

THESIS

SKILLS TO SUCCEED: A QUESTIONNAIRE DEVELOPED TO MEASURE
SELF-ADVOCACY SKILLS BEFORE AND AFTER INTERVENTION IN
UNIVERSITY STUDENTS

Submitted by

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In partial fulfillment of the requirements

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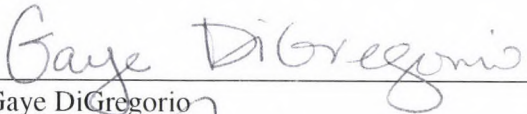
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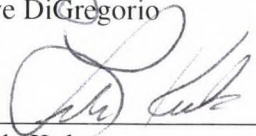
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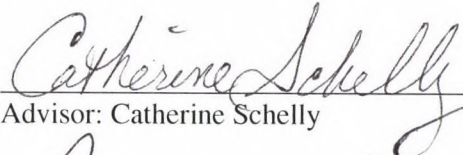
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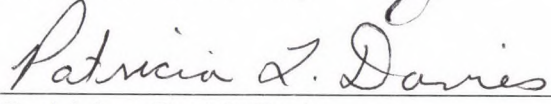
WE HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER OUR SUPERVISION BY JAYNE GONDA MOHAR ENTITLED SKILLS TO SUCCEED: A QUESTIONNAIRE DEVELOPED TO MEASURE SELF-ADVOCACY SKILLS BEFORE AND AFTER INTERVENTION IN UNIVERSITY STUDENTS BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE.

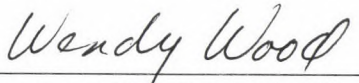
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ABSTRACT OF THESIS

SKILLS TO SUCCEED: A QUESTIONNAIRE DEVELOPED TO MEASURE
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UNIVERSITY STUDENTS

Objective: Diversity of learners attending post-secondary education is increasing, but students from diverse backgrounds including racial/ethnic minorities, first-generation college students, and students with disabilities continue to graduate at lower rates than their peers. Non-academic skills are an important part of student success in post-secondary education, and self-advocacy is a piece of a non-academic skill set that can lead to greater student retention and increased graduation rates. The purpose of this study was to develop a questionnaire to measure self-advocacy skills in university students and to determine the effectiveness of a self-advocacy intervention.

Method: A quasi-experimental, mixed design study was used to determine the quality of a questionnaire to identify self-advocacy skills in college sophomores and the effectiveness of the questionnaire to measure the improvement of self-advocacy skills after receiving a self-advocacy intervention. A diverse group of 36 students in a Learning Community at Colorado State University were given a questionnaire before the start of fall semester 2009. Students received a self-advocacy intervention to target areas of lower performance based on the pre-intervention questionnaire results and were given a follow-up survey at the end of fall semester.

Results: Descriptive statistics indicated that half of the 30 Likert scale questions on the self-advocacy questionnaire did not have ceiling effects. Paired *t*-tests revealed a significant increase in one self-advocacy area and a decrease in two self-advocacy skill areas. When racial/ethnic groups, first-generation students, and students with disabilities were compared, differences were found in how Asian/Pacific Islander and Hispanic/Latino(a) students answered questions regarding self-advocacy skills. Qualitative data analysis further defined sophomore students' perceived needs and definitions of self-advocacy.

Conclusion: Literature supports that sophomore students often report a decrease in self-efficacy related to their academic experience as they measure their ability or chance for academic success. Students reported a need for increasing motivational and academic skills (test taking, studying) as the top areas for needing improvement. In addition to adding control groups, further refinement of the self-advocacy questionnaire and intervention is required in order to effectively measure and target the student identified self-advocacy needs.

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Skills to Succeed: A Questionnaire Developed to Measure Self-Advocacy Skills

Before and After Intervention in University Students

Completing postsecondary education is important for students to be able to earn higher pay and increase their standard of living (U.S. Department of Labor, 2009).

Though it is not uncommon for college and university campuses to provide resources for students in order to help them stay enrolled, not all students are ultimately successful at the college or university they initially choose. In 2003, the reported five-year graduation rate at four-year public Bachelor's, Master's, and PhD granting institutions was 51.6% . This amounts to over half a million college students each year who do not achieve their initial academic and career goals (Carey, 2004). At Colorado State University (CSU) this number is higher with 59% of students who enrolled in 2004 graduating within five years (Colorado State University, 2009b). Students who remain at a chosen university for consecutive years until they graduate with a degree are said to be "retained" (Habley & McClanahan, 2004). In addition to the concern for people who are unable to access the benefits of a college education, institutions of higher education are interested in improving student retention rates as they receive pressure from policy makers and try to maintain institution quality and prestige (Hossler, Ziskin, & Gross, 2009).

There are many issues contributing to students' ability to complete a degree at an institution of higher education. Their retention has been positively linked to academic and non-academic factors (Lotkowski, et al., 2004). The top academic factors reported by Lotkowski, et al. (2004) were student high school grade point average (GPA) and

ACT Assessment score. Some non-academic factors affecting retention include socioeconomic status (SES), academic-related skills, academic self-confidence, academic goals, institutional commitment, social support, institution selectivity and financial support.

Other personal student factors have been linked with student graduation. Students representing minority racial groups or low-income families graduate at lower rates than their peers (Carey, 2004). Other groups of students who are less likely to earn a degree include those students who: 1) require remedial coursework, 2) are first-generation to attend higher education, and 3) have disabilities (Frieden, 2003; Pascarella, Pierson, Wolniak, & Terenzini, 2004). This research will focus on the issues of retention pertaining to students who represent racial minorities, first-generation college students and students with disabilities. A possible solution to some student retention issues will be offered.

Students representing racial minorities are enrolling in postsecondary education in greater numbers, yet some minorities do not graduate from college at the same rate as their non-minority peers. In 1976, 15% of all college students were minorities. This number more than doubled, to 32%, in 2007 (Snyder, Dillow, & Hoffman, 2009). The six-year graduation rate for a Bachelor's degree for African American and Latina/o students who began their education in the 1995 school year was 43% and 44%, respectively (National Center for Education Statistics, 2002). This compares to Asian and White peers who graduated at 69% and 62% respectively (National Center for Education Statistics, 2002). At CSU, the six-year graduation rates for students entering in 2003 was 47% for African American students, 60% for Latino(a) students, 56%

percent for Asian students, and 65% for non-minority students (Colorado State University, 2009b). These statistics show less of a disparity in graduation rates between minority students and non-minority students at CSU compared to the national rates, but there is still a marked difference of 5 to 17 percentage points.

In a National Center for Education Statistics study (2002), Choy (2001), reported that in the 1995-1996 school year 34% of students entering four-year institutions were first-generation students. The issues of first generation students are compounded by the fact that they tend to be racial minorities, from low-income families and have lower levels of academic preparation (Engle & Tinto, 2008). However, even when controlling for these factors, students who are first-generation and low income are still at greater risk for exiting higher education without a degree. This indicates that the experiences students have during enrollment in college also have a major impact on their retention rates (Engle & Tinto, 2008).

Students with disabilities are another growing population in postsecondary education. The National Center for Educational Statistics (Horn, Nevil, & Griffith, 2006) reported that in the 2003-04 school year 11% of all undergraduate college students identified as having a disability. This is an increase from previous years when Henderson (1992) found in 1991 that 9% of freshmen students disclosed a disability, and in 1978 only 3% of freshmen reported a disability. Though their numbers are increasing, studies indicate that students with disabilities are less likely to graduate than their peers without disabilities (Belch, 2004). Belch (2004) describes how a student's self-determination, which includes assertiveness, self-advocacy, creativity, and independence, is fundamental to success in postsecondary education.

Administrators, staff, faculty, and students all play a part in year-to-year and overall retention, as well as student graduation rates: however, this study will focus on the role of the student and the skills that students must employ to help themselves succeed in higher education. For the purpose of this study, of primary interest are the skills that can be summarized as part of self-advocacy.

The ACCESS team at Colorado State University is interested in investigating the benefit of self-advocacy for students who have typically experienced difficulty with retention in postsecondary education. (A detail description of the ACCESS project is found in Appendix A.) The term self-advocacy, which is frequently described as being a part of self-determination, has origins in the disability rights movement (Wehmeyer, Bersani Jr., & Gagne, 2000). Wehmeyer (1999), who has significantly contributed to the field of self-determination, which is related to self-advocacy. Wehmeyer focused much of his work on children and adults with developmental disabilities. Yet his model of self-determination is intended to serve all people; as indicated by his assertion that, “our strong belief is that self-determination is a construct pertinent to all students, not just students with disabilities, and important to all people, not just people with disabilities” (p. 60).

