6-1-2023

Teaching Employment Skills to Carla within Inclusive Postsecondary Education

Kelly R. Kelley
Western Carolina University

Kelly A. Clark
Appalachian State University

Larry Fisher
Western Carolina University

Recommended Citation
Kelley, Kelly R.; Clark, Kelly A.; and Fisher, Larry (2023) "Teaching Employment Skills to Carla within Inclusive Postsecondary Education," *The Journal of Case Learning and Exceptional Learners*: Vol. 1: Iss. 1, Article 5.
https://doi.org/10.20429/jclel.2023.010105
https://digitalcommons.georgiasouthern.edu/jclel/vol1/iss1/5

TEACHING EMPLOYMENT SKILLS TO CARLA WITHIN INCLUSIVE POSTSECONDARY EDUCATION

AUTHORS: KELLY R. KELLEY, KELLY A. CLARK, & LARRY FISHER

title	demographics	grade band	dis/ability	setting/context	purpose	focus
CARLA	Cisgender white female	Post-secondary	Intellectual Disability	Inclusive Postsecondary Education Program	Intervention	Employment Skills

Positionality Statement

Please note that the information included in this case study accurately represents the focus student (sometimes referenced as the participant) and contains sufficient information based on their experiences and surrounding support system with the research and interventions used. However, some of the identifying information included here about the focus student has been altered to ensure family and student privacy. A pseudonym is used throughout to protect the identity of the focus student. The participant was not directly involved in the development of this case study. This participant represents a student with intellectual disability (ID) in an inclusive postsecondary program with unique challenges that participated in a research study conducted by the authors of this manuscript.

Setting the Stage

Students with intellectual and developmental disabilities (IDD) include students with ID, autism spectrum disorder (ASD), multiple disabilities (MD) or a combination of those disabilities diagnosed during the developmental period (i.e., originates before the age of 22; American Association on Intellectual and Developmental Disabilities, 2021). The individual in this case study included a young adult named Carla. Carla was born with Down syndrome and formally diagnosed with an intellectual disability before age 5. Research indicates individuals with IDD experience poorer employment outcomes compared to their peers with other disabilities (Lipscomb et al., 2017; Newman et al., 2011). As individuals with IDD age, the gap in employment outcomes grows. For example, only 32% of adults with IDD are employed compared to 74% of adults without disabilities (Sulewski et al., 2013). However, students with IDD listed their top post-school goals included obtaining employment in their community (Migliore et al., 2007). In addition, employment was found to be associated with obtaining a higher quality of life (Simões & Santos, 2016). Therefore, it is imperative to teach students with IDD the skills needed in order to obtain and maintain competitive integrated employment (CIE).

Several barriers to employment for individuals with IDD have been identified including a lack of employment skills such as social skills, self-regulation, work completion, punctuality, and task accuracy (Riesen et al., 2014). When adults with IDD gain employment soft skills they may improve their job performance when helping others, using self-control, employee interactions with managers and coworkers, performing under pressure or in stressful situations, and having good personal hygiene (Brady & Rosenberg, 2002). Due to this need, instruction in soft skills could assist individuals with IDD in improving their job performance which may help them gain and maintain employment. One intervention that has been effective with individuals with IDD is called UPGRADE Your Performance. Within UPGRADE soft skills are defined as soft skills for employment were defined as "(a) having a good attitude and demonstrating cooperation by showing initiative, receiving feedback, and engaging respectfully with others in the workplace such as supervisors, co-workers, and customers; (b) demonstrating reliability by being on time to work, consistent attendance, being prepared for work, and wearing appropriate attire such as a uniform as needed for the job; (c) showing productivity and staying on-task by working independently without assistance, staying focused, and working at a pace comparable to others on the job; (d) showing quality work by completing each job task fully, finding mistakes and being able to correct them without prompting or assistance, and reviewing their work before completing a job task; and (e) demonstrating communication and teamwork by communicating, engaging, and interacting with others at work such as customers, supervisors and co-workers, requesting assistance when they need it, being courteous and polite to others on the job, offering to assist others, and following all of the rules, regulations, and guidelines of the job" (Clark et al., 2023, p. 2).

Setting the Stage continued

UPGRADE Your Performance is an intervention with multiple components including goal-setting, self-evaluation, self-graphing, self-monitoring, and technology-aided instruction (TAI). It also includes a mnemonic to assist individuals in remembering the steps (i.e., U=You evaluate yourself, P=Professional evaluates you, G=Graph your scores, R=Restate your goal and determine if you met it, A=Acknowledge what you did well, D=Decide what you need to improve, and E=Execute improvements tomorrow to meet your goal). After working at a job, individuals review their performance and assess themselves using a job performance rubric. Then, the interventionist shares their scores with the individual and the scores are compared on a graph. Next, individuals review a goal they have set for the soft skill area and determine if they have met their goal. Then, they review what they did well and what they need to improve on and finally come up with a plan to improve their skills and get closer to meeting their goal the next day.

