COMPARING RESULTS OF A VIDEO-BASED PREFERENCE ASSESSMENT TO A
VOCATIONAL FIT ASSESSMENT FOR INDIVIDUALS WITH INTELLECTUAL AND
DEVELOPMENTAL DISABILITIES: THE IMPORTANCE OF CONSIDERING
PREFERENCE ALONGSIDE JOB SKILLS

By

Lauren Snyder

A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Applied Behavior Analysis—Master of Arts

2019

ABSTRACT

COMPARING RESULTS OF A VIDEO-BASED PREFERENCE ASSESSMENT TO A
VOCATIONAL FIT ASSESSMENT FOR INDIVIDUALS WITH INTELLECTUAL AND
DEVELOPMENTAL DISABILITIES: THE IMPORTANCE OF CONSIDERING
PREFERENCE ALONGSIDE JOB SKILLS

By

Lauren Snyder

To improve employment outcomes for adults with intellectual and developmental

disabilities (IDD), school-to-work transition programs provide supported employment

experiences and assist students in obtaining competitive, integrated employment. Supported

employment specifically addresses job matching for individuals with IDD, which should include

consideration of an individual's abilities, an individual's interests, and the job demands as a part

of the job matching procedure. The current study was designed to compare the results of two

methods used to identify a job match. Specifically, the results from the VocFit®-- a program that

ranks jobs from best match to poorest match based on the individual's job readiness skills-- were

compared to a video-based preference assessment—a program that provides a ranking of the

individual's most preferred to least preferred job placement. Eight individuals with IDD, ages

18-22, participated in the study. Results indicate there were few relations between a participant's

job preference and the individual's job readiness skills in a given job category. Future research

should continue to evaluate different preference and vocational fit assessments to determine if

results are similar and subsequently determine if these rankings result in certain job performance

and preservation of future employment.

Keywords: supported employment, job matching, preference assessment, video-based

preference assessment, vocational fit assessment, school-to-work transition

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

KEY TO ABBREVIATIONS

ASD   Autism Spectrum Disorder

IDD   Intellectual and Developmental Disabilities

VFA   Vocational Fit Assessment

MSWO   Multiple Stimulus Without Replacement

Introduction

Inevitably with transition, comes change. Young individuals who attend school will eventually go through some sort of transition when they leave; such as attending post-secondary education, obtaining employment, living independently, and developing new personal and social relationships with other adults. To support a successful transition process for individuals with intellectual and developmental disabilities (IDD), comprehensive team planning must account for the dreams, desires, and abilities of youth with IDD. The plan should provide the basic structure necessary to prepare these youth to fully and independently live, work, and socialize in the community (PACER Center Inc., 2001). As such, a student's individualized education plan (IEP), developed under the Individuals with Disabilities Education Act (IDEA, 2017), requires that transition planning starts no later than the age of 16 and that it entails appropriate and measurable postsecondary goals, as well as, the transition services needed to reach those goals. Finding and maintaining a competitive job is a common postsecondary goal. Due to the financial gains and environment a job provides, employment allows an individual to more easily live independently and to develop personal and social relationships, helping to make the transition to adulthood positive and successful for young adults. Despite the importance of employment, compared to 68.6% of individuals without disabilities (Bureau of Labor and Statistics, 2016), only 26.3% of individuals with an intellectual disability (Kraus et al., 2018) and only 14% of individuals with autism spectrum disorder (Roux et al., 2017) were competitively employed in 2016.

To improve outcomes for young adults with IDD, school-to-work transition programs, such as Project SEARCH, provide supported employment experiences prior to high school graduation and assist their participants in obtaining competitive employment. Project SEARCH

(Daston, Riehle, & Rutkowski, 2012) is a yearlong program that combines classroom instruction and workplace experiences to produce promising integrated employment for its participants. A typical day for a student enrolled at Project SEARCH includes 1.5 hours of classroom instruction targeting employment and daily living skills, followed by four hours of work experience at an internship site. Project SEARCH students experience three different internships throughout the year.

At the internship site, students receive supported employment-- an evidence-based treatment that systematically places individuals at a job and then provides training and supports within the job site. Supported employment is implemented in four phases: (1) assessment of the individual seeking employment; (2) job matching for the available jobs; (3) training and supports at the job site; and (4) services for job preservation (Schall et al., 2015; Wehman et al., 2012). An important initial step in the supported employment process for individuals with disabilities is to conduct job matching (Persch et al., 2015). Job matching involves matching individuals with disabilities to a job based on their career interests and current job readiness skills. Effective job matching is best practice in the vocational field (Everson & Reid, 1997) and is a requirement of supported employment legislation (West, 1995). Job matching ensures job satisfaction and success because both the job demands and the individual's preferences and job skills are considered before placing an individual in a certain job (Wehman et al., 2018). It is important, then, to consider an individual's abilities, an individual's interests, and the job demands as a part of the job matching procedure (Daston et al., 2012; Graffam, Shinkfield, Smith, & Polzin, 2002; Kilsby & Beyer, 2002; McDonnell, Nofs, Hardman, & Chambless, 1989; Morgan 2008, 2011; Stevens & Martin, 1999; Trach, 1990).

Project SEARCH currently uses the VocFit® in their job matching process. The VocFit® is an internet-based vocational fit assessment (VFA) program that uses an algorithm to determine pros and cons of each potential job match based on a individual's abilities and the jobs' environmental and occupational demands (as coded through the Standard Occupational Classification and the Occupational Information Network). To identify the best job match, the individual is assessed on: (1) skills and abilities, (2) job demands, (3) pros and cons of each potential job match, and (4) areas of need that are suitable for intervention (Persch, Gugiu, Onate, & Cleary, 2015).

The VocFit®, however, does not incorporate or assess the individual's job preferences, in addition to the individual's skills and abilities, into its job matching procedures. Research indicates that providing individuals with IDD the ability to choose or giving the individual a preferred job or job tasks leads to more productive job performance (Bambara, Ager, & Koger, 1994; Morgan & Horrocks, 2011; Parsons, Reid, Reynolds, & Bumgarner, 1990); whereas if the individual's job preferences are not considered, the job match could lead to poor job satisfaction and performance, ultimately leading to job loss and difficulty obtaining future employment (Wehman et al., 2018). It is vital, then, for individuals with disabilities to be given the opportunity to identify their employment preferences as a part of the job match procedure. Expressing preference not only ensures a more successful job match, but it also allows for choice, autonomy, and self-determination.

A job-related preference assessment for individuals with IDD is one approach to assessing the individual's job preference as a part of the job matching process. Although there are currently several assessments available to help individuals with IDD to identify job preferences and/or career paths, few assessments are reading free (i.e., no reading is required of

the individual) or offer an alternative format for the individual to express likes and dislikes. This is problematic because not every individual with IDD has the ability to read or the ability to comprehend written assessments, and few studies have evaluated other preference assessments to address these limitations.

One solution may be a video-based job preference assessment. Horrocks and Morgan (2009) compared the results of a multiple stimulus without replacement (MSWO) procedure using tangible materials to a video-based assessment to identify preferred jobs. The MSWO procedure included actual materials representing the different job options (e.g., a spray bottle and cleaning rag) displayed in an array in front of the participant with the participant instructed to "point to the one you like best." Once the participant selected a job, that job was removed from the array and this process was repeated until all of the jobs had been chosen. The MSWO procedures were repeated three times to ensure reliability and a final ranking of preferred jobs was produced based on the results. These results were then compared to the video-based assessment, which presented videos of the jobs in a paired stimulus format. In a paired stimulus format each stimulus is randomly matched with all of the other stimuli in the set (Fisher et al., 1992). Hence, videos of two jobs were presented side by side with the participant instructed to "choose the one you like." This process was repeated until each job was paired together and displayed on both the right and the left of the screen. Following, a ranking of preferred jobs was produced based on the results.

Both preference assessments, the MSWO procedure and the video-based assessment, produced similar results in identifying preferred jobs. This comparison indicated that participants were able to accurately select their preferred jobs without requiring access to the materials associated with each job (as was required for the MSWO procedure). The video-based preference

4

assessment provided additional benefits as well, such as, using technology, presenting job tasks in real time and in their real environment, taking less time to identify preferred jobs compared to other methods, and it is reading free (Horrocks & Morgan, 2009).

An additional benefit of video-based preference assessments is that they allow practitioners to display the dynamic features of items or activities within their regularly occurring environment (Peterson, 2014). Through the use of videos, practitioners are able to capture the item or activity realistically (i.e., movement, noise, color, shape, etc.) and reliably without the need for providing the individual with actual stimuli. Further, comparing a tangible paired-stimulus preference assessment to a video-based preference assessment, Snyder, Higbee, and Dayton (2012) found a strong correlation between the results, indicating that a video-based preference assessment may be a feasible and reliable solution to conducting an assessment to identify preferred jobs for individuals with IDD.