Hartman (1993) describes self-advocacy as the students’ understanding of his or her disability, awareness of strengths and weaknesses that result, and the ability to articulate need for accommodations. Though this is appropriate for people with disabilities, the ACCESS team uses a definition of self-advocacy that is inclusive of diverse groups of people in order to meet the needs of all students. Adapting Hartman’s definition, the ACCESS team has identified three core components of self-advocacy: (1)

knowledge of self; (2) knowledge of personal needs and wants; (3) knowledge of how to obtain personal needs and wants. It is our hypothesis that improving these skills may improve retention rates in groups of students who typically leave a four-year postsecondary school without a degree.

Literature Review

Test and colleagues developed a conceptual framework for self-advocacy, and they identified four components upon which SA depends: (a) knowledge of self, (b) knowledge of rights, (c) communication, and (d) leadership (Test, Fowler, Wood, Brewer, & Eddy, 2005). These authors later published a methodological review of self-advocacy intervention studies (Test, Fowler, Brewer, & Wood, 2005), which noted that although research has demonstrated a positive relationship between an individual's level of self-determination and adult outcomes (Wehmeyer & Palmar, 2003; Wehmeyer & Schwartz, 1997), no studies have specifically investigated a relationship between self-advocacy and positive adult outcomes.

Most studies that were reviewed by Test et al. (2005) focused on immediate results for students with disabilities. Of the 25 self-advocacy studies reviewed, eight used student participation and engagement during their own Individualized Education Plan (IEP) team meetings as an outcome measure, and the majority of students were high school aged with learning disabilities. For example, Lancaster, Schumaker, and Deshler (2002) used an Interactive Hypermedia Program intervention with 22 high school students and assessed their ability to engage in effective communication behaviors (eye-contact, good posture, pleasant tone of voice, etc.) as well as demonstrate self-advocacy skills such as asking questions and naming individualized goals during IEP meetings.

Test, Fowler, Brewer, et al. (2005) described this study as addressing their proposed skill components of *knowledge of self* and *communication*. The researchers obtained several baseline scores, two scores during intervention, and one post-intervention score. Results indicated that students who received either media or live instruction in self-advocacy strategies had better advocacy skills, counted by “relevant responses” during an IEP meeting following the intervention. Each student in the hypermedia instructions groups made between 47 and 78 relevant responses ($M = 62$) during his or her IEP meeting, and those in the live instruction group made between 41 and 79 relevant responses ($M = 61.4$). Students in the control group made between 14 and 33 relevant responses ($M = 21$). Significant differences were found between the hypermedia instruction intervention group and the control group [$(W_X < 21) = .0003$] and the live intervention group and control group [$(W_X < 21) = .0003$].

These studies reviewed by Test, provide valuable information for a group of high school students that may transition into a college or university setting. Students with disabilities make a major life transition as they leave high school, in that they are also leaving behind the support services mandated by the Individuals with Disabilities Education Act (IDEA) (2004). Prior to entering a college or university, students with disabilities are sought out by the education system and they are automatically provided with the accommodations they need (IDEA, 2004). This is not the case when they leave high school. Students with disabilities who are pursuing post-secondary studies are eligible for reasonable accommodations as mandated by Section 504 of the Rehabilitation Act and the Americans with Disabilities Act (Hartman, 1993). Though these accommodations are available in post-secondary settings, a student must independently

seek them. The ability to independently seek out accommodations is one area where self-advocacy skills are needed. Hartman (1993) describes articulating the need for accommodations as a major component of self-advocacy. Though roughly one in ten students report having a disability (National Center for Education Statistics, 2006), not all of these students request accommodations on campus. The ACCESS team recently surveyed 614 students at CSU who were enrolled in undergraduate psychology classes, primarily General Psychology (Psychology 100). It was found that of the 10.9% of students who self-disclosed a disability; less than half of these students were registered with the Resources for Disabled Students office (Colgan, 2010). Though many students with apparent physical disabilities self-identify in order to receive accommodations such as interpreters, note takers, and accessible classrooms, students with “invisible” disabilities, such as mental illness, ADHD, or learning disabilities, may avoid disclosure to prevent stigmatization (Troiano, 2003).

Additional studies reviewed by Test and colleagues (2005) included college students with a variety of disabilities. A study by Balcazar, Fawcett, and Seekins (1991) had four college students with physical disabilities who volunteered to receive training to help them achieve personal goals through “help-recruiting.” *Communication* was the identified self-advocacy skill addressed in this study (Test et al., 2005). The researchers identified 25 skills required for recruiting help from another person which include: making a personal introduction, indicating a request, handling a refusal, asking for a referral, and making a closing statement. Participants completed role-play probes during baseline assessment, received training, and then participated in additional probes after training. Results indicated that performance scores after training were significantly

greater ($M = 92.5$) than scores before training ($M = 40.19$, $t(60) = 17.49$, $p < .001$). Four months after training, participants reported reaching three to five goals they had set before training in the areas of education, social relations, or health. Furthermore, an increase was found for the numbers of people in the participants' social support networks. During baseline, the average size of a support network was 18 people (range from 17-21). Four months after training, the average network was 24 people (range 18-29). This was statistically significant ($p < .05$) using a two-tailed t -test ($t(8) = 2.81$). Collectively, this reviewed research indicates that interventions targeted at increasing self-advocacy skills in high school and college students can result in positive, functional outcomes.

Although the vast majority of research and theory about self-advocacy involves people with disabilities, a recent article by counselors Astramovich and Harris (2007) advised the promotion of self-advocacy in minority students by high school counselors. The authors first describe the challenges to academic, career, and social development of minority students through longstanding systems of oppression, stereotyping, and disempowerment.

Astramovich and Harris (2007) propose self-advocacy principles appropriate for their target population: self-determination, empowerment, and social justice. They cite Malian and Nevin's (2002) definition of self-determination as "the ability of an individual to make meaningful decisions and implement choices that relate to the quality of personal life events" (p. 271). This definition further expounds upon Hartman's and the ACCESS team's definition of self-advocacy by adding focus to the quality that the choices and decisions can add to an individual's life. Astramovich and Harris (2007) propose that "when students have a sense of control over their education, they are

more inclined to take a vested interest in their academic success” (p. 271). This statement bolsters the importance of self-advocacy in the academic arena. Bolton and Brookings (1996) identified 20 facets of empowerment including being autonomous and collaborative, interdependent and independent, and personally and socially responsible. Astromovich and Harris (2007) explain how mastering these qualities give a person the ability to take control over life decisions while having awareness of the threat of societal power structures. Another principle of self-advocacy proposed by Astramovich and Harris (2007) is social justice. A social justice approach, used by counselors and students, emphasizes the identification of barriers and environmental challenges that can limit success. This part of Astramovich and Harris’s (2007) definition further expands the self-advocacy components proposed by Hartman (1993) and the ACCESS team; “understanding your disability” and “knowing yourself.” Including social justice in the definition of self-advocacy accentuates that barriers and challenges can exist outside of the individual.

For most students, leaving high school and entering a four-year institution represents a major life transition. Schlossberg’s transition theory provides insight into how the transition, the environment and the individual can together determine the impact a transition will have on a person (Evans, Forney, & Guido-DiBrito, 1998). Schlossberg identified four factors that affect an individual’s ability to cope with a transition: situation, self, support and strategies. These factors are commonly referred to as the “4 S’s” (Evans, et al., 1998). For most students the transition to college is very intentional, and the situation created by the timing and role change is likely viewed as positive. Yet

students may be challenged by the notions of *self* they possess, the *support* they have, and the *strategies* they employ while making the transition to postsecondary education.

Though all students are making a transition when they leave high school, not all students come with the same preceding factors, abilities and experiences as they enter postsecondary education. One group that is particularly challenged with making the transition to college is first-generation students. Currently, no studies have been found that target first-generation students' self-advocacy or self-determination skills, yet this is a group that has great potential to benefit from such an intervention. For example, first-generation college students who enroll at a four-year institution are less likely to have had a rigorous high school education and the academic preparation needed for college, particularly in mathematics, and are also less likely to have parent involvement in planning for college, and to come from a family with lower income (Choy, 2001).

