

Evaluating the Effects of a Self-Advocacy Training Program for Undergraduates with Disabilities

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Abstract

The purpose of this study is to explore the efficacy of a training program with a group of college students who have physical, sensory, and/or learning disabilities regarding their acquisition of knowledge and skills related to their rights to reasonable accommodations under several disability-related federal laws (e.g., Section 504, Americans with Disabilities Act [ADA]). This investigation seeks to address the following research question: Do participants in a knowledge- and skill-based training program successfully acquire knowledge and behaviors associated with understanding their disability-related rights and how to request disability-related accommodations? The study showed significant results concerning student acquisition of knowledge (** $p < .001$) and accommodation skills (** $p < .001$). Future applications for this research are discussed.

Keywords: Disability rights, Americans with Disabilities Act, Section 504, disability support services, postsecondary accommodations, empowerment, self-advocacy, self-determination

Policymakers, educators, and researchers have long recognized that postsecondary education is a key factor in ensuring successful adult outcomes for individuals with disabilities. Few employment differences between postsecondary graduates with and without disabilities were found according to a survey conducted by Fichten et al. (2012). However, several studies indicate that individuals with disabilities without postsecondary education might be disadvantaged when seeking employment. Recent data show that overall employment of adults with disabilities in 2011 was 33%, but for those with college degrees (Bachelor's degree or higher), employment increased to 53% (Erickson, Lee, & von Schrader, 2012). In another recent study of students with intellectual disabilities, Grigal, Hart, and Migliore (2011) found that the only predictor associated with a greater likelihood of employment for these students was attendance at a two- or four-year college. These results suggest that postsecondary education influences a more favorable employment rate for college graduates with disabilities.

The passage of Individuals with Disabilities Education Act (IDEA) and the protection of the Americans with Disabilities Act (ADA) as well as other laws such as Section 504 of the Rehabilitation Act, has provided some advantages for students with disabilities regarding postsecondary education. For example, the number of students with disabilities at transition age who were enrolling in some form of postsecondary education within four years of leaving high school rose from 27% in 2003 to 57% in 2009 (National Council on Disability, 2011). By 2010, the overall percentage of persons with disabilities with some college had risen to 30.1%; this figure is comparable to that for persons without disabilities, which is 32.2% (Erickson et al. 2012). However, the proportion of persons with disabilities who complete a Bachelor's degree or higher is only 12.2%, compared with 30.9% of those without disabilities (Erickson et al., 2012). While many postsecondary students face stressors and challenges in completing their degrees, this is exacerbated for students with disabilities (Getzel & Thoma, 2008). Thus,

the literature has identified a strong need to increase success in postsecondary education (Burgstahler, 2003; Dowrick, Anderson, & Acosta, 2005; Flannery, Yovanoff, Benz, & Kato, 2008; Stodden & Zucker, 2004; Zaft, Hart, & Zimrich, 2004).

One of the factors that can affect the success of students with disabilities is their access to appropriate accommodations. Several studies have indicated that there is a positive relationship between academic accommodations and academic performance (Keim, 1996; Trammel, 2003). However, it is often challenging for students with disabilities to obtain the appropriate disability services needed to be successful in their postsecondary program (Cawthon & Cole, 2010). Nearly one-fourth of college students with disabilities reported not receiving the appropriate accommodations needed to be academically successful (Horn & Nevill, 2006).

One barrier to accessing appropriate accommodations may be a difference in how accommodations are provided between secondary education supports and postsecondary education (Eckes & Ochoa, 2005). In secondary education settings under IDEA, Section 504 of the Rehabilitation Act, and the ADA, the school is responsible for initiating and providing disability accommodations and services through the individualized education plan (IEP) process; however, postsecondary students must re-establish their eligibility for disability accommodations when they enroll in a postsecondary institution before they can receive supports (Cawthon & Cole, 2010; Madaus, 2005). In other words, students must take the responsibility for establishing their eligibility for accommodations, and, in most postsecondary institutions, are responsible for obtaining their own disability accommodations. Unfortunately, it appears that many students with disabilities may not know how to initiate the process of establishing eligibility for and accessing accommodations. For example, in a survey of 110 students with disabilities at one four-year college, 48% reported that they had received no guidance about whom to contact on their campus to access accommodation supports (Cawthon & Cole, 2010).

