**Effects of Remote Audio Coaching During Workplace Conversations
for College Students with Intellectual Disability**

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Abstract

College students with intellectual disability (ID) face many challenges while maintaining employment. These challenges encompass both social and behavioral tribulations. Increasing social skills at work is a significant goal for practitioners and educators of adults with ID. Coaching strategies such as Covert Audio Coaching (CAC) and Remote Audio Coaching (RAC) have proven effective in teaching students with ID various employment related skills. This study used a multiple probe design to test the effects of RAC on teaching communication skills in the workplace. In this study, college students logged onto a Zoom call to speak with a co-worker about an employment topic while the interventionist used their audio functions to coach the student through the conversation. The results of this studied demonstrated that the RAC intervention was effective in increasing on-topic exchanges between college students with ID and their co-workers.

Keywords: *Remote Audio Coaching, Intellectual Disability, Employment Skills*

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Adults with intellectual disability (ID) have historically low employment rates and have traditionally been employed in sheltered workshops or positions that are deemed non-competitive due to their wages and hours being substantially below a typical co-worker (Hiersteiner et al., 2016). Due to poor employment outcomes, adults with ID are more likely to rely on their government benefits (Sannicandro et al., 2018) and experience unemployment rates at 10 times greater than their nondisabled peers (Butterworth et al., 2011).

One of the government benefits programs adults with ID are more likely to rely on is Supplemental Security Income (SSI). To qualify for SSI, an individual must only have resources below a certain threshold and be either: an adult over the age of 65, blind, or have a disability (Social Security Administration; SSA, 2021). SSI provides cash assistance to eligible individuals to supplement their monthly income. The Social Security Administration (SSA) has a strict definition of disability. SSA defines disability as "the inability to do any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months." Substantial gainful activity (SGA) for 2022 is $1,350 for non-blind individuals and $2,260 for blind individuals. Many adults with ID have sufficiently few resources, low income, and meet the disability requirements for SSI.

Adults with ID that receive disability benefits from SSA are eligible to participate in several different work incentives, including the Ticket to Work program. Work incentive programs promote less reliance on their disability benefits and foster increased independence (SSA, 2022). The goal of the Ticket to Work and other work incentive programs align directly with Inclusive Post-Secondary Education initiatives that are developing nationwide which are increasing self-sufficiency and greater independence for adults with ID.

Inclusive Post-Secondary Education

In recent years the development of Inclusive Post-Secondary Education (IPSE) programs has improved work conditions for adults with ID, specifically those receiving Supplemental Security Income (SSI) benefits from the Social Security Administration (SSA) through activities and curricula such as high-quality employment skills instruction (Gilson et al., 2017). For example, IPSE programs help adults with ID gain competitive employment resulting in increased work opportunities and competitive wages as an outcome of a college-based employment curriculum (Grigal et al., 2018). These curricula vary but overall share common objectives specifically for employment preparedness including interview skills, resume writing, and social skills on the job (Kelley & Westling, 2019). Typically, workers with ID face challenges with retaining their jobs, not because of their productivity levels, but because they lack job experience and training in a community context (Bennett et al., 2010). Workers with ID are stigmatized within their community and are therefore less likely to be hired and experience job training (Gormley, 2015). Without the appropriate job training in an inclusive setting, workers with ID will struggle to learn social skills on the job. Community-based social skills can help workers with ID to become independent in the workplace and help retain jobs, both of which can decrease dependence on SSI benefits in the future.

To increase community-based employment, reciprocal communication in the workplace is an essential part of social competency (Joseph et al., 2020). Workplace conversations that

involve customer service, teamwork, retail, and employee-to-supervisor interactions must be directly taught to many individuals who have not previously had positive community work experiences (Kaye et al., 2011). Holmes and Fillary (2000) found that when adults with ID in the workplace engaged in conversations with employees without ID, they often shared inappropriate topics (e.g., intimacy, family issues), had difficulty staying on-topic, and only interacted with the same familiar employees. Other studies had similar findings of social deficits when conversing with employers and other employees (Gilson & Carter, 2016; Kearney et al., 2020; Mason et al., 2020; Oswald et al., 2018). These studies suggest that on-topic conversational skills, and the instruction of these skills, are a critical part of employment training programs designed for adults with ID. Deficits in these areas result in poor employment prospects, leading to dependency on SSI and SSDI for longer periods of time.