Currently, four studies have been conducted examining the effects of UPGRADE Your Performance on the acquisition of soft skills of students with disabilities. The first two studies were conducted with high school students with IDD while working in school-based and community-based internships (Clark et al., 2018; Clark et al., 2019). The third study was conducted with 18-21 students with IDD participating in a high school program located on a university's campus (Clark et al., 2023). Students participated in UPGRADE while working at unpaid internships located on the university's campus.

The fourth and most recent study (Hooper et al., 2023) was conducted with young adults attending an inclusive postsecondary education program (IPSE) and working competitively in the community. Data collected from post-secondary programs have indicated that there is a correlation between students attending an IPSE and achieving positive employment outcomes (Grigal et al., 2019). Grigal et al., conducted a secondary analysis of data from Transition and Postsecondary Programs for Students with Intellectual Disabilities (TPSID) between 2010 and 2015, and found that employment while enrolled in postsecondary educational programs increased the likelihood of the student obtaining a paid job upon exit of the program by 15%. In an updated report that evaluated data collected from 38 TPSID programs between 2020-2021, it was stated that 47% percent of students enrolled in these programs had a paid job or paid work-based learning experience with 66% of these participants earning wages at or above minimum wage (Grigal & Papay, 2022). It is crucial for IPSEs to continue to find ways to support participants enrolled in their programs in developing the necessary skills for improving CIE outcomes.

This case study includes one of the participants from the fourth study named Carla and describes her unique needs, how we modified this intervention based on her needs allowing her to respond to the intervention, and the support needed to help her make progress on her goals. The sections below will describe this participant in detail and then provide implications based on modifications made during their participation in the study.

CONCEPTUAL KNOWLEDGE

Carla is enrolled in a 2-year residential Inclusive Postsecondary Education Program (IPSE) focused on preparing graduates for competitive integrated employment (CIE) and inclusive community living opportunities. The program is located at a large 4-year public university in a rural setting in the southeastern United States. She attends classes within an audit status with her non-disabled peers and participates in a curriculum focused on supporting her goals for employment and independent living after college. She currently works in a competitive employment setting on campus and resides on campus.

BACKGROUND INFORMATION

MEET CARLA

Carla is a 22-year-old White female with an intellectual disability (e.g., Down syndrome). When not living on the college campus, she resides with her parents and one older sibling who just graduated from college. Carla admires her family and has a close relationship with them, including their family dog.

Historically, Carla's mom reported a normal pregnancy and birth. There were some noted heart defects that were repaired in the first few months of Carla's life. While Carla is a very determined individual when she sets her mind to accomplish something, she can also be easily distracted and sometimes impulsive. It should also be noted that she has also been working through some sleep disturbance most of her life and abnormal thyroid functions.

Carla's educational experiences were in more self-contained settings with smaller class sizes. Carla and her family have been adamant about more inclusive community and classroom opportunities throughout her school experience. Therefore, in the past 2 years, the IPSE has further expanded opportunities to see Carla's full potential in inclusive college coursework, competitive work sites each semester, and regularly participating in campus activities with all other college students.

Carla has many strengths and interests. She enjoys music, watching movies, going out to eat, playing piano, listening to music, coloring, and drawing. Carla is very social and enjoys hanging out with her peers and her boyfriend. Her career interests while in college have included working in hospitality and tourism, food service, and working with the elderly while in college.

During Carla's time at the IPSE, she has completed several paid job internships and two to three courses per semester related to overall communication and career interests. During her first three semesters of college, she worked in the food service industry, completing various tasks, and in a hotel in the nearby community.

Throughout Carla's life, the family has valued and maximized inclusive school and community opportunities presented to Carla. Most of Carla's school experiences were completed within public school settings, minus her high school being at a charter school. Carla also attended community events for individuals with disabilities such as Special Olympics and community organizations for social opportunities with same-age peers (specific and non-specific groups related to disability). Carla and her family members portray as a traditional working-class family that enjoys community involvement and giving back to others. Despite living in a city, they are well known in their community and suburban neighborhood with many social connections. Carla also enjoys going out with her family and their social networks. She receives services through a federally approved program designed to support individuals with IDD in home or community settings, so she is able to also personalize her own supports and opportunities she chooses to do with these services.

While Carla has many strengths and is viewed as fun to be around by peers and staff, she has also been described as having behavioral challenges and fixations. For example, observations indicate she will excessively contact others when they do not show interest or respond back to her.

Additionally, she has difficulty understanding and recognizing personal and social boundaries. This can result in her being involved in social dilemmas that can cause additional emotional imbalances. Direct observations indicate she can easily shut down without actively listening to suggestions provided by others, including constructive feedback. She has also been observed to frequently do what she chooses at more inappropriate times or places. These behaviors have shown that making and maintaining friendships have been harder for her in college, the community, and the workplace. At times, Carla does not self-reflect or monitor her own behavior and how it impacts others with perspective-taking opportunities.

EVALUATIVE FINDINGS

Based on the latest psychological testing (i.e., Wechsler Abbreviated Scale of Intelligence, WASI), Carla's full-scale IQ was 55. Her Vineland II Adaptive Behavior Scale scores fell within the moderately low range with a composite score of 75. Communication, daily living skills, and socialization were all within the moderately low range based on two reports from parents and teachers. Given her IQ score and deficits in adaptive functioning, these scores align with her diagnosis of an intellectual disability (5th Ed.; DSM-5; American Psychiatric Association, 2013). In addition, based on some job performance tasks presented to Carla, she performs more rote and repetitive job tasks efficiently and accurately.