Disability Support Services (DSS) offices provide a wide array of services ranging from counseling, to assistive technology such as audio translation of reading material, to supervising extended test time (Shaw & Dukes, 2006). Surveys of DSS staff suggest a wide variation in the types and extent of services provided, however. The bulk of DSS staff reported that their services were usually provided in the form of direct classroom support (e.g., note takers, extended test time), while far fewer reported providing capacity-building training to students such as self-advocacy training or counseling (Tagayuna, Stodden, Chang,

Zeleznik, & Whelley, 2005). In summary, while postsecondary accommodations can be effective in supporting students with disabilities, students with disabilities may not be aware of them and/or may not receive the capacity-building training they may need to be successful on their own.

Important components of capacity-building training consist of knowledge of disability rights under the various disability-related laws and skills needed to successfully request needed disability-related accommodations from higher education staff members. As Test, Fowler, Wood, Brewer, and Eddy (2005) propose, "students must have knowledge of themselves and know that they have rights before they can self-advocate effectively" (p. 49). Cummings, Maddux, and Casey (2000) found that students with learning disabilities may not always be effective advocates because they lack understanding about their strengths and weaknesses and are inadequately prepared to communicate these to university staff. This is confirmed by college administrators, who are ultimately responsible for ensuring that services are provided (Janiga & Costenbader, 2002).

Research has documented that students with disabilities often are unable to describe their disability and its impact on their lives (Glover-Graf, Janikowski & Handley, 2003; Hitchings et al., 2001; Triano, 2003). In addition, students often lack knowledge about their legal rights (Carroll & Johnson-Brown, 1996; Rumrill, 1994) and lack an ability to assess their need for personal accommodations in academic settings (Izzo, Hertzfeld, Simmons-Reed, & Aaron, 2001; Izzo & Lamb, 2003; Vo, White, Higgins, & Nary, 2005). This lack of self-awareness, coupled with fear of stigma related to disclosure of their disability, may lead students to either refuse to access support services or request inappropriate accommodations (Barnard-Brak, Sulak, Tate & Lechtenberger, 2010; Collins & Mowbray, 2005; Hitchings et al., 2001). For example, according to a survey of 110 undergraduate students with learning disabilities, only 32% of students interacted with faculty about their learning disability (Cawthon & Cole, 2010).

Self-awareness is a prerequisite for self-determination. According to Turnbull and Turnbull (2001), self-determination is "the means for experiencing quality of life consistent with one's own values, preferences, strengths and needs" (p. 58). Self-determination emerges across an individual's life span and plays a significant role in an adult's life (Turnbull & Turnbull, 2006; Wehmeyer, Martin, & Sands, 2008). A self-determined young person has the ability to identify goals, problem-solve effectively, and appropriately express

and advocate for him or herself (Karvonen et al., 2004; Wehmeyer & Palmer, 2003). Self-advocacy, defined as recognizing and acting on one's rights (Getzel, 2008), is a component of self-determination. Balcazar, Fawcett, and Seekins (1991) stated that self-advocacy is the ability to communicate with others to acquire information and recruit help in meeting personal needs and goals. Van Reusen, Bos, Shumaker, and Deshler (1994) define self-advocacy as an individual's ability to effectively communicate, convey, negotiate, or assert his or her own interests, desires, needs and rights. It is also described as educating students about their rights and responsibilities and how to successfully request accommodations and modifications (Pocock et al., 2002).

Many students lack self-awareness and self-advocacy skills (Schreiner, 2007) and have had limited opportunities to learn them (Test et al., 2005). Both self-determination and self-advocacy have been identified as critical factors related to success for students with disabilities in postsecondary settings (Carter, Swedeen, Walter, Moss, & Hsin, 2010; Getzel, 2008; Getzel & Thoma, 2008; Lock & Layton, 2001; Palmer & Roessler, 2000; Walker & Test, 2011). These studies suggest that students with disabilities who lack self-advocacy skills can learn them through a structured, behaviorally-oriented training technology (Palmer & Roessler, 2000; Test et al., 2005; White & Vo, 2006). Such training should focus on developing self-advocacy skills in students with disabilities rather than just providing them with advocacy and advice (Hitchings et al., 2001; Stodden, Whelley, Chang, & Harding, 2001). Moreover, according to Satcher (1995) and Carroll and Johnson-Brown (1996), students with disabilities can receive many benefits from self-advocacy skills training. This training can result in (a) more empowered students with disabilities who become autonomous adults, (b) enhanced self-advocacy skills to reduce social isolation that may cause a significant number of students with disabilities to drop out of school, and (c) students becoming more successful in the transition from postsecondary education to employment.

