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WEST VIRGINIA UNIVERSITY
WVU-CED JUNE WEBINAR
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>> Welcome everyone. It is two o'clock and we are going to get started. I appreciate everyone joining us for the June able ground rounds for the center for excellence and disability. I am going to turn this over to the grants and research specialist to introduce our speaker for the month. Valerie -- are you situated and ready?

>> I am. It is my pleasure to introduce our speaker. Dr. Claire St. Peter received her PHD from the University of Florida in 2006. She is currently an Associate Professor of Psychology and Coordinator of the Behavioral Analysis Area at West Virginia University.

Dr. St. Peter's research focuses on development and intervention for challenging behavior including the challenging behavior displayed in schools. She is interested in evaluating naturalistic conditions of intervention implementation including effective (background noise) and conditions that result in relapse of previously treated behavior. She is also conducted research on the (Overlapping Speakers)

She serves the editorial boards of the journal of experiential analysis behavior and perspectives on behavioral science and is associate editor for education and treatment of children as well as the journal of applied behavioral analysis. Thank you for being with us and welcome.

>> Quickly -- please remember to mute your lines, I am able to mute people but there is someone on a phone call right now that we can hear that I can't mute. So during the presentation please remember to mute your lines. On the phone and computer. Okay thank you.

>> Is Dr. St. Peter able to take over the screen now?

>> Yes. There we go. Wonderful. I might have muted your line Dr. St. Peter -- let me see -- you want to go ahead and try to talk? I can figure it out? We are not able to hear you. Sorry. I have unmuted all the phones.

>> CLAIRE ST. PETER: Okay can you hear me? Sorry about that. All of these things are bound to have a glitch so if that is the one we have, that is all right. So thank you all. You Facebook people out there in the listening world for joining us today and thanks for the CED for inviting me to speak. The research I am talking about today is part of a grant sponsored research study funded by the WVUCED at part of the mini grant program. I am excited to share our findings from that study and talk to you about how we might facilitate successful transitions into meaningful employment with individuals with autism spectrum disorders.

All right so when typically developing individuals think about career paths it is a daunting thought process or conversation for those individuals. And there are lots of different career options. Adolescences are not often exposed to what the career paths might be so if you think about your own experiences and the extent to which you are able to think as an early adolescent, did you envision yourself doing what you are doing today? For many much us the career paths changed across time.

And eventually really what we are looking for in our vocational training and vocational career paths is that we land in a job where we enjoy what we are doing. That it brings us a form of happiness and this is can be -- this path to outrageous happiness as Linus puts it is a daunting exercise for typically developing individuals. In part because choosing a career path -- there are so many different options, that are available to typically developing individuals, for which we require specific skill set as and specific aptitudes to be successful in those. And it becomes challenging to try to determine what it is that we are going to do when we grow up.

As I mentioned this is challenging even for typically developing individuals but we can begin early in doing this and we do start early with most of our children. So we talk with them about the career paths. There is bring your sons and daughters to work day demand high school they start to think about the transitions to career planning and vocational paths, there is guidance counseling available to them to assist with those transitions. In college we have majors where we are providing specific training to individuals that prepare them for very particular career paths and we have broad career services available within our universities to help promote appropriate job seeking and career success for students.

So when we talk with the career paths for typically developing students, generally what we are doing is talking with people with adolescents about likes and dislikes. What do you like to do. What do you find enjoyable? And trying to link those to possible career paths for the individual. These strategies, talking with individuals about what their likes and dislikes are and using specific inventories to try to link those likes and addition likes to career paths become more difficult to use with individuals with autism that have limited vocal communication abilities. So imagine ask career path questions like, what is it you really like to do? Talking about individuals who have limited vocal communication skills and who might not have the skills no answer abstract WH questions. Answering questions that have no clear answer is difficult for the individuals and might limit the extent to which we can use the traditional inventories to facilitate the success of our students.

So when that is the case and we are working with students for whom we have limited individual communication skills and we can't assess using traditional metrics, we are left with barriers to identifying appropriate vocational activities for the individuals.

These barriers are not me making things up, they are real startling statistics having to do with the employment outcomes for those with autism and intellectual disabilities.