Audio Coaching

Some interventions that have been used thus far to teach social employment skills are video modeling, literary-based behavioral interventions and covert audio coaching (CAC). One intervention specifically, CAC, has a long history of success in teaching employment skills. CAC involves a coach (job coach, teacher, other professional, etc.) delivering immediate feedback to a person completing a skill through a two-way radio system and earbud (Bennett, 2013). The success of CAC interventions has led a group of researchers to explore teaching social skills with Remote Audio Coaching, which is the remote application of covert audio coaching (Joseph et al., 2020) via a videoconferencing platform. CAC has long been used amongst many populations and in multiple settings, while RAC has evolved due to recent environmental need (i.e., social distancing) during the Covid-19 pandemic.

Purpose of Study

Full-time competitive employment requires that employees with ID overcome the social skill deficits that put job promotion and retention at risk. One strategy for teaching these social skills is remote audio coaching (RAC) as demonstrated in the Joseph et al. (2020) study. The research proposed here is an extension of a prior study from Joseph et al. which examined the effectiveness of RAC in increasing on-topic conversations for college students with ID. However, the purpose of this research is to extend the application of RAC to employability – specifically to on-topic workplace and employment related communication. This is a critical need for college students with ID. The research questions for this study were:

1. What are the effects of Remote Audio Coaching on increasing the on-topic workplace communication of college students with ID?
2. Will on-topic workplace communication be maintained once the RAC intervention is removed?
3. Will on-topic workplace communication generalize to novel (unfamiliar) professionals?

Method

Sample
Participants

The participants in this study were three college students enrolled in an IPSE program at a university in the southeastern United States. There were only three students in this study because it is a single-subject design (SSD). SSD methodology is commonly used in intervention research with children and adults with disabilities (Kratochwill et al., 2013). Therefore, instead

of calculating one effect size from a large sample size (N), we calculated four different effect sizes, three at the individual level per each participant and one overall for all participants. All students were required to have a documented intellectual disability. have little to no prior work experience. Upon admittance to the IPSE program, students are required to supply a recent psychological evaluation stating proof of their documented intellectual disability. These evaluations were used as evidence to support the ID diagnosis of the students in this study. The students were administered the *Job Observation and Behavior Scale: Opportunities for Self Determination* (JOBS:OSD) to obtain employment profile norms. To be selected for the study, students were not actively engaged in employment internships and students showed employment profiles below average for entry level employees. All students in this study were receiving SSI or SSDI benefits as indicated by their guardians. All students had prior experience using Zoom, a free online videoconferencing application, for online coursework, meetings with faculty, and campus clubs and activities. Students who were selected demonstrated regular attendance, availability, and a willingness to participate. Students with the most pronounced need for workplace communication skills were prioritized for selection for the study. Prior to baseline, the study was approved by the Institutional Review Board. Verbal and written assent was obtained from the students, and written consent was obtained from their parents or legal guardians.

Cameron

Cameron was a 22-year-old Caucasian male whose WAIS full-scale IG score was 70. He has also been diagnosed with autism spectrum disorder (ASD). On the JOBS: OSD assessment, Cameron scored a *Work Related Daily Living* score of 34 with a level of support score of 24, a *Work Required Behavior* score of 18 with a level of support score of 17, and a *Work Required Job Duty* score of 19 with a level of support score of 18. These scores indicated that Cameron perceived he can sometimes achieve job tasks and that he required support sometimes. He had job shadowing experience in an on-campus entity at the University but had no employment experiences since the start of the Covid-19 pandemic. Cameron had never been employed in a paid position.

Jenna

Jenna was a 24-year old female diagnosed with ID. Her full-scale IQ score was 53 on the Weschler Adult Intelligence Scale (WAIS). On the JOBS:OSD assessment, Jenna scored a *Work Related Daily Living* score of 37 with a level of support score of 37, a *Work Required Behavior* score of 22 with a level of support score of 20, and a *Work Required Job Duty* score of 25 with a level of support score of 23. These scores indicate that Jenna perceived she can sometimes achieve job tasks but required support for work-related daily living skills. Jenna had job shadowing experience in an on-campus entity at the University but had no employment experiences since the start of the Covid-19 pandemic. She had never worked a paid job before.