This study reports the results of a pilot test to determine whether a combined online and face-to-face training curriculum could help postsecondary students with disabilities acquire knowledge and skills to successfully request disability-related accommodations. Based on the self-advocacy training first developed and tested by White and Vo (2006), this study was designed as an evaluation of a behaviorally-based training program tested with a group of college students with physical, sensory, and learning disabilities. As a pilot, we did not seek to evaluate any long-term or generalized outcomes of the training, but rather sought to

determine whether the training enabled participants to acquire specific behaviors to request accommodations from university staff members. Determining whether a training curriculum actually imparts the knowledge and skills it is intended to deliver is a critical first step that must be completed in order to establish the plausibility of efficacy or "going to scale" in future, larger scale research (Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005). Therefore, this paper seeks to address the following research question related to acquisition of ADA accommodation requesting skills: Do participants in a knowledge- and skill-based training program successfully acquire knowledge and behaviors associated with understanding their disability-related rights and how to request disability-related accommodations?

Method

Participants and Settings

Recruitment. Because this was a pilot study with a focus only on whether students with disabilities could acquire the specific intended knowledge and skills being taught in the curriculum, we did not attempt to recruit students with disabilities who were not already identified and being served by DSS programs. The investigators recruited students with disabilities through an email distributed by the DSS offices at four higher education settings in the Midwest. The email briefly described the study, requested their involvement in it, and provided contact information to the research team. Additionally, the DSS staff made personal contacts to qualified students. Eligible students indicated they had a disability that was recognized by their respective DSS Office. Students who volunteered for the study met with researchers who explained the study and asked students to sign a consent form. The students were compensated for their time with \$25 for completing the online knowledge-based training, and another \$100 for participating in the skills-based workshop. In all, 52 students with different types of disabilities completed the entire study across four higher education settings. See Table 1 for a description of participant demographics. The overall distribution of disabilities experienced by the participants is roughly equivalent to national reports of disability prevalence among postsecondary students (Newman, et al., 2011).

Site Selection. The researchers conducted this study in collaboration with DSS support staff in four locations: two large four-year state universities, one university for Native Americans, and one two-year community college located in an urban, low-income community. The research team selected these sites in order to maximize diversity of students as well as the

type of support service offices located at these institutions. DSS support staff served on the Consumer Empowered Team for the project and also advised on strategies to recruit participants for the training. They received brochures and flyers describing the training and were the primary agents for recruiting participants. Each DSS office received \$2,500 in compensation for their time and use of the institution's facilities.

Training Materials

The training materials consisted of a two-part curriculum: (a) a knowledge-based, online tutorial (KBOT) and (b) a face-to-face skill-based training workshop. We describe the disability-related accommodations training content in greater detail elsewhere (see Summers, White, Zhang, Gordon & Renault, 2014). Following is a brief summary of the content and method of delivery.

Knowledge-based Online Tutorial (KBOT). The online tutorial contained content from an earlier knowledge-based training component (White & Vo, 2006), which was updated and expanded to contain information to enhance self-awareness and to enable selection of accommodations based on students' needs. After signing consent forms and receiving brief instructions about the study, the investigators gave each participant

a password to access the KBOT. Upon website entry, students were directed to a pretest site to determine their knowledge about the content they were about to receive. Students worked on the KBOT at their own pace. The tutorial was constructed so that students could not skip or advance to the next section until they had completed the previous one. The content of the tutorial included (a) knowledge about their rights under disability law (ADA, Section 504, etc.); (b) a comparison of the procedures for receiving accommodations in postsecondary schools versus high school; (c) the meaning of "reasonable" accommodations (including comparisons of reasonable and unreasonable accommodations); (d) a strengths and challenges self-assessment related to the student's ability to succeed in postsecondary courses; and (e) an accommodations self-assessment worksheet to identify accommodations best suited to the student's needs. After completing their review of the materials, each student completed a posttest to assess his/her knowledge acquisition.

