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**The Impact of a Brief Meeting on Employer Attitudes, Knowledge, and Intent to Hire**

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### **Abstract**

We evaluated the ability of an intervention that consisted of a one-on-one meeting between a vocational rehabilitation (VR) professional and an employer to improve employer attitudes, knowledge, and intent to hire people who are blind or visually impaired. We evaluated the relative effectiveness of two approaches (dual customer vs. educational) and the impact of the VR professionals' vision status (blind or sighted) on our primary outcome measures and on interest in follow-up. Participants were 59 hiring managers employed by a large company who completed measures at three time points: pre, post, and four month follow-up. We found that, regardless of approach used or vision status of the VR professional, the intervention was successful at improving employers' attitudes, knowledge, and intent to hire. The educational approach resulted in increases in knowledge that were retained at follow-up, while the dual customer approach did not. Improvements in intent to hire were not retained at follow-up, suggesting that ongoing contact with employers will be beneficial to positively impact the hiring of people who are blind or visually impaired. These findings are particularly relevant given the Workforce Innovation and Opportunity Act's focus on employer engagement for VR agencies.

*Keywords:* employer attitudes, intent to hire, blindness, visual impairment, intervention, experimental

### **The Impact of a Brief Meeting on Employer Attitudes, Knowledge, and Intent to Hire**

Negative employer attitudes are a long-standing problem for people with disabilities, as evidenced by the extensive amount of research conducted on the topic and multiple literature reviews summarizing this research (e.g., Burke et al., 2013; Hernandez, Keys, & Balcazar, 2000; Ju, Roberts, & Zhang, 2013; Unger, 2002). These attitudes are considered a major barrier to employment for people with all types of disabilities, including those who are blind or visually impaired (Coffey, Coufopoulos, & Kinghom, 2014; Crudden & McBroom, 1999; Kirchner, Johnson, & Harkins, 1997; Salomone & Paige, 1984). Employer attitudes are important because attitudes are associated with behavior (Eagly & Chaiken, 1993), such as hiring. The Theory of Planned Behavior suggests that attitudes are one important predictor of intentions, and intentions lead to behavior (Ajzen, 1991). In terms of negative employer attitudes towards people with disabilities, these attitudes would be expected to decrease employers' intention to hire people with disabilities and their actual hiring of people with disabilities, resulting in discrimination. The ongoing low employment rates and high unemployment rates for people with disabilities, including those who are blind or visually impaired (Kraus, Lauer, Coleman, & Houtenville, 2018), are believed to be associated with negative employer attitudes and subsequent discrimination.

One reason for negative attitudes and workplace discrimination may be the common stereotypes about people with disabilities held by many employers, namely that they lack the knowledge, skills, and abilities for employment and are less productive than people without disabilities (Domzal, Houtenville, & Sharma, 2008; U.S. Department of Labor, 2014). Both people who are blind and people with disabilities are rated low on competence (Fiske, Cuddy, Glick, & Xu, 2002), but several studies have documented that employers have greater concerns

about hiring someone who is blind than hiring individuals with other disabilities (Chen, Blankenship, Austin, Cantu, & Kotbungkair, 2016; Fuqua, Rathbun, & Gade, 1984; Gilbride, Stensrud, Ehlers, Evans & Peterson, 2000; Inglis, 2006; Williams, 1972). It has been established that the majority of employers have little knowledge about people who are blind or visually impaired and the ways they are able to accomplish work tasks (Authors), perhaps leading to employers' increased concern about hiring people with this particular type of disability.

One way to address negative employer attitudes is through direct contacts between vocational rehabilitation (VR) professionals and employers, providing the opportunity for advocacy and education. The importance of working directly with employers has received increased attention in the VR field, and, for the first time, this activity is part of the law that governs the state-federal VR system: the Workforce Innovation and Opportunity Act (WIOA, 2016) requires VR agencies to provide services to employers as well as to consumers with disabilities. With the passage of WIOA, the Rehabilitation Act now mandates that VR agencies, and thus the VR professionals that work within them, engage directly with employers to help their consumers obtain employment. Yet some, perhaps many, VR professionals are uncomfortable with business engagement and do not know how to interact effectively with employers (Beveridge, Leconte, Shaine, Del Toro, & Penrod, 2015; Chan et al., 2003; Fleming, Phillips, Kaseroff, & Huck, 2014; Schultz, 2008).