Aaron

Aaron was a 21-year-old Caucasian male whose WAIS full-scale IQ score is 71. He has also been diagnosed with ASD. His WAIS full-scale IQ score is 71. On the JOBS: OSD assessment, Aaron scored a *Work Related Daily Living* score of 30 with a level of support score of 34, a *Work Required Behavior* score of 24 with a level of support score of 22, and a *Work Required Job Duty* score of 24 with a level of support score of 25. These scores indicated that Aaron perceived he can achieve job tasks and that he can do most of them independently. He had

job shadowing experience in a department of the University, but had no employment opportunities since the start of the Covid-19 pandemic. Aaron had never worked a paid job before.

Setting

The study took place remotely on Zoom. Students and researchers used their personal laptops, home computers, or cell phones, to login to the meeting. The researcher emailed the students a Zoom link and access code each morning before the meeting. Students were advised to find a quiet and distraction free environment to be able to properly hear the conversation and participate in the meeting. All sessions, baseline, intervention, follow-up, and generalization, consisted of four or five people: the confederate, the student, the coach, and one or two data collector(s).

At the beginning of each session, the data collectors muted their audio, discontinued their video, and erased their name. This resulted in a blank screen. This protocol was developed to minimize measurement reactivity. The confederate also muted their audio and discontinued their video but did not erase their name as the coach would instruct the student to speak with the confederate after a prompt was given. The coach was the only individual in the meeting that began with their video and audio on. Once the coach gave the prompt, the coach would then turn their video off and only use their audio to be in true remote audio coaching format.

Aaron used his home laptop to access the Zoom meeting. He was stationed at a home desk either in his bedroom or living room and typically wore headphones to minimize distractions and other background noises. Cameron used his home laptop to access the Zoom meeting. He was stationed at a table in his dining room but there were no distractions or other individuals nearby. Jenna used her cell phone to access the Zoom meeting. She was typically not at home while she was attending the Zoom call but at an organization that she attends. She was able to find a distraction free environment from her activities at the organization by stepping outside or using headphones. All students had approximately 1.5 years of experience using Zoom.

Measures
Dependent Variable

The dependent variable for this study was on-topic employment conversation exchanges with a confederate (research assistant) serving as a co-worker. There were two dependent variables: on-topic exchanges and off-topic, or inappropriate exchanges, with the confederate. An example of an *on-topic* employment exchange in this study was talking about taking care of animals at the animal shelter for work; an example of an *off-topic or inappropriate* exchange was discussing weekend plans. As in the Joseph et al. (2020) study, a control code for a confederate-initiated exchange was used to determine if student increases in on-topic exchanges were in fact due to the intervention rather than in response to the confederate's initiation. The following are codes listed on the data collection sheets: on-topic (OT), off-topic (OffT), participant talk (PT), confederate talk (CT), coaching prompt (Coach), and confederate initiated (ConI). Participant talk was listed above the on-topic and off-topic codes and data collectors were given an option beneath this code to determine if the exchange was on or off topic.

Data Collection; Interobserver Agreement; and Treatment Fidelity

Two staff members from the IPSE program served as data collectors. Data were collected during a 5-minute observation, using a partial interval system with 10-second intervals. During all observations, data collectors observed with their screens darkened and audio functions muted so they were considered "hidden" to the students. During sessions that included the IOA data collector, both data collectors would use their cell phones to participate in a phone call with each other. A pre-recorded 5-minute audio to prompt for the 10-second intervals would be played via one data collector into their cell phone. The prompt consisting of cues such as "Look" and "End". This method was adapted from the Joseph et al. (2020) study.

To establish procedural and treatment fidelity, the researchers developed a checklist that summarized the experiment and intervention protocol. The list analyzed the coach's behavior throughout all conditions. The treatment fidelity data sheet also collected data on the types of prompts the coach provided and why the prompt was provided (i.e. latency, inappropriate exchange, etc.).

Procedures
Experimental Design and Procedures

The researchers used a multiple baseline design across participants in this study. This design staggers the implementation of the intervention across participants to assure that improvements in the outcome behavior occur when, and only when, the intervention is applied. The researchers implemented a follow-up condition to address the second research question of whether the skills are maintained once the intervention is removed.