These students may benefit by accessing tutoring services that are provided by most campuses. To do this, a student needs to recognize the need for tutoring and know how to utilize tutoring programs on campus. In other words, he or she will need to self-advocate for the educational support he or she needs.

One characteristic of first-generation students found by Ishitani (2006) is that these students are most likely to depart post-secondary education during their sophomore year. Academic-related skills, such as self-advocacy, were not assessed in this study, but it was found that a greater amount of financial aid received by students had a positive effect on retention. Accessing resources on campus, including Student Financial Services, is an important skill that a self-advocacy intervention can address. This supports the contention that gaining self-advocacy skills during the freshmen and

sophomore years in college may be vital for colleges and universities to improve the retention and graduation rates.

Though there is information available about risk factors and retention rates of first-generation students, there is less information about why many of these students leave school once they have enrolled. Furthermore, there is less research assessing what is helpful for these students during their college experience.

College campuses are attempting to address retention and graduation rates of incoming freshmen by responding to their needs. Some type of transition services are now commonplace at most post-secondary institutions (Schaller, 2010). Schaller (2010) reports that 96% of institutions have new student orientation programs and 80% offer first year seminars. These transition services are important as they can offer both academic and social connection to the university which has been shown to be an important predictor of retention during the first year and beyond (Pascarella & Terenzini, 2005; Kennedy & Upcraft, 2010). Though transition services for incoming freshmen have proved beneficial, a marked decrease in services occurs when students enter their second years (Kennedy & Upcraft, 2010).

Sophomore students have a unique experience that warrants attention. Little research has been conducted beyond the freshman year. The transition of students from freshman to sophomore year is often overlooked, but it is an area where self-advocacy intervention may prove useful. Second only to the spring after freshman year, at CSU students are most likely to depart between fall and spring semester of their sophomore year (Colorado State University, 2009b). Schaller (2010) describes some of the distinct issues that many sophomores experience. One of these is the selection of a major and the

development of a career path. Sophomores are often expected to decide a major during their second year, which typically has occupational outcomes. One issue with this, Schaller explains, is that students may not be prepared to make this decision. Many second year students are still receiving financial support from their parents. Because these students do not immediately need to begin a career to support themselves, or a family of their own, they experience less pressure to choose a major and corresponding career path (Schaller, 2010).

Self-advocacy skills may play an important role as students select a major and career path. Though there is little in the literature to support this, it is logical that students who know themselves, know what they need and want, and know how to get what they need and want will be better prepared to make decisions that will have a significant impact on their lives. Supporting the development of students' self-advocacy skills may be one way to promote the selection of a compatible major, one that they will be successful in completion of a degree.

Purpose

There are two purposes to be achieved through this research. The first purpose of this study is to develop a tool that can reliably measure students' perceived self-advocacy skills. Since there has been little research on self-advocacy in post-secondary students without disabilities, it is understandable that there are no instruments developed to survey the self-advocacy skills of the general student population, and there are also no reliable survey tools that have been used with post-secondary students with disabilities.

Developing such a tool may provide researchers, educators and university personnel with a greater ability to proactively anticipate students who may have difficulty

with persistence at the university. The second purpose of this study is to determine the effectiveness of the self-advocacy intervention that has been developed by ACCESS team members, using both quantitative and qualitative measures. These data are part of a larger project, a grant awarded to the Department of Occupational Therapy at Colorado State University titled, ACCESS II: Persistence in Post-secondary Education for Students with Disabilities, funded by the U.S. Department of Education (see Appendix A for a description of this funded project).

Research Questions

Question 1: Are the questions developed for the Student Self-Assessment questionnaire sensitive to change in students' perceived level of self-advocacy?

Hypothesis One: The pre-questionnaire will result in responses at varying points along the continuum that will allow the ability to demonstrate improvement.

Hypothesis Two: On the post-questionnaire, students will report a significant increase in self-advocacy skills as compared to their responses on the pre-questionnaire.

Question 2: Are there students representing diverse groups by student status (first generation college students, non-traditional students, or part-time students), race or ethnicity (Hispanic/Latino(a), Asian/Pacific Islander, Arabic, Black/African American, White/Caucasian, Multicultural/Multiracial), or students with disabilities?

Hypothesis Three: If there are students who represent the aforementioned diverse groups on the pre-questionnaire, there will be differences in perceived self-advocacy skills, measured by quantitative data, when compared to students who are not considered of a minority group.

Hypothesis Four: Qualitative data from the post-questionnaire will reveal common themes in line with the three principles of self-advocacy, and students representing diverse groups will vary in their responses to questions regarding self-advocacy needs and skills compared to students who are not considered of a minority group.

METHODS

Participants

The 36 students who participated in this study were members of the Key Plus Learning Community, and as freshmen they participated in the Key Learning Community. The mission of Key Communities is “to assist students with their transition to and through their first two years at Colorado State University (CSU) by providing an enriched academic and social environment that is welcoming to students of all backgrounds and experiences” (Colorado State University, 2010). Students who participate in the Key Plus Communities typically live in the same residence hall, attend at minimum one class together, and participate in extracurricular functions designed specifically for them.

Sophomore students who participated in the Key Plus Community enrolled in one of two tracks with 20 students (56%) in Career Decision Making and 16 (44%) students in Leadership. Of the 36 initial participants, 24 (67%) were female. When asked to describe their race and ethnicity, 14 (39%) reported being White/Caucasian, 12 (33%) were Hispanic/Latino, 10 (28%) reported Black/African American, 3 (8%) reported Asian/Pacific Islander, 2 (6%) reported Multicultural/Multiracial, and 1 student (3%) reported ‘Other’. These totals exceed the number of students participating, as participants were allowed to select all appropriate racial and ethnic groups. The demographic makeup of this group was more racially and ethnically diverse than the

overall population at CSU which consisted of 79% White, 6% Hispanic, 3% Black, and 3% Asian American students as reported by CSU's Freshmen Profile (2009a).

First-generation college students represented 13 (36%) of the 36 respondents. The percentage of CSU students who were first-generation was not available, but this percentage aligned with Choy's (Choy, 2001) statistic of 37% of students enrolled in four-year institutions of whom neither had a Bachelor's degree.

Additionally, though no students reported having a disability on the pre-questionnaire, two students (6%) identified having a disability on the post-questionnaire. This number is lower than the 11% of students who reported having a disability on a recent ACCESS project survey of mostly freshmen students at CSU.

Of the 36 students who completed the pre-questionnaire, 32 students completed the post-questionnaire. One student left the Key Plus program, and three students were unavailable on the final day of class when the post-questionnaire was administered.

Procedures

Approval of research tools and methods was granted by the IRB in advance of data collection and intervention. Before administration of the pre-questionnaire, all participants reviewed an implied consent form approved by the IRB (see Appendix B). Pre-questionnaires were administered to all participants before completion of the first week of school. Students completed post-questionnaires during their final exam period corresponding to the track, Leadership or Career Decision Making, in which they were enrolled.

In order to determine the ability of the self-advocacy questionnaire to measure change, as well as determine the effectiveness of the self-advocacy intervention, a

convenience sample of 36 sophomore students at (CSU) was selected. Students completed a pre-questionnaire at the start of fall semester in 2009 and a post-questionnaire at the end of the semester. After pre-questionnaire administration, ACCESS team members reviewed the data to identify areas of lower self-reported performance. To remain blind, the ACCESS team, rather than the author, participated in the initial data review. Students received a self-advocacy intervention that targeted areas of lower reported performance on the pre-questionnaire. A monetary compensation of five dollars cash was given to students for completing the pre-questionnaire and another five dollars for completing the post-questionnaire.

Materials

The Student Self-Advocacy Questionnaire was developed by ACCESS project team members. The questionnaire was piloted with members of the Department of Occupational Therapy at CSU including OT graduate students, staff and faculty. Changes were made to questions to improve clarity. The author provided feedback during development of the questionnaire but was not directly responsible for its creation.

The pre-questionnaire (see Appendix C) consisted of a participant demographic section, thirty-one Likert scale questions, one yes or no question, and one open-ended question. The post-questionnaire had an identical demographic and Likert scale questions, but included seven additional open-ended questions (see Appendix D). Thirty of the Likert scale questions were on a scale from 0 to 10 with '0' being "totally false" and '10' being "totally true." All of these questions were phrased positively with 10 representing the highest self-advocacy skill level. Question 23, "My feelings and

thoughts about college are best described in the following statement,” used a five point scale. Finally, question 22, “I have declared an academic major” was yes or no.