Skills-based Training. Because this study was a pilot, we focused on delivering the developed training with fidelity; therefore, the facilitators were members of the research team. We did include a designated DSS staff representative at each training site to introduce the trainers and to provide an overview of available services

Table 1

Demographic Characteristics of Study Participants

Characteristic		Frequency	Percent (%)
Gender	Female	31	59.6
	Male	21	40.4
Year in School	Freshman	15	28.8
	Sophomore	13	25.0
	Junior	11	21.2
	Senior	13	25.0
Disability Types	Physical disability	5	9.62
	Learning disability	31	59.62
	Sensory disability	3	5.77
	Mental health issues	13	25

on his or her campus. The facilitators used a Facilitator's Manual that had been developed in an earlier phase of the project, which included a PowerPoint presentation accompanied by a script for the presenters.

The team delivered four training workshops, one at each of the four participating institutions. The skills-based training consisted of a 1.5-day workshop that was convened on a Friday afternoon and ran from 8:30 to 3:30 on Saturday. The majority of students did not report any class conflict with the workshop. On the first day, the facilitators reviewed KBOT and the self-assessments completed in the KBOT. The second day of the workshop focused on skills acquisition. This consisted of a seven-step negotiation rubric, including 18 discrete behaviors within these seven steps, on how to request ADA accommodations from higher education staff members. The facilitators described each of the behaviors, including examples and non-examples of each. Students then practiced the behaviors through role-playing with other students using training vignettes of hypothetical scenarios. Finally, they developed a personal scenario based on their own anticipated personal accommodation needs for a specific class or other higher education situation and role-played it with other students to practice and receive feedback on their accommodation-requesting behaviors.

Measurement

Knowledge-based Online Training. To assess knowledge acquisition, the KBOT included a pre- and posttest measure consisting of 12 multiple-choice questions covering the content of the material in the online tutorial. The posttest questions were worded slightly differently, but covered the same content. Students could not access the KBOT until they had completed the pretest. Once the students had completed all sections on disability-related law, accommodations, and self-awareness activities, they could then proceed to the posttest page to complete the test and then check out of the tutorial.

Skills-based Training. Researchers conducted pre- and posttest role plays with each participant before and following the skills-based training. These tests consisted of scenarios of a situation where a university student needs some type of ADA accommodation. The researchers met individually with each participant in private rooms adjacent to the workshop room. The student read the testing vignette and the researcher answered any questions. For the pretest, the researcher asked the student to pretend to have the disability in the hypothetical situation and to ask for an accommodation based on the scenario as it was written. The researcher played the role of a professor or other higher education

staff member. All testing scenarios were videotaped for later review and scoring purposes. The pre- and posttest vignettes were different but both included an opportunity for the student to display all 18 behaviors included in the training. In the posttest, the students were allowed to keep a "Seven Step Checklist" introduced in the training and listing the behaviors before them as they engaged in the role play.

Social Validity

The researchers collected social validity data on study outcomes from students at the end of the skills-based face-to-face workshop through a survey using a Likert-type Scale (ranging from 1 = very dissatisfied to 5 = very satisfied) and a yes/no question that focused on the students' satisfaction with their online tutorial and workshop experience. Students completed the survey and turned it in to one of the facilitators in order to receive their participation payment. See Table 4 for a description of the questions.

Research Design and Analysis

For this study we used a pretest/posttest design. The research team delivered the complete training (both KBOT and Skills-based workshop) to each of the four participating institutions sequentially.

Independent variables. The research team documented completion of the KBOT as described above; students who did not complete both a pretest and posttest were not included in the analysis. Similarly, students who did not complete a pre- and post-training role play, and who did not attend both days, were not included in the analysis of the skills-based training.

Dependent variables. Pre- and posttest knowledge scores from the KBOT served as one of the dependent variables, while the number of accommodation requesting skills exhibited by students at pre- and post-assessment times served as the other dependent variable for this study. The research team created an observation score sheet (see Appendix A) to be used while viewing the video-recorded role plays. The two researchers who delivered the training, and served as the university instructor in the role plays, collaborated to develop agreement about the definitions of each of the behaviors and to revise the observation score sheet to reflect that agreement. Two additional research team members who had not participated in the participant training received training from the senior researchers on inter-observer use of the observation score sheet. They then independently scored the full data set consisting of pre- and post-training role plays for all 52 of the skills-based training participants.