A challenge for VR professionals is that the best approach to use for these interactions with employers has not been determined. Use of the dual customer approach for this purpose has received a significant amount of attention and has been encouraged in the VR field (Anderson et al., 2006; Luecking, 2008; Wehman, 2017; West-Evans & Butler, 2016). The dual customer approach focuses on learning about the needs of the business, establishing that VR can help the

business address their workforce needs, and attempting to form long-term relationships with employers (Anderson et al., 2006; Fry, 1997). Although this approach is thought to be effective and has been widely recommended, there is little research to support its efficacy. Only one published study that empirically evaluated the efficacy of the dual customer approach was identified: this study documented a positive relationship between VR counselors' self-reported use of dual customer approach principles and employment for consumers with blindness or visual impairment (Authors).

VR professionals who work with individuals who are blind or visually impaired identified what they believed to be the best techniques to encourage an employer to consider hiring their clients (Authors). Providing education about blindness, accommodations, and assistive technology in order to increase employer knowledge was the most common response, while establishing a relationship with the business and focusing on their needs (i.e., use of the dual customer approach) was the sixth most common response. Allowing the employer to see a blind person performing a job or using assistive technology, or bringing a professional who is blind to the meeting with the employer, was also recommended as an effective technique by several VR professionals. Because employers do not know much about how a blind person could perform basic job tasks or the accommodations available to them (Authors), providing education of this type to employers may be a more successful approach compared to the dual customer approach, particularly for this population.

### **Attitude Change Research**

There is a large body of research about attitude change that may also provide guidance on the best approach for VR professionals to use when working with employers. While there are multiple theories about how to change attitudes, one of the key routes to changing attitudes is the

information that one has about the topic under question (Anderson, 1971; Petty & Cacioppo, 1996). Providing education is a common approach to changing attitudes toward people with disabilities (Anthony, 1972), supported by the assumption that ignorance is a cause of prejudice (Stephan & Stephan, 1984). This approach has been recommended for use with employers to increase knowledge, reduce misperceptions, and change attitudes (Brostrand, 2006; Kaye, Jans, & Jones, 2011; Phillips, Deiches, Morrison, Chan, & Bezyak, 2016). The outcomes of educational interventions have been mixed, with several experiments documenting that attitudes towards people with disabilities can be changed through educational intervention (e.g., Hall, 2008; Hunt & Hunt, 2004; Zahn & Kelly, 1995), while others have not (e.g., Anthony, 1972; Hassanein, 2015; Krahe & Altwasser, 2006). Interestingly, Anthony (1972) showed that attitudes did not change from an educational intervention even though knowledge increased.

One of the most common approaches taken to changing attitudes toward people with disabilities has been via contact with someone with a disability. This idea is supported by the intergroup contact hypothesis, which states that, under appropriate conditions, interpersonal contact is one of the most effective ways to reduce prejudice between majority and minority group members (Allport, 1954). A meta-analysis of 515 studies documented the efficacy of the intergroup contact hypothesis, and indicated that interpersonal contact can reduce prejudice for multiple outgroups, such as people with disabilities (Pettigrew & Tropp, 2006). Given the low incidence of blindness and visual impairment and the relatively small number of people with visual impairments who are working (U.S. Census Bureau, 2017), most people have likely not encountered a blind or visually impaired professional in the workplace. Therefore, use of contact may be particularly important to improve employer attitudes towards this population.

A large number of correlational studies have documented an association between contact

with people with disabilities and more positive attitudes, with many of these studies including employers (Hernandez et al., 2000; Ju et al., 2013; Scior, 2011; Smedema, Ebener, & Grist-Gordon, 2012; Strohmer, Grand, & Purcell, 1984). However, experimental studies utilizing contact alone as a method to change attitudes toward people with disabilities have been less successful (Anthony, 1972; Donaldson, 1980). Research supports the idea that the contact between the person with a disability and participants needs to be of high quality (e.g., interactive, respectful, pleasant; McManus, Feyes, & Saucier, 2010), needs to include information in addition to contact (Anthony, 1972; Daruwalla, 2005; Fisher & Purcal, 2017; Hassanein, 2015; Krahe & Altwasser, 2006; Lee & Rodda, 1994), or should involve structured experiences or presentations by people with disabilities rather than unstructured interaction and should involve a person with a disability that is of equal status as the study participant (Desforges et al., 1991; Donaldson, 1980). These findings support Allport's intergroup contact hypothesis regarding the appropriate conditions necessary for contact to change attitudes.

### **This Study**

Given the ongoing problem of low employment levels and high unemployment rates for people who are blind or visually impaired and employers' concerns about hiring them, it is important for VR professionals to interact with employers to advocate for the hiring of this population. This interaction with employers is now mandated by law in WIOA, which has the potential to significantly influence how VR agencies and professionals work with employers. Although a limited number of studies have tested the ability of disability awareness or diversity presentations with groups of employers to change their attitudes (Phillips et al., 2016), no one has tested the efficacy of one-on-one meetings with employers. One-on-one interactions are necessary to implement the dual customer approach and establish relationships with businesses

as recommended to improve employment outcomes for people with disabilities (Anderson et al., 2006; U.S. Department of Labor, 2014).