In relation to specific career assessments, Carla has taken several informal and formal assessments to measure her overall strengths, preferences, interests, and needs. More specifically, in her recent Career Cluster Interest Survey (CCIS), her top three Career Clusters were 1) Arts/A/V Technology and Communications 2) Hospitality and Tourism, and 3) Law, Public Safety and Security. This has been consistent across multiple attempts across the two years with a fourth added area to include Agriculture, Food, and Natural Resources.

Based on her recent O'NET Interest Profiler (Rounds et al., 2021) administered within the last year, Carla has interest in rank order being: Artistic, Conventional, Investigative, Enterprising, Social, and Realistic. With the most recent O*NET Work Importance Locator assessment, Carla ranked the following six areas in this order of importance (Achievement, Support, Working Conditions, Independence, Recognition, and Relationships). Her informal observations and interviews indicate specific interest in jobs working in a restaurant, with the elderly in a senior center, and with children in a daycare. She also seems excited when she works in retail settings. From a recent employer evaluation within food services completed in her first and second semesters, Carla received the highest scores in attendance and punctuality, hygiene and grooming, and the ability to accept and follow directions. Areas that were above average included communication skills, relations with supervisor and coworkers, motivation to work and learn, attention to tasks and quality of performance, production speed, enthusiasm on the job, and self-confidence in the ability to learn tasks. Her lowest score on the recent evaluation was an "average" score in problem-solving skills. Based on recent work observations overall, Carla performs well within restaurant food service areas and plans to branch out to explore more within the hospitality and tourism industry.

GOALS AND INTERVENTIONS

PERSON-CENTERED PLANNING (PCP) GOALS AND OBJECTIVES

Students enrolled in Carla's IPSE program participate in monthly PCP meetings where they develop and discuss their postsecondary goals. Through this process, Carla and her team identified several goals in areas such as employment, budgeting, independent living, and community engagement. Some of these goals with work include soft skills such as communicating appropriately with coworkers and supervisors and maintaining boundaries, asking appropriate questions, following her work task list, and exploring realistic jobs after graduation. She has some basic work goals for arriving on time, staying on task, or wearing appropriate clothes for her job setting. Her

independent living goals that relate to work specifically align with practicing good personal hygiene and getting enough rest at night to participate in daytime activities. Specific to community engagement and work-related goals, Carla is encouraged to follow and update her scheduler about work-related hours and have appropriate interactions with others in her community with personal space and appropriate conversations. Across all areas, she has a goal of using her phone and technology appropriately as a tool rather than a distraction.

CURRICULUM

Carla's weekly scheduled activities are decided by her. She knows she has to work 10 hours per week at her community job and attend her college courses when they are scheduled. She is also responsible for her daily hygiene, taking medications, keeping her room clean, and having healthy eating and workout habits. The curriculum for her IPSE is personalized to Carla's goals and needs. She chooses her classes related to her career goals. She navigates those choices using the college course catalog and auditing courses that are decided on Advising Day (and by reviewing all the recent career assessments and roadmaps). Each week's schedule changes based on what Carla advocates to have on her schedule with her scheduler (another undergraduate student). She uses the college's student campus engagement website and campus activities to determine what she wishes to add each week for fun.

DAILY SCHEDULE

Each day, Carla starts her morning around 7 am and her day usually includes 2 to 3 hours of work at least 3 to 4 days per week. She attends her classes 2 to 3 times per week with all other college students. She works on her goals each day, attends a social skills and relationship group weekly, some exercise at least every other day, and completes some cooking and daily living skills. Fun activities are also sprinkled into her daily routine as she communicates these preferences and interests as she has the time or wishes to participate in them.

ACCOMMODATIONS

Carla receives accommodations throughout her daily schedule and in her college courses she is auditing. Some of these accommodations include taking breaks as needed, alternative formats (such as audiobooks or recording class lectures), having a notetaker or scribe as needed, preferential seating, and extended time or scribe assistance on tests. On the job, Carla receives a personalized work task list as well as job coach support for some of the work hours she receives from her home and community services to provide direct job training support.

TRANSITION PLAN

Carla completed some community college experiences before coming to the residential IPSE. While going into her last semester, she is receiving support in areas related to her job, daily living support, and overall communication/social skills. She will continue to have this support once she graduates from the IPSE. She is looking at jobs related to restaurants, hotels, and working with the elderly, which are areas the IPSE has prepared Carla for working towards when she completes her last semester. She will continue to have daily support with her home and community-based services, family support, support from Vocational Rehabilitation, and natural supports within her community once she moves closer to home in her own apartment.

PARTICIPATION IN UPGRADE INTERVENTION

Carla was a participant in a study conducted on *UPGRADE Your Performance* to work on her soft skills for employment. She chose to focus on one area—quality of work—and this aligned with her PCP goals and the curriculum mentioned above. She set a goal for herself in that area during the intervention lessons and followed the intervention after working at her job in food service. She met mastery criteria during the study; however, she was unable to maintain her performance at that same level 5 months after the intervention when working at a new job in hospitality at a hotel. In the next section, we will describe specific portions of the intervention

that were effective for Carla and any changes made to assist their engagement in the intervention.