Results

Knowledge-based Training

The total number of students completing the KBOT pre- and posttests was 52. The mean percentage correct from pre- to posttest rose from 67 to 85%. Table 2 shows the results of a paired t-test analysis of the change. There was a statistically significant difference ($p < .001$) in mean disability-related accommodation knowledge score before and after taking/completing the online knowledge tutorial. The effect size, based on a Cohen's d calculation, was 1.05 (Cohen, 1994).

Skills-based Training

Pre- and Posttest Skills Demonstration. The overall mean percentage of observed skills scored as correctly demonstrated was 42% in the pretest and 65% in the posttest. Table 3 presents a paired t-test analysis and reveals that the change from pre- to posttest skills was significant at $p < .001$. The effect size in this analysis was 1.35 (Cohen, 1994).

Reliability. As noted, two trained observers viewed and scored all of the video-recorded role plays.

Inter-observer agreement reliability was calculated by dividing the number of agreements by the total number of agreements plus disagreements and multiplying by 100. The inter-observer reliability for the pretest and posttest were 97% and 96%, respectively.

Social Validity

The social validity survey included five questions; four of them were in the form of Likert-type Scale and one was a yes/no question. Specifically, the questions were: (1) How would you rate the ADA workshop?; (2) How would you rate the content of the training?; (3) How would you rate the overall experience of the ADA tutorial?; (4) How would you rate this overall ADA training program?; and (5) Would you recommend this training to someone who has a similar disability? Survey results indicated that the satisfaction with the online tutorial was slightly lower than the satisfaction with the workshop training. However, overall all the students were satisfied with the entire training and would recommend it to other students with disabilities. See Table 4 for further results description.

Table 2

Paired t-test Results Comparing ADA Accommodation Knowledge Pre- and Posttest Scores

Outcome	Pretest		Posttest		n	95% CI		t	df	Cohen's d
	M	SD	M	SD						
	0.67	0.17	0.85	0.17	52	-0.23, -0.13	-7.20***	51	1.05	

Note. CI = confidence interval.

*** $p < .001$.

Table 3

Paired t-test Results Comparing ADA Accommodation Skills Pre- and Posttest Scores

Outcome	Pretest		Posttest		n	95% CI		t	df	Cohen's d
	M	SD	M	SD						
	0.42	0.16	0.65	0.17	52	-0.28, -0.18	-9.14***	51	1.35	

Note. CI = confidence interval.

*** $p < .001$.

Discussion

In this pilot study, the investigators sought to empirically test whether a designed training curriculum could help postsecondary students with disabilities acquire the specific knowledge and skills to successfully request disability-related accommodations. While this study did not assess longer-term impacts of acquiring the knowledge and skills targeted in this training model (e.g., successful completion of coursework, graduation), it did demonstrate that students can learn both knowledge and skills using this combined online and face-to-face format. As a pilot, the primary research question focused on whether the training could produce the intended changes in knowledge and skills; such a result is needed before moving on to the question of longer-term impacts. This study also revealed that the training could produce a large effect size, which will serve as a guide for future sample size calculations and the design for a more longitudinal approach to determine generalization in naturalistic settings.

The KBOT proved to be an effective approach to helping students obtain information on the disability-related legislation and the types of accommodations they might use to enhance their educational outcomes in a higher education setting. The mean pretest versus posttest scores showed a significant increase in knowledge ($M = 0.67$ vs. 0.85 ; $p < .001$). Similarly, the skills-based training proved to be an effective strategy to help students acquire necessary skills for requesting accommodations, showing a significant training effect ($M = 0.42$ vs. 0.65 ; $p < .001$) on the improvement of the students' performance in scenario role play situations.

The results from pre- to posttest for both the knowledge and skills portions of the training demonstrated statistical significance. However, a higher level of skill acquisition was anticipated. This would suggest that the training was necessary but not sufficient. Future training might increase practice opportunities until a specified criterion for mastery is achieved. As noted previously, this exploratory study did not follow students to determine whether the acquired skills were successfully generalized beyond the training. White and Vo (2006) used university staff member confederates to whom students were directed with requests for accommodations. White and Vo's findings show that generalization probes in naturalistic settings had high consistency with accommodation-requesting scores under training conditions.