Pre-Baseline

Prior to the study, the investigator developed a list of 30 topics related to employment (e.g., asking a co-worker for a quality control check; helping a customer). Before each daily session, the investigator selected randomly the daily employment conversation topic and shared it with the data collectors and confederate. To develop this list of topics, the investigator surveyed job coaches, parents, and current employers of individuals with ID to determine necessary and challenging topics.

Baseline

Each baseline session began with the confederate (research assistant in the role of a co-worker), the data collectors, and the coach (interventionist) in the Zoom meeting. The data collectors were hidden, and the confederate was muted. The student was admitted to the session from the waiting room by the coach. The coach greeted the student and checked microphones and connectivity. The coach shared a visual that matches the conversation topic with the student. Then, the coach provided an organizing statement—but no actual instruction—with the conversation topic to the student (e.g., "John, one of the job tasks that you might do in the future is making photocopies. While you think about this, I am going to observe your conversation with a co-worker, [confederate name]."). Next, the coach turned off her video and microphone; the confederate turned on her video to join the conversation. Baseline sessions were held until sessions showed a stable or descending trend in the un-prompted employment communication exchange data.

Intervention

The independent variable in this study was the remote audio coaching (RAC). Like baseline, intervention sessions began with the confederate, the data collectors, and the coach in the Zoom meeting. The coach turned on her screen and microphone to admit and inform the student about the topic. Then, the coach hid her screen but keep her microphone on to provide instruction. The confederate turned on her audio and video to join the conversation once the coach turned her video off. Identical to the baseline condition, the coach provided a conversation topic with a visual, and an organizing statement.

The confederate did *not* initiate a conversation but always engaged with the student after every exchange initiated by the student. The coach provided a coaching prompt if 10-seconds elapsed without any exchange from the student, or if the student engaged in an off-topic comment or repeated statement during the conversation. Coaching prompts were delivered using the Kearney et al. (2020) 2-step hierarchy of *indirect* and *direct* prompts. If a coaching prompt was needed to cue the student to initiate a communication exchange, the first prompt was *indirect* (e.g., "John, remember we're talking about work schedules"). If a second prompt is needed, it was *direct* (e.g., "John, ask [confederate name] what her work schedule is this week"). At the end of the observation, the coach provided a closing statement (e.g., "Great job talking to your co-worker, John") and prompted the student to sign off for the day. Intervention sessions were held until three consecutive sessions showed that the un-prompted employment conversation exchange data stabilized at a higher rate than the un-prompted employment conversation exchange data from baseline sessions.

Generalization

The researchers conducted a generalization probe in each condition for each student. The probe included an employment conversation with a novel confederate acting as a co-worker. The generalization probes followed the same procedures of the baseline condition, but the confederate was unfamiliar to the student. The confederate for the baseline condition was a researcher from another department on campus. The generalization confederate was trained in the same manner as the main confederate, using practice sessions to ensure she did not initiate any exchanges with the student.

Follow-up

The researchers collected follow-up probes after the last intervention session for each student. This was done to determine if the student maintained the skill. During the follow-up sessions, the procedures were identical to baseline, with no intervention occurring at all.

Analytic Plan

Data were analyzed using traditional visual analysis procedures. This included comparing the primary dependent variable across each condition using the following metrics: (a) measures of central tendency and range across participants as well as (b) direction, (c) trend, and (d) level of data (Kratochwill et al., 2013). A post-hoc analysis using the Tau-U coefficient determined omnibus and individual effect sizes across conditions (Vannest et al., 2016).

Social Validity

The researchers assessed perceptions of professionals in the field to evaluate the social validity of the RAC intervention on workplace communication. A survey tool was developed and emailed to professionals at the end of the study. The survey consisted of six questions with a

Likert scale for responses. The scale responses were Strongly Agree, Agree, Disagree, and Strongly Disagree. The survey was returned via email to the researchers and the results were recorded with no identifying characteristics. Additionally, the students participating in the study completed a separate social validity survey that was developed by the researchers. This survey assessed the students' perceptions of learning workplace communication skills. The survey also had visuals that followed the Likert scale. The researchers emailed the survey to students after they completed their final follow-up session.