Despite scripted lessons within the UPGRADE Your Performance intervention, there were some adaptations and modifications made for Carla that did not limit the results of the study in comparison to the other participants. For example, the first adaptation was to provide materials on a computer or iPad versus paper/pencil. A digital spreadsheet was created that allowed Carla to type in her answers or use drop-down lists to select her scores since her handwriting was so large.

The next adaptation was to add additional visuals to the spreadsheet, such as color coding each section of the *UPGRADE* steps, to help her visualize which step was next. The graph was already color coded to distinguish between the interventionist's scores and the participant's scores when graphed on the spreadsheet. The graph was set up to automatically graph the scores, allowing Carla and the interventionist to see the scores graphed instantly. Additionally, drop-down lists were created in the Google spreadsheet for each section of the *UPGRADE* steps, except for the last step where the participants must type in their answers. This helped with focus and attention and made the intervention more feasible to conduct at a paid job (see Figure 1 for an example of the digital spreadsheet and Figure 2 for a list of steps within the UPGRADE intervention). Lastly, the interventionists in the study were same-aged college peers without disabilities that implemented the intervention with all the participants in the study, and for Carla this seemed to increase engagement in the intervention. All adaptations were extended to each participant in the study. Carla's performance on the selected soft skill area increased during her participation in *UPGRADE Your Performance*. She showed marked improvement in quality of work while working at her paid work experiences.

FURTHER RECOMMENDATIONS

There are several implications and areas of discussion related to implementing an intervention such as *UPGRADE Your Performance* with a student

with needs similar to Carla's. Accommodations were used based on the individual needs of the participant and these areas included read aloud, additional technology-aided instruction (TAI), visual supports and color coding, peer-assisted instruction, maintenance, and generalization.

TAI has been identified as an effective method of instruction for teaching students with IDD academic skills (Knight et al., 2013; Pennington, 2010; Root et al., 2015); a combination of academic, transition, and independent living skills (Kagohara et al., 2013); and transition and employment skills (Wehmeyer et al., 2004). TAI, in conjunction with self-determination components, has assisted students with IDD with job training and support (Smith et al., 2016). *UPGRADE Your Performance* instruction includes TAI within the intervention package. However, TAI was used only during a second phase of the study called *U-GRADE*. *U-GRADE* is a phase where the interventionist's presence is removed, and the participant continues to follow the steps of the intervention using a handheld device. Due to the needs of the students, particularly Carla, the research team decided to include TAI throughout all phases of the study. All lessons and data collection were done using an interactive Google spreadsheet with colors representing different areas (see Figures 1 and 2). This helped with Carla's engagement and focus.