Two commonly recommended approaches to these employer meetings are (a) providing education about vision loss and how people who are blind or visually impaired can function on the job and (b) the dual customer approach, but empirical research has not evaluated the efficacy of either approach. These approaches are very different, with the educational approach focusing on sharing information to increase employers' knowledge, and the dual customer approach focusing initially on asking questions to gather information from the employer about his or her business and determine the businesses' needs. In addition, contact with a person from an outgroup is believed to have the ability to positively impact attitudes, and this was also an approach recommended by some VR professionals to encourage employers to hire people who are blind or visually impaired.

The purpose of this study was to determine whether a one-hour meeting between a VR professional and an employer can improve attitudes toward, knowledge about, and intent to hire people who are blind or visually impaired. Additional purposes were to evaluate the relative effectiveness of two approaches to the meeting, to evaluate the impact of contact with a person who is blind (accomplished via the VR professional's vision status – blind or sighted) on these outcomes, and to determine whether these factors are associated with interest in a follow-up meeting. This information will be of benefit to VR agencies and professionals as they determine how to implement the WIOA mandate to work with employers. The following set of research questions and hypotheses were investigated, with hypotheses being used when justified by existing research.

### **Hypotheses and Research Questions**

1. Participation in a meeting with a VR professional will improve employer attitudes toward, knowledge about, and intent to hire people who are blind or visually impaired.
2. Employer attitudes and intent to hire will show greater improvement when an employer meets with a VR professional who is blind compared to a VR professional who is sighted.
3. Use of the educational approach will result in a greater increase in employer knowledge about people who are blind or visually impaired than the dual customer approach.
4. Does the approach used for the meeting with an employer result in different effects on employer attitudes toward or intent to hire people who are blind or visually impaired?
5. Does the approach used for the meeting with an employer and vision status of the VR professional interact to influence employer attitudes toward, knowledge about, or intent to hire people who are blind or visually impaired?
6. Does interest in a follow-up meeting with a local VR professional differ based on approach used, the vision status of the VR professional, or the interaction of the two?

## **Method**

### **Participants and Procedure**

This study was approved by the authors' university Institutional Review Board overseeing human subjects research. To implement the intervention for this study, the authors partnered with a large company (approximately 3,000 employees) in the financial services sector in the southern United States. A representative from the company's human resources (HR) management department worked with the authors to identify employees within the company who were eligible to participate in the study. Criteria for inclusion were that participants were managers with hiring power or HR staff who were involved in hiring (henceforth referred to as hiring managers) who had not previously hired a person who was blind or visually impaired and

who worked in the location that the intervention was being conducted. The authors provided the company representative with information to share with prospective participants, including a description of the study and what participation would entail, the process for completing measures and meeting with a VR professional, and sample survey questions. The company and participants were unaware of the specific research questions and hypotheses being addressed by the study.

The intended sample size for the study was a minimum of 44 to achieve power to detect differences with a medium effect size. The company representative identified 65 employees who were eligible and willing to participate. One hiring manager identified served as an alternate only, in case another hiring manager was not able to keep his or her appointment, resulting in a sample of 64. All 64 of the participants completed the intervention meeting, but one participant only met with the VR professional for half of the intended time, so did not complete the remainder of the study. Sixty-three participants completed the post-test, and 60 participants completed the follow-up survey four months after the intervention, for a total completion rate of 93.8%. Following the completion of the study, one participant was removed from the analyses due to a high degree of knowledge and experience about blind persons as employees, acquired from a previous close working relationship with a blind coworker. Analyses were run both with and without this participant, and the participant's exclusion did not alter the results. For fidelity of the study, this participant's data was removed as we wanted to examine the effect of the intervention on naïve participants, resulting in a sample size of 59. The sample was 66% female, with 80% White/Caucasian and 20% Black/African American. Most participants were between the ages of 55 to 64 (34%), followed by 45 to 54 (32%), and 35 to 44 (29%); 3% were age 25 to 34, and 2% were age 65 to 74. Reported education levels were high school (5%), some college but no degree (19%), 4-year college degree (54%), and graduate-level degree (22%).

The company representative provided the authors with a list of identified participants along with their email addresses, job titles, and departments. Study measures were administered via online survey at three time points: within the week prior to the participant's meeting with the VR professional, (pre-test), within one day to one week after their intervention meeting (post-test), and approximately four months following the intervention meeting (follow-up survey). Participants were scheduled by the company representatives to an intervention appointment (i.e., meeting with a VR professional), and, after the meeting, were requested via email to complete two subsequent online surveys. All meetings took place over the course of one week.

