiate experience in science- and mathematics-related careers such as health care, engineering, and forensic science. Another intention of this camp was to ease the difficulty of transitioning from high school to post-secondary education by providing high school students with curricular, social, and living experiences on a university campus to grow or enhance their sense of institutional engagement and belonging, academic competence, motivation, and educational expectations. The following were contemporary areas of emphasis for the camp experience:

1. students engaging in hands-on academic activities and experiencing life in a post-secondary setting;
2. students working collaboratively with instructors and preservice teachers in careers related to mathematics and science;
3. an examination of preservice teacher, practicing teacher, and student perceptions of the camp; and
4. post-camp tracking of the number of former high school participants enrolled in some form of post-secondary education. (This area of emphasis was added later than the first three to the camp experience.)



Method

Eighty students were recommended for the camp program by an urban high school faculty in conjunction with Project REAL. These students were identified as having the potential to succeed in college, even though they had not been tracked as academically talented in middle or high school. They also were noted as "at risk" for a variety of reasons, such as a lack of self-discipline or a dearth of academic motivation. Of these students, 26 were accepted into the REAL Camp-NIU Experience, primarily based on comments from their high school teachers that these students "needed something to motivate them" or "did not have confidence in their academic abilities."

The camp program and goals, expectations of student behavior, and safety procedures were explained to the students' parents at an informational meeting. The students chosen to participate lived in a university residence hall and attended classes taught by NIU instructors and preservice teachers. NIU instructors and preservice teachers coordinated camp curricular activities, and preservice teachers also served as camp counselors. The first day of camp, the College of Engineering hosted a series of classes in industrial and mechanical engineering (e.g., technology, air tunnels, and helicopters). During the second day, students participated in a food sciences lab, an audiology lab, and clinical laboratory sciences activities. The students learned crime scene investigation techniques on the third day, and then applied these techniques to a mock crime scene. On the final day of camp, students, along with instructors, employed mathematics and engineering concepts garnered from previous sessions to apply these learned skills in the construction of model bridges.

Results and Discussion

Two contemporary areas of emphasis for the camp were to engage students in hands-on academic activities and life experiences in a post-secondary setting, and to encourage students to work collaboratively with instructors and preservice teachers in career areas related to mathematics and science. The eight areas of the curriculum addressed by instructors and preservice teachers during the camp were measured via a Likert-type scale ranging from 1 (*poor*) to 4 (*excellent*). Participants' scores for the courses ranged from 2.28 to 3.38, with scores greater than 3.00 in one-half of the content areas: bridge building (3.31), food sciences lab (3.38), clinical laboratory (3.22), and crime scene investigation (3.22). In terms of post-secondary life experiences, on all three of the evening events, participants scored very high, ranging from 3.03 to 3.81 based on the previously mentioned Likert-type scale.

An area of emphasis added to the original plan for the camp experience was to track the number of former high school participants enrolled in some type of post-secondary education. Implementing a full continuum of activities to inform students about careers and engage them in academic preparation assisted in raising educational expectations, scholastic motivation, and academic competence. Post-camp tracking indicated that of the 26 participants, 17 were enrolled in two-year community colleges or four-year colleges or universities, two were enlisted in the military, three were involved in job internships, and four were in post-secondary trade schools in programs of less than two years. Additionally, regarding the 17 students enrolled in two-year community

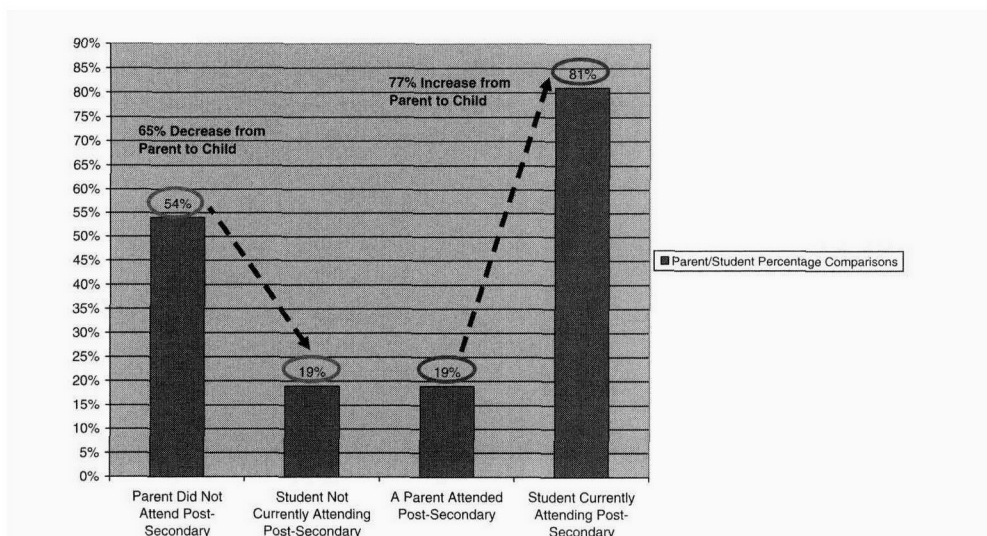


Figure 1. Parent and student educational activities post-high school.

colleges or four-year colleges or universities, 10 (58 percent) matriculated at either NIU (8 students) or RVC (two students).