In addition to increasing the use of TAI, additional visual supports were added to intervention materials. Visual supports have been identified as an evidence-based practice and can be used to teach new skills and increase independence for people with IDD (Van Laarhoven et al., 2018; Wong et al., 2015). A visual support is an added visual display assisting the learner to engage in a desired behavior or skill without prompting (Wong et al., 2015). Examples of visual support include videos, labels, object cues (e.g., colors), maps, and pictures. These supports are used during instruction to assist individuals as they learn new skills, reduce errors, and give feedback related to error correction (Randall et al., 2020). Due to the needs of Carla and the other participants, visual supports were added to the spreadsheet used during the lessons. Different blocks were color coded to assist with
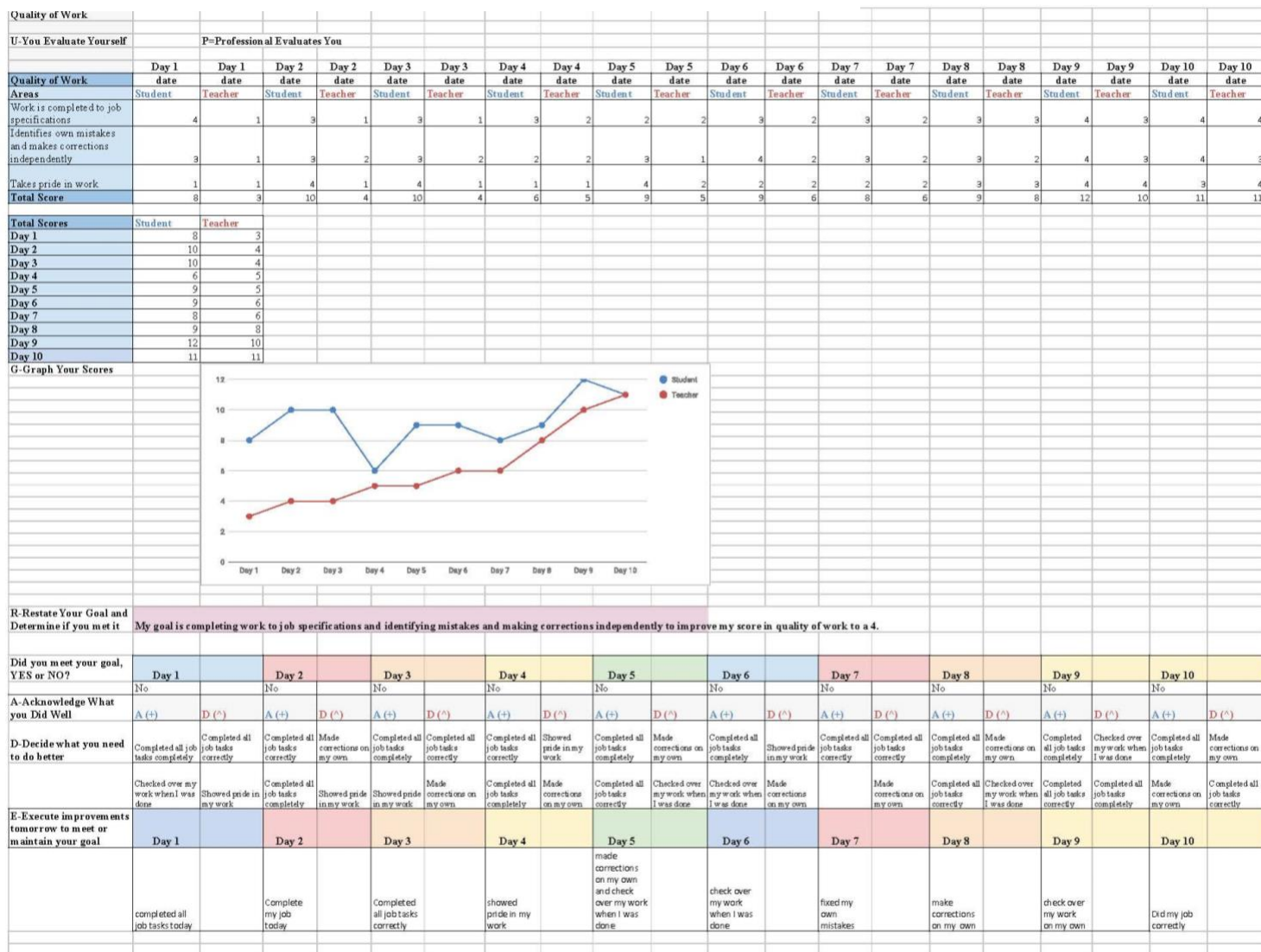
Figure 1
UPGRADE Spreadsheet

Figure 2
UPGRADE Steps

which step to go to next and the graph displayed used two different colors of markers to show the difference between each score graphed. The graph itself was a great visual for participants to examine their progress each session and over time. This is also shown in Figure 1.

Next, peer-assisted instruction has been found to be effective for students like Carla. Peer-assisted instruction has been identified as a research-based practice for students with IDD. For example, one study found that students who had peers supporting their learning in inclusive settings had increased academic engagement, made progress on their social goals, increased their participation, engaged in new friendships, and

overall increased their interactions with their peers (Carter et al., 2016). Another study found that students who had peer-supported learning increased social interactions as well as their academic engagement in an inclusive classroom (Carter et al., 2017).

During this study, peers served as interventionists and provided a peer-assisted learning environment for all participants. This was effective for all the participants in the study, including Carla. This aspect was important for Carla, because these were individuals she saw as a peer or friend to her versus an authority figure. This dynamic allowed Carla to be more engaged in the lesson and more willing to accept feedback from peers, allowing her to reflect on her own performance.

In addition, maintenance data were not as promising as in previous studies. However, due to time constraints, we were unable to include the *U-GRADE* phase that faded the presence of the interventionist and encouraged students to follow the intervention on their own. Fading is one way to increase maintenance. Fading occurs when a program is gradually removed and can include dividing a program into different levels (Esveldt-Dawson & Kazdin, 1998). Since maintaining skills over time is a goal for Carla, future studies should utilize the *U-GRADE* phase to see if it would increase maintenance and independence on the job.

Lastly, the study examined generalization across skills and settings. Carla participated in paid jobs requiring different work tasks across two different job settings while using UPGRADE Your Performance ratings and with multiple peer supports providing job coaching and observations. Overall, maintenance data were low, but generalization opportunities were maximized across generalization (both setting and situational).

RECOMMENDATIONS TO PRACTICING TEACHERS AND FUTURE EDUCATORS

Based on Carla's performance in this study, it is important to consider several recommendations for future teacher educators and practicing teachers. First, visuals for Carla and many learners with IDD seem to be a critical piece of intervention packages to better understand overall concepts that help make abstract topics more concrete. As with many recommendations with math concepts, social skills also need to be more of a scaffolded process with more abstract concepts (e.g., quality of work, problem-solving skills, from *UPGRADE*) to make them more concrete. One strategy that helps make this possible within the research is the model, lead, test (I do, we do, you do) format (Archer & Hughes, 2011). Second, before adolescence or young adulthood, there must be a focus on teaching about goal setting and honestly reflecting on progress or self-monitoring. This should be happening in elementary school so that it is a good "habit" for goal setting, self-monitoring, and honest reflections on progress made. It is important not only that the student is taught how to reflect honestly, but also the evaluators. It is often the experience of the researchers in working with individuals with IDD that evaluators have a greater tendency to avoid giving the honest and direct feedback that is truly needed for overall student growth and progress. It is not doing anyone a favor by repeatedly "sugarcoating" feedback about overall work performance if it is not truly an accurate depiction of the student's ability or work skill set. Third, with honest and direct feedback, there should be accountability and high expectations in comparison to all other employees. Just because a person has a disability does not mean they should not be required to have the same accountability and high expectations as everyone else doing the same work tasks. Many times, the researchers have experienced employers excusing individuals with disabilities from work tasks that they would be fully capable of doing like their coworkers when given the same opportunities (possibly using an accommodation or adaptation as needed), due to their disability. This is something that may need more direct and explicit training with the employers that are hiring the individual with a disability as well.