### **Measures**

At the beginning of the survey, the measures were introduced as questions about the participants' thoughts and perceptions toward employing people who are blind or significantly visually impaired. For brevity, the term "legally blind" was used to describe this population in the questions, with an indication that this includes people with a range of vision loss, from a significant visual impairment to complete blindness.

**Employer Attitudes Toward Blind Employees Scale (EABES).** This scale measures attitudes of employers regarding blind people as employees (McDonnall, 2014, 2017). With eleven Likert-scale items, participants rate their agreement with statements regarding employees who are blind, such as "People who are legally blind would be able to perform work of the same quantity as sighted people at my company." The measure consists of two subscales: one related to beliefs about ability and productivity of blind employees, and the other regarding perceived difficulties in employing a person who is blind. Items are rated on a 7-point scale from *Strongly Agree* to *Strongly Disagree*, for a total scale range from 0 to 66. Higher scores indicate more positive attitudes. Validity of the measure was verified with confirmatory factor analysis, and

predictive validity is supported by a significant relationship between total scale score and future likelihood of hiring a qualified person who is blind (McDonnall, 2017). Internal consistency reliability of the scale is high, with .92 for the ability/productivity subscale and .84 for the subscale regarding challenges to employing a person who is blind (McDonnall, 2017).

**Knowledge about how blind employees accomplish work tasks.** Four items were included in the survey to assess participant knowledge about how a person who is legally blind can perform basic work tasks, such as accessing printed materials; accessing a computer to use the internet or email; using typical office equipment such as a multifunction document center; and handling a cashier or bank teller position. Participants were asked if they knew of any way a legally blind employee could perform these tasks. If participants responded yes, they were asked to specify how the person could perform the task. Answers given were rated for accuracy using a coding scheme which was developed and refined based on data collected from three previous studies (Authors). Data from this study were independently coded by four researchers who discussed any discrepancies to reach consensus. The researchers were unaware of the group assignment of participants. Partial credit was given for responses that indicated some knowledge, but were not complete answers. One point was assigned for each partially correct response and two points were assigned for completely correct responses, for a possible range of scores between 0 and 8.

**Intent to hire.** The authors modified an instrument based on Ajzen's Theory of Planned Behavior (Ajzen, 1991) from a previous study (Fraser, Ajzen, Johnson, Hebert, & Chan, 2011) to assess participants' level of intent to hire an individual who is blind or visually impaired. The measure included five Likert-scale items and began with the statement "Assuming that a qualified blind or visually impaired applicant has applied for a position at your company, please

rate the following statements.” This statement was followed by items such as “I am ready to hire an individual who is legally blind.” Items were scaled from 0 (Unlikely) to 7 (Likely). Prior to the intervention, data were collected for this measure in a pilot study that included 388 employers, and confirmatory factor analysis indicated that three of the five items in the measure were the best indicators of the latent construct of intent to hire. In addition to the item above, “I intend to hire...” and “I will hire an individual who is legally blind” were retained. Internal consistency reliability was very high for the three item measure (Cronbach’s  $\alpha = .91$ ). Therefore, this three item measure was utilized for this study, resulting in a possible score range of 0 to 21.

**Interest in follow-up.** At the end of the meeting, the VR professional asked the participant if he or she was interested in speaking to a local VR provider about employment of people with blindness or other visual impairments. The VR professional recorded each participant’s response and provided participants who were interested with an informational brochure about the state-federal VR agency and contact information for two agency professionals.

### **Assignment of Participants to Conditions**

Participants were randomly assigned to one of four conditions in a 2 (approach: dual customer or educational) x 2 (VR professionals’ vision status: blind or sighted) design. The company’s HR representative assigned participants to one of two conference rooms set aside for the meetings. Participant availability determined meeting time, and the company representative alternately assigned participants to one of the two rooms, as participants provided their available times. This alternate assignment ensured that each VR professional would see the same number of people. VR professionals were randomly assigned to one of the two rooms, after the participant assignments were complete but prior to the VR professionals’ arrival at the business.

VR professionals alternated between the two intervention approaches to the meetings, after determining which to start with based on a coin flip (i.e., the dual customer approach was used for the first meeting, then the educational approach, then the dual customer approach, etc.). This is considered a completely random assignment, as the company representative scheduling the meetings had no awareness of which VR professional would conduct the meeting or which approach would be used during any of the meetings.

