The Effect of Career Mentoring on Employment Outcomes for College Students Who Are Legally Blind

Jamie O’Mally and Karla Antonelli

Structured abstract: Introduction: College graduates with visual impairments (that is, those who are blind or have low vision) often face challenges in securing competitive employment after graduation. Working with a mentor who is also visually impaired, and working in the same field, can provide important benefits to overcome these barriers. Methods: A nationwide longitudinal study, involving random assignment to an intervention group working with a mentor or a comparison group given traditional career resources, evaluated changes in job-seeking self-efficacy, assertiveness in job hunting, and career adaptability over the course of one year as legally blind college students prepared to graduate and enter the job market. Employment outcomes, job satisfaction, and evaluation of the mentoring program were also measured. Results: Those working with mentors demonstrated increased job-seeking self-efficacy, career adaptability, and significant gains in assertiveness in job-hunting compared to those receiving only traditional job-search resources. Although no significant differences were found between groups for employment rate or job satisfaction, participants reported high satisfaction with the program. Discussion: Working with a mentor demonstrated positive trends for self-efficacy, career adaptability, and significant increases in job-hunting assertiveness among visually impaired college students with legal blindness. Participants were highly committed and found the program beneficial. Small sample size may have limited the ability to detect significant differences in employment outcomes.

Full-time employment is difficult to secure during challenging economic times, and specific barriers faced by individuals with visual impairments (that is, those who are blind or have low vision) are well documented (Coffey, Coufopoulos, & Kinghorn, 2014; Crudden & McBroom, 1999; McDonnell, Zhou, & Crudden, 2013). Challenges faced may include lack of early work experience, transportation difficulty, limited exposure to career role models, negative employer attitudes, underdevelopment of “soft skills” and blindness skills, and low self-advocacy and assertiveness.

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Despite having the highest rate of post-secondary attendance among students with disabilities, with approximately 78% attending postsecondary school (Newman, Wagner, Cameto, & Knokey, 2009), youths with visual impairments have difficulty securing employment (Burgstahler, 2001; McBroom, 1995; Nagle, 2001; Roessler, Hennessey, & Rumrill, 2007). The current unemployment rate for recent college graduates averages about 7.2% (Davis, Kimball, & Gould, 2015). Given that this rate does not reflect discouraged workers (such as individuals who may have stopped looking for work because of repeated discrimination, lack of necessary supports, and limited job opportunities), that unemployment rate is likely considerably higher for college graduates with visual impairments. Although data are not available on employment rates for this specific population, data from the Community Population Survey indicates that only 53.8% of noninstitutionalized persons with visual disabilities aged 25–34 were employed during 2014 (Bureau of Labor Statistics, 2014).

Many strategies have been used to assist students with disabilities to make the transition from educational settings to employment (Getzel & Briel, 2008; Getzel, Briel, & Kregel, 2000; Roessler et al., 2007). Efforts include job clubs, employability workshops, work experience, and career counseling. Some studies have focused on the use of career mentors who establish relationships through face-to-face meetings, in e-mails, or on the telephone (Burgstahler & Cronheim, 2001; Getzel & Briel, 2008; Knouse, 2001; Powers, Sowers, & Stevens, 1995; Whelley, Radtke, Burgstahler, & Christ, 2003). Career mentors may provide critical experiences for transitional youths with visual impairments by serving as models of success, providing encouragement and expert advice, as well as assisting in the development of self-efficacy, career adaptability, and assertiveness. Research indicates that youths with visual impairments who worked with mentors achieved significant increases in career decision-making efficacy and hope for the future (Bell, 2012; Cavenaugh, McDonnall, & Giesen, 2010).