Fourth, within this case study specifically, Carla was experiencing many different interventions at once for social skills instruction and learning

boundaries. The *UPGRADE Your Performance* intervention may or may not have helped this research outcome for her improved quality of work on the job in conjunction with other supplemental social skills or instruction Carla was receiving in the IPSE setting. Also specific to Carla, her handwriting is rather large, so it is important as a young adult, when possible, to consider using TAI as we did in adapting this study for Carla's needs. She worked better using the technology, but it was not given to her to use as often unless it was at the end of the work time to avoid the technology being more of a distraction. Educators and future educators should carefully consider the skills being taught and technology use being more of a tool rather than a distraction when using *UPGRADE Your Performance* or other interventions that can incorporate technology. And finally, it can be a little harder in the workplace to teach appropriate work skills or professional behaviors when others around them are not always the best role models. This makes skills much more difficult to teach without the same consistency. For example, when they see others around them doing what they should not, they often tend to do what others around them do instead. Therefore, it is important to consider teaching the separation when needed to focus on self-monitoring and reflecting on themselves at the workplace rather than often modeling what they see with others around them that might not be what they actually need to be doing on the job.

GENERALIZATION RESEARCH

Learning a new skill or behavior can be useful if it can be retained over time and applied to novel situations or settings. Students with IDD often have trouble generalizing and maintaining new skills (Westling et al., 2015). Stokes and Baer (1977) conducted a literature review of applied research and found generalization could be described as "the occurrence of relevant behavior under different, non-training conditions (i.e., across subjects, settings, people, behaviors, and/or time) without the scheduling of the same events in those conditions as had been scheduled in the training conditions" (p. 350). We often have to program for

generalization within an intervention to teach generalization.

To target generalization with Carla, the following strategies or procedures for programming were used (a) teaching relevant behaviors, (b) using sufficient response exemplars, and (c) self-mediated instruction. Teaching relevant behaviors includes useful and adaptive behaviors that are likely to encounter natural positive reinforcement in other settings and environments (Stokes & Osnes, 1988). The skills measured by the job performance rubric within *UPGRADE Your Performance* instruction could be considered relevant behaviors for multiple environments and are likely to be reinforced naturally by others, including those in Carla's workplace. The skills of having a positive attitude, being cooperative, reliable, productive, and on-task, demonstrating quality work, teamwork, and appropriate communication skills are likely to be viewed positively in multiple settings and environments other than just on the job; as well as, by others in Carla's life outside of the interventionist. Next, using sufficient response exemplars includes a diversity of response training where multiple related behaviors are the targeted outcome of the intervention, and several examples of each behavior are included in the training (Stokes & Osnes, 1988). To incorporate this strategy within instruction for *UPGRADE Your Performance* on Carla's targeted soft skill areas, she was provided several examples of how to perform each behavior appropriately within each phase of goal-setting instruction through role-play, discussion, and video instruction. Lastly, self-mediated instruction was used during training conditions. Self-mediated instruction includes self-management procedures such as self-monitoring and self-evaluation (Stokes & Osnes, 1988). Carla self-evaluated and self-monitored her performance by grading herself and graphing her scores. These are ways to increase generalization with students like Carla.

Additional ways to program for generalization include three principles of programming described by Stokes and Osnes (1986): (a) take advantage of naturally occurring contingencies of reinforcement (e.g., what happens when this behavior occurs in a natural setting that

could reinforce the appropriate behavior – such as positive social interaction); (b) train diversely (e.g., maintain as little control as possible and incorporate natural settings into training when possible); and (c) incorporate functional and relevant aspects in training environments that occur in generalization settings (e.g., include objects in the physical and social environment that are present in generalization settings or situations). Stokes and Osnes (1986) also described 11 procedures for programming generalization, including (a) teaching relevant behaviors, (b) modifying environments to support maladaptive behaviors, (c) recruiting natural communities of reinforcement, (d) using sufficient stimulus exemplars, (e) using sufficient response exemplars, (f) training loosely, (g) using indiscriminable contingencies, (h) reinforcing unprompted generalizations, (i) using common physical stimuli, (j) using common social stimuli, and (k) using self-mediate stimuli. Procedures should be incorporated within interventions to increase the probability of generalization. Stokes and Osnes (1988) also described the ethical obligation and responsibility to ensure generalization programming is included in any program seeking to cause important social and lifestyle changes for students.