While it is recommended that consideration of an individual's abilities, an individual's interests, and the job demands are all a part of the job matching procedure (Daston et al., 2012; Graffam, Shinkfield, Smith, & Polzin, 2002; Kilsby & Beyer, 2002; McDonnell, Nofs, Hardman, & Chambless, 1989; Morgan 2008, 2011; Stevens & Martin, 1999; Trach, 1990), there are few assessments that take all of these aspects into account. Further, a study by Persch et al. (2015), found that the job matching process is variable and lacks consistency. Meaning, that job matching varied from random to rigorous and data-based (Persch et al., 2015). Thus, it is unclear if school-to-work transition programs use only a vocational fit assessment or a preference assessment (or no assessment at all), rather than using the results of both forms of assessment when matching jobs for their students. Additionally, we were unable to find any research that has compared the results of a vocational fit assessment to those of a job preference assessment to

determine if similar results would be produced by both assessment or to examine each assessment's impact on successful job match.

The Current Study

The current study was designed to examine the correspondence between the results of two assessments commonly used to identify a job match. Specifically, the results from the VocFit®-- a program that ranks jobs from best match to poorest match based on the individual's job readiness skills-- were compared to the results of a video-based preference assessment—a program that provides a ranking of the individual's most preferred to least preferred job placement. The primary research question was:

1. To what extent do preferred jobs identified from a video-based preference assessment correspond to job match results identified on the VocFit®?

The secondary research questions were:

2. To what extent do skills in one job category correlate with skills in another job category?

3. Do the participants and classroom teacher find the video-based preference assessment as a useful way to choose a job preference?

Method

Participants

Eight individuals with IDD, ages 18-22, participated in the study. Participants were selected from a local postsecondary vocational training program, Project SEARCH, that was housed on a university campus. Participants received 1.5 hours of classroom instruction targeting employment and daily living skills, followed by four hours of work experience at an internship site, Monday through Friday. Criteria for participating in the current study included: (a) between the ages of 18 and 26 years old; (b) have met eligibility criteria for enrollment in Project SEARCH; (c) ability to express preferences and non-preferences; and (d) individual consent.

The first participant, Sara, was 20 years old with a diagnosis of specific learning disability. The second participant, Kris, was 22 years old with a diagnosis of autism spectrum disorder (ASD) and intellectual disability. The third participant, Ann, was 18 years old with a diagnosis of ASD. The fourth participant, Diez, was 19 years old with a diagnosis of intellectual disability and attention deficit hyperactivity disorder. The fifth participant, Jack, was 21 years old with a diagnosis of ASD. The sixth participant, Tom, was 22 years old with a diagnosis of ASD and intellectual disability. The seventh participant, Jim, was 22 years old with a diagnosis of Noonan syndrome, intellectual disability, and hearing impairment. Finally, the eighth participant, Craig, was 18 years old with a diagnosis of ASD. See Table 1 for a summary of participant characteristics.

Settings

The preference assessment was conducted on a university campus in the Project SEARCH classroom. This classroom was set up similar to a typical college classroom in that there were several large tables, chairs, and an instructor's area complete with a projector screen.

This location was chosen out of convenience and familiarity for the participants, as well as, feasibility to administer the preference assessment. The participants, the classroom teacher and three job coaches, and three researchers were present in the classroom during administration of the assessment. The classroom teacher completed the VocFit® on his own prior to the start of the Project SEARCH school year.

Materials

Materials required for the video-based preference assessment included the following: iPad® (to record the videos), iMovie® (to edit the videos), a checklist of the required components for each of the videos in the preference assessment, Qualtrics (an internet-based survey platform used to host the video-based job preference assessment program), headphones, an overhead projector and projection screen, and a technology device with internet access to complete the assessment (e.g., computer, tablet, or phone). The only required material for the VocFit® was a technology device with internet access to complete the assessment (e.g., computer, tablet, or phone).

Dependent Variable

Video-Based Preference Assessment. The dependent measure for the video-based preference assessment was the ranking of job categories by participants from most preferred (1) to least preferred (6). A percentage selection score was calculated for each job category following completion of the video-based preference assessment by dividing the number of times the job category was selected by the number of times it was presented (e.g., 10 opportunities) and multiplying by 100 (Horrocks & Morgan, 2009). Based on this percentage, job categories were then ranked from most preferred (1) to least preferred (6). If there was a tie in a percentage selection score (e.g., the same percentage of preference for a job category), then the same

ranking was assigned to both job categories. For example, if a participant had the following percentage selection for the job categories, Food Service- 60%, Animal Care- 60%, Landscaping- 50%, Production- 40%, Janitorial- 20%, and Office/Clerical-0%, then the ranking was: (1) Food Service; (1) Animal Care; (3) Landscaping; (4) Production; (5) Office/Clerical; and (6) Janitorial.

Vocational Fit Assessment. The dependent measure for the VocFit® was the ranking of job categories for participants from best match (1) to poorest match (6). After the job match report was run by the classroom teacher, the average number of pros for a job category was calculated by adding the number of pros for each internship site in a job category and then dividing that total by the number of internship sites in the category (described in more detail below). Similar to the preference assessment rankings, if there was a tie in the average number of pros for a job category (e.g., two job categories had the same number of pros), then both job categories were given the same ranking. For example, if a participant had the following average number of pros for the job categories, Food Service- 18, Janitorial-16, Landscaping-14 Animal Care-14, Office/Clerical-13, and Production-12, then the ranking would be as follows: (1) Food Service; (2) Janitorial; (3) Landscaping; (3) Animal Care; (5) Office/Clerical; and (6) Production.

Procedures

Video-Based Preference Assessment Development. Prior to the start of the study, the seventeen internship site options available to participants attending Project SEARCH were categorized into six job categories, including Food Service, Janitorial, Landscaping, Animal Care, Production, and Office/Clerical. These categories were created in collaboration with the classroom teacher based on the similarity of the job tasks. Three tasks described by the internship

site supervisors as essential were then selected to depict examples of job tasks relevant to each category, (see Table 2 for a description of each job category and the three tasks depicted in each video). Next, videos of an actor (a former job coach who was familiar with the different job categories and required job tasks) performing each of the job tasks were created at various internship sites for each job category.

Videos were then placed into iMovie and edited into approximately 3-minute clips. To reduce any potential bias in how each job category was portrayed in the video, a checklist (see Appendix A) was developed to ensure each video included a specific set of required components, including (1) an initial black screen with the job category title; (2) a voice-over description of the job category and the three tasks expected at the job site(s); and (3) video clips of the job tasks being performed at the internship site in real time with actual noise in the expected environment. A graduate student was trained to score the videos on each of the specific components on the checklist as present (+) or not present (-). The student watched and scored each of the six videos and the percent of required components included in each video was calculated by dividing the number of components present by the total number of expected components for each video and multiplying by 100. If any video clip did not contain 100% of the required components it was re-filmed. All of the videos for the six different job categories included 100% of the required components.

Final videos were uploaded into Qualtrics for the video-based preference assessment. Qualtrics was programmed to present the videos in a paired stimulus format (as described by Horrocks & Morgan, 2009) to display two videos side by side, with the question, "Which job do you want?" displayed under the videos. All six job categories were randomly paired with every

10

other job category two times, once on the left side and once on the right side of the screen, to account for a side bias. Thus, a total of 30 trials were presented to each participant (see Table 3).

Video-Based Preference Assessment. To begin the assessment, participants were first instructed to watch the videos displayed on the projection screen through an overhead projector together as a group. They first watched the videos of the six different job categories and then immediately watched a video on how to complete the assessment. Participants were then instructed to complete the video-based preference assessment on their own laptop while wearing headphones. For each trial, two videos and the corresponding name of their job category were displayed. Because the participants were instructed to watch all of the videos presented in the preference assessment at the beginning of the assessment, they were given the option to watch the videos again or to just select their preferred job among the two options displayed. After selecting one of the two video options, the participant then pressed "next" to move to the next two video selections. This process was repeated until each job category was displayed 10 times, 5 times on the left and 5 times on the right; or in other words, paired two times with all of the other job categories. The researcher was available for technical support during the assessment. To account for participants who could not read, audio for each question was available through Qualtrics. All of the participants were observed to use the audio buttons to have the instructions read aloud and to re-watch the videos when needed. Upon completion of the video-based preference assessment, the ranking of each job category for each participant was calculated.