Two years after graduating from high school for than 50% of adults with autism remain unemployed. So for than half of young adults are not meaningfully employed. When we do have meaningful employment -- in that 50%, it is less than the same age peers with other forms of disabilities.

So we are seeing individuals with autism spectrum disorders who are behind the curve even relative to other individuals of the same age who have different forms of disabilities. And for the less than 50% ho are employed, they work only about five hours a week and make salaries well under the poverty line. So we clearly have a lot of room to grow in terms of creating meaningful vocational outcomes for adolescents and young adults with ASD. Now there are lots of barriers that might go into creating these meaningful vocational outcomes for individuals.

Some have to do with some of the skill sets necessary for employment, the types of employment opportunities that are available in areas particularly rural areas, as well as the extent to which individuals with limited communication abilities can appropriately seek additional training and resources. So even once employed there are barriers to remaining employed.

Before we get to that point though, there are additional barriers that might present individuals with an autism spectrum disorder from being able to identify even what an appropriate career would be. Now we know the career paths for individuals with disabilities and this is true for typically developing individuals as well -- are more promising when those individuals are in a vocation they enjoy.

So how do we identify vocations that individuals with an autism spectrum disorder might enjoy? And think back to the examples that we just talked about how we might do that with a typically developing individual.

We usually have vocal conversations about likes and dislikes. These are more complimented for individuals with disabilities but they are out there. One of the common used alternatives is called the reading free vocational interest inventory developed by Ralph Becker. This was designed to provide an alternative way for individuals to assess the likes and dislikes of adolescents and young adults who had difficulty communicating or reading and so had limited language repertoire.

>> I know this is small on your screens, this is not a test, there are no right or wrong answers. Your answers will tell us about the kind of work you like best. On each page of the book there are groups of three pictures in a straight row. Look at the example below. If you like the picture best -- if you like best the picture of building a wall, you make a large circle on the picture like the one in the example. You can only choose one picture in each group of three so choose the one you like best. If you like all three pictures you must decide on one so make a large circle on the picture you like best. If you don't like any of the three pictures choose the one you would do only for a very short time. There are 55 pictures of people working at different jobs. Be sure you circle one picture in each group of the 55 rows of pictures. Turn the page and begin.

So although the inventory is designed for individuals with limited reading skills, one of the things that became apparently to me is that the receptive language skills no understand these instructions are still pretty significant. So the instructions are clearly worded but they require pretty complex choice making and discrimination from the people who are answering.

Additionally they may present pictures of things the individual has never experienced before. I have never built a wall. And so the extent to which I might be able to say yes, I would like to build a wall might be unclear because I have never had that personal experience in my life to know if I like building a wall.

The other potential barrier with some of these pictures is that they require that the individual be able to infer from line drawings to real life and that they make particular discriminations went line drawing. So in the second picture, where assuming that the responding adolescent knows they are selecting this is serving the food and not eating the food.

If these complexities are not in place for adolescents with autism then inventories like this may not be appropriate for us to use. These inventories are commonly used in educational programming for adolescents with autism in the public schools system. The one I see most often is the pictorial interest inventory. This is a modified version of the reading free interest inventory and the directions as you can see to the page are more simple. It was designed to reduce one of the barriers that I just mentioning with the reading free interest inventory, which is that it using actual pictures of individuals engaging in tasks rather than line drawings. How there are still some of the same barriers associated with the pictorial inventory. So if I have never served as a mechanic on a car or worked on an engineer, I might not know if I would like that particular task. The second problem is that I might attend to features of these pictures that are not the features that the Administrator of the inventory wants me to attend to. I might pick the second picture because that women looks the most like me.

So as we have discussed there are workarounds and modifications to the interviews that are typically used with individuals that have complex verbal skills.

But there remains potential problems with those activities. They require picture to activity matching skills. So using the reading free or picture inventory, we are assuming that the individual to whom we are administering the inventory can match -- or have a sense that this picture means this thing. And often those skills are not assessed.

Second they may show pictures the individual has never done so it is unclear the extent to which -- if someone circles that activity -- if that is really what they are saying I would like to do. Because they may not have had those skills or experience before. Third the preference -- so while a might prefer to be a librarian over a mechanic -- I might prefer another job over being a librarian.

Individuals may attend to inappropriate parts of the pictures like the extent to which an individual shown in a pictorial inventory looks like they do -- rather than seeing the tasks they are doing.