CONCLUSION

Teaching new skills to students like Carla can be challenging, however, when evidence-based practices are used along with programming for generalization, students can make progress toward their goals. Despite the poor outcomes for individuals with IDD, Carla, and others that have participated in the *UPGRADE Your Performance,* have improved their soft skills in a variety of job settings. It is important to modify or adapt as needed with interventions to cater to a student's strengths, preferences, interests, and needs. While this is only one study that shares these overall adaptations made for one participant, it shows promising results and outcomes that many practitioners and researchers should keep in mind while teaching employment soft skills.

REFERENCES

American Association on Intellectual and Developmental Disabilities. (2021). *Intellectual disability: Definition, diagnosis, classification, and systems of support* (12th ed.).

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://www.psychiatry.org/psychiatrists/practice/dsm

Archer, A. L., & Hughes, C. A. (2011). *Explicit instruction: Effective and efficient teaching.* Guilford.

Brady, M., & Rosenberg, H. (2002). Job observation and behavior scale: A supported employment assessment instrument. *Education and Training in Mental Retardation and Developmental Disabilities, 37*(4), 427-433. https://www.jstor.org/stable/23880076

Carter, E. W., Asmus, J., Moss, C. K., Biggs, E. E., Bolt, D. M., Born, T. L., Brock, M. E., Cattey, G. N., Chen, R., Cooney, M., Fesperman, E., Hochman, J. M., Huber, H. B., Lequia, J. L., Lyons, G., Moyseenko, K. A., Riesch, L. M., Shalev, R. A., Vincent, L. B., & Weir, K. (2016). Randomized evaluation of peer support arrangements to support the inclusion of high school students with severe disabilities. *Exceptional Children, 82*(2), 209-233. https://doi.org/10.1177/0014402915598780

Carter, E. W., Gustafson, J. R., Sreckovic, M. A., Dykstra Steinbrenner, J. R., Pierce, N. P., Bord, A., Stabel, A., Rogers, S., Czerw, A., & Mullins, T. (2017). Efficacy of peer support interventions in general education classrooms for high school students with autism spectrum disorder. *Remedial and Special Education, 38*(4), 207-221. https://doi.org/10.1177/0741932516672067

Clark, K. A., Konrad, M., & Test, D. W. (2018). UPGRADE your performance: Improving soft skills of students with disabilities.

Journal of Vocational Rehabilitation, *49*(3), 351-365. https://doi.org/10.3233/JVR-180979

Clark, K. A., Konrad, M., & Test, D. W. (2023). The effects of UPGRADE your performance on employment soft skills of students with intellectual and developmental disabilities: A pilot study of generalization. *Journal of Intellectual Disabilities*, Advance Online Publication. https://doi.org/10.1177/17446295231163263

Clark, K. A., Test, D. W., & Konrad, M. (2019). Teaching soft skills to students with disabilities with UPGRADE your performance. *Education and Training in Autism and Developmental Disabilities*, *54*(1), 41-56. https://www.jstor.org/stable/26663961

Esveldt-Dawson, K., & Kazdin, A. E. (1998). *How to maintain behavior*. Pro Ed.

Grigal, M, & Papay, C. (2022). More than a decade of data: What we know about inclusive higher education for students with intellectual disability from TPSIDs [PowerPoint slides]. Think College National Coordinating Center. https://thinkcollege.net/sites/default/files/files/resources/Recent_National_Data_SOTA2022_R.pdf

Grigal, M., Papay, C., Smith, F., Hart, D., & Verbeck, R. (2019). Experiences that predict employment for students with intellectual and developmental disabilities in federally funded higher education programs. *Career Development and Transition for Exceptional Individuals, 42*(1), 17-28. https://doi.org/10.1177/2165143418811358

Hooper, R., Williams, H., Clark, K.A., & Kelley, K. R. (2023). Effects of UPGRADE Your Performance on the employment soft skills of college students with intellectual disability. *Manuscript in preparation.*

Kagohara, D. M., van der Meer, L., Ramdoss, S., O'Reilly, M. F., Lancioni, G. E., Davis, T. N., Rispoli, M., Lang, R., Marschik, P. B., Sutherland, D., Green, V. A., & Sigafoos, J.

(2013). Using iPods® and iPads® in teaching programs for individuals with developmental disabilities: A systematic review. *Research in Developmental Disabilities*, *34*(1), 147-156. http://doi.org/10.1016/j.ridd.2012.07.027

Lipscomb, S., Hamison, J., Burghardt, J., Johnson, D. R., & Thurlow, M. (2017). Preparing for life after high school: The characteristics and experiences of youth in special education. Findings from the National Longitudinal Transition Study 2012. Volume 2: Comparisons across disability groups. Full Report. NCEE 2017-4018. *National Center for Education Evaluation and Regional Assistance*.

Migliore, A., Mank, D., Grossi, T., & Rogan, P. (2007). Integrated employment or sheltered workshops: Preferences of adults with intellectual disabilities, their families, and staff. *Journal of Vocational Rehabilitation*, *26*(1), 5-19.

Newman, L., Wagner, M., Knokey, A. M., Marder, C., Nagle, K., Shaver, D., & Wei, X. (2011). The post-high school outcomes of young adults with disabilities up to 8 years after high school: A report from the National Longitudinal Transition Study-2 (NLTS2). NCSER 2011-3005. *National Center for Special Education Research*.