Although the implementation of mentoring programs varies widely, common elements include career counseling, job shadowing, and job-placement assistance (Briel & Getzel, 2001; Burgstahler & Cronheim, 2001; Getzel & Briel, 2008; Hagner, 2000; Whelley et al., 2003). Multiple strategies have been identified to improve postsecondary outcomes among students with disabilities—for example, knowledge of the Americans with Disabilities Act (ADA) and U.S. Social Security Administration (SSA), encouraging self-advocacy, and including mentors with disabilities (Burgstahler, 2001; Burgstahler & Crawford, 2007; Roessler et al. 2007; Wilson, 2003). CareerConnect, an online mentoring resource provided by the American Foundation for the Blind (AFB), includes a searchable database of over 1,000 mentors with visual impairments, and it is currently the only ongoing mentoring program for individuals with visual impairments (AFB, 2015). To

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date, no studies have systematically evaluated the effectiveness of mentoring programs on employment outcomes for recent college graduates with visual impairments.

Mentors can serve as role models and share experiences that address the unique concerns of students with visual impairments preparing for jobs (for instance, disclosure, requesting accommodations, and self-advocacy). Improving self-efficacy, or confidence in one’s own abilities to perform a specific task, may be especially critical for students with visual impairments. College graduates with visual impairments may have limited to no early work experiences, and those play an important role in securing future employment (Landmark, Ju, & Zhang, 2010; McDonnall, 2010, 2011; McDonnall & Crudden, 2009; McDonnall & O’Mally, 2012). Self-efficacy is improved through both mastery experiences and vicarious learning through exposure to successful role models (Bandura, 1994). By pairing students with mentors who are visually impaired and employed in the students’ field of interest, self-efficacy for finding employment may be enhanced by the presence of a role model as well as by discussions and activities such as resume development and interview role plays.

Students with visual impairments may lack assertiveness in job-seeking behaviors because they typically have few early work experiences. Securing meaningful employment in an unstable economy can be challenging, and assertiveness may be a trait that would benefit those facing additional barriers. An attitude of career adaptability and resilience can positively impact a person’s capacity to face challenges in a work environment (Rottinghaus, Day, & Borgen, 2005), which may help students with visual impairments prepare for employment. Working with a career mentor who is visually impaired would likely allow students to build their confidence in job seeking and increase their understanding of the realities of a competitive job market.

In this study, legally blind college students seeking employment were paired with career mentors who are also blind and working in the students’ career area. The study provides the first empirical evaluation of the effectiveness of a career mentoring program for legally blind college students. We expected that working with a mentor would significantly improve self-efficacy, assertiveness, and career adaptability by providing students with direct experiences and a successful role model. Primary hypotheses for this study were:

1. Participants paired with mentors will have a higher employment rate than those in the comparison group.
2. Of the students who secure employment, those paired with mentors will report higher job satisfaction than those who were not paired with mentors.
3. Working with a mentor will lead to significant increases in job-seeking self-efficacy, assertiveness, and career adaptability.

**Methods**

**Design**

In this longitudinal experimental study, students were randomly assigned to either work with a career mentor for one
year or to receive only traditional career preparation resources. Students participated in one of four cohorts based on their expected graduation date, to allow for assessment of pre- and postgraduation measures.

**Participants**
Participants ($N = 77$) included 26 mentees, 26 mentors, and 25 comparison students that constituted a nationally diverse sample with representation from 30 states. The majority of students and mentors were white (70.59% and 80.77%, respectively), with 7.79% African American, 10.39% Hispanic, 2.60% Asian, and 5.19% other races. Women made up 62.75% of the students and 65.38% of the mentors. Students ranged in age from 20 to 35 ($M = 25.88, SD = 4.35$), and mentors ranged in age from 25 to 63 ($M = 48.00, SD = 10.13$). Most students were undergraduates (72.55%), with a wide variety of majors including: social sciences (21.57%); science, technology, engineering, and math (17.65%); communication, journalism, and English (13.73%); and law, government, and public administration (11.76%). Most mentors were currently employed (80.77%), 19.23% had recently retired, and most had earned graduate degrees (72.96%; of that group, 26.92% had doctoral degrees).

**Eligibility**
Students eligible to participate were legally blind college or graduate students under age 35, living in the United States, who were within a year of graduation and seeking post-graduation employment. Mentors included those who were currently employed or recently retired, legally blind, and living in the United States. Participants self-reported legal blindness, which was defined in the eligibility survey as having central visual acuity of 20/200 or less in the better eye with best correction or widest diameter of visual field subtending an angle of no greater than 20 degrees.