The length of administration for the video-based preference assessment was timed using a stopwatch. The stopwatch was started for the video-based preference assessment when the researcher started talking about the video-based preference assessment (i.e., going over the

instructions and showing the videos), and was stopped when the last participant submitted their survey. The total duration of the video-based preference assessment was about 29 minutes.

Vocational Fit Assessment. The VocFit® is an internet-based vocational fit assessment (VFA) program that uses an algorithm to determine pros and cons of each potential job match based on the jobs' environmental and occupational demands and an individual's abilities. Specifically, the program includes a task analysis of 125 items that are used to assess the job site and to assess the individual's job skills and abilities. A VFA-job site profile is created by responding to the prompt "To what degree does the job demand…" and rating each of the 125 items as "high demand" (e.g., essential to the performance of the job), "some demand", and "low demand" (e.g., irrelevant and non-essential) for that specific job site. The Project SEARCH classroom teacher, with input from the job sites and job coaches, created a job site profile for each of the seventeen internship sites prior to the start of the academic year.

A VFA-worker profile is created in a similar manner. Specifically, the classroom teacher responds to the prompt "To what degree does the worker demonstrate…" to rate each participant's ability to perform each of the 125 items of the task analysis as "high ability" (e.g., can perform the task independently), "some ability," and "low ability" (e.g., unable or dependent on others to complete task). Before participants began Project SEARCH, they attended a three-week summer preparation course with the Project SEARCH classroom teacher. Following this three-week course, the classroom teacher created a VFA-worker profile for each participant. Per the classroom teacher, it took approximately 40 minutes to complete a VocFit® assessment for each participant.

Once all profiles are created, the VocFit® generates a job match report, in which it compares the VFA-job site to the VFA-worker, providing a worker profile of pros (e.g.,

alignment between an individual's abilities and the job site demands) and cons (e.g., misalignment between an individual's abilities and the job site demands) for each job site (Persch et al., 2015). The gap between the pros and cons shows potential areas for intervention, which could be intended to modify the individual's skill development or the environment of the internship site. For the purposes of this study, the average number of pros calculated for each job category was used to determine the ranking of best to poorest matched job category.

Procedural Integrity

A checklist was created to assess procedural integrity of the researcher's delivery of the video-based preference assessment. The researcher was responsible for ensuring that 1) the participants were provided with the assessment link, 2) the participants viewed all of the job category videos and were given the opportunity to ask questions about each video, 3) the participants viewed a video on how to complete the video-based preference assessment, and 4) participants were provided enough time to complete the video-based preference assessment. A graduate student was trained to code procedural integrity data by scoring the researcher's delivery of each of the specific components on the checklist as present (+) or not present (-). Following, procedural integrity was calculated by dividing the number of correctly implemented components by the total number of components and multiplying by 100 (Gast & Ledford, 2014). The procedural integrity percentage was 100%.

Interobserver Agreement

Interobserver agreement (IOA) was collected for the calculation of the rankings of job categories from the video-based preference assessment for all of the participants. The secondary coder was another graduate student who was trained in coding the ranking procedures by the researcher. The secondary coder and the researcher began by calculating the ranking of a job

category selection together, and then calculating two job category selections independently. After these were calculated independently, rankings were compared. When the two coders obtained 90% agreement on the ranking calculations, IOA data calculation was conducted for all other rankings. An agreement was recorded if both coders calculated the same percentage for a job category and therefore the same ranking of that job category; whereas, a disagreement was recorded if the coders recorded a different percentage for a job category and therefore different rankings of that job category. Interobserver agreement was calculated using the point-by-point method; dividing the number of agreements by the number of agreements plus disagreements and converting the result into a percentage (Gast & Ledford, 2014). The average IOA percentage for the ranking of job categories in the video-based preference assessment for all of the participants was 100%.

Social Validity

To assess for content social validity, the videos portraying the different jobs were shown to the job site supervisors before the study was conducted. The site supervisors were asked to rate the acceptability and accuracy of how the job tasks and expectations were portrayed via a survey (e.g., Qualtrics). If any tasks were ranked low (i.e., neither agree nor disagree or below) the video was re-recorded and the supervisor was asked to review the revision. No videos had to be re-recorded.

To evaluate the acceptability of the video-based preference assessment, the participants and teacher were given a survey immediately following completion of the video-based preference assessment. The survey took about 5 minutes to complete. See Table 4 for a summary of the responses.

Data Analysis

       The results of this study were analyzed by comparing job category ranking results of the preference assessment to the ranking results of the VocFit®. That is, the most preferred job category (1) to the least preferred job category (6) was compared to the best matched job category (1) and poorest matched job category (6) in the VocFit®. Finally, a Kendall's tau-b correlation was run to determine the relationship between rankings on the video-based preference assessment and the VocFit®.

The job preference rankings compared to the best matched job category rankings for each participant are presented in Table 5, as well as in Figures 1-8. Overall, only one participant, Tom, had a 1 to 1 correspondence between most preferred and best match job category. Two participants, Sara and Craig, had a 1 to 1 correspondence between least preferred and poorest match job category.

Comparisons Between Assessments

Sara. The video-based preference assessment identified Landscaping (1) as the most preferred job category and Office/Clerical (6) as least preferred; whereas, the VocFit® assessment identified Food Service (1) as the best matched job category and Office/Clerical (6) as the poorest matched job category. For both assessments, then, there was agreement on the lower ranked job category, as Office/Clerical (6) was ranked both as the least preferred and the poorest match. On the other hand, there was no agreement on the most preferred job compared to the best match. The most preferred job category, Landscaping (1), was actually ranked 5th on the VocFit®, indicating that although Sara preferred the job, she did not have the essential skills to perform the job tasks. Alternatively, whereas Food Services (1) was ranked as the best match for Sara and her current job skills, she ranked this job category 4th on the video-based preference assessment indicating low preference for this type of job.

Kris. The video-based preference assessment identified Landscaping (1), Office/Clerical (1), and Janitorial (1) as the most preferred job categories and Food Service (6) (which was never selected) as least preferred; whereas the VocFit® assessment identified Food Service (1) as the best matched job category and Office/Clerical (6) as the poorest matched job category. For both assessments, then, there was no agreement between the most preferred and the best matched jobs

or between the least preferred jobs and poorest matched jobs. Specifically, the most preferred job categories of Landscaping (1) and Office/Clerical (1) were ranked as the poorest matches on the VocFit®, indicating that although Kris preferred the jobs, he did not have the essential skills to perform the job tasks. Alternatively, whereas Food Services (1) was ranked as the best match for Kris and his current job skills, he never selected this job category on the video-based preference assessment indicating low preference for this type of job. The closest match was for the category of Janitorial, which was tied for 1st on the video-based preference assessment and was ranked 2nd on the VocFit®.

Ann. The video-based preference assessment identified Food Service (1) as the most preferred job category and Janitorial (6), which was never selected, as least preferred; whereas, the VocFit® assessment identified Office/Clerical (1) as the best match and Landscaping (6) as the poorest matched job category. Notably, Janitorial was ranked 5th on the VocFit®. Similar to Sara, then, there was agreement on the least preferred and poorly matched job category, as Janitorial was ranked as the least preferred and the second to poorest match. On the other hand, there was no agreement on the most preferred job compared to the best match, as the most preferred job category, Food Service (1) was ranked 4th on the VocFit®, indicating that although Ann preferred the job, she did not have the essential skills to perform the job tasks. Alternatively, whereas Office/Clerical was ranked as the best match for Sara and her current job skills, she ranked this job category 3rd, highlighting this job category could be a good category for Ann.

Diez. The video-based preference assessment identified Animal Care (1) and Landscaping (1) as the most preferred job categories and Food Service (6), which was never selected, as least preferred; whereas the VocFit® assessment identified Food Service (1) as the best matched job category and Office/Clerical (6) as the poorest match. There was a close match

between the poorest matched job category (Office/Clerical), which was ranked 5th on the video-based preference assessment. Next, the top preferred job categories, Animal Care (1) and Landscaping (1) were ranked 3rd (Animal Care) and 4th (Landscaping) on the VocFit® falling in the middle of a best match and poorest match for job categories. Similar to the results for Kris, whereas Food Services (1) was ranked as the best match for Diez and his current job skills, he never selected this job category on the video-based preference assessment indicating low preference for this type of job.