Training Procedures

ACCESS team members provided self-advocacy training for the program coordinator, graduate student mentors and undergraduate interns involved with the Key Plus program. This training provided the attendees (i.e., coordinator, mentors, and interns) with detailed information about the principles of self-advocacy and challenges facing students, as well as specific self-advocacy skill building activities to benefit individuals and groups.

After initial collecting of the pre-questionnaire, ACCESS team members, excluding the author, reviewed the data to identify areas of lower self-reported student performance. Data reviewers met with the coordinator of the Key Plus community to report their findings and provide training in self-advocacy development activities to target the areas of lower reported performance. Based on the information provided by the ACCESS team, the Key Plus staff members delivered the self-advocacy intervention to students during “community meetings” held three times during the semester.

Attendance at these meetings by students was not mandatory but was highly encouraged. Two major themes predominated each meeting. The first was an explanation of the three principles of self-advocacy (1) know yourself, (2) know what you need and want, and (3) know how to get what you need and want. The second theme was “balance.” In one activity students applied the principles of self-advocacy when looking at the current balance of their lives, and how they see their lives in the future. Students completed a worksheet where they detailed their lives right now paying

particular attention to the areas of work/school, health, relationships, spirituality/purpose, recreation, and daily living. Students then completed a similar worksheet detailing areas where they think changes should be made in order to have a more balanced life now and in the future.

Data Analysis

After the collection of the pre- and post-questionnaires, quantitative data were entered into and analyzed using the data analysis program Statistical Package for Social Sciences (Version 18.0; SPSS, Inc.; Chicago, IL). Responses to open-ended questions were entered into the qualitative analysis program ATLAS.ti (Version 6.0; Scientific Software Development). This program was used to code and identify common themes among student responses. Student ID numbers were used to link responses to the pre- and post-questionnaires for each participant.

To answer hypothesis one, the mean, standard deviation, and skewness of each question was analyzed for ceiling effects. To answer hypothesis two, a paired *t*-test was used to determine significant differences between pre and post-questionnaire responses. Due to the exploratory nature of this study, Bonferroni's correction was not used and the alpha was set at .05. To answer hypothesis three, descriptive statistics were first used to determine group sizes. With sizable minority groups in the sample, independent samples *t*-tests were used to compare groups' responses on Likert scale questions. To answer hypothesis four, an analysis of open ended questions to identify common emerging themes from pre and post-questionnaires was completed using the qualitative analysis program ATLAS.ti and manual analysis.

RESULTS

Students were encouraged to attend three community meetings throughout the fall semester in which attendance was necessary for students to receive the formal self-advocacy intervention. Attendance at community meetings varied among the 32 participants. Nine students (28%) attended all three of the meetings, eleven (34%) attended two meetings, eight (25%) attended one meeting, and four (13%) did not attend any meetings. Though students were not asked to provide a reason for not attending, seven students reported not being able to attend some meeting(s) due to class or exam conflicts.

Students were asked whether or not they had declared a major. On the pre-questionnaire, 5 out of 36 students reported that they had not declared a major. On the post-questionnaire one of these students reported having declared a major, three were still undeclared, and one student did not complete the follow-up questionnaire. Additionally, one student who had declared a major in the pre-questionnaire reported not having a major on the follow-up questionnaire.

Hypothesis 1 stated that the pre-test will result in responses at varying points along the continuum that will allow the ability to perceive improvement. Means, standard deviations, and skewness values were gathered for the thirty 11-point Likert scale questions, and they were analyzed for potential ceiling effects. The means on the pre-questionnaire ranged from a high of 9.53 ($SD = 1.12$) on question 24 (I will graduate from college) to a low of 7.36 ($SD = 1.73$) on question 31 (I have effective test-taking skills) with the highest score on the Likert scale being 10. These same two questions also

had the highest and lowest means on the post-questionnaire; question 24 had a high of 9.63 ($SD = .66$) and question 31 had a low of 7.16 ($SD = 1.90$). For the purposes of this research, a question was considered to be free from ceiling effect if it did not significantly violate skewness and if it had an “upper bound” ($M + 1SD$) of equal or less than 9.75 out of a maximum of 10. On the pre-questionnaire, 15 out of 30 questions met the criteria to be free from ceiling effect, and on the post-questionnaire, 17 out of 30 questions met the same criteria. Questions were considered skewed if the skewness statistic divided by the standard error of skewness was greater than ± 1.96 . Twelve questions on the pre-questionnaire and 13 questions on the post-questionnaire violated skewness (see Table 1). Overall, 11 questions did not violate skewness or the upper bound limit, and did not have a ceiling effect. The questions without a ceiling effect have the possibility of showing improvement in students’ perception of self-advocacy skills when the questionnaire is used before and after intervention.

Hypothesis two stated that on the post-questionnaire, students will report a significant increase in self-advocacy skills as compared to their responses on the pre-test survey. A paired t-test was used to compare responses of the 32 students who responded to both the pre- and post-questionnaires. Student perception of skills significantly increased on question 15 and decreased on questions 27 and 30 (see Table 2). Because question 27 violated principles of skewness and kurtosis, a nonparametric Mann-Whitney U test was run to error on the side of caution. The findings did not alter the significance and the parametric t-tests results were reported for all the questions.

Table 1 <i>Summary of questions with ceiling effects*</i>				
Question	Pre-questionnaire violations		Post-questionnaire violations	
	Skewness	Mean + 1SD	Skewness	Mean + 1SD
1. I am aware of my values (e.g. beliefs, what is important to me).		✓	✓	✓
5. I have an understanding of strategies that assist me in overcoming my challenges.	✓			
8. When I feel stressed, I know how to manage my stress in healthy ways.			✓	
9. I know how to motivate myself in order to achieve my goals.		✓	✓	
11. I feel confident in my ability to communicate my needs to others.	✓			
12. I ask others for help when needed.	✓			
13. I am organized.	✓	✓	✓	✓
14. I feel in control of my life.	✓			
15. I meet deadlines.		✓		✓
16. I know how to prioritize and manage my time wisely.			✓	✓
17. I know how to set short-term goals that lead to the achievement of my larger goals.			✓	
18. I follow through and accomplish the goals that I set for myself.	✓			
19. I have people I can turn to for help and support.	✓	✓	✓	✓
21. I have a meaningful vision for my future (e.g., career, life beyond college).	✓	✓	✓	✓
24. I am confident I will graduate from college.	✓	✓	✓	✓
27. I am responsible for the grades I achieve.	✓	✓	✓	✓
28. When I am having difficulty in a particular class I take action to overcome my challenges.			✓	
29. I am on time for class and appointments.	✓	✓	✓	✓
31. I have effective test taking skills.	✓			
*Detailed description of ceiling effects located in Appendix E.				

Table 2 Summary of means, standard deviations, <i>t</i> values and Cohen's <i>d</i> for questions with significant paired <i>t</i> -tests							
	Pre-questionnaire		Post-questionnaire		<i>t</i> (31)	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Negative <i>t</i> (Increased skill)							
15. I meet deadlines	8.97	0.97	9.38	0.75	-2.63	0.013	0.47
Positive <i>t</i> (Decreased skill)							
27. I am responsible for the grades I achieve	9.44	1.11	9.06	1.08	2.68	0.012	-0.35
30. I have strong study skills that help me succeed	7.54	1.44	7.44	1.54	2.24	0.032	-0.30

Though they were not significant, six questions had small effect sizes (see Table 3). Three were in the positive direction indicating increased skill, and three in the negative direction indicating decreased skill.