**Recruitment**
Extensive recruitment efforts were made from 2011 to 2014 to identify a nationally representative sample. Major avenues for recruitment included vocational rehabilitation agencies, consumer groups, professional organizations, multicultural organizations, college student services centers, and nonprofit organizations. Recruitment efforts included over 3,000 personalized e-mails and telephone calls, the development of a nationwide research participant registry, conference and media promotion (social media, electronic discussion groups, news articles, radio interviews, paid advertisements), and assistance from an advisory council board consisting of representatives of prominent consumer groups and professionals in the field of blindness.

**Materials**

*Eligibility survey*
An online survey allowed interested students and mentors to report demographic information including their level of visual impairment, contact information, and other disabilities. Students reported their major area of study, expected graduation date, and future employment plans. Mentors provided employment status, education level, and employment information.
Employment mentoring manual
A 20-page manual was developed and provided in electronic format to students in the intervention group (mentees) and their mentors. The manual, used in orientation, included: benefits of mentoring, tips for successful mentorships, codes of conduct, project details, and recommended discussion and activities (for example, accommodation planning, blindness skills, disclosure, social skills, transferring academic technology skills to the workplace, transportation skills, career planning, job-seeking skills, job shadowing, and job placement). A revised version of the manual is publically available and includes resources and details about program structure (National Research and Training Center [NRTC], 2016).

Resource sheet for job seekers
A handout was developed and provided to all students, including the comparison group. This resource sheet included links to websites for information on requesting accommodations, finding mentors, career exploration, disclosure, job opportunities, blindness skills, vocational rehabilitation services, and transportation.

Job-Seeking Self-Efficacy (JSSE)
The Job-Seeking Self-Efficacy (JSSE) scale was adapted from the JSSE scale for people with physical disabilities (Barlow, Wright, & Cullen, 2002); the 14-item scale (administered online at pretest, six months, and posttest) asks respondents to rate their level of confidence in job-seeking activities from 1 (not very confident) to 7 (very confident). Items include confidence in requesting an application, producing a resume, traveling to an interview, presentation skills, working independently and with a team, requesting accessibility information, and disability disclosure. Reliability for this measure is high (.93), with concurrent validity supported by significant correlations with similar measures (Barlow et al., 2002).

Assertive Job Hunting Survey (AJHS)
This adapted 22-item scale (administered online at pretest, six months, and posttest) assesses the level of assertiveness individuals would use in seeking employment (Becker, 1980). Participants rated the likelihood that they would engage in assertive job-seeking behaviors from 1 (very unlikely) to 7 (very likely). Items include assertiveness in: requesting information, describing qualifications, networking, and contacting employers. AJHS has .82 reliability, and was validated with previous job-hunting experience (Becker, 1980), and with other assertiveness and self-esteem scales (Strauser & Berven, 2006).

Career Adaptability Scale (CAS)
This 11-item scale (administered online at pretest, six months, and posttest) adapted from the Career Futures Inventory (Ruttinghaus et al., 2005) assesses individual sense of control over career destiny and adaptability. Participants rated agreement from 0 (strongly disagree) to 10 (strongly agree) in their ability to adapt to a changing work environment, control over career success, and resiliency. CAS has high reliability (.85), and is significantly correlated with similar established scales (Harmon, Hansen, Borgen, & Hammer, 1994; Heppner, 1988; and Scheier, Carver, & Bridges, 1994).
Quarterly and monthly reports
All participants completed brief quarterly reports online so researchers could assess their job-seeking activities and to monitor the mentoring relationship. Students were asked to report the amount of time they had spent engaging in job-seeking activities and the number of job applications they had submitted. Mentees submitted brief monthly reports that tracked their communication with mentors.