Jack. The video-based preference assessment identified Office/Clerical (1) as the most preferred job category and Animal Care (6), which was never selected, as least preferred; whereas, the VocFit® assessment identified Food Service (1) as the best match and Office/Clerical (6) as the poorest matched job category. There was no agreement between the most preferred and best match, as the most preferred job category, Office/Clerical (1) was ranked 6th on the VocFit®, indicating that although Jack preferred the job, he did not have the essential skills to perform the job tasks. There was, however, a close agreement between the best matched job and most preferred job category with Food Service, as it was ranked as the best match and second to most preferred. Alternatively, Animal Care was ranked as the least preferred job for Jack, however, the VocFit® ranked it 3rd falling in the middle of a best and poorest match for job categories.

Tom. The video-based preference assessment identified Food Service (1), Office/Clerical (1), and Landscaping (1) as the most preferred job categories and Production (4), Animal Care (4), and Janitorial (4) as least preferred; whereas the VocFit® assessment identified Food Service (1) as the best matched job category and Office/Clerical (6) as the poorest match. For both assessments, then, there was agreement on the highest ranked job category, as Food Service (1)

18

was ranked both as the most preferred and the best match. There was a close agreement on the least preferred job and the poorest match, as the least preferred job category, Production (4) was ranked 4th on the VocFit®. Finally, the top preferred job category, Office/Clerical (1) was ranked last on the VocFit®, indicating that although Tom preferred the job, he did not have the essential skills to perform the job tasks.

Jim. The video-based preference assessment identified Food Service (1) as the most preferred job category and Animal Care (6), which was never selected, as least preferred; whereas, the VocFit® assessment identified Office/Clerical (1) as the best match and Janitorial (5) and Landscaping (5) as the poorest matched job categories. Notably, Food Service was ranked 2nd on the VocFit®. Thus, there was agreement on the most preferred and highly ranked job category, as Food Service was ranked as the most preferred and second to the best match. This was also seen with the least preferred and lower ranked job category, as Landscaping was ranked 5th on the video-based preference assessment and as the poorest match. Office/Clerical was ranked as the best match for Jim and his current job skills, and he ranked this job category 4th, highlighting this job category could be a good category for Jim.

Craig. The video-based preference assessment identified Landscaping (1) as the most preferred job category and Office/Clerical (6), which was never selected, as least preferred; whereas the VocFit® assessment identified Food Service (1) as the best matched job category and Office/Clerical (5) as the poorest match. There was an agreement between the least preferred and poorest matched job category, as Office/Clerical was ranked lowest on both. Similarly, there was a close agreement between the most preferred and a higher ranked job category, as Food Service was ranked 2nd on the video-based preference assessment and was the best match. Finally, there was no agreement between the most preferred and best match, as the most

preferred job category, Landscaping (1) was ranked 4th on the VocFit®, indicating that although Craig preferred the job, he did not have the essential skills to perform the job tasks.

Correlational Analyses

First, only two positive correlations between rankings on the VocFit® and the video-based preference assessment were found. Notably, no job category was significantly correlated with itself between the video-based preference assessment and the VocFit®. First, there was a strong positive correlation between high rankings for Food Service on the VocFit® assessment and high rankings for Landscaping on the video-based preference assessment ($\tau b = .807$, $p < .05$). Second, high rankings for Office/Clerical on the VocFit® assessment were strongly correlated with a high preference for Food Services on the video-based preference assessment ($\tau b = .776$, $p < .05$).

Next, both positive and negative correlations between job rankings on the VocFit® were found. There was a strong positive correlation between Food Services and Janitorial, $\tau b = .694$, $p < .05$, indicating those who with more Food Services skills also had more Janitorial skills. Alternatively, there was a strong negative correlation between Office/Clerical rankings on the VocFit® assessment and Janitorial rankings ($\tau b = -.746$, $p < .05$) and Food Service rankings ($\tau b = -.744$, $p < .05$), indicating there is not a lot of overlap among the skills required for Office/Clerical work and those required in Food Services and Janitorial work.

Social Validity

Overall, the participants and the teacher found the video-based preference assessment a useful way to assess job preference. Specifically, most of the participants (5), and the teacher, agreed that the video-based preference was a good way to assess job preference. Additionally, most of the participants (6), and the teacher, agreed that the video-based preference assessment

was an appropriate length of time and easy to understand. Finally, most of the participants (7),

and the teacher, agreed that the jobs viewed in the video-based preference assessment were clear.

Discussion

The current study was conducted to compare a participant's job preference to the participant's job skills using the results of a video-based preference assessment and a vocational fit assessment. Secondary questions examined the extent to which skills for certain job categories related to skills for other job categories and the extent to which participants and the classroom teacher felt the video-based preference assessment was a useful and appropriate way to assess job preference. The results suggest that there is little correspondence between preferences and abilities in a given job category; there was only one participant that had a 1 to 1 correspondence between the most preferred and best matched job category and two participants with 1 to 1 correspondence between least preferred and poorest match job category. These findings support claims that key stakeholders should consider various sources and types of data-- including the individual's abilities, the individual's interests, and the job demands-- as a part of the job matching procedure (Daston et al., 2012; Graffam et al., 2002; Kilsby & Beyer, 2002; McDonnell et al., 1989; Morgan, 2008, 2011; Persch et al., 2015; Stevens & Martin, 1999; Trach, 1990).

First, the lack of correspondence between the participants' job preference and their current job skills raises questions related to the best way to ensure a student's preference is considered but also that the student is placed in a setting that will ensure success. One option is to consider the gap between the pros and cons, as reported on the job match report of the VocFit®, rather than determining job placement based on the highest number of pros. This gap between the pros and cons signifies potential areas for intervention, as the individual has some skills but not all those required for the job. Thus, rather than considering the correlation between the most preferred and the best matched job, another approach would be to examine if the job

categories with several areas for intervention on the VocFit® correspond with the individual's most preferred jobs. Placing individuals in a preferred job with a job coach to teach the needed skills would allow individuals to experience their preferred jobs and to learn the skills needed to be successful on the job. This approach, however, would require a systematic procedure to determine which percentage of skills/tasks rated as areas for intervention (e.g., participant has some skills required for the job but not all) indicates whether a job category would be a good job match. These categories could then be compared to the student's most preferred job categories to inform a better job match.

An important additional consideration, however, is the qualifications of the individual who completed the VocFit® assessment for the participants. Within the current model (and for the current study), the Project SEARCH classroom instructor is supposed to complete the VocFit®; yet, this teacher often has minimal educational history with the student. For example, the classroom teacher in the current study completed the VocFit® for each of the participants after having only known them for about three weeks. As a result, he was dependent on his limited interactions with the students in the classroom setting and on the students' previous IEPs (without conducting observations at previous job sites). This brief history and knowledge of each participant may not be enough to accurately rate the participant's job skill abilities. A better alternative, then, would be to have a previous classroom teacher, job site supervisor, or other individual with a longer educational history with the participant (e.g., one year) complete the VocFit® prior to the student beginning Project SEARCH.

Second, it is important to consider the correlation of job skills between different job categories. If one student does not prefer a certain job but their job skills are positively correlated with another preferred job category, that could be a way to provide additional experiences and

better matches between preference and skills. Additionally, this would also provide information about job skills that are negatively correlated with another job category. For instance, during this study the participant Jack preferred to work in Office/Clerical, however his best match was Food Service and his poorest match was Office/Clerical. Recall that there was a strong negative correlation between Office/Clerical and Food Service, indicating that there was not a lot of overlap among the skills required for the job categories. However, Jack was placed at Office/Clerical for his first internship experience and due to his inability to perform some of the skills at the job site, he resorted to physical aggression and unfortunately was removed from Project SEARCH. Therefore, it is highly important to consider the correlation of job skills between different job categories.

Finally, the acceptability of the video-based preference assessment is an important consideration. The video-based preference assessment was an objective way to determine participants' job category preferences but it also provided the participants with the autonomy to express their own choice in an informed and systematic way. Similar to previous research, this video-based preference assessment had many benefits, including the ability to present job tasks in real time in their real environment, the ability for the classroom teacher to assess multiple participants at once (which saves time), and the assessment is reading free. The positive feedback regarding the video-based preference from the participants and the teacher suggest that a systematic preference assessment, like a video-based preference assessment, should continue to be used as part of the job matching process.

Limitations and Directions Future Research

There are some limitations to this study. First, the job categories identified as preferred and least preferred in the video-based preference assessment were not subjected to further

assessments to replicate those results. Consequently, it is unknown if these identified jobs categories were valid in preference. Second, the small sample size and specificity to one school-to-work transition program limits the generalizability of the results. Future research should compare job preferences to job skills with a larger sample of individuals with IDD in a variety of supported employment programs. Additionally, because the videos for the video-based preference assessment were specific to the current Project SEARCH site, future research should examine a way to make a generic video-based preference assessment that can be used across settings but still provide the information necessary for specific job categories. Future research should also continue to evaluate different preference and vocational fit assessments to determine if different types of assessments results are similar and subsequently to determine if these rankings result in certain job performance and preservation of future employment.