Limitations

This project is primarily focused on intervention development and therefore the emphasis of this pilot was on testing of the training model to determine its potential efficacy in further research. Therefore, testing was exploratory in nature and intended primarily to indicate whether participants could successfully acquire the knowledge and skills intended in the curriculum. However, we should point out the limitation created by the small sample size in this study ($N = 52$), and the lack of a control group against which to measure knowledge and skill acquisition. Second, future research should include students who have not previously established their eligibility for accommodations through contacts with their campus DSS, in order to determine broader impacts such as attitudinal change and a willingness to self-disclose their disability and seek accommodations. A third limitation to be noted is that the face-to-face training was delivered in four sequential workshops held in different locations. The presenters followed the same script for all presentations and kept fidelity ratings in the form of checks at each stage of the agenda. Nevertheless, it is possible that these participants did not receive exactly the same dosage in delivery of the skills-based training. There were, however, no significant differences between the pre- and post-training skill acquisition scores across the four sites.

Future Research

The primary purpose of this pilot study was to determine whether the training curriculum, as designed, could result in successful acquisition of the target knowledge and skills for students with disabilities. The proximal variables of knowledge and skill acquisition in this study demonstrated statistical significance. The large effect size of this study provides guidance concerning the appropriate sample sizes for a future research design utilizing control groups. Yet to be determined is whether this intervention results in more significant effects on long-term or distal variables such as changing attitudes of students who are reluctant to request accommodations or self-disclose their disability, requesting accommodations in natural environments, grade achievement across semesters, grade point change, duration of enrollment, and successful graduation.

The focus of this pilot study was on further developing the original training program as discussed in White and Vo (2006). The re-design of the curriculum involved transformation of the knowledge portion of the intervention from paper and pencil to an online tutorial format. The intent was to create a tool that could be used by students almost anytime or anywhere

Table 4

Social Validation of ADA Training

Questions	Four-year state university (A) (n = 16) M	Four-year state university (B) (n = 13) M	University for Native Americans (n = 9) M	Two-year community college (n = 12) M	Overall (n = 52) M
How would you rate the ADA workshop?	4.56	4.31	4.00	5.00	4.47
How would you rate the content of the training?	4.63	3.92	4.33	5.00	4.47
How would you rate the overall experience of the ADA tutorial?	3.69	3.85	3.67	4.36	3.89
How would you rate this overall ADA training program?	4.69	4.23	4.22	5.00	4.54
Would you recommend this training to someone who has a similar disability? (Yes/No)	16 Yes	13 Yes	9 Yes	12 Yes	52 Yes

and at their own pace. It was also our thought that this training format would help save DSS staff time and provide an effective and efficient tool to educate students about legal rights, the nature of disability-related accommodations, and enhanced self-awareness of their own needs and strengths. At this developmental stage, the research team continued to be the primary training team delivering this ADA accommodations training. While we have anecdotal data from our collaborating DSS partners concerning the value and relevance of the training, future research needs to explore the fidelity and social validity with which the training can be delivered by others, such as DSS staff who would serve as trainers for future application of this product. The Facilitator's Guide used to establish fidelity will serve as the basis for an observation-based fidelity check to help facilitators reach criterion fidelity in delivery of the face-to-face training.

Another avenue for future research lies in the more effective and flexible use of the interactive online technology, which we used in this project primarily for the knowledge-based component of the training curriculum. Because of the need to test the overall content, it was necessary to have all participants complete all of the knowledge-based materials. The research protocol required students to do the online tutorial in a linear fashion from start to finish. Under non-research conditions students might take an alternate approach to obtaining knowledge and content. The students might direct their attention to different sections of the webpage with the intent of only seeking the information they need at the moment versus reviewing the whole webpage document on disability-related knowledge. Future research could explore the patterns of use and application of skill acquisition using more innovative delivery of the material. For example, students could use a mobile device application to access disability accommodation knowledge and skill materials and also plan their meetings with university staff.