Despite the limitations we know there are other ways to identify preferences for individuals. And there are two ways that are well established within the replied behavior analysis literature. These are called paired choice preference assessment and multiple stimuli without replacement assessments.

Each individual is given choices between two or more activities and the extent to which an individual selects one of the two activities when presented is very systematic across time. These forms have been established as accurately identifying events that serve as rewards to improve client outcomes with individuals with autism. There is limited in evidence the literature that paired choice and multiple stimulus without replacement can be used to identify vocational preferences with young adults with autism or other intellectual disabilities. But the studies are limited and there has not been a direct comparison of the two different methods.

Therefore we wanted to do in the current study -- to determine if the two preference assessment formats that involve direct access and measurement of activities can provide the direct measure of vocational preferences for students with poor verbal abilities.

We targeted students with autism or intellectual disabilities and we recruited the individuals from the local high schools and we to date have four participants who have enrolled.

I will talk about them today. Harold was a 17 year old male diagnosed with autism. In his education plan he had data from a universal non verbal intelligence test that put him in the delayed range. He had three vocational goals, to increase prevocational skills with 80% accuracy on tasks, demonstrate appropriate work behavior and master harder vocational tasks.

Trevor was a 15 year old male with autism and had a WISC verbal score of #35e and no IEP goals specified.

Adam was diagnosed with autism level 3. He had a recent WISC but the Administrator determined that it was too low to score. He had one vocational goal which was to determine if he would like to attend our local technical training center.

Molly had a DASH developmental age of 48 to 60 months. She had one goal -- to physical a schedule using least to greatest prompting for 100% completion of the work schedule.

We had several things we did before starting the experiment. The first thing was we interviewed the parents and teachers to identify possible tasks and tasks to avoid. We wanted to make sure we were starting with tasks that the individuals who are familiar with the participants thought would be good and also that we were

avoiding tasks that might be difficult for that particular student -- things they thought they would dislike or handling a substance that the individual may be allergic to.

So we generated lists from the parents and teachers and my original plan was that I was going to read the student's individualized education plan and I was going to include the activities in our assessment. Well the vocational goals that were included in the IEPs were nonspecific. So unfortunately our individualized education plans did not provide a lot of guidance about what might be an appropriate goal for the students.

So we selected eight tasks that we included. Eight possible vocational tasks that were identified by the teacher or parent as being something they thought the student might enjoy.

We wanted to make sure the students had experienced each of the tasks so we provided exposure to the tasks while showing a picture of what the task materials were. These exposures were two minutes in duration. After they had experienced each of the 8 tasks for two minutes we then on the next day asked the participant to match the picture of the task items to the task. So we set out two different sets of task items, and handed the participant a picture. We asked the participant to take the picture to the related task items. Now again, remember that one of the things that is necessary for us to use pictures when we are identifying preferences is that the individual can match the picture to the actual task.

So this was pretty important to us to make sure that our participants knew what they were picking when they selected the pictures and we wanted to use pictures because we wanted an array of eight items able to be presented to the participants to make the efforts of selecting easy.

Now we run into difficulty in working with Molly. She did not engage with the task in the initial two minute exposures so we thought we had missed tasks that she might enjoy and we replaced the tasks based on new discussions with the parent and teacher but Molly still only engaged with four of the tasks so from the initial exposures -- we provided with including the four tasks. Molly did not match any of the pictures to the corresponding items.

Now remember that I wanted to use pictures because I had eight different sets of vocational tasks some of which included large items like brooms and I could not easily put that within reach of the participants. For Molly all four of her items were small and could be placed on the table in front of her. So because we did not know if she had picture to object matching skill we stopped using pictures and presented the actual items in front of her and asked her to select between items. However Molly did not select between task related items when asked to do so.

At this point we were unsure if Molly didn't have the skills to understand our instruction to select the tasks when presented to her in an array of four or if Molly was choosing not to choose so to speak. That is if Molly was saying I don't want to do any of these. So was deliberately not selecting.

We had plans for how to modify the procedures but Molly was withdrawn from school unfortunately.