Conclusions

This study was the first to use a video-based preference assessment to compare job category preferences to the results of a vocational fit assessment to measure the abilities required in each job category for individuals with IDD. The results yield important information for teachers, vocational counselors, and other service providers. Findings highlight the importance of using a systematic preference assessment, such as the video-based preference assessment, to identify preferred jobs for individuals with IDD in addition to other VFAs. Findings also highlight the need to create and use a systematic calculation to determine the best matched job based on an individual's abilities. It is important then to consider both of these rankings, preferences, and abilities, when determining the final job match to ensure success for individuals with IDD (Wehman et al., 2018).

APPENDIX

Table 1.

Participant Characteristics.

Participant	Age	Ethnicity	Primary Diagnosis
Sara	20	Caucasian	Specific Learning Disability
Kris	22	Caucasian	Intellectual Disability
Ann	18	Caucasian	Autism Spectrum Disorder
Diez	19	Caucasian	Intellectual Disability & Attention Deficit Hyperactivity Disorder
Jack	21	African American	Autism Spectrum Disorder
Tom	22	Caucasian	Autism Spectrum Disorder & Intellectual Disability
Jim	22	Caucasian	Noonan Syndrome, Intellectual Disability, & Hearing Impairment
Craig	18	Caucasian	Autism Spectrum Disorder

Table 2.

Descriptions of the Job Categories and the Featured Job Tasks.

Job Category	Description	Job Task 1	Job Task 2	Job Task 3
Food Service	Includes food preparation, stocking bars, cooking and/or preparing food, serving food, clean food surfaces, operating a dishwasher, providing customer service (e.g., greeting, taking orders, responding to questions/concerns), and checking inventory.	Taking an order from a customer	Washing dishes	Operating the grill
Janitorial	Includes navigating the assigned building, following checklist/instructions, operating industrial cleaning equipment, and prepare the necessary cleaning materials.	Preparing the necessary cleaning materials	Cleaning a conference room	Vacuuming
Landscaping	Includes, power washing/cleaning equipment and rooms, raking, mulching, weeding, and operate outdoor equipment.	Weeding	Operating a backpack blower	Checking tire pressure
Animal Care	Includes, cleaning animal enclosures, providing socialization for the puppies, and bathing animals.	Power washing an animal enclosure	Socializing with puppies	Cleaning an animal enclosure
Production	Includes, preparing food for baking and transit, washing dishes, operating commercial laundry equipment, and folding/sorting laundry.	Bagging food for baking	Folding laundry	Operating commercial laundry equipment
Office/Clerical	Includes, cleaning/preparing conference rooms for meetings, cleaning/preparing lab equipment, answering and directing phone calls, cleaning laptops, greeting/directing people, preparing promotional packets, and operating commercial copy machines.	Cleaning/preparing lab equipment	Filling a commercial copy machine with paper	Operating a commercial copy machine

Table 3.

Paired Stimulus Format for Video-Based Preference Assessment.

Trial	Left	Right
1	A	B
2	C	D
3	E	F
4	D	C
5	F	E
6	B	A
7	A	D
8	C	F
9	E	B
10	D	A
11	F	C
12	B	E
13	A	C
14	B	D
15	E	A
16	F	B
17	C	A
18	D	B
19	A	E
20	B	F
21	C	E

Table 3 (cont'd).

Paired Stimulus Format for Video-Based Preference Assessment.

22	D	F
23	A	F
24	E	C
25	F	D
26	B	C
27	D	E
28	F	A
29	C	B
30	E	D

Note. A= Food Service; B= Janitorial; C= Landscaping; D= Animal Care; E= Production; F= Office/Clerical.

Table 4.

Participant and Teacher Responses to Social Validity Survey of the Video-Based Preference Assessment.

Question	Strongly Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Strongly Agree
1. The video-based assessment was a good way to assess job preference, or which job someone may want	1	1	1	1	4 (1)
2. The video-based assessment was an appropriate, or good, length of time	0	1	1	1	5 (1)
3. The video-based assessment was easy to understand	0	1	1	1 (1)	5
4. The jobs viewed in the videos of the video-based assessment were clear	0	1	0	2	5 (1)

Note. The number of participants to select each response option are presented and the teacher's selection is represented as (1).

Table 5.

Job preference rankings compared to the best matched job category rankings.

Participant	Video-based preference assessment ranking	Vocational fit assessment ranking
Sara	1. Landscaping 2. Production 3. Animal Care 4. Food Service 5. Janitorial 6. Office/Clerical*	1. Food Service 2. Animal Care 3. Production 4. Janitorial 5. Landscaping 6. Office/Clerical
Kris	1. Landscaping 1. Office/Clerical 1. Janitorial 4. Production 4. Animal Care 6. Food Service*	1. Food Service 2. Janitorial 3. Animal Care 4. Production 5. Landscaping 6. Office/Clerical
Ann	1. Food Service 2. Animal Care 3. Office/Clerical 4. Production 5. Landscaping 6. Janitorial*	1. Office/Clerical 2. Production 3. Animal Care 4. Food Service 5. Janitorial 6. Landscaping
Diez	1. Animal Care 1. Landscaping 3. Production 4. Janitorial 5. Office/Clerical 6. Food Service*	1. Food Service 2. Janitorial 3. Animal Care 4. Landscaping 5. Production 6. Office/Clerical
Jack	1. Office/Clerical 2. Food Service 3. Janitorial 4. Landscaping 5. Production 6. Animal Care*	1. Food Service 2. Janitorial 3. Animal Care 4. Production 5. Landscaping 6. Office/Clerical
Tom	1. Food Service 1. Office/Clerical 1. Landscaping 4. Production 4. Animal Care 4. Janitorial	1. Food Service 2. Animal Care 3. Janitorial 3. Landscaping 5. Production 6. Office/Clerical

Table 5 (cont'd).

Job preference rankings compared to the best matched job category rankings.

Jim	1. Food Service	1. Office/Clerical
	2. Janitorial	2. Food Service
	3. Production	3. Animal Care
	4. Office/Clerical	4. Production
	5. Landscaping	5. Janitorial
	6. Animal Care*	5. Landscaping
Craig	1. Landscaping	1. Food Service
	2. Food Service	2. Animal Care
	3. Animal Care	3. Janitorial
	4. Janitorial	3. Production
	5. Production	5. Landscaping
	6.Office/Clerical*	6. Office/Clerical