Hypothesis 3 stated that if there are students who represent diverse groups on the pre-questionnaire, there will be differences in perceived self-advocacy skills, measured by quantitative data, when compared to students who are not considered of a minority group. Independent samples *t*-test were used to determine differences in students' responses who represented diverse groups of at least three participants. Students who reported being Hispanic/Latino (*n* = 12), Black/African American (*n* = 10), Asian/Pacific Islander (*n* = 3), or first-generation college students (*n* = 13) were compared to their peers who did not represent the respective diverse group. The groups Multicultural/Multiracial (*n* = 2), 'Other' (*n* = 1), and 'students with disabilities' (*n* = 0) were excluded due to insufficient numbers. Table 4 depicts questions with significant differences when

Table 3

Summary of means, standard deviations, t values and Cohen's d for questions with small effect sizes

	Pre-questionnaire		Post-questionnaire		t (df)	p	d
	M	SD	M	SD			
<i>Positive effect</i>							
3. I have a well balanced life that meets my needs.	8.03	1.36	7.59	1.37	-1.67 ^a	0.104	0.365
17. I know how to set short-term goals that lead to the achievement of larger goals.	8.52	1.15	8.16	1.55	-1.10 ^a	0.281	0.264
32. I am satisfied with the grades I achieve.	8.20	1.38	7.80	1.19	-1.62 ^a	0.117	0.337
<i>Negative effect</i>							
1. I am aware of my values.	8.59	1.39	8.91	1.12	1.32 ^a	0.194	-0.253
5. I have an understanding of strategies that assist me in overcoming my challenges.	7.56	1.13	8.00	1.39	1.95 ^b	0.060	-0.347
6. When I have a problem, I know what steps to take to address my problem.	7.78	1.34	8.09	1.09	1.26 ^c	0.217	-0.254
^a df = 31; ^b df = 30; ^c df = 29							

analyzed by diverse group membership. On question 7, “When I am having a difficult time in my personal life, I know how to work through it,” Students who identified themselves as Asian/Pacific Islander answered significantly lower than those who did not report being Asian/Pacific Islander. On question 7, question 21, “I have a meaningful vision for my future”, and question 27, “I am responsible for the grades I achieve”, students who identified themselves as being Hispanic/Latino(a) answered significantly higher than their peers who did not report being Hispanic/Latino(a).

Table 4 <i>Summary of means, standard deviations, t values for questions with independent t-test significant by race</i>						
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Question 7				-2.199	34	.035
Asian/Pacific Islander	3	6.67	1.528			
Non Asian/Pacific Islander	33	8.21	1.139			
Question 7				2.465	34	.019
Hispanic/Latino	12	8.75	.866			
Non Hispanic/Latino	24	7.75	1.260			
Question 21				3.758 ^a	32.77 ^a	.001
Hispanic/Latino	12	9.83	.389			
Non Hispanic/Latino	24	8.96	.999			
Question 27				2.295 ^a	30.71 ^a	.029
Hispanic/Latino	12	9.83	.389			
Non Hispanic/Latino	24	9.21	1.215			
^a The <i>t</i> and <i>df</i> were adjusted because variances were not equal						

Hypothesis 4 states that qualitative data will reveal common themes in line with the three principles of self-advocacy, and students representing diverse groups will vary in their responses to questions regarding self-advocacy needs and skills.” To address the first part of hypothesis four, the open-ended questions 34, 35 and 40 from the post-questionnaire were analyzed for common themes with relevance to self-advocacy. These questions were chosen because they were the most relevant in assessing the self-advocacy skills present and needed by the students.

Do you have the skills?

Question 34, “Do you have the skills you need to accomplish your academic and life goals? If not, what do you feel you are lacking?” yielded three distinct themes. Fifteen respondents (50%) clearly stated they had the skills to accomplish their goals; this theme was summarized as “yes.” The following statement made by a student represents this theme, “*Yes! My skills will get me far in life.*” Eleven respondents (37%) stated that

they had the skills but then named an area where they needed improvement; this theme was summarized as “yes, but...” One student described this conflict by saying, *“I feel like I have the skills to accomplish my academic life. I just need a little more help on studying.”* Four students (13%) gave a specific area where they needed improvement; this theme was summarized as “identified need.” One student described her skills she felt were lacking, *“I need to work on my motivation; personal family issues severely affected me academically this semester and last semester.”*

Of the students whose responses fell in the categories of *yes, but...* or *identified need* themes, nine students said motivation was the skill they were lacking and five students said they were lacking academic skills (i.e. studying, test taking, planning for academic future). One student reported needing to be less social with friends, and another student stated that she was always looking for ways to improve herself.

What is your greatest challenge?

Results from question 35, “Right now what is your greatest challenge?” were grouped into four major themes. The first theme “motivation” had ten responses (36%). Students identified that they needed to not procrastinate, put skills to use, apply themselves, and to “stop slacking.” The second theme “academics” had nine responses (31%). Students reported being challenged by current classes, as well as future classes or programs. A student describes this by saying, *“Right now my greatest challenge is getting myself ready for applying to a highly competitive program and getting in.”* The third theme “personal/life issues” had six responses (21%). Two students mentioned experiencing the loss of a friend or loved one, while others described other personal issues. A student describes her challenge as, *“Dealing with changes in my life plan.”*

Finally, the theme “finances” had three responses (11%). One student clearly explained,
“Finances. I am not getting any help from my parents.”

How do you self-advocate?

Responses to question 40, “In what ways do you self-advocate?” were more varied and the strategies students used were grouped into seven categories. These strategies were then corresponded to one of the three principles of self-advocacy. Some students listed multiple, independent concepts pertaining to self-advocacy within their response, and each relevant response was coded individually. The responses to this question are displayed in Table 5.

Table 5 Results from question 40: “In what ways do you self-advocate?”			
Theme (N)	Self-advocacy principles		
	Know <i>yourself</i>	Know <i>what</i> you need and want	Know <i>how to get</i> what you need and want
	Take care of myself (6)	Planning (5)	Utilize resources (7)
	Be myself (6)		Work toward improvement (4)
	Time/talking with others (5)		
	De-stress (3)		
N (%)	20 (56%)	5 (14%)	11 (31%)

To address the second part of hypothesis four, responses to open-ended questions were sorted based on students who were first-generation, Hispanic/Latino(a), Black/African American, and White/Caucasian. The groups: Asian/Pacific Islander, Multicultural/Multiracial, Other, and ‘students with disabilities’ were not used to due to insufficient numbers. Responses to questions 34, 35, and 40 were manually analyzed across racial/ethnic groups and first-generation students. No apparent differences were found in the way students responded, based on race or ethnic backgrounds.

DISCUSSION

A quasi-experimental, mixed design study was used to determine the quality of a questionnaire to identify self-advocacy skills in college sophomores and the effectiveness of the questionnaire to measure the improvement of self-advocacy skills after receiving a self-advocacy intervention. A diverse group of 36 students in a Learning Community at Colorado State University were given a questionnaire before the start of fall semester 2009. Students received a self-advocacy intervention to target areas of lower performance based on the pre-intervention questionnaire results and were given a follow-up survey at the end of fall semester. Students reported a need for increasing motivational and academic skills (test taking, studying) as the top areas for needing improvement.

Hypothesis 1

It was found that half of the 11-point Likert scale questions were free from ceiling effects on the pre-questionnaire and 17 of 30 were free from ceiling effects on the post-questionnaire. Because there was bidirectional change in student responses on the post-questionnaire, some questions violated skewness or the upper bound score ($M + 1SD \leq 9.75$) on the pre-questionnaire but did not violate either of these criteria on the post-questionnaire. Conversely, some questions had no violations on the pre-questionnaire but had violations on the post-questionnaire.

In order to improve the Student Self-Advocacy Questionnaire, all questions will benefit from revision, with attention to those with ceiling effects. The 19 questions that

had a violation of either the skewness or upper bound score need be checked for clarity and relevance for measuring self-advocacy. Particular attention must be paid to the nine questions that had violations on both the pre- and post-questionnaires, as these questions may require the greatest revision. For example, question 13, “I am organized,” violated skewness and upper bound limits on both the pre- and post-questionnaires. One possibility is that this question may be too broad for students to interpret. It may be beneficial to divide a general question into multiple, specific topics such as, “I keep my course notes organized,” and, “I have an organized calendar of assignments and exams.”

The questionnaire may also benefit from the addition of questions that expand on challenging skill areas described by students. Because students reported motivation (36%) and academic skills (31%) as a challenge, questions that break down the challenge into its components may be more informative. An example of this is asking students about their study techniques such as, “I schedule specific times to study during the week.”

Hypothesis 2

The questionnaire did not seem to be able to detect changes in self-advocacy skills as only one question showed a significant increase, and two questions showed a significant decrease in skills. Results from a paired *t*-tests indicated that question 15, “I meet deadlines,” had significant positive change and question 27, “I am responsible for the grades I achieve,” and question 30, “I have strong study skills that help me succeed,” had significant negative change. Students may have improved in their ability to meet deadlines due to the instruction on time management that students received during the self-advocacy intervention. Though this is possible, it is difficult to be certain because

ACCESS team members were not present when the intervention was delivered at community meeting, thus we cannot be sure to what detail this topic was addressed. Another possibility is that students may have improved in their ability to manage time as a result of better learning to cope with school during their sophomore year.