Employment outcomes
Online, at six months and one year, all students reported their employment-preparation activities, challenging aspects of obtaining employment, and current employment status. Those employed reported start date, hours per week, salary, receipt of benefits, how they found their job, and job satisfaction, using adapted versions of the Abridged Job in General Scale (AJIG; Russell et al., 2004) and the Abridged Job Descriptive Index (AJDI; Stanton et al., 2002). Participants rated their level of agreement from 1 (strongly disagree) to 5 (strongly agree) on global job satisfaction, as well as satisfaction with pay, opportunities for promotion, supervision, and coworker interactions. The abridged versions maintain reliability (.75 to .85) and validity of the full instrument (Stanton et al., 2002) and correlate with the original scales, as well as the Intention to Quit measure (Parra, 1995), and other measures of job satisfaction (Russell et al., 2014). Employed students in both groups also completed the Intent to Leave scale (O’Reilly, Chatman, & Caldwell, 1991), which assesses plans to leave a job and the extent to which they would prefer a different job. Job fit was assessed by asking respondents to rate their agreement from 1 (strongly disagree) to 10 (strongly agree) with how well their job matches their education level, experience, interests, and expectations for the type of work they would be doing after graduation.

Program satisfaction
Mentors and mentees evaluated their experiences in the mentoring relationship and the project by rating 28 statements on a 10-point agreement scale. Items addressed communication, keeping in touch following the project, benefits, staff support, and helpfulness of materials.

Early-exit survey
Mentors and mentees who exited the study prematurely completed a brief online survey to document their reasons for withdrawal.

Procedures
Upon approval for the protection of human subjects by the Mississippi State University Institutional Review Board, eligible students were randomly assigned to either the intervention group (mentees) or the comparison group. Participants completed consent forms and were told that the project was designed to measure the effectiveness of a mentoring program on employment outcomes for legally blind college students. Intervention group participants worked with a mentor, and comparison group participants received a career planning resource sheet. Participants completed online reports over the course of one year, and students received gift cards as incentives to participate and
to offset any costs related to traveling to meet locally with mentors.

The initial goal of the project was to partner students with mentors who lived within one hour of the student, and who worked in the student’s field of interest. When this arrangement was not possible, “distance mentorships” were used. Local pairs were encouraged to meet face to face monthly, and distance mentors were encouraged to have extended telephone meetings. Mentors were identified through recruitment efforts and the AFB CareerConnect database, and they volunteered their time.

Students participated in one of four cohorts based on their expected graduation date. Table 1 provides a study timeline by cohort. All students completed pretest measures, and within one week mentees and mentors participated in separate distance orientation sessions. The orientation focused on the mentoring manual and relationship; therefore, the comparison group did not complete an equivalent. One week after orientation, each mentor-mentee pair was introduced by a conference call led by project staff members.

For the remainder of the year, participants completed all measures online, with support from staff members as needed. All students completed pretest measures, six-month measures, and posttest measures (at one year). All participants completed quarterly reports, and mentees completed monthly reports. Those who withdrew from the study prematurely completed an early exit survey.

### Results

#### Retention

A total of 51 students and 26 mentors participated in the project. Two mentoring pairs withdrew due to incompatibility, and one comparison participant did not complete all measures, resulting in an exceptionally high retention rate of 93.5%.

#### Job-search scales

Analyses included pre- and posttest correlations between measures and a factorial MANOVA to test for group differences from pre- to posttest. Individual scores were calculated for each of the four job scales using established guidelines and were analyzed using MANOVA and correlational tests.

#### Pretest

Scores on the JSSE indicated fairly high scores on a 7-point scale for both groups (intervention \( M = 5.18, SD = .90 \); control \( M = 5.36, SD = .92 \)), with no significant differences. Participants were slightly more confident for independent job tasks, such as requesting an application \( (M = 6.14) \), working on their own \((M = 6.04)\), and completing applications \( (M = \)
5.88). They reported least confidence with tasks requiring personal interaction, including interview skills (M = 4.79), disclosure of disability (M = 4.77), and oral presentation (M = 4.94).