Note. *= Never selected by the participant.
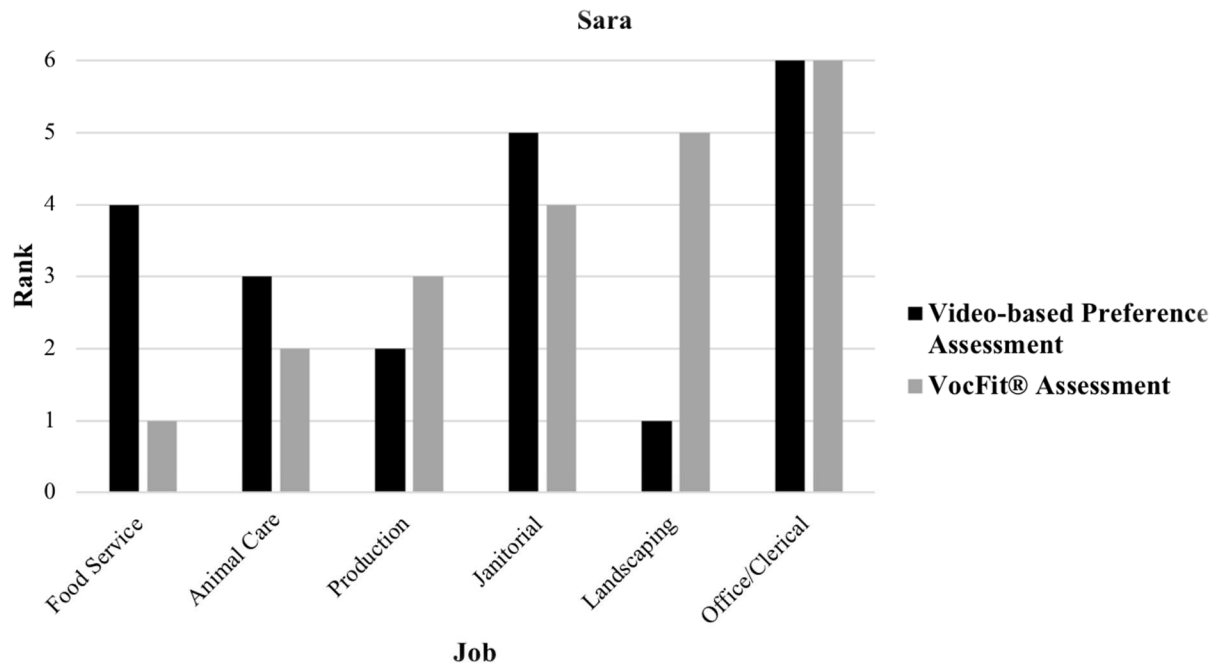
Figure 1. Results of the video-based preference assessment and VocFit® assessment for Sara.
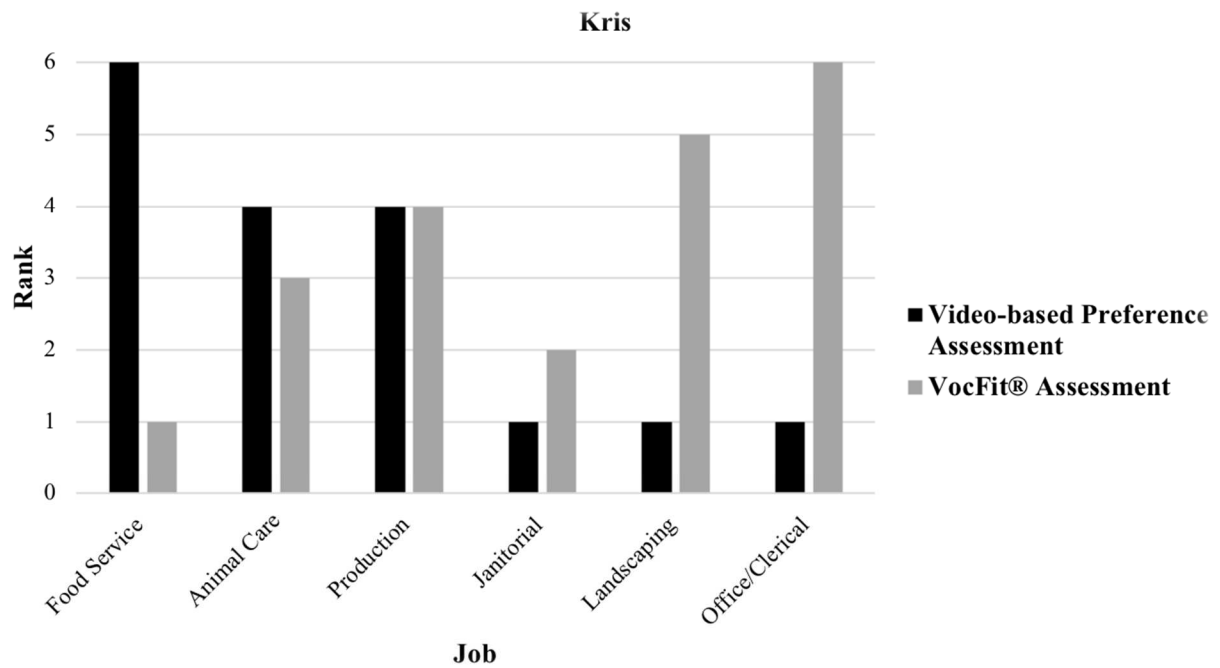
Figure 2. Results of the video-based preference assessment and VocFit® assessment for Kris.
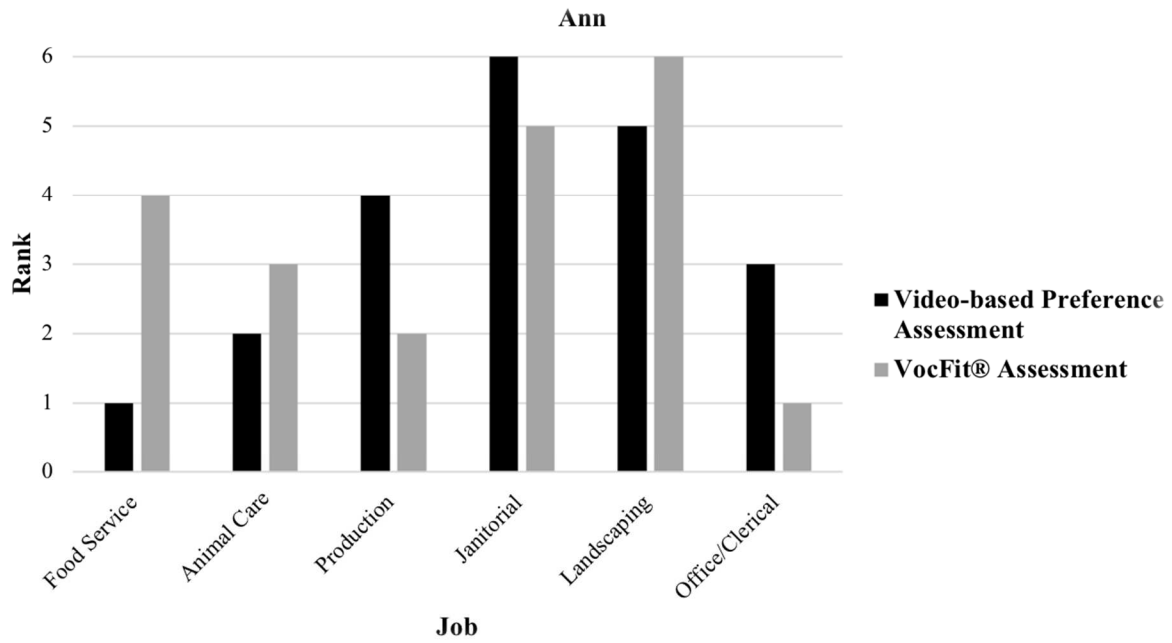
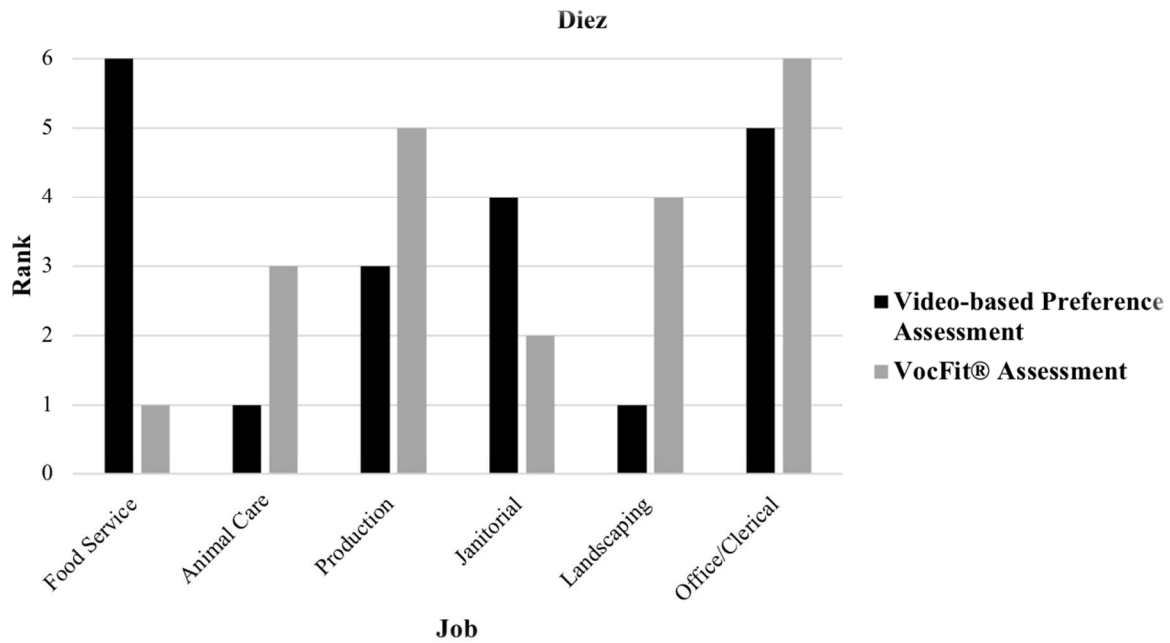*Figure 3*. Results of the video-based preference assessment and VocFit® assessment for Ann.