Pennington, R. C. (2010). Computer-assisted instruction for teaching academic skills to students with autism spectrum disorders: A review of literature. *Focus on Autism and Other Developmental Disabilities*, *25*(4), 239-248. https://doi.org/10.1177/1088357610378291

Randall, K. N., Johnson, F., Adams, S. E., Kiss, C. W., & Ryan, J. B. (2020). Use of a iPhone task analysis application to increase employment-related chores for individuals with intellectual disabilities. *Journal of Special Education Technology*, *35*(1), 26-36. https://doi.org/10.1177/0162643419836410

Riesen, T., Schultz, J., Morgan, R., & Kupferman, S. (2014). School-to-work barriers as identified

by special educators, vocational rehabilitation counselors, and community rehabilitation professionals. *Journal of Rehabilitation*, *80*(1), 33-44.

Root, J. R., Stevenson, B. S., Davis, L. L., Geddes-Hall, J., & Test, D. W. (2017). Establishing computer-assisted instruction to teach academics to students with autism as an evidence-based practice. *Journal of Autism and Developmental Disorders*, *47*(2), 275-284. https://doi.org/10.1007/s10803-016-2947-6

Rounds, J., Hoff, K., & Lewis, P. (Eds.). (2021). *O*NET® Interest Profiler Manual*. National Center for O*NET Development.

Simões, C., & Santos, S. (2016). Comparing the quality of life of adults with and without intellectual disability. *Journal of Intellectual Disability Research*, *60*(4), 378-388. https://doi.org/10.1111/jir.12256

Smith, K. A., Ayres, K. A., Alexander, J., Ledford, J. R., Shepley, C., & Shepley, S. B. (2016). Initiation and generalization of self-instructional skills in adolescents with autism and intellectual disability. *Journal of Autism and Developmental Disorders*, *46*(4), 1196-1209. https://doi.org/10.1007/s10803-015-2654-8

Stokes, T. F., & Baer, D. M. (1977). An implicit technology of generalization. *Journal of Applied Behavior Analysis*, *10*(2), 349-367. https://doi.org/10.1901/jaba.1977.10-349

Stokes, T. F., & Osnes, P. G. (1986). Programming the generalization of children's social behavior. In P. S. Strain, M. J. Guralnick, & H. M.Walker (Eds.), *Children'ssocial behavior: Development, assessment, and modification* (pp. 407-443*).* Academic Press.

Stokes, T. F., & Osnes, P. G. (1988). The developing applied technology of generalization and maintenance. In R. Horner, G. Dunlop, & R. L. Koegel (Eds.), *Generalization and maintenance: Lifestyle changes in applied settings* (pp. 5-19). Paul H. Brookes.

Sulewski, J. S., Zalewska, A., Butterworth, J., & Migliore, A. (2013). Trends in employment outcomes of young adults with intellectual and developmental disabilities in eight states, 2004–2011. Institute for Community Inclusion. https://www.communityinclusion.org/pdf/trends-IDD.pdf

Van Laarhoven, T., Carreon, A., Bonneau, W., & Lagerhausen, A. (2018). Comparing mobile technologies for teaching vocational skills to individuals with autism spectrum disorders and/or intellectual disabilities using universally-designed prompting systems. *Journal of Autism and Developmental Disorders*, *48*(7), 2516-2529. https://doi.org/10.1007/s10803-018-3512-2

Wehmeyer, M. L., Smith, S. J., Palmer, S. B., & Davies, D. K. (2004). Technology use by students with intellectual disabilities: An overview. *Journal of Special Education Technology*, *19*(4), 7-21. https://doi.org/10.1177/016264340401900402

Westling, D. L., Fox, L. L., & Carter, E. W. (2015). *Teaching students with severe disabilities* (5th ed.). Pearson.

Wong, C., Odom, S. L., Hume, K. A., Cox, A. W., Fettig, A., Kucharczyk, S., Brock, M. E., Plavnick, J. B., Fleury, V. P., & Schultz, T. R. (2015). Evidence-based practices for children, youth, and young adults with autism spectrum disorder: A comprehensive review. *Journal of Autism and Developmental Disorders*, *45*(7), 1951-1966. https://doi.org/10.1007/s10803-014-2351-z

Guiding Discussion Questions for Carla's Case Study

---

1. *As a future or practicing teacher/researcher, if you worked with Carla, what would you do to train her future employers evaluating her work performance?*

2. *Are there other modified interventions (besides TAI, peers, and visual supports) that could be provided to Carla to increase her employment soft skills and learning needs?*

3. *How else can the employment soft skills discussed in this case study (e.g., quality of work or productivity) be further generalized or maintained in academic areas for Carla and others?*

4. *In reviewing the Figures, what else could be done based on what you know specifically about Carla to help increase her quality of work at the food service industry or hotel settings?*

5. *Why is self-monitoring and goal settings so important in relation to self-determination for individuals with IDD? How can these skills be more specifically taught and/or expanded throughout elementary, middle, high, and college settings to further increase work performance overall?*