### **Intervention Description**

Two VR professionals, one sighted and one totally blind, provided the intervention via a one-hour, individual face-to-face meeting with each hiring manager assigned to him or her. These meetings took place in the headquarters of the partner company. The VR professionals each had more than 25 years of experience in the VR field, and were both recently retired from a state-federal VR agency that provided services to consumers who are blind or visually impaired. Both had extensive experience working directly with employers to encourage hiring of individuals who are blind or visually impaired, and had utilized both types of approaches (dual customer and educational) in practice.

The VR professionals worked together to develop a script for each meeting approach. The dual customer approach script began with a very brief overview of VR services and then included a list of 21 questions to illicit information about the business' needs (in general) and the manager's hiring needs (in particular). The educational approach script began with gathering basic company information and then providing information about blindness/visual impairment in general, typical misconceptions about blindness/visual impairment, assistive technology and other alternative techniques used by people who are blind or visually impaired, reactions of coworkers to hiring someone who is blind or visually impaired, and tips for interviewing

someone who is blind or visually impaired. Participants were asked a few questions during the educational meeting, such as what type of equipment their employees typically use to complete work tasks, thus enabling the VR professional to provide education about assistive technology or alternative techniques that would be most relevant for the hiring manager. Participants were given the opportunity to ask questions during the meeting, regardless of approach used. The VR professionals used the scripts as a general guideline for the meetings, with the understanding that questions raised by the hiring managers may guide some of the conversation. The general focus of each of the approaches was maintained to the greatest extent possible while allowing for a natural conversation to happen between the two individuals. The VR professionals were asked to report to the researchers any major deviations from the planned approach.

## **Results**

### **Treatment Fidelity**

To ensure consistency of the approaches used, the two VR professionals prepared for the meetings by practicing both written scripts via telephone with a former hiring manager. These calls were recorded and the professionals listened to each other's calls. The VR professionals discussed any differences noted in their approaches and provided feedback to each other, coming to consensus on how to manage the meetings. The VR professionals documented any deviations that occurred to implementing the intervention meetings as planned. Two deviations were reported: the participant meeting that lasted only 30 minutes, and the hiring manager who had a large amount of knowledge and experience working with someone who is blind. As another check of treatment fidelity, in the post-test participants were asked to rate the VR professionals they met with on how knowledgeable, competent, and engaging they were, using a scale of 1 (Not at all) to 7 (Very). All ratings were high, with averages of 6.69 (SD=0.56) for engaging,

6.80 (SD=0.45) for knowledgeable, and 6.81 (SD=0.39) for competent.

### **Intervention Assessment**

To examine hypotheses and research questions regarding our outcome variables, univariate results from repeated-measures ANOVAs were used. Follow-up tests for simple effects were conducted for the knowledge measure, by approach used. An a priori type I error rate of .05 was established and partial eta-squared was utilized as a measure of effect size. SAS 9.4 was used for all data analyses. Means for the three measures completed at pre-test, post-test, and follow-up are provided in Table 1. Overall group means are presented, as well as means by approach utilized and VR professionals' vision status.

Results indicated that the intervention was successful at improving all three outcome measures, providing support for the first hypothesis: that participation in a meeting with a VR professional would improve employer attitudes toward, knowledge about, and intent to hire people who are blind or visually impaired. The main effect for time was significant for employer attitudes,  $F(2,110) = 18.35, p < .001, \text{partial } \eta^2 = .25$ . Overall mean scores increased from pre-test to post-test ( $F(1,55) = 25.21, p < .001, \text{partial } \eta^2 = .31$ ) and this change was maintained from pre-test to follow-up ( $F(1,55) = 22.09, p < .001, \text{partial } \eta^2 = .29$ ). The main effect for time was significant for the knowledge measure,  $F(2,110) = 11.15, p < .001, \text{partial } \eta^2 = .17$ . Knowledge scores increased from pre-test to post-test ( $F(1,55) = 19.43, p < .001, \text{partial } \eta^2 = .26$ ), and a significant increase was maintained from pre-test to follow-up ( $F(1,55) = 9.42, p < .01, \text{partial } \eta^2 = .15$ ). For the measure of intent to hire, given a qualified applicant, the main effect for time was significant,  $F(2,110) = 5.31, p < .01, \text{partial } \eta^2 = .09$ . Overall scores for intent to hire increased from pre-test to post-test ( $F(1,55) = 10.23, p < .01, \text{partial } \eta^2 = .16$ ), but decreased by follow-up ( $F(1,55) = 0.64, p = .42, \text{partial } \eta^2 = .01$ ).