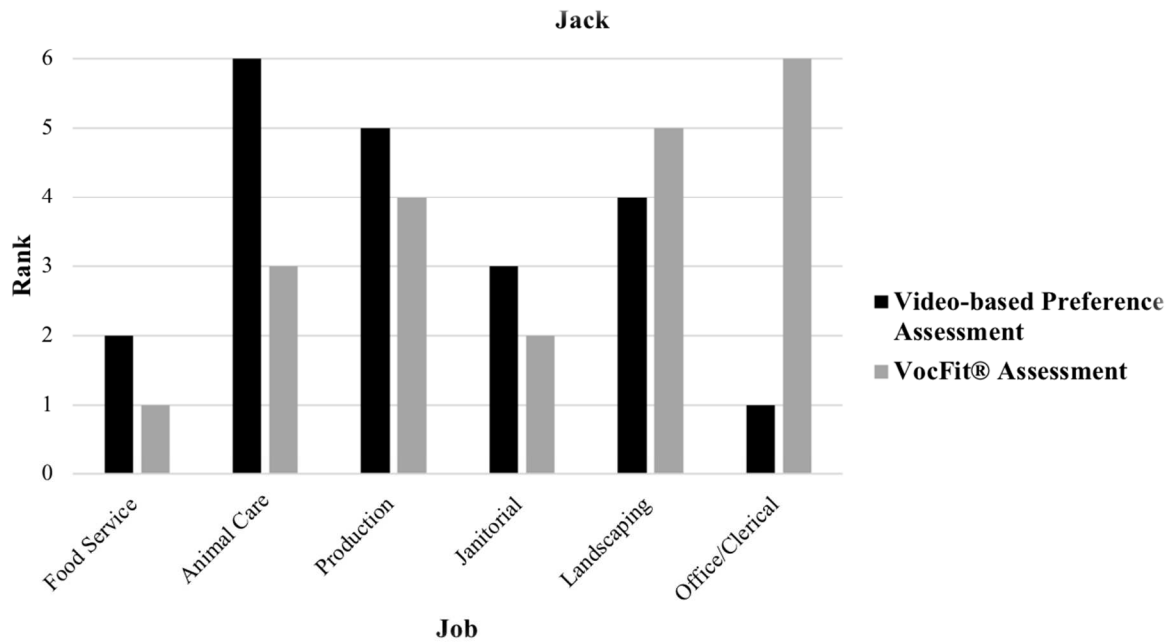*Figure 4.* Results of the video-based preference assessment and VocFit® assessment for Diez.

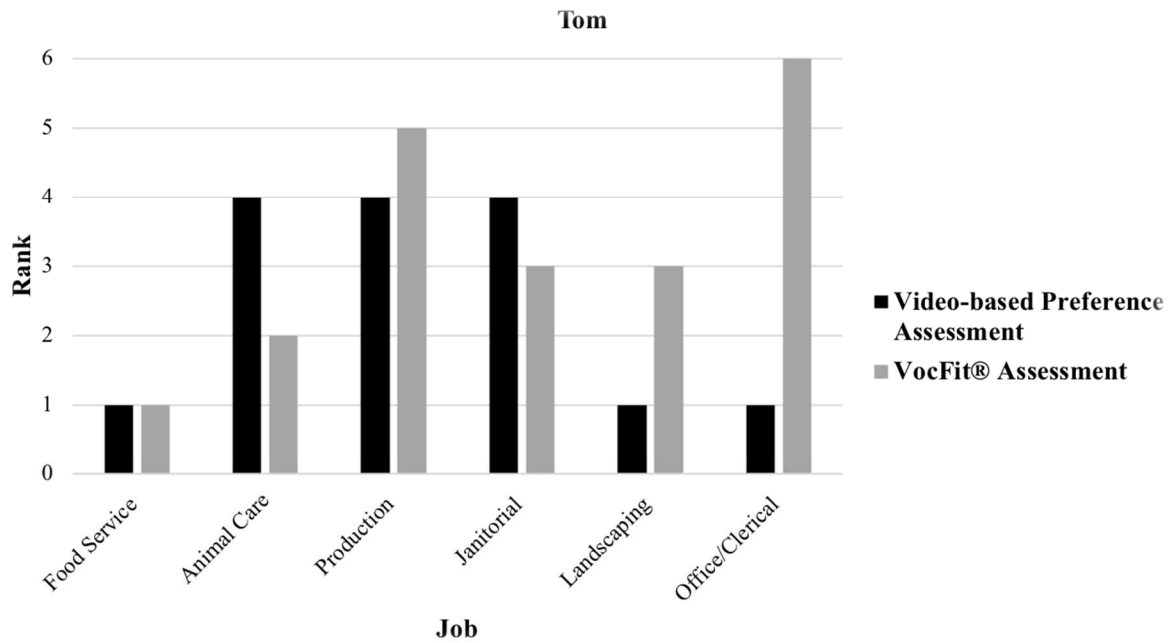*Figure 5.* Results of the video-based preference assessment and VocFit® assessment for Jack.

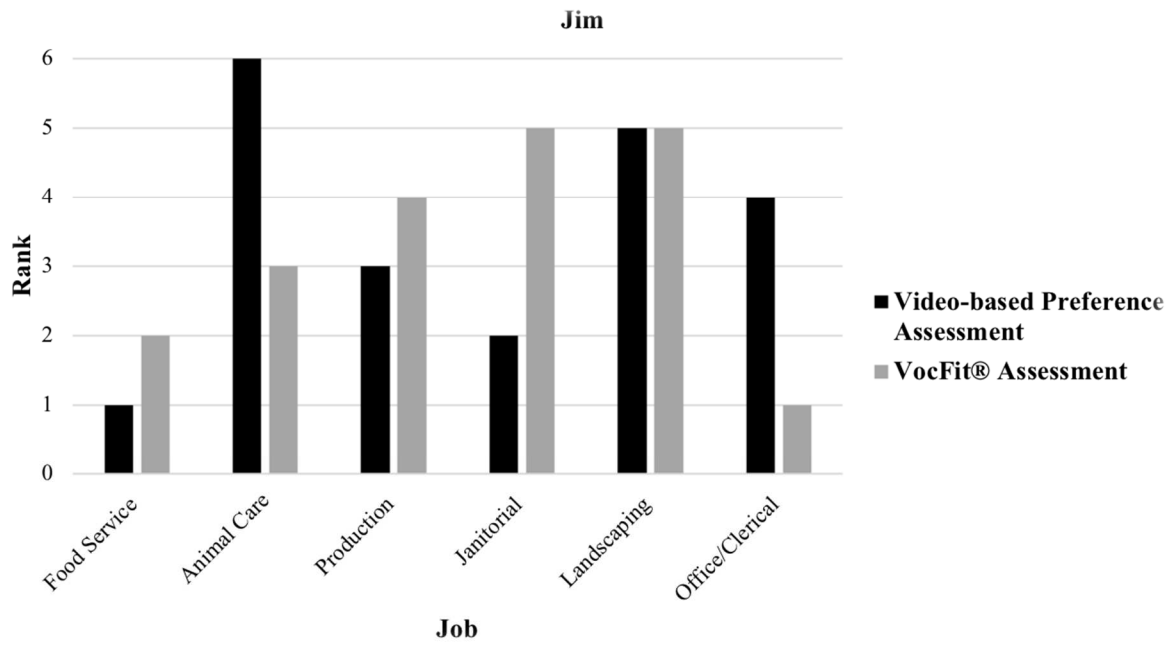*Figure 6.* Results of the video-based preference assessment and VocFit® assessment for Tom.