To put this into context, Figure 1 shows that 14 of the 26 camp participants' parents (54 percent) did not attend a post-secondary institution, while only five of the 26 student participants (19 percent) did not attend any form of post-secondary education, which was a 65 percent decrease in this pattern from parent to child. Also, five of the 26 camp participants' parents (19 percent) attended a post-secondary institution, while 21 of the participants (81 percent) were enrolled in some form of post-secondary education, which was a 77 percent increase in post-secondary education from parent to child. On the national level, the NCES (Chen and Carroll 2005) found that 22 percent of twelfth graders constituted as first-generation students enrolled in post-secondary education, while 42 percent of these students' parents had some form of post-secondary education.

Another area of emphasis was an examination of preservice teacher, practicing teacher, and student perceptions of the camp. Students indicated that the camp was a constructive experience for them. Students' comments were overwhelmingly positive pertaining to the camp experience, and made a strong case for continuation of the camp experience:

- *The NIU camp experience taught me a lot more about college than I expected.*
- *My academic performance has improved since the NIU camp last summer because it made me want to try harder to go to college.*
- *I never thought to go to college after high school, but being in the camp made me think that being a well-educated woman could change my life around.*
- *When I was in the camp and going to classes, my grades were great and better than the previous year of high school.*
- *Being in the NIU camp made a big difference in my grades because it made me focus more in school so I would be able to go to camp again.*



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Working as instructors and camp counselors provided numerous opportunities for preservice teachers to interact with high school students. Preservice teacher participants were very positive about their roles and experiences within the framework of the camp. As part of the camp experience, they developed or practiced these possible in-class and out-of-class skills:

- learning and practicing professional conduct;
- using good judgment in a wide variety of situations;
- learning and practicing setting limits with high school students;
- acquiring insight into the emotional and social side of teenagers; and
- gaining knowledge into one's own strengths and weaknesses in handling the multitude of problems that arise when working with adolescents.

After the camp had ended and students returned to school, their high school teachers reflected on how they thought the camp experience may have influenced the student participants:

- *I was interested in seeing how my students had changed. Students that had attended the NIU camp had surpassed my wildest dreams with their mental growth.*
- *There were three boys in particular that I had high hopes for, but I was afraid they would follow bad peer advice. Because of the NIU camp experience, I know they are on the right track.*
- *It was wonderful to see many of the students bond together after visiting the NIU camp and begin to share a focus in preparing themselves to attend a university after high school.*
- *I do think the camp is a positive and important way to reach some kids who are at an important decision-making point in their lives and to help them see that it is possible for them to go to college, academically and financially, and that it could make a world of difference.*

Implications of the Study

During the time that followed student participation in the camp experience, the partnership assisted in creating the NIU Club, which is an after-school club initiated by students that meets once per week. The NIU Club is a follow-up measure to the camp experience that has involved a large percentage of camp participants. NIU advisers monitor students' progress in the club. Maintaining good rapport with club students, the high school's teachers contact the club advisers when they notice a camp student faltering in areas such as attendance, behavior, or academics. The student members in the club focus on activities related to college readiness, such as ACT preparation classes and a book club to encourage them to read outside of school. The club also has concentrated on and benefited from:

1. keeping students connected to college through panel presentations by NIU and RVC students and faculty, field trips to NIU and RVC, and discussions and advising provided by NIU to give students background knowledge concerning how to prepare for college;
2. engaging in service projects within the Rockford, IL community, emphasizing the importance of being involved in extracurricular activities and projects to help in college admission and scholarships (e.g., volunteering at local elementary schools); and

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3. enrolling in honors and Advanced Placement classes after attending camp (e.g., 22 students matriculated in honors classes after camp).

In part, the last student initiative came from meeting with other college-bound students and being influenced by them; yet, the experience at camp, and the confidence garnered in academic aptitude, also may have a relationship to participant preparation for higher education in terms of academic schedule changes and course enrollment.

Conclusion

The students chosen to attend the REAL Camp-NIU Experience camp were exploring possibilities of continuing their education after high school. The camp experience encouraged them to think beyond high school to the kinds of careers they would like to have in the future. By giving students a preview of academic and social life on a college campus, this experience offered students an enriched understanding of what could be possible for them. Though there were no post-camp comprehensive curricular changes at the high school based on these students' experiences, it is noted that individual teachers and classroom context-based curricular changes likely transpired to accommodate some of these participants based on camp experiences and their new direction in terms of learning and preparing for post-secondary education.

One of the biggest questions parents and educators at all levels ask is, "What can we do to interest our high school students when they are not engaged or motivated at school?" The NIU camp afforded students possibilities and reasons to work toward college and think about their future careers. With too many high school students falling behind in mathematics and science, the camp seeks to motivate high school students to experience college life and a collegiate-level science- and mathematics-focused curriculum with the option of attending college as a possibility in the future.

From a secondary education perspective, comparative data denoted that during the same time period, 100 percent of the camp participants graduated from their urban high school, as compared with 64 percent of their contemporaries (albeit a larger group) who did not experience camp. Further data from a post-secondary viewpoint indicated that the camp has shown success over time, with 21 of the 26 participants enrolled in some form of collegiate-level education. Future endeavors will continue to track these students to determine college-level retention percentages and career development after graduation from post-secondary education, and to persist in encouraging other cohorts of high school students to participate in forthcoming camp experiences.

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