Average assertiveness scores on the AJHS for the intervention group at pretest was 102.65 (SD = 18.11), and 109.74 for the comparison group (SD = 17.13) out of 154. Participants rated themselves as most assertive in asking friends for job leads (M = 6.06), asking for more information about jobs (M = 5.94), and mentioning both unpaid and paid experience (M = 5.90). Participants were less assertive with bolder actions, such as asking employers if they knew other employers who might be hiring (M = 2.90) and asking for a second interview (M = 4.06).

Participants were fairly confident in their ability to adapt to new job situations (CAS) (intervention M = 7.51, SD = 1.53; comparison M = 8.21, SD = 1.42, on a 10-point scale with higher scores indicating greater career adaptability). Highest-rated items related to control in the career process including those items such as: career success as determined by effort (M = 8.39), and ability to overcome career barriers (M = 8.35). Responses were fairly high on all items, with resiliency after disrupted career plans rated lowest (M = 6.80).

**Posttest**

Overall responses on the three measures administered at pretest and posttest were significantly correlated with each other (r > .28; p = .05 or less for all). Group differences in change at posttest were examined using repeated measures MANOVA. Mentees showed improvement in all scales at posttest, whereas the comparison group was inconsistent (See Table 2 for means and standard deviations).

A factorial MANOVA was used to analyze group differences in changes from pre- to posttest, resulting in a significant interaction by group (intervention, comparison) and time of test (pretest, posttest), F(3,42) = 3.41, p = .026. Mentee assertiveness, measured by the AJHS, improved significantly more than those in the comparison group, with a significant interaction between group and time of test, F(1,44) = 9.09, p = .004 (see Table 2). Mentee scores on the AJHS improved by 12.39 points from pre- to posttest, t(22) = −3.61, p < .01.

### Table 2
Pre- and posttest scales: means and standard deviations.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Intervention Pretest</th>
<th>Intervention Posttest</th>
<th>Comparison Pretest</th>
<th>Comparison Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job-Seeking Self-Efficacy</td>
<td>M = 5.18</td>
<td>M = 6.05</td>
<td>M = 5.36</td>
<td>M = 5.86</td>
</tr>
<tr>
<td>SD = 0.90</td>
<td>SD = 0.71</td>
<td>SD = 0.92</td>
<td>SD = 0.88</td>
<td></td>
</tr>
<tr>
<td>Assertive Job-Hunting Survey</td>
<td>M = 102.65</td>
<td>M = 115.04*</td>
<td>M = 109.74</td>
<td>M = 106.30</td>
</tr>
<tr>
<td>SD = 18.11</td>
<td>SD = 14.52</td>
<td>SD = 17.13</td>
<td>SD = 24.78</td>
<td></td>
</tr>
<tr>
<td>Career Adaptability Scale</td>
<td>M = 7.51</td>
<td>M = 8.01</td>
<td>M = 8.21</td>
<td>M = 8.26</td>
</tr>
<tr>
<td>SD = 1.53</td>
<td>SD = 1.74</td>
<td>SD = 1.42</td>
<td>SD = 1.37</td>
<td></td>
</tr>
</tbody>
</table>

* Significant change from pretest to posttest at p < .01.
EMPLOYMENT OUTCOMES

Of the 47 participants who completed the posttest, 26 provided employment information. Of the 12 mentees, 7 were employed full-time (30 hours or more per week), and 5 were employed part-time. In the comparison group, 10 were employed full-time, and 4 were employed part-time. A Chi-Square Test of Independence indicated no significant group differences, $X^2(2, N = 46) = 1.36, p = .51$. Several students ($n = 9$; 1 intervention, 8 comparison) were not eligible for full-time employment at posttest because they failed to graduate during the study. Five students (4 intervention, 1 comparison) did not provide posttest graduation information.

JOB-SATISFACTION MEASURES

A total of 26 participants (12 intervention, 14 comparison) were employed and completed job-satisfaction measures at posttest. The AJDI and AJIG were administered using a 5-point scale with higher numbers indicating greater satisfaction. Four measures of job satisfaction (AJDI, AJIG, job fit, and intention to leave) were analyzed using MANOVA analysis for differences between groups. Participants generally indicated high job satisfaction, with no significant group differences on any of the measures, with all $p$ values $> .3$ (see Table 3 for means and standard deviations).