Results

The effects of RAC intervention, as well as the generalization and maintenance of the skills, are shown in Figure 1. Overall, the RAC intervention was effective in increasing unprompted on-topic exchanges.

Cameron

During baseline, Cameron's on-topic exchanges averaged 18% of the intervals (range = 10-26%) and his off-topic exchanges averaged 3.8% of the intervals (range = 3-6%). For the baseline sessions, he only spoke for about the first minute of the 5-minute session and remained quiet for the rest of the session. After four days of baseline sessions, Cameron received the RAC intervention. On the first day of intervention, Cameron received five coaching prompts, resulting in an increase of his on-topic exchanges to 56% of the intervals. For the remainder of the intervention session, Cameron's on-topic exchanges averaged 58.8% of the intervals (range = 50-70%), and his off-topic exchanges averaged 2.1% of the intervals (range = 0-13%). The reader can observe, through Figure 1, that when the coach delivered more prompts, Cameron's on-topic exchange averages increased. The average amount of coaching prompts delivered to Cameron during the intervention sessions was 6.25 (range= 4-10) prompts per session. After 12 days of intervention sessions, the RAC intervention was removed. Cameron's on-topic exchange averaged 47% of the intervals (range = 40-67%) and his off-topic exchanges averaged 0%. This occurred over three follow-up sessions, across 8 days.

Jenna

During baseline, Jenna's on-topic exchanges averaged 2.5% (range = 0-3%) of the intervals and her off-topic exchanges average 93.5% (range = 80-100%). After six days of baseline, Jenna began the RAC intervention. On the first day of intervention, Jenna received three coaching prompts. This resulted in an increase of her on-topic exchanges to 63% and a decrease in her off-topic exchanges to 27%. For the following intervention sessions, Jenna's on-topic exchanges averaged 69.2% of the intervals (range = 63-80%) and her off-topic exchanges averaged 7.2% of the intervals (range = 0-27%). The average amount of coaching prompts delivered to Jenna during the intervention sessions was 3.5 prompts per session (ranging from 3 to 5). Jenna's on-topic exchanges stabilized, and the RAC intervention was removed after nine days of intervention. During three follow-up sessions, across 19 days, Jenna's on-topic exchanges averaged 64.3% of the intervals (range = 53-73%) and her off-topic exchanges averaged 8.7% of the intervals (range = 0-23%).

Aaron

During Aaron's first baseline session, he only had on-topic exchanges for 10% of the intervals and zero off-topic exchanges. The following baseline session, Aaron had on-topic

exchanges for 40% of the intervals and 6% of the intervals had off-topic exchanges. For all baseline sessions, Aaron's on-topic exchanges averaged 40.5% (range= 10-63%) of the intervals and his off-topic exchanges averaged 6.3% (range= 0-13%). Aaron began the RAC intervention after six days of baseline sessions. On the first day of intervention, Aaron received three coaching prompts. He had on-topic exchanges for 67% of the intervals and zero off-topic exchanges. For the rest of the intervention sessions, Aron's on-topic exchanges averaged 71.8% of the intervals (range= 60-80%) and his off-topic exchanges averaged 0% of the intervals (range= 0%). The average amount of coaching prompts delivered to Aaron during the intervention sessions was 2.5 (range=0-4) prompts per session. After eight days of intervention sessions, the RAC intervention was removed. Three follow-up sessions occurred across 10 days. During the follow-up sessions, Aaron's on-topic exchanges averaged 74.7% of the intervals (range= 70-77%) and his off-topic exchanges averaged 0% of the intervals (range=0).

Post-Hoc Analysis and Effect Size

The researchers used the Tau-U web-based calculator (Vannest et al., 2016) to calculate post hoc analysis of the on-topic exchanges at the overall level. The Tau-U post-hoc analysis showed an overall effect size of .986, suggesting a robust effect size across students (Parker et al., 2011). Jenna's overall effect size between baseline and intervention was 1.0; Cameron's overall effect size between baseline and intervention was 1.0; and Aaron's overall effect size was 0.958. The overall Tau-U effect size for all three students between the baseline and intervention conditions indicate that the intervention was in fact, effective.