Future research might also consider new applications of this training to other populations and contexts in addition to the current group of postsecondary students with disabilities. Two possible opportunities are working with students with disabilities in high schools and postsecondary graduates. In high school, the transition coordinator could help develop the knowledge and skills they will need to transition to their postsecondary education. Because development of self-determination and self-advocacy skills are a recommended practice for high school students with disabilities, the training developed through this project might be useful as a transition tool to work with secondary education students.

Following completion of postsecondary training, the disability-related accommodations training may also be useful to graduates for better understanding their individual needs and their rights under the disability laws such as 504 and the ADA in order to proactively secure the accommodations they require in the workplace as well. Knowing one's rights is one thing, but the skills of respectful negotiation taught through this training may be critical to secure needed accommodations with future employers.

Based on feedback from our DSS colleagues, we believe this intervention would be of value for university and college personnel working with students with disabilities. Many DSS offices face increasing workloads and diminishing budgets and personnel to accomplish their ever-increasing work. The knowledge-based online tutorial is designed to help students learn information about disability laws designed to afford them accommodations. This knowledge acquisition can be done at the student's own pace and does not require extensive disability services personnel for set up. The length of time to complete the instructional tutorial was not over-bearing. After controlling for outliers, our data show that the mean number of minutes students were engaged with the knowledge instruction was 38.23 minutes (range 8.09 minutes to 1.55 hours). The other main component of this intervention, the face-to-face accommodations requesting training, is designed to be taught in groups between eight and 12 students. There is economy of scale in terms of teaching students in group formats and there is the added benefit of peer interactions and cooperative learning.

Education can be the key to opening many new doors to employment, to new networks, or even more advanced education. This is especially advantageous for people with disabilities. Researchers, educators, advocates, and family members must work together to help students with disabilities gain academic success. To achieve this, a combination of human and technological supports can be used to help students with disabilities develop knowledge and skills to request appropriate accommodations, which will provide them equal opportunity for success in the academic environment. The research reported here is one small step toward achieving that goal.

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Authors' Note

The contents of this article were developed with funding from the National Institute on Disability and Rehabilitation Research, U.S. Department of Education (grant number H133G070160). However, the contents of this article do not necessarily represent the policy of the Department of Education, and the reader should not assume endorsement by the Federal Government. We would also like to acknowledge the assistance of Andrew Shoemaker, Andrea Blair, Jason Tomlinson-Maseberg, Jaclyn Anderson, and Perry Graves for their involvement with the ADA and Accommodations training at their respective institutions of higher education. Recognition also is given to our project coordinator, Leslie Schmille, and our e-Learning Team colleagues Dr. Ed Meyen, Dr. Diana Greer, and Tom Shorock.

Appendix A

INDIVIDUAL SCORING FORM

Observer:	Date scored:
Participant:	
Location:	(circle one) Pretest or Posttest
Abbreviation: S=student; USM=university staff member; O=Occurrence; N=Nonoccurrence; N/A=Not Applicable	

Scoring Code: O = Occurrence
 N = Nonoccurrence
 E = Early Occurrence (If the behavior occurs but at the earlier time than suggested)
 L = Late Occurrence (If the behavior occurs but at the later time than suggested)

BEHAVIORS	Score	Comment	DEFINITION
(A) OPENING THE MEETING			
1			O : A greeting consists of both words of salutation and the USM's title and last name. N : The S does not greet the USM or, if the S uses slang.
2			O : A statement made by the S that identifies himself or herself to the USM. N : The S does not mention his or her name. N/A : If the USM knows the S
3			O : A positive statement made by the S to the USM that expresses appreciation in meeting the USM N : No statement of appreciation occurs. N/A : If the USM starts asking questions before the S has an opportunity to make statement of appreciation.
4			O : Statement that mentions the name of the person that referred him/her to the USM, and <u>also</u> states brief information about the referring person. N : The S does not mention the referring person OR does not include information about the referring person. N/A : If the situation does not specify a referring person OR the S and the USM know each other
(B) MAKING THE REQUEST			
5			O : A statement that provides the USM with specific contextual information directly related to the pending request for accommodation. N : If the S does not mention his/her current situation OR provides non-specific information. N/A : If the USM indicates he/she knows the S's situation
6			O : A statement that provides the USM with specific contextual information directly related to your talents or strengths that is pertinent to your request for accommodation or the specific situation. N : If the S does not mention his/her strengths or talents OR provides non-specific information, or identifies talents/strengths that are not related to the request. N/A : If the USM indicates he/she knows the S's talents/strengths.
7			O : A statement that provides additional information about the S's personal challenge, which should be related to the request for accommodation. N : If the S does not mention the disability or challenge. N/A : If the USM states he/she knows the meeting's purpose