Our remaining three participants experienced our experimental procedures. Those started with two forms of preference assessments. The multiple stimuli without replacement and the paired choice assessment. We placed all the pictures in an arc on the table in front of the participants. The students selected one of the pictures, we remove the remainder of the pictures and had the student complete the selected task for two minutes. During the two minutes the student received attention every 15 seconds. If the student was working on task that attention was

on the form of praise, if the student was off task we provided prompts or models or assisted the student if they were stuck on the task.

After the two minutes were completed the instructor removed the selected picture, represented the remaining pictures and after the first selection this was seven, rotating the location of the pictures to make sure the participant was not selecting the item based on the location of the picture and then repeated the process of having the participants select the picture, the person completed the task for two minutes and represented the remaining pictures until none remained.

We repeated the entire series three times. Having all eight pictures out and going all the way down until none were remaining. In the paired choice assessment each picture was paired with every picture twice. So two pictures were presented at a time and each was then paired with every other picture. So in the first presentation picture A was on the left and in the second, on the right. Except for the change in the number of pictures available, the other procedures were the same. The students selected a picture between one of the two available options and completed the task for two minutes receiving attention every 15 seconds and this continued until all the pairings were presented twice.

Just to give you an idea -- this is an actual picture of our pictures. So this is the table in Harold's classroom. What you see are the pictures of the activities selected for him. They are arranged in an arc on the table and he sat at the chair and selected a picture.

So from left to right the pictures are assembling bags, sweeping, matching and folding socks, sledding paper, filling, transcribing, folding paper and stuffing envelopes.

Once he selected the picture he had the activity associated with the picture for two minutes before coming back and selecting from the remaining pictures. So from here I want to show you outcome data of what we saw across the two assessments. I will show you the data for all three of the participants who completed the preference assessments and all of the slides the data from the multiple stimulus replacement assessment are on the left, and the one with the paired choice assessment where the participant is given two options at a time is on the right.

For all of the graphs the percentage of presentations with selections are along the line access so the taller the bars are, the more often the participants selected that picture when it was available as an option. The different options from most to least selected appear along the X axis. So for Harold, he selected sledding every time it was available in the MSWO assessment and 95% of the time in the paired choice assessment.

So those forms of the assessment identified sledding as the highest preferred option.

The lowest preferred option differed across the two assessments. Transcribing was the lowest preferred option in the MSWO but sweeping was the lowest option in the paired choice assessment.

Here is the data for Trevor. The graph is the same way. The taller the bar the more often he selected a particular activity when available and the shorter the bar the less often he selected that particular activity when it was available. It was similar for Trevor as Harold. Both assessments identified the same activity as being the highest preferred. Greeting people. But different activities as the lowest prefer activities and in fact for Trevor the lowest preferred activity in the MSWO, cleaning, was in the middle of the pack for the paired choice. There were three other

vocational tasks identified by the paired choice assessment as being less preferred than cleaning.

If we needed more than one vocational task for Trevor it might be difficult to term which of the preference hierarchies is more appropriate.

Here are the results for Adam. Again the taller the bars the more often Adam selected a particular task. Both types of assessments identified delivering mail as the highest preferred task but again the lowest differed across the two assessments with matching socks as lowest in paired choice but being in the bottom three are two other options less preferred in the MWO.

So what did we learn? The same highest preferred task was identified in both assessments but the highest preferred task differed across individuals. The students had different preferences for example cleaning was one of Trevor's lowest preferred activities but in the top three highest for Adam. These results suggest we can't presume that all individuals with a particular diagnosis will like to do the same kinds of activities. It is important that we access the individual preferences of the students with whom we work to make sure that we are providing solid vocational training opportunities that will match that student's likes and dislikes. The two different assessment procedures identified different lowest preferred tasks for each student in addition to identifying present preferences between the students. The assessments had good correspondence with the highly preferred activities but differences with how the procedures yielded outcomes.

If we want to identify a single highest preferred activity as a vocational task it seems like it would be difficult to select between the two assessments. Therefore we did a secondary analysis to look at the amount of time that was necessary to complete the two assessments. Because time is a precious commodity it is important to select the most efficient assessment when the outcomes are equivalent.

Although both assessments identified the same highly preferred activities the paired choice assessment took twice as long to complete as the multiple stimulus without replacement assessment. The graph shows the means where the arrow bars are the standard deviations. Paired choice takes 160 to 170 minutes to complete and the MSWO is taking about 75 minutes to complete.