To examine our second hypothesis, that employer attitudes and intent to hire would show greater improvement when an employer met with a VR professional who is blind compared to a VR professional who is sighted, we calculated the interaction of vision status by time. This interaction was not significant for either employer attitudes,  $F(2,110) = 0.54, p = .58, \text{partial } \eta^2 = .01$ , or intent to hire,  $F(2,110) = 0.93, p = .40, \text{partial } \eta^2 = .02$ , indicating that vision status of the VR professional did not differentially affect the improvement of attitudes or intent to hire over time, contrary to our hypothesis. The intervention was effective, regardless of whether a sighted or blind VR professional provided the intervention.

Our third hypothesis posited that the use of the educational approach would result in a greater increase in employer knowledge about people who are blind or visually impaired than the dual customer approach. To test this hypothesis, we examined approach used (educational or dual customer) by time. This interaction was not significant for the knowledge outcome,  $F(2,110) = 1.28, p = .28, \text{partial } \eta^2 = .02$ . In contrast to our hypothesis that the educational approach would result in greater increases in knowledge, both approaches used in the intervention were effective in increasing knowledge about how a blind employee could perform tasks on the job. However, even though the interaction was not significant, differences in the means of each approach were noted across the data collection points (see Table 1). The gain in knowledge from pre-test to post-test for the educational approach was approximately double that of the dual customer approach (i.e., an increase of .64 for the dual customer approach, and 1.25 for the educational approach). Because of this difference in the pattern of scores, we examined the simple effects for each approach across time. Scores for participants for whom the dual customer approach was used increased significantly from pre-test to post-test,  $F(1,30) = 5.95, p = .02, \text{partial } \eta^2 = .17$ , but not from pre-test to the follow-up survey  $F(1,30) = 1.91, p = .18$ ,

partial  $\eta^2 = .06$ , indicating that the increase in knowledge was not well sustained over time for the dual customer approach. For participants that received the educational approach, knowledge scores increased significantly both from pre-test to post-test,  $F(1,27) = 13.86, p < .001$ , partial  $\eta^2 = .35$  and from pre-test to follow-up  $F(1,27) = 8.00, p = .01$ , partial  $\eta^2 = .23$ , indicating that for the educational approach, improvements in the knowledge score were sustained over time, possibly supported by the larger initial gain in knowledge.

We also investigated three research questions. We evaluated whether the approach used by the VR professional had any differential effect on either employer attitudes or intent to hire. For both of these measures there was no effect, with the interaction of approach by time not significant for the EABES  $F(2,110) = 0.38, p = .69$ , partial  $\eta^2 < .01$ , nor the intent to hire measure  $F(2,110) = 0.23, p = .79$ , partial  $\eta^2 < .01$ . We also evaluated whether the approach used interacted with vision status of the VR professional for any of the three measures. This three-way interaction was not significant for any outcome variable: attitudes,  $F(2,110) = 1.85, p = .16$ , partial  $\eta^2 = .03$ ; knowledge,  $F(2,110) = .05, p = .95$ , partial  $\eta^2 < .001$ ; or intent to hire,  $F(2,110) = .31, p = .73$ , partial  $\eta^2 = .01$ .

The final research question evaluated whether approach used, vision status of the VR professional, or the interaction between these factors influenced interest in follow-up with a local VR provider. Overall, 29 or 59 participants (49.2%) expressed an interest in receiving follow-up. Interest in follow-up did not differ based on the approach used,  $X^2(1, N = 59) = 0.02, p = .90$ , vision status of the VR professional,  $X^2(1, N = 59) = 0.02, p = .89$ , or by the interaction of approach and vision status,  $X^2(3, N = 59) = 0.19, p = .98$ . For each group, approximately half of the participants expressed interest in a follow-up meeting.

## Discussion

People who are blind or visually impaired experience negative employer attitudes and workplace discrimination, resulting in low employment levels and high unemployment rates. WIOA requires VR professionals to engage with employers in an attempt to improve employment opportunities for agency consumers. Our study documented that a brief intervention can improve attitudes of employers about this population, thus supporting the importance of this WIOA mandate. This brief intervention consisted of a one-hour face-to-face meeting conducted by a VR professional with a hiring manager, which is a typical avenue that VR professionals use to connect with employers. We evaluated the relative effectiveness of two recommended approaches to these VR professional-employer meetings, and determined whether contact with a professional who is blind would result in greater improvements in attitudes and intent to hire. This information is important to help VR professionals make the most effective use of their time with employers.

We found support for our first hypothesis, that a meeting between a VR professional and an employer would result in improvements in our three outcome variables. The size of the effects for these changes over time were all large. Improvements in attitudes were retained at the four month follow-up at a level similar to post-test. Increases in knowledge were also retained at the follow-up, although knowledge decreased somewhat between post-test and follow-up. While intent to hire increased significantly between pre-test and post-test, these changes were not retained at follow-up.