Interobserver Agreement and Treatment Fidelity Results

One data collector attended every session and the second data collector attended 41% of all sessions to collect interobserver agreement (IOA) and treatment fidelity data. Jenna's IOA percentage for all codes totaled 88%; Cameron's IOA percentage for all codes totaled 92.5%; and Aaron's IOA percentage for all codes totaled 94.7%. All three participants' combined IOA percentage for all codes totaled 91.9%. Treatment fidelity data was collected at 41% of all sessions. During each observation, the interventionist implemented the design procedures with 100% fidelity.

Social Validity Results

Students and professionals in the field provided answers to questions related to the significance of the goal of the intervention, acceptability of the intervention, and the impact of the outcomes of the intervention. Across all items and respondents, there was an indication of a high level of social validity for learning workplace communication skills. Students provided highest ratings for items related to the significance of the intervention and the acceptability of the RAC intervention (3.7 and 3.7 out of 4.0), with the impact of the intervention outcomes still strong (3.5). Professionals' ratings were similarly strong for the significance of the intervention and the acceptability of the intervention (3.7 and 3.7 out of 4.0). Their thoughts on the impact of using the RAC intervention were adequate (3.3).

Discussion

The purpose of this study was to determine if RAC would increase on-topic workplace communication skills for college students with ID. The researchers determined this by examining on-topic conversational exchanges versus off-topic conversational exchanges. The researchers

also calculated effect sizes for each student at the individual level. The Tau-U effect sizes for all three students indicated that the intervention was effective. All three students in this study received the RAC intervention and increased their on-topic exchanges during the intervention and follow-up phases. This is significant because all three students were able to maintain the learned skills once the intervention was removed. Additionally, all three students were able to use the learned skills when speaking with novel co-workers, proving that RAC was an effective intervention for generalization purposes.

A researcher provided coaching prompts as part of the intervention protocol. These coaching prompts decreased for Jenna and Aaron after the first few intervention sessions. This shows that the communication skills learned through the intervention phase were acquired quickly and did not require the RAC intervention as frequently. For Cameron, the coaching prompts remained at a higher frequency throughout the intervention phase. During Cameron's follow-up sessions, the coach did not provide prompts and Cameron was still able to provide more on-topic exchanges than during his baseline sessions. This is significant because although he required a higher frequency of prompts throughout the intervention sessions, he maintained the communication skills learned once the RAC intervention was removed, further proving that the RAC intervention was effective.

The RAC intervention used in this study was like the one used in the Joseph et al. (2020) study. Although this was not a true replication study, the intervention was used in the same manner as the Joseph et al. study. Therefore, between the two studies, the methods were similar with some minor exceptions, specifically the topics discussed and the visual prompts to begin each session. The researchers used the suggestion for future research from the Joseph et al. discussion to guide the purpose of this study. Employment conversations and workplace communication were suggested areas to explore with the RAC intervention. The research completed in this study added to a series of CAC and RAC studies that will hopefully continue to be researched in different contexts and across other populations.

On-topic discussions at work between co-workers, supervisors, and customers or clients, help adults with ID retain their employment. Off-topic discussions at work may hinder the employment success of adults with ID, especially if these conversations are inappropriate or if the behaviors need to be addressed in multiple instances by employers. Providers and professionals in the field can ensure better employment outcomes for adults with ID by teaching more social employment behaviors.

Limitations

This study had several limitations. First, for Aaron, there was a slight ascending trend in baseline, prior to a decrease. The researchers determined it was appropriate to progress to intervention to avoid extended periods of Aaron not speaking at all to the confederate. Second, the students in the study were familiar with the interventionist and the confederate, which could have had an impact on willingness to communicate or expectations to converse more with the confederate. Third, while RAC was effective in increasing workplace communication amongst all participants, it is possible if this study occurred in real world settings, we could see different levels and effects due to more distraction in the environment. Two of the students were stationed at their desks in their homes, with little distraction. Many jobs that students with ID or entry level workers obtain are not situated at quiet desks, hidden from customers or passersby.