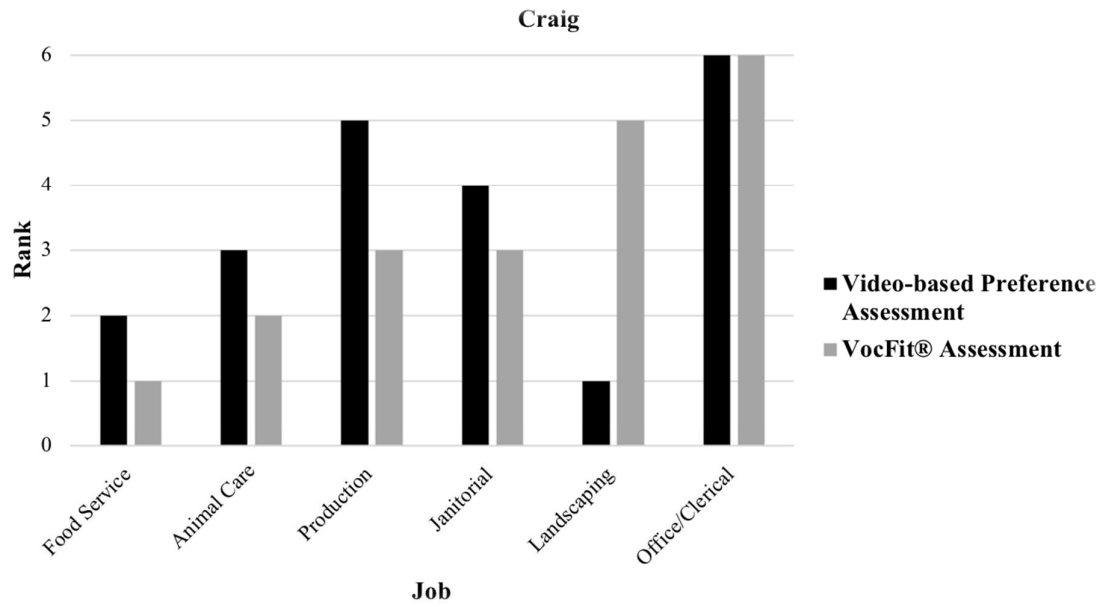*Figure 7.* Results of the video-based preference assessment and VocFit® assessment for Jim.

Figure 8. Results of the video-based preference assessment and VocFit® assessment for Craig.

REFERENCES

REFERENCES

Bambara, L. M., Ager, C., & Koger, F. (1994). The effects of choice and task preference on the work performance of adults with severe disabilities. *Journal of Applied Behavior Analysis, 27*, 555–556.

Brown, L., Farrington, K., Suomi, J., & Ziegler, M. (1999). Work-wage relationships and individuals with disabilities. *Journal of Vocational Rehabilitation, 13*, 5-13.

Bureau of Labor and Statistics. (2016). Table A-6. Employment status of the civilian population by sex, age, and disability status, not seasonally adjusted. Retrieved from http://www.bls.gov/news.release/empsit.t06.htm.

Carter, E., Trainor, A., Cakiroglu, O., Swedeen, B., & Owens, L. (2010). Availability of and Access to career development activities for transition-age youth with disabilities. *Career Development for Exceptional Individuals, 33* , 13-24. doi: 10.1177/0885728809344332.

Daston, M., Riehle, E., & Rutkowski, S. (2012). *High school transition that works! Lessons learned from Project. SEARCH.* Baltimore, MD: Brookes.

Everson, J. M., & Reid, D. H. (1997). Using person-centered planning to determine employment preferences among people with the most severe developmental disabilities. *Journal of Vocational Rehabilitation, 9*, 99–108.

Fisher, W. W., Piazza, C. C., Bowman, L. G., Hagopian, L. P., Owens, J. C., & Slevin, I. (1992). A comparison of two approaches for identifying reinforcers for persons with severe and Profound disabilities. *Journal of Applied Behavior Analysis, 25,* 491-498.

Graffam, J., Shinkfield, A., Smith, K., & Polzin, U. (2002). Factors that influence employer decisions in hiring and retaining an employee with a disability. *Journal of Vocational Rehabilitation, 17*, 175-181.

Hiersteiner, D., Bershadsky, J., Bonardi, A., & Butterworth, J. (2016, April). *Working in the community: The status and outcomes of people with intellectual and developmental disabilities in integrated employment-Update 2* (NCI data brief). Cambridge, MA: Human Services Research Institute.

Kilsby, M. S., & Beyer, S. (2002). Enhancing self-determination in job matching in supported employment for people with learning disabilities: An intervention study. *Journal of Vocational Rehabilitation, 17*, 125-135.

Kraus, L., Lauer, E., Coleman, R., & Houtenville, A. (2018). 2017 Disability statistics annual report. Durham, NH: University of New Hampshire.

Horrocks, E. L., & Mogran, R. L (2009). Comparison of a video-based assessment and a

multiple stimulus assessment to identify preferred jobs for individuals with significant intellectual disabilities. *Research in Developmental Disabilities, 30*, 902-909. doi:10.1016/j.ridd.2009.01.003.

Ledford, J.R., & Gast, D. L. (2014). Multiple Baseline and Multiple Probe Designs. In D. L. Gast & J. R. Ledford (Eds.), *Single case research methodology: Applications in special education and behavioral sciences* (2nd ed., pp. 251-296). New York, NY: Routledge.

McDonnell, J., Nofs, D., Hardman, M., & Chambless, C. (1989). An analysis of the procedural components of supported employment programs associated with employment outcomes. *Journal of Applied Behavior Analysis, 22*, 417-428.

Morgan, R. L. (2008). Job matching: Development and evaluation of a web-based instrument to assess degree of match among employment preferences. *Journal of Vocational Rehabilitation, 29*, 29-38.

Morgan, R. L. (2011). Job matching assessment: Inter-rater reliability of an instrument assessing employment characteristics of young adults with intellectual disabilities. *Journal of Vocational Rehabilitation, 34*, 25-33.

Morgan, R. L., & Horrocks, E. L. (2011). Correspondence between video-based preference assessment and subsequent community job performance. *Education and Training in Developmental Disabilities, 46*, 52-61.

PACER Center Inc. (2001). Parent tips for transition planning, PHP-c80. Retrieved from www.asec.net/Archives/Transitionresources/Parent%20tips%20for%20transition.pdf.

Parsons, M., Reid, D. H., Reynolds, J., & Bumgarner, M. (1990). Effects of chosen versus assigned jobs on the work performance of persons with severe handicaps. *Journal of Applied Behavior Analysis, 23*, 253–258.

Persch, A., Cleary, D., Rutkowski, S., Malone, H., Darragh, A., & Case-Smith, J. (2015). Current practice in job matching: A project search perspective on transition. *Journal of Vocational Rehabilitation, 43*, 259-273. doi:10.3233/JVR-150774.

Persch, A., Gugiu, C., Onate, J., & Cleary, D. (2015). Development and psychometric evaluation of the vocational fit assessment (VFA). *The American Journal of Occupational Therapy, 69*, 6906180080. Received from: http://dx.doi.org/10.5014/ajot.2015.019455.

Peterson, R. N. (2014). The effectiveness of a video-based preference assessment in identifying socially reinforcing stimuli (Masters thesis). Retrieved from http://digitalcommons.usu.edu/etd/2296.

Roux, A. M., Rast, J. E., Anderson, K. A., & Shattuck, P. T. (2017). *National autism indicators report: Transition into young adulthood.* Philadelphia, PA: Life Course Outcomes Research Program, A.J. Drexel Autism Institute, Drexel University.

Schall, C., Wehman, P., Brooke, V., Graham, C., McDonough, J., Brooke, A., & Rounds, R.

(2015). Employment interventions for individuals with ASD: The relative efficacy of supported employment with or without prior Project SEARCH training. *Journal of Autism and Developmental Disorders, 45*, 3990-4001. doi:10.1007/s10803-015-2426-5.

Stevens, P., & Martin, N. (1999). Supporting individuals with intellectual disability and challenging behaviour in integrated work settings: An overview and a model for service provision. *Journal of Intellectual Disability Research, 43*, 19-29.

Test, D., Mazzotti, V., Mustian, A., Fowler, C., Kortering, L., & Kohler, P. (2009). Evidence-Based secondary transition predictors for improving postschool outcomes for students with disabilities. *Career Development for Exceptional Individuals, 32* , 160-181. doi: 10.1177/0885728809346960.

Trach, J. S. (1990) Supported employment program characteristics. In F. R. Rusch (Ed.), *Supported employment: Models, methods, issues* (pp. 65-81). Sycamore, IL: Sycamore Publishing.

U.S. Department of Education (Department), Office of Special Education and Rehabilitative Services, A Transition Guide to Postsecondary Education and Employment for Students and Youth with Disabilities, Washington, D.C., 2017.

Wehman, P., Lau, S., Molinelli, A., Brooke, V., Thompson, K., Moore, C., & West, M. (2012). Supported employment for young adults with autism spectrum disorder: Preliminary data. *Research and Practice for Persons with Severe Disabilities, 37*, 160-169. doi:10.2511/027494812804153606.

Wehman, P., Taylor, J., Brooke, V., Avellone, L., Whittenburg, H., Ham, W., Brooke, A., & Carr, S. (2018). Toward competitive employment for persons with intellectual and developmental disabilities: What progress have we made and where we need to go. *Research and Practice for Persons with Severe Disabilities, 43*, 1-14. doi:10.1177/1540796918777730.

West, M. D. (1995). Choice, self-determination and VR services: Systematic barriers for consumers with severe disabilities. *Journal of Vocational Rehabilitation, 5*, 281–290.