We did not find support for our second hypothesis, that employer attitudes and intent to hire would show greater improvements when the hiring manager met with a blind VR professional, based on the intergroup contact hypothesis (Allport, 1954), despite the fact that all of the key requirements for this contact appear to have been met (e.g., included information in

addition to contact, involved structured experiences with people with disabilities rather than unstructured interaction, involved a person with a disability that is of equal status as the study participant). Differences between groups based on VR professional's vision status were small. Given the large amount of research supporting the intergroup contact hypothesis (e.g., Pettigrew & Tropp, 2006), it is perhaps surprising that we did not find a positive effect for contact with a blind VR professional compared to a sighted VR professional. This finding could stem from different mechanisms for change being at work when meeting with a blind versus a sighted professional. Pettigrew (1998) proposed four processes of change that can occur when the conditions of the intergroup contact hypothesis are present, two of which are particularly pertinent for our study: learning about people who are blind via direct contact and reducing anxiety, and generating positive emotions by interacting directly with a blind person. However, meeting with a blind professional may also impact the employer's comfort with asking questions about blindness or how blind people do certain things. When meeting with a sighted professional, an employer may feel more comfortable asking any question that comes to mind, thereby potentially obtaining more information that helps to reduce any existing stereotypes, which could also reduce anxiety. There may be slightly different benefits of each vision status of the professional, which could both result in reducing stereotypes about blind employees, causing the exhibited lack of a difference in ability to improve attitudes and intent to hire.

We found some support for our third hypothesis, that knowledge would increase at a greater level when the educational approach was used compared to the dual customer approach. Although employers who received the educational approach exhibited a greater increase in knowledge, the time by approach interaction was not significant in our model. The size of this effect was small, and post-hoc power analyses document that power was rather low for this

analysis (power = .69). Simple effects illustrated that while both approaches resulted in a significant increase in knowledge from pre-test to post-test, only the educational approach resulted in a significant increase from pre-test to follow-up. A potential reason for this lack of clear evidence for the superiority of the educational approach is that employers were able to ask questions, and provide some direction for the meetings. If an employer asked for information about accommodations or how a person could perform a task, the VR professional was instructed to provide this information regardless of approach being used to allow for a natural conversation to occur, as would occur in a typical meeting between a VR professional and employer.

We did not find significant differences based on the three research questions that were investigated. Neither approach used nor the interaction between approach and vision status had an impact on attitudes, intent to hire, or interest in follow-up. Likewise, the interaction between approach and vision status did not have an effect on knowledge. The effect sizes for these differences were very small or small. While there were no group differences for interest in follow-up, it is noteworthy that a relatively large portion of hiring managers (almost half) were interested in continuing the conversation about employment of individuals who are blind or visually impaired.

### **Limitations**

Our study has limitations that should be acknowledged. The meeting was arranged by the hiring managers' HR department, rather than through a contact with a VR professional as would occur in practice. The hiring managers voluntarily participated in the meetings, after learning that they involved discussing the employment of people who are blind or visually impaired. Therefore the participants may have had a more open attitude about hiring people who are blind or visually impaired compared to typical hiring managers in the same, and other, companies.

Results may only generalize to employers who also have an open attitude. However, it is relevant to note that hiring managers' average pre-test score on the EABES matched very closely to average scores of three national samples of employers (McDonnall, 2014, 2017; McDonnall & Antonelli, 2018). We utilized an online survey to collect data from participants, which may be a limitation for the knowledge items. We could only rate knowledge based on what the participant wrote in terms of how a person would perform each task; participants may not have taken the time to write thorough, complete responses (as suggested by the fact that some provided an accurate answer at pre-test but not at post-test). Some participants were likely more knowledgeable than their scores indicate, and knowledge could have been better assessed in an interview rather than an online survey. Also, the knowledge items were only related to how a person performs four typical work tasks, not about general knowledge related to blindness. A broader knowledge measure may have demonstrated greater variability between groups.

### **Implications for Practice and Future Research**

An important finding of this study is that the approach a VR professional uses for the meeting with an employer is not as important as having the meeting, in terms of positively impacting employer attitudes, knowledge, intent to hire, and interest in follow-up. Consequently, VR professionals should take every opportunity to meet with employers, utilizing whichever approach is most comfortable for them, or a hybrid approach. These findings support the importance of the WIOA requirement for VR agencies to engage with employers, improving relationships and coordination between the two entities. A finding of this study that is particularly relevant to practice is that one meeting between a VR professional and a hiring manager is not enough to impact intent to hire people who are blind or visually impaired over time. VR professionals should strive to establish relationships with hiring managers that involve

ongoing contact. Ongoing contact will allow the professional to readily be available to provide information and assistance as needed, and refer qualified applicants to the business. This indicates a potential advantage to the dual customer approach, which focuses on the goal of building long-term relationships with businesses.