Implications

Students in this study learned to participate in a conversation about various workplace topics. In prior audio coaching studies, students learned to participate in a small-talk conversation or complete various work tasks. This study was meaningful because students learned social skills that were essential to maintaining a job. College students with ID face challenges maintaining jobs and many of these challenges are related to social skills (Grigal et al., 2018). Attending IPSE programs and learning essential job skills can decrease the employment challenges that college students with ID encounter in their careers. IPSE programs, vocational agencies, and job coaches can use interventions such as RAC while teaching students these essential job skills.

Other governmental assistance programs have aimed to help adults with ID and disabilities. For example, the efforts of SSA initiatives such as Ticket to Work and SSI or SSDI benefits programs have assisted college students with ID as they search for and obtain jobs. The financial assistance that these programs provide gives time and opportunity to college students with ID to learn essential job skills, and needed social skills, for better employment outcomes. Interventions such as RAC can be used by the practitioners and job coaches of these programs to improve skills and to ultimately reduce reliance on financial assistance. The limitations of this study imply that future researchers could examine the effects of RAC in real-world employment settings. This could be achieved at the student's place of work or in simulated areas of work. Additionally, remote services are increasing in practitioner environments. Remote services provide more flexibility in scheduling and travel. Practitioners could use RAC interventions as a way increase their productivity levels with clients and students.

Conclusion

This study examined the effects of RAC on teaching social employment skills to college students with ID. The study proved that RAC is an effective intervention for practitioners and job coaches to use with clients and students. Due to the Covid-19 pandemic, many places of business are distancing and decreasing foot traffic. Some places of work may not be willing to allow in-person job coaches. RAC interventions could allow students with ID to have reasonable accommodations through job coaching supports while they are on the job but still maintaining social distance.

References

Bennett, K.D. (2013). Improving vocational skills of students with disabilities: Applications of covert audio coaching. *TEACHING Exceptional Children, 42*(3), 60-67.

Bennett, K. D., Brady, M. P., Scott, J., Dukes, C., & Frain, M. (2010). The effects of covert audio coaching on the job performance of supported employees. *Focus on Autism and Other Developmental Disabilities, 25*(3), 173-185. http://doi.org/10.1177/1088357610371636

Butterworth, J., Hall, A.C., Smith, F.A., Migliore, A., & Winsor, J. (2011). StateData: The National Report on Employment Services and Outcomes. Boston, MA: Institute for Community Inclusion, University of Massachusetts Boston.

Gilson, C. B., & Carter, E. W. (2016). Promoting social interactions and job independence for college students with autism or intellectual disability: A pilot study. *Journal of Autism and Developmental Disorders, 46,* 3583–3596. http:/doi.org/10.1007/s10803-016-2894-2

Gilson, C.B., Carter, E.W., & Biggs, E.E. (2017). Systematic review of instructional methods to teach employment skills to secondary students with intellectual and developmental disabilities. *Research and Practice for Persons with Severe Disabilities, 42*(2), 89-107.

Gormley, M.E. (2015). Workplace stigma towards employees with intellectual disability: A descriptive study. *Journal of Vocational Rehabilitation, 43*(3), 249-258.

Grigal, M., Hart, D., & Papay, C. (2018). Inclusive education for people with intellectual disability in the United States. *People with intellectual disability experiencing university life* (69-97). https://doi.org/10.1163/9789004394551_005

Hiersteiner, D., Bershadsky, J., Bonardi, A., & Butterworth, J. (2016). *Working in the community: The status and outcomes of people with intellectual and developmental disabilities in integrated employment-Update 2* (NCI data brief). Human Services Research Institute. Retrieved from https://www.dol.gov/odep/topics/EmploymentFirst/EmploymentDataBrief-NC_ICI-5-2016.pdf

Holmes, J., & Fillary, R. (2000). Handling small talk at work: Challenges for workers with intellectual disabilities. *International Journal of Disability, Development and Education*, *47*(3), 273-291. https://doi.org/10.1080/713671114

Joseph, B. M., Kearney, K., Brady, M. P., Downey, A**.,** & Torres, A. (2020). Teaching small talk: Increasing on-topic conversational exchanges in college students with intellectual and developmental disabilities using remote audio coaching. *Behavior Modification, 45*(2), 251-271. https://doi.org/10.1177/0145445520975174

Kaye, H.S., Jans, L.H., & Jones, E.C. (2011). Why don't employers hire and retain workers with disabilities? *Journal of Occupational Rehabilitation, 21*(4), 526-536.