PROGRAM SATISFACTION

Participants completed a survey evaluating the program on a 10-point scale, with higher scores indicating greater satisfaction. Average ratings were at least 8 on most items, including ratings for how beneficial the project is for visually impaired college students and willingness to participate in a similar project again. Most mentees agreed that they would likely keep in touch with their mentor after the project ($M = 7.91$).

Discussion

We predicted that participating in a career mentoring relationship would significantly improve employment outcomes for legally blind college students, compared to those using traditional career preparation resources. Students working with mentors were significantly more assertive in job hunting and showed trends in improvement for job-seeking self-efficacy and career adaptability. Despite these positive trends, however, the mentoring relationship did not have a significant influence on employment rates and job satisfaction.

Service providers, students, and parents have important knowledge to gain from these results. Based on our recruitment experiences, we found that professionals and students in the visually impaired community are highly interested in

Table 3
Job satisfaction measures: means and standard deviations.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Intervention</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>AJDI</td>
<td>$M = 3.75 \ (SD = .58)$</td>
<td>$M = 3.70 \ (SD = .79)$</td>
</tr>
<tr>
<td>AJIG</td>
<td>$M = 4.18 \ (SD = .67) $</td>
<td>$M = 3.88 \ (SD = .91) $</td>
</tr>
<tr>
<td>Job fit</td>
<td>$M = 8.00 \ (SD = 2.26)$</td>
<td>$M = 7.13 \ (SD = 2.34)$</td>
</tr>
<tr>
<td>Intention to leave</td>
<td>$M = 3.44 \ (SD = 1.52)$</td>
<td>$M = 3.64 \ (SD = 1.93)$</td>
</tr>
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</table>
mentoring. The number of participants in this study underestimates the number of those interested, given the narrow eligibility criteria. Mentors across the United States were eager to volunteer their time, and many college students expressed a desire to work with a mentor but were excluded from participating due to age or late graduation dates. The retention rate for this project was impressively high for a longitudinal study, indicating that students and mentors were invested. In addition, participants evaluated the project as being beneficial, and most planned to stay in contact with each other after the study.

Our results indicate that mentor relationships are effective in improving job-seeking assertiveness for legally blind college students. Trends indicated that improvement may also occur in areas of self-efficacy and career adaptability and, perhaps with a longer mentoring period, significant gains would be seen in these areas as well. More research is needed to investigate the link between assertiveness and employment outcomes among this population.

Delayed graduation, an unanticipated issue that arose in this study, raises an important concern. Several students in this study lacked the ability to accurately predict when they would graduate. This problem is worth noting because students need to be prepared to provide potential employers with an accurate expected graduation date. Students with visual impairments may need more assistance formulating realistic degree plans.

LIMITATIONS
As the first systematic, empirical study of the effectiveness of career mentoring for this population, the use of a two-group randomly controlled, longitudinal, experimental design maximizes internal validity. Yet there are important limitations to consider. First, narrow criteria and a limited time frame resulted in a small sample size that restricted our ability to appropriately interpret trends and generalize results. Second, several students who did not graduate during the study were ineligible for employment at posttest. Conducting the study over a longer period of time would have allowed for broader eligibility criteria, higher rates of graduation within the time frame, and more time for the mentoring relationship to prepare students for employment.

FUTURE DIRECTIONS
In addition to longer-term mentoring with a larger sample, other research directions should be explored. We initially intended to match students with local mentors, which was not always possible. An investigation comparing the effectiveness of distance versus local mentoring may provide information on the critical components of mentorship needed to improve employment outcomes. Qualitative data was collected on the quality of the mentoring relationships, activities, and job-search strategies. Qualitative results will be presented in future work that may provide insight for students, mentors, and service providers on specific practices that could lead to greater employment success for this population.

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