Similar to all students at CSU, Key Plus Learning Community participants have access to subject specific tutoring, writing assistance, and study skills workshops, yet it is unclear how many students accessed these resources. There are several potential explanations for the decrease in perception of the responsibility for grades and the strength of study skills. One possibility is the increase in rigor and concentration of academic course work during the sophomore year. Schaller (2010) describes how academic self-efficacy develops during the sophomore year. Self-efficacy, in this sense, is defined as, “the self-evaluation of one’s ability or chance for success or both in the academic environment,” (Schaller, 2010, p. 18). Because over 80% of students involved in Key Plus have declared a major, these students may be engaged in the demanding, major-specific coursework that challenges their perceptions of academic self-efficacy.

It will be beneficial to refine the questionnaire to ask students if they feel they can self-advocate on behalf of their academic related skills specific to their major. For example, having questions that ask if students want or use major-specific tutoring services or study groups will provide insight into their academic self-efficacy as well as the need for enhanced intervention in this area.

A second possibility for the decrease in perception of the responsibility for grades and the strength of study skills, albeit not independent of the first, is the timing of the administration of the post-questionnaire. Students completed the post-questionnaire

during their finals week, and it is possible this affected the perception of their self-advocacy skills, particularly their academic and coping skills. By administering another questionnaire at midterm during the semester, during subsequent semesters, as well as adding a control group, perception of students' self-advocacy skills can be better understood. For example, do students who receive the intervention have higher levels of self-advocacy skills during midterm, but a decrease during finals? Also, do their skills increase as they progress through their sophomore year?

Hypothesis 3

When analyzing how students representing differing racial/ethnic groups, first-generation students, and students with disabilities answered questions on the pre-questionnaire, some differences were noted. Groups with sufficient numbers included students who identified themselves as being Caucasian/White, Black/African American, Hispanic/Latino(a), Asian/Pacific Islander, or first-generation to attend college. Differences were found on one question between students who were Asian/Pacific Islander and non-Asian/Pacific Islanders, and on three questions between students who were Hispanic/Latino(a) and those who were non-Hispanic/Latino(a).

Hypothesis 4

Qualitative data analysis expanded upon students' perceptions of need for skill development, as well as how students describe their challenges and self-advocacy strategies. A need for acquisition or improvement of self-advocacy skills was reported by 50% of students. Interestingly, when asked, "What is your greatest challenge?" students who previously said they *had* the necessary skills to succeed subsequently reported an area for improvement such as motivation, difficulty with a particular class, and getting

good grades. The qualitative data suggests that students who are confident in their ability to self-advocate still identify areas for improvement, and this indicates that they may benefit from a self-advocacy intervention.

Students will benefit from a self-advocacy intervention that meets their identified needs. Since about 65% of students reported motivation or academic related skills, such as studying and test taking, as a challenge, a refined intervention to target improvement in these skills may greatly benefit these students. The important areas of personal/life issues and financial concerns, reported by 21% and 11% respectively, should also be addressed in greater depth. Mentors who work with the Key Plus participants can assist by informing and encouraging students to use resources that match their needs. For example, if a student is unsure how he or she will pay for college, the mentor can talk with the student about visiting Student Financial Services or applying for scholarships.

The strategies that students reported using at the end of the semester provide insight into their current understanding of self-advocacy. Over 50% of students reported their personal techniques of self-advocacy as part of “know yourself.” This may be developmentally appropriate, as sophomore students are often challenged with exploring academic and personal identity. Schaller (2005) describes a period of “random exploration” that may continue from freshman year into sophomore year. At this time, students are learning to make decisions that best benefit themselves, instead of pleasing authority figures (e.g. parents or advisors). It may be the case that some of the students we surveyed are in a phase of learning about themselves. These students may report lower levels of perceived self-advocacy skills and not have declared a major. Consistent with Schaller’s (2005) insight into the sophomore year, some of the students we surveyed

are ready to apply their skills toward their goals. These students may be the ones who responded with a clear *Yes!* when asked if they had the necessary skills needed to succeed. These students may be in a period of “focused exploration.” During focused exploration students must know what they need and want, as well as know how to get what they need and want.

Limitations

One unanticipated limitation was the attendance rate of the community meetings for students involved with Key Plus. Because 23 students (72%) missed at least one community meeting, the majority of students did not receive the full self-advocacy intervention. If the training was effective, missing community meeting would affect student outcome, but based on the results of this study, we could not determine if the training was effective. Thus, it is not possible to determine if missing a community meeting had an impact on the results.

Because this study was exploratory, some limitations were difficult to avoid. One limitation is related to the sampling procedures used. Though the collaboration with the Key Plus Learning Community was a positive experience for both parties involved, this population had small sample size and did not have a control group available.

The method of delivery for the self-advocacy intervention was a limitation in this study. Because ACCESS team members provided the intervention indirectly, we did not monitor its implementation, and we cannot be certain to what degree it was used.

Another limitation is that the results may not be generalizable to other populations, including other students at CSU. The students who were sampled had unique experiences as they participated in Key Communities during their freshman year,

and again as they elected to continue the experience into their sophomore year. Without a control group it is difficult to understand how the experiences and self-advocacy skill development of these sophomores differ from their peers who elected a different path for their college career.

Finally, though sampling sophomore students has been beneficial for the development of the Student Self-Advocacy Questionnaire and self-advocacy intervention, the results may not be relevant for students in other years. Freshman, juniors, and seniors in addition to graduate students, transfer students, and non-traditional students will all have variation in their current self-advocacy skill level and the need for skill development. The current questionnaire and intervention needs further testing and revision to be applicable to sophomores, in addition to all student populations.

Future Research

A Bonferroni's correction was not made due to the exploratory nature of this study, and it is possible that the significant results were found by chance. With more refinement and focus of this questionnaire, it will be important for future studies to use this correction to minimize the possibility of making a type I error.

Using Cohen's d , small effect sizes were found in six questions, with three in the positive direction and three in the negative direction. A small effect size indicates that a larger sample size may yield a significant p value. This also needs to be interpreted cautiously due to the bidirectional nature of the effect sizes.

Continued research will benefit from having a control group to determine if the self-advocacy intervention is effecting the change, positive or negative, in students' perception of self-advocacy skills. Additionally, further alignment of the self-advocacy

intervention and questionnaire and a higher intensity of intervention may yield sensitivity to perceived change by participants.

CONCLUSIONS

This study may represent the first of its kind to study the self-advocacy skills of the typical university student population, and it is the first to develop a self-advocacy questionnaire and intervention for use with these students. Though further refinement is needed for the questionnaire and intervention to improve its applicability to students outside of the sophomore year and outside of CSU, this intervention represents a link to increasing retention for students who are at risk for leaving the university before graduating.

Results from this study have helped increase the understanding of the self-advocacy skills that university students use in addition to the areas where they feel skill improvement is needed. Though this questionnaire and intervention is intended for the general student population, in order to catch those who may be at risk for early departure, it is important to understand that university students are in no way a homogenous group. In addition to differing high school experiences, race, class, first-generation status, gender, and disability status, students have unique experiences in different years in school.

The unique experiences had by students in their second year of college have been described by a small number of authors (Schaller 2005, 2010; Kennedy & Upcraft, 2010). If a self-advocacy intervention can be used to improve retention rates for students, future research must increase the understanding of the development of self-advocacy skills for students in their second year.

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APPENDICES

Appendix A: Description of Access Project

The Department of Education has awarded a grant to the Department of Occupational Therapy at Colorado State University (CSU) for the project *ACCESS II: Persistence in Post-Secondary Education for Students with Disabilities*. The ACCESS II project builds on preliminary, successful implementation and dissemination of universal design for learning (UDL) principles and strategies for creating inclusive classroom instruction and accessible course materials. ACCESS II is working toward providing compelling evidence about UDL's effectiveness as a methodology for improving the learning experience and persistence of college students with disabilities. A student self-advocacy initiative is also being implemented to enhance UDL effectiveness. ACCESS II goals include:

1) Institutionalization and expansion of UDL dissemination and implementation:

The implementation of UDL principles and strategies will take place in multiple undergraduate "gateway" courses at CSU. These are courses that have high student attrition rates, such as psychology, chemistry, microbiology, sociology and mathematics. The implementation of UDL is done by developing innovative, effective and efficient teaching methods and strategies, which are based on the principles of UDL. In addition, the ACCESS II project staff is providing professional development and training sessions for faculty and administrators at CSU and the 33 CO/WYO Consortium Institutes of Higher Education (IHE) to provide them with the skills and

supports necessary to meet the postsecondary educational needs of students with disabilities through implementation and institutionalization of UDL.