8	Make a specific request			<p>O : A statement that specifically describes how the USM can assist him/her.</p> <p>N : If the S does not make a specific request or says something not related to the meeting's purpose.</p>
9	State potential benefit of the accommodation required			<p>O : A statement of rationale that explains <u>HOW</u> the specific accommodation can help the S with the academic tasks.</p> <p>N : If the S does not mention the specific potential benefit of the accommodation.</p>
<p>• If the request is met, go to (C) – Planning action, and then score items 11-15 as N/A, and then go to (F) Summarizing and (G) Closing the Meeting.</p> <p>• If the request is rejected, go to (D) – Handling rejections</p> <ul style="list-style-type: none"> ○ If (D) is agreed to go back to (C), then score 13-15 as N/A, then go to (F) Summarizing and (G) Closing the Meeting. ○ If the USM refuses to help with (C), (D), and (E), skip (F) and then score. ○ 				
(C) PLANNING ACTION				
10	S states or requests an action plan			<p>O : S states or requests information that would result in an action plan designed to meet the requested accommodation need.</p> <p>N : If the S does not ask about details for how to carry out the initial request.</p> <p>N/A: If the USM response is a simple yes or no or if the USM volunteers an action plan.</p>
(D) HANDLING REJECTIONS				
11	Ask USM for alternative/suggestions or S makes thoughtful request for alternative suggestion			<p>O : A statement or question after the initial request has been rejected, which seeks the USM's ideas or suggestions as to possible alternative actions the S might take to achieve his/her requested accommodation. The S may also make a thoughtful suggestion.</p> <p>N : If the S <u>does not ask</u> or request an alternative or a different suggestion, or makes a threatening suggestion.</p> <p>N/A: If the initial request is NOT rejected or if the USM spontaneously offers a different suggestion</p>
12	Analyze feasibility of the suggestion			<p>O : A statement that specifically indicates whether or not the suggestion is feasible, given his/her situation.</p> <p>N : If the S does not analyze the feasibility of the suggestion.</p> <p>N/A: If the USM did not make a suggestion OR accepted the initial request</p>
(E) ASKING FOR A REFFERAL				
13	Ask for a referring person			<p>O : A statement or question that requests the name of someone else who might help him/her with the requested accommodation.</p> <p>N : If the S does not ask for a referral, OR makes a negative statement.</p> <p>N/A: If the USM voluntarily offers a referring person Score as N/A if request is granted.</p>
14	Ask for necessary information to contact the referring person			<p>O : A statement that seeks more information about the person who has been recommended as an appropriate referring person. This information could include the person's full name, address, and number.</p> <p>N : If the S does not ask for specific information about the referring person.</p> <p>N/A: If the USM volunteers the information about the referring person Score as N/A if request is granted.</p>

15	Ask for permission to use the university staff member's name			<p>O : The S asks if he/she can use the USM's name when talking to the referring person.</p> <p>N : If the S does not ask for permission to use the USM's name.</p> <p>N/A: If the USM volunteers first states that the S can use his/her name OR offers to contact the referring person in advance</p> <p>Score as N/A if request is granted.</p>
(F) SUMMARIZING				
16	Summarize			<p>O : The S reviews the relevant parts of previous discussion. Answer who, when, what, how, and/or where the necessary action steps are going to occur as appropriate.</p> <p>N : If the S does not summarize his/her understanding of the future action they (the student and the USM) will take.</p> <p>N/A: If the USM refused to help OR the USM summarizes future actions to be taken before the S has the opportunity</p>
(G) CLOSING THE MEETING				
17	State appreciation			<p>O : The S expresses his/her gratefulness for the opportunity to meet the USM.</p> <p>N : If the S does not state his/her appreciation.</p>
18	Make a final closing			<p>O : A statement made by the S to indicate the ending of the interaction</p> <p>N : If the S does not state a final greeting.</p>