Kearney, K. B., Brady, M., Bennett, K., Joseph, B., & Dukes, C. (2022). Using covert audio coaching to teach "small talk" to a college student with intellectual and developmental disabilities. *Journal of Inclusive Postsecondary Education*, *3*(2), 1-13. https://doi.org/10.13021/jipe.2021.2928

Kelley, K.R. & Westling, D.L. (2019). *Teaching, including, and supporting college students with intellectual disabilities.* Routledge.

Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M., & Shadish, W. R. (2013). Single-case intervention research design standards. *Remedial and Special Education*, *34*(1), 26–38. https://doi.org/10.1177/0741932512452794

Mason, R. A., Gregori, E., Wills, H. P., Kamps, D., & Huffman, J. (2020). Covert audio

coaching to increase question asking by female college students with autism: Proof of concept. *Journal of Developmental and Physical Disabilities*, *32*(1), 75-91. https://doi.org/10.1007/s10882-019-09684-2

Oswald, T. M., Windel-Patel, B., Ruder, S., Xing, G., Stahmer, A., & Solomon, M. (2018). A pilot randomized controlled trial of the ACCESS program: A group intervention to improve social, adaptive, functioning, stress coping, and self-determination outcomes in young adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 48*, 1742–1760. https://doi.org/10.1007/s10803-017-3421-9

Parker, R.I., Vannest, K.J., & Davis, J.L. (2011). Effect size in single-case research: A review of nine nonoverlap techniques. *Behavior Modification, 35*(4), 303-322. https://doi.org/10.1177/0145445511399147

Scruggs T. E., & Mastropieri, M. A. (2013). PND at 25: Past present, and future trends in summarizing single-subject research. *Remedial and Special Education, 34,* 9-19.

Sannicandro, T., Parish, S.L., Fournier, S., Mitra, M., & Paiewonsky, M. (2018). Employment, income, and SSI effects of postsecondary education for people with intellectual disability. *American Journal on Intellectual and Developmental Disabilities, 123*(5), 412-425. https://doi.org/10.1352/1944-7558-123.5.412

Social Security Administration. (2021). *The red book - a guide to work incentives.* Retrieved from https://www.ssa.gov/redbook/

Vannest, K. J., Parker, R. I., Gonen, O., & Adiguzel, T. (2016). Single case research: Web based calculators for SCR analysis (Version 2.0) [Web-based application]. Texas A&M University.

Appendix A

Table 1

Social Validity Outcomes

Participants	Significance of Goal	Effectiveness of Intervention	Satisfaction	Total of All Items
	Students (*N=3*) (6 Items; Rating = 1-4)			
Student 1				
Mean	3.5	4	3.5	3.7
Median	3.5	4	3.5	4
Mode	3.5	4	3.5	4
Student 2				
Mean	4	4	4	4
Median	4	4	4	4
Mode	4	4	4	4
Student 3				
Mean	4	3.5	3	3.5
Median	4	3.5	3	3.5
Mode	4	3.5	3	3.5
Total				
Mean	3.8	3.8	3.5	3.7
Median	4	4	3.5	3.8
Mode	4	4	3.5	3.8
	Professionals (*N=6*) (6 Items; Rating = 1-4)			
Professional #1				
Mean	4	4	3.5	3.8
Median	4	4	3.5	4
Mode	4	4	3.5	4
Professional #2				
Mean	3	3	2.5	2.8
Median	3	3	2.5	3
Mode	3	3	2.5	3
Professional #3				
Mean	4	4	3	3.7
Median	4	4	3	4
Mode	4	4	3	4
Professional #4				
Mean	3.5	4	3.5	3.7

Median	3.5	4	3.5	4
Mode	3.5	4	3.5	4
Professional #5				
Mean	4	4	4	4
Median	4	4	4	4
Mode	4	4	4	4
Professional #6				
Mean	4	3.5	3.5	3.7
Median	4	3.5	3.5	4
Mode	4	3.5	3.5	4
Total				
Mean	3.75	3.75	3.3	3.6
Median	4	4	3	4
Mode	4	4	3	4

Appendix B

Figure 1. *Percentage of workplace exchanges on-topic, off-topic, and coached.*