2) Comprehensive integration of student self-advocacy principles and strategies:

In addition to comprehensive training and implementation of UDL, ACCESS II will involve the development of promising new strategies for self-advocacy training and research. This is taking place through the development of a self-advocacy tutorial for students enrolled in gateway courses, to provide information to students that will facilitate the use of self-advocacy (SA) skills. In addition, SA strategies will be incorporated into mentor trainings; SA dissemination and skill development will be incorporated into the freshman curricula; SA skill development will be incorporated into the intake and support strategies at the Disability Services Offices; and the SA materials and resources will be disseminated to CO/WYO campuses and the 337 high schools in Colorado, via the Colorado Department of Education (CDE).

3) Measurement of faculty commitment and student outcomes:

Using the online WebCT survey that was created during the first ACCESS project, pre and post-surveys will be used to collect data from instructors and students in the UDL “gateway” courses as CSU. In addition to the SA tutorial, a SA survey will also be developed. The effect of UDL and SA on student persistence will be determined by tracking individual student success in completing “gateway” courses that implement UDL and offer the SA tutorial. Comparisons, including student course completion, student persistence, student performance, and students’ learning experiences, will be drawn between students with and without documented disabilities who have participated in targeted courses in which UDL and SA are implemented.

In summary, the *ACCESS II* project seeks to improve post secondary outcomes for college students with and without disabilities by implementing two research-based, complimentary strategies: inclusive, universally designed teaching practices for instructors and self-advocacy skills for students. The outcomes of *ACCESS II* are expected to have far-reaching and long-lasting impacts on post-secondary education at Colorado State University.

Appendix B: Pre-questionnaire

Directions: Please answer the following as accurately as possible by circling or checking the relevant response for each question. All information will be used for aggregate purposes only. No individual student will be identified and all results will remain anonymous. Thank you for your participation!

<p>Student I.D. # _____</p> <p>Please Check One:</p> <p>Male..... <input type="checkbox"/></p> <p>Female..... <input type="checkbox"/></p> <p>Transgender..... <input type="checkbox"/></p> <p>Key Plus class you are taking:</p> <p><input type="checkbox"/> Leadership</p> <p><input type="checkbox"/> Career Decision Making</p> <p>Please identify your student status; check all that apply:</p> <p><input type="checkbox"/> 2nd year at CSU</p> <p><input type="checkbox"/> First generation college/university student</p> <p><input type="checkbox"/> Non-traditional student (a student who does not follow a direct path from high school to college)</p> <p><input type="checkbox"/> Part-time student</p> <p><input type="checkbox"/> Other</p>	<p>Please Check All That Apply:</p> <p>I Am:</p> <p>Hispanic/Latino(a)..... <input type="checkbox"/></p> <p>Asian/Pacific Islander..... <input type="checkbox"/></p> <p>Arabic..... <input type="checkbox"/></p> <p>Black/African American..... <input type="checkbox"/></p> <p>White/Caucasian..... <input type="checkbox"/></p> <p>Multicultural/Multiracial..... <input type="checkbox"/></p> <p>Other..... <input type="checkbox"/></p> <p>Are you a student with a disability (for example, a learning disability, ADHD, a physical disability, etc.)?</p> <p>YES <input type="checkbox"/> NO <input type="checkbox"/></p> <p>If you are a student with a disability, have you contacted the Resources for Disabled Students office (RDS) to request accommodation services?</p> <p>YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/></p>
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1. I am aware of my values (e.g. beliefs, what is important to me).

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

2. I understand my personality style (e.g., characteristics of my personality and associated strengths and challenges).

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

3. I have a well balanced lifestyle that meets my physical, emotional, mental, and spiritual needs.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

4. I recognize what my challenges are.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

5. I have an understanding of strategies that assist me in overcoming my challenges.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

6. When I have a problem, I know what steps to take to address my problem.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

7. When I am having a difficult time in my personal life, I know how to work through it.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

8. When I feel stressed, I know how to manage my stress in healthy ways.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

9. I know how to motivate myself in order to achieve my goals.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

10. I know how to recognize potential barriers to my success.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

11. I feel confident in my ability to communicate my needs to others.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

12. I ask others for help when needed.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

13. I am organized.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

14. I feel in control of my life.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

15. I meet deadlines.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

16. I know how to prioritize and manage my time wisely.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

17. I know how to set short-term goals that lead to the achievement of my larger goals.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

18. I follow through and accomplish the goals that I set for myself.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

19. I have people I can turn to for help and support.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

20. I make good decisions.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

21. I have a meaningful vision for my future (e.g., career, life beyond college).

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

22. I have a declared academic major.

Yes

No

23. My feelings and thoughts about college are best described in the following statement.

"Why did I go to college...I can't succeed."

Anxious and
unsure

Somewhat
anxious and
unsure

Cautiously
optimistic

Confident and
happy

24. I am confident I will graduate from college.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

25. I am happy with my academic abilities.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

26. I understand my personal learning style.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

27. I am responsible for the grades I achieve.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

28. When I am having difficulty in a particular class I take action to overcome my challenges.

0 1 2 3 4 5 6 7 8 9 10

totally false

totally true

29. I am on time for class and appointments.

0	1	2	3	4	5	6	7	8	9	10
totally false					totally true					

30. I have strong study skills that help me succeed.

0	1	2	3	4	5	6	7	8	9	10
totally false					totally true					

31. I have effective test taking skills.

0	1	2	3	4	5	6	7	8	9	10
totally false					totally true					

32. I am satisfied with the grades I achieve.

0	1	2	3	4	5	6	7	8	9	10
totally false					totally true					

33. Do you have the skills you need to accomplish your academic and life goals? If not, what do you feel you are lacking?

34. Please check all that apply.

I am familiar	I have used	CSU campus service offices
<input type="checkbox"/>	<input type="checkbox"/>	Academic Advancement Center (AAC)
<input type="checkbox"/>	<input type="checkbox"/>	Asian/Pacific American Cultural Center
<input type="checkbox"/>	<input type="checkbox"/>	Assistive Technology Resource Center (ATRC)
<input type="checkbox"/>	<input type="checkbox"/>	Black/African American Cultural Center
<input type="checkbox"/>	<input type="checkbox"/>	Campus Recreation (Rec. Center, intramural sports, etc.)
<input type="checkbox"/>	<input type="checkbox"/>	Campus Ministry
<input type="checkbox"/>	<input type="checkbox"/>	Career Center
<input type="checkbox"/>	<input type="checkbox"/>	Center for Advising and Student Achievement (CASA)
<input type="checkbox"/>	<input type="checkbox"/>	College of Natural Science Tutorial Hall
<input type="checkbox"/>	<input type="checkbox"/>	El Centro
<input type="checkbox"/>	<input type="checkbox"/>	Gay, Lesbian, Bisexual and Transgender Student
<input type="checkbox"/>	<input type="checkbox"/>	Hartshorn Health Services
<input type="checkbox"/>	<input type="checkbox"/>	Learning Assistance Program (LAP)
<input type="checkbox"/>	<input type="checkbox"/>	Morgan Library Assistive Technology
<input type="checkbox"/>	<input type="checkbox"/>	Native American Cultural Center
<input type="checkbox"/>	<input type="checkbox"/>	Office of Women's Programs & Studies
<input type="checkbox"/>	<input type="checkbox"/>	Psychological Services Center (PSC)
<input type="checkbox"/>	<input type="checkbox"/>	Resources for Adult Learners
<input type="checkbox"/>	<input type="checkbox"/>	Resources for Disabled Students (RDS)
<input type="checkbox"/>	<input type="checkbox"/>	Student Activities e.g., SLICE, ASCSU, Greek Life, ASAP,
<input type="checkbox"/>	<input type="checkbox"/>	Student Employment Services
<input type="checkbox"/>	<input type="checkbox"/>	Student Financial Services
<input type="checkbox"/>	<input type="checkbox"/>	The Writing Center
<input type="checkbox"/>	<input type="checkbox"/>	University Counseling Center
<input type="checkbox"/>	<input type="checkbox"/>	The Wellness Zone

35. How long did it take you to complete this survey?

3-5 min. 6-8 min. 9-11 min. 12-14 min. >14 min.