Another important finding of the study is that having a blind VR professional conduct an employer meeting is not more effective than having a sighted professional conduct the meeting. Although this is a surprising finding based on previous research, it is a positive finding for practice because it indicates that any knowledgeable VR professional can potentially be effective at one-on-one meetings with an employer. While a number of VR professionals who work with this population are blind or visually impaired themselves, a large majority are not. This finding indicates that it's not necessary for a sighted professional to include a blind professional in meetings with employers to positively influence factors associated with hiring, which simplifies the process.

Although these findings are promising for VR and provide validity for the WIOA employer engagement mandate, as a next step, it would be valuable to evaluate the ability of an intervention such as this to result in *actual* hiring of people with disabilities. One component of that could be the ability to develop a relationship with the employer after the first meeting. However, this would require a naturalistic study of a longer duration than four months and would be challenging to conduct, as there are limited numbers of people who are blind or visually impaired who would be available and interested in applying for an open position with any given employer.

There are several other research directions that could be taken to build upon these findings. Although a face-to-face, one-on-one meeting may be the ideal method to interact with

employers, this kind of approach may not always be possible and will limit the number of employers that can be reached based on the limited availability of VR professionals. Therefore, it would be valuable to determine whether a group educational approach (i.e., a disability awareness or diversity training) is as effective as an individual meeting at improving these outcomes. A group approach would reach a much larger number of employers in the same amount of time, thereby making it a more efficient approach. Along those same lines, it would be beneficial to determine whether an informational video (e.g., of a VR professional providing information similar to the educational approach) is as effective as an individual meeting at changing these outcomes. Other studies have documented the ability of viewing videos of people with disabilities to change attitudes (Lu, Webber, Romero, & Chirino, 2018; Reinhardt, Pennycott, & Fellinghauser, 2014), making this a promising line of future research. Finally, it would also be worthwhile to determine whether a shorter meeting could produce the same results as a one-hour meeting, as some hiring managers will not be able, or willing, to make themselves available for an hour at a first meeting.

### **Conclusion**

Negative employer attitudes are a long-term barrier to the employment of people with disabilities, including those who are blind or visually impaired. This research documents the ability of a brief meeting between a VR professional and an employer to improve attitudes towards people who are blind or visually impaired, as well as increase knowledge and intent to hire. However, increases in intent to hire were not retained at four month follow-up, which indicates that ongoing contact is needed. These findings are very timely given the WIOA's mandate for VR agencies to increase engagement and improve collaboration with employers. They provide support for the importance of engaging with employers and also indicate the value

of developing long-term relationships with employers, which was the intent of WIOA.

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Table 1  
*Means and Standard Deviations for Measures at Pretest, Posttest, Follow-Up by Group*

Group	<i>n</i>	EABES			Knowledge			Intent to Hire		
		Pretest Mean (SD)	Posttest Mean (SD)	Follow-Up Mean (SD)	Pretest Mean (SD)	Posttest Mean (SD)	Follow-Up Mean (SD)	Pretest Mean (SD)	Posttest Mean (SD)	Follow-Up Mean (SD)
All	59	34.31 (10.50)	39.42 (10.20)	39.17 (9.96)	0.81 (1.12)	1.73 (1.65)	1.39 (1.69)	9.29 (4.57)	10.90 (4.28)	9.71 (4.93)
Dual Customer	31	31.52 (11.46)	37.06 (9.45)	37.16 (11.30)	0.71 (0.94)	1.35 (1.28)	1.03 (1.25)	8.68 (4.35)	10.61 (4.20)	9.29 (4.99)
Educational	28	37.39 (8.49)	42.04 (10.52)	41.39 (7.85)	0.93 (1.30)	2.18 (1.89)	1.79 (2.02)	9.96 (4.80)	11.21 (4.42)	10.18 (4.91)
Blind	29	33.10 (9.61)	37.66 (8.68)	38.52 (9.63)	1.00 (1.16)	1.83 (1.79)	1.38 (1.59)	9.31 (4.42)	11.14 (3.90)	10.41 (4.60)
Sighted	30	35.47 (11.33)	41.13 (11.36)	39.80 (10.40)	0.63 (1.07)	1.67 (1.49)	1.40 (1.81)	9.27 (4.79)	10.67 (4.67)	9.03 (5.22)

*Note.* SD indicates standard deviation. EABES is the Employer Attitudes Toward Blind Employees Scale.