Appendix C: Open ended questions from post-questionnaire

1. Do you have the skills you need to accomplish your academic and life goals? If not, what do you feel you are lacking? _____

2. Right now, what is your greatest challenge? _____

3. Did you miss any of the community meetings? _____
4. If so, how many did you miss? _____
5. What did you like the best and the least about the community meetings?

6. In what ways did your mentor help you? _____

7. How would you improve the mentor experience? _____

8. In what ways do you self-advocate? _____

How long did it take you to complete this survey?

3-5 min. 6-8 min. 9-11 min. 12-14 min. >14 min.

Appendix D: Consent form

Student Questionnaire

Introduction message – please read before filling out the questionnaire

Thank you for helping us with our research! This survey is designed to evaluate whether students who receive self-advocacy education report higher levels of self-understanding, self-efficacy, goal setting and determination.

Because one of your instructors, coordinators and/or mentors has agreed to participate in self-advocacy education and research, we are asking you to fill out two questionnaires, one at the beginning and another one at the end of the semester. Each questionnaire will take about 5-10 minutes to complete. Students who fill out the questionnaire this semester will receive \$5 each time the questionnaire is completed, at the beginning and end of the semester.

Your participation in this research is voluntary. You do not have to fill out the questionnaire to meet the requirements for this course or program, nor will your instructor, coordinator, or mentor know whether or not you participate in this research.

For this research project, we will request your student ID number and connect it to your completed questionnaire for two reasons:

First, the ID numbers allow us to know which students completed *both* questionnaires so that we can provide enhanced student education experiences, especially for particular *groups* of students. These include, but are not limited to; students that are first generation college students, students of minority background, and students that identify themselves as using accommodations for learning, etc. We will use the ID numbers to know to which groups students may belong.

Second, we will also be able to learn more over time about the success of students who have had self-advocacy skills training, compared to students who do not receive self-advocacy training.

We will *not* use student IDs to examine individual student's responses. Also, instructors, coordinators, and mentors of the courses and programs involved in this research will only receive feedback in summary format and will not receive information about individual student's responses or answers. Your responses on the questionnaire cannot be viewed by your instructor, coordinator or mentor. Only the research team working on this project has access to the surveys, and your survey responses will be kept confidential.

By filling out this questionnaire we know that you agree that it is OK for us to use the information you provide in the questionnaire for the research as described in this message.

Thanks for taking time to fill out the questionnaire and helping us with our research!

If you have any questions about this questionnaire or our research give us a call:

- Cathy Schelly (970) 491-0225
- Patti Davies (970) 491-7294
- Julia Kothe (970) 491-3469

Appendix E: Detailed list of ceiling effects

Table 1 <i>Questions with ceiling effects</i>				
	Pre-questionnaire		Post-questionnaire	
	Skewness violation	Mean + 1SD	Skewness violation	Mean + 1SD
1. I am aware of my values (e.g. beliefs, what is important to me).		9.93	x	10.02
2. I understand my personality style (e.g., characteristics of my personality and associated strengths and challenges).		9.71		9.70
3. I have a well balanced lifestyle that meets my physical, emotional, mental, and spiritual needs.		9.37		8.96
4. I recognize what my challenges are.		9.26		9.62
5. I have an understanding of strategies that assist me in overcoming my challenges.	x	8.71		9.39
6. When I have a problem, I know what steps to take to address my problem.		9.13		9.18
7. When I am having a difficult time in my personal life, I know how to work through it.		9.31		9.30
8. When I feel stressed, I know how to manage my stress in healthy ways.		9.26	x	9.54
9. I know how to motivate myself in order to achieve my goals.		9.79	x	9.59
10. I know how to recognize potential barriers to my success.		8.98		9.05
11. I feel confident in my ability to communicate my needs to others.	x	9.59		9.65
12. I ask others for help when needed.	x	9.52		9.23
13. I am organized.	x	9.86	x	9.88
14. I feel in control of my life.	x	9.56		9.50
15. I meet deadlines.		9.93		10.13
16. I know how to prioritize and manage my time wisely.		9.64	x	9.84
17. I know how to set short-term goals that lead to the achievement of my larger goals.		9.65	x	9.71
18. I follow through and accomplish the goals that I set for myself.	x	9.69		9.75
19. I have people I can turn to for help and support.	x	10.37	x	10.21

20. I make good decisions.		9.46		9.47
21. I have a meaningful vision for my future (e.g., career, life beyond college).	x	10.19	x	10.16
24. I am confident I will graduate from college.	x	10.64	x	10.28
25. I am happy with my academic abilities.		9.61		9.73
26. I understand my personal learning style.		9.38		9.69
27. I am responsible for the grades I achieve.	x	10.47	x	10.14
28. When I am having difficulty in a particular class I take action to overcome my challenges.		9.51	x	9.60
29. I am on time for class and appointments.	x	10.53	x	10.65
30. I have strong study skills that help me succeed.		9.19		8.98
31. I have effective test taking skills.	x	9.09		9.06
32. I am satisfied with the grades I achieve.		9.44		8.99

Appendix F: Suggested questionnaire revisions

Suggested questionnaire revisions		
Question	Revision	Area
1. I am aware of my values (e.g. beliefs, what is important to me).	Leave	Life
2. I understand my personality style (e.g., characteristics of my personality and associated strengths and challenges).	OK	Life
3. I have a well balanced lifestyle that meets my physical, emotional, mental, and spiritual needs.	OK	Life
4. I recognize what my challenges are.	I recognize what my challenges are academically.	Academic
5. I have an understanding of strategies that assist me in overcoming my challenges.	Leave	Life
6. When I have a problem, I know what steps to take to address my problem.	OK	Life
7. When I am having a difficult time in my personal life, I know how to work through it.	OK	Life
8. When I feel stressed, I know how to manage my stress in healthy ways.	When I feel stressed, I manage it stress in healthy ways.	Life
9. I know how to motivate myself in order to achieve my goals.	I can easily motivate myself to achieve my goals.	Life
10. I know how to recognize potential barriers to my success.	OK	Life
11. I feel confident in my ability to communicate my needs to others.	I feel confident in my ability to communicate my needs to my professors/instructors.	Academic
12. I ask others for help when needed.	I use resources available to me on campus (i.e. Academic Advancement center, Center for Advising and Student Achievement, SLiCE, University Counseling Center).	Academic
13. I am organized.	OK	Academic
14. I feel in control of my life.	Leave	Life
15. I meet deadlines.	I complete homework assignments on time.	Academic
16. I know how to prioritize and manage my time wisely.	I prioritize and manage my time wisely.	Life
17. I know how to set short-term goals that lead to the achievement of my larger goals.	I set short-term goals that lead to the achievement of my larger goals.	Life
18. I follow through and accomplish the goals that I set for myself.	Leave	Life

19. I have people I can turn to for help and support.	To meet my academic needs, I have people (family, friends, mentors, professors, advisors) I can turn to for help and support.	Academic
20. I make good decisions.	OK	Life
21. I have a meaningful vision for my future (e.g., career, life beyond college).	I have a meaningful vision for my future beyond college.	Life
24. I am confident I will graduate from college.	Leave	Academic
25. I am happy with my academic abilities.	OK	Academic
26. I understand my personal learning style.	OK	Academic
27. I am responsible for the grades I achieve.	I put forth significant effort into my coursework (homework, exams)	Academic
28. When I am having difficulty in a particular class I take action to overcome my challenges.	When I am having difficulty in a particular class I take action to improve my experience.	Academic
29. I am on time for class and appointments.	I am on time for class.	Academic
30. I have strong study skills that help me succeed.	I have strong study skills.	Academic
31. I have effective test taking skills.	I am satisfied with my test taking skills.	Academic
32. I am satisfied with the grades I achieve.	OK	Academic
Additional Questions:	I can easily motivate myself to study and complete homework.	Academic
	I schedule specific times to study during the week.	Academic
	I am aware of how my values affect my learning.	Academic
	I feel in control of my academic experience (or learning?).	Academic
	I am satisfied with the balance I have between school and my personal life.	Academic
	I see how the classes I take relate to my academic and career goals.	Academic
	I enroll in classes that interest me, whether or not they are required for my major.	Academic
	I am comfortable talking with my professors/instructors.	Academic
	I have an organized calendar of assignments and exams.	Academic
	I keep my course notes organized.	Academic