So again if we were only interested in identifying a single highly preferred task the MSWO is the way to go.

But the data still doesn't tell us the entire story. There are potential problems with how we range the analysis. First the participants still had a short time to work on the task. They selected a task from the array of available options and only worked on that task for two minutes. During that two minute time they received lots of attention. So one of us attended to the participant every 15 seconds. This is unlike a real work environment where a supervisor is unlikely to attend to a participant that frequently.

Third, there was a choice before each task that the participant had to complete. This is also unlike a real work environment. As much as I would love to have free latitude to choose what I am going to do in my day, I have constraints on time placed by my supervisors. I am told what I need to get done. So our procedures identifies preferences but it was unclear the extent to which they would predict if participants would be able to work for longer periods of time when no choices were available.

We conducted an additional analysis to present single tasks without as much attention. We called this our engagement assessment because we were really

interested in the extent to which our participants would remain engaged and focus on the task as hand when they were not as many choices and not as much attention and prompting and they had to work for longer periods of time.

We wanted to see if our preference assessments would predict with which tasks the participants would remain engaged. Would participants remain more engaged with the tasks labeled and identified as highly preferred in the preference assessment relative to the tasks identified as low preferred in the preference assessments.

This is how we did the analysis. We identified the highest preferred task -- remember that was for all participants that was the same across both assessments, and then the two low preferred tasks. Remember these differed across the two assessments. So each of the participants had three different tasks. We determined which task the participant would work on. So there was no choice.

For example recall that Harold preferred sledding. And the lowest preferred task was typing and sweeping. So in each block of three sessions we would decide if he would sled, type or sweep and we would tell him what the next activity was.

In each ten minute session he did one of these three tasks. So they had to work for ten minutes instead of two minutes. And then as he worked during the ten minute session we checked in every two minutes. If the participant was working we praised the work and if they were not working we reminded them to work or showed the participant what to do.

Here is the data for the outcome. These are the data for Harold. The percentage of the ten minute session he spent engaged in the task is along the Y axis and the following sessions are along the X axis. Remember that we selected which activity he would do and he did it for the entire ten minute block. So your three data pat paths show the three activities identified by the preference assessment. Closed circles show the highest preferred activity, sledding. The squares show the activity identified as the lowest preferred. Typing. And the closed triangles is the activity lowest preferred, sweeping.

So our preference assessments did identify a task that resulted in higher levels of engagement. He was much more likely to spend his ten minutes activity engaged in sledding then he was in typing or sweeping. The paired choice assessment although it took longer seemed tomorrow more accurate and identifying a task that he did not like. He spent the least amount of time sweeping relative to the other tasks. Park here is the data for Adam. The graph is laid out the same way. It delivering mail was identified as the highest preferred activities. Filling papers was the lowest preferred in the MSWO and matching socks was the lowest in the paired choice. He engaged in delivering mail almost 100% of the time but he spent most of the time engaged in filling papers. So the MSWO was not predictive that is, it identified and activity as low preferred but he still engaged it in across a longer period of time with less support. For the paired choice assessment it identified matching socks as the lowest preferred activity and he spent the least amount of time matching socks. The amount of time he spent matching socks decreased over repeated assessments.

The paired choice, although it takes longer may be more accurate, at fully identifying a preference hierarchy. Here is the data for Trevor. Regardless of the type of activity that he was asked to engage in, he engaged in that activity for almost 100% of the ten minute block across all three of the activities. So he was just really compliant with what we asked him to do no matter if it was an activity identified as preferred or nonpreferred in the previous assessments.

So what did we learn from the data. Well our preference assessments predicted high levels of engagement with highly preferred tasks. For all three of the participants the activity identified as highly preferred resulted in high levels of engagement. This suggests we may be able to use the assessments to determine the tasks that adolescents with autism will enjoy and may result in the individuals working independently for longer periods of time.

The paired choice assessments produced better predicting of the tasks that resulted in the lowest levels of engagement. When we need to know more than one preferred task we may want to use paired choice methods even though they took twice as long on average to administer.

We wondered about how others would perceive the student's work. One of the things we noticed with Trevor -- he was the student who engaged in the task regardless of high or low preferred -- he seems happier doing some tasks than others.

We recruited the teachers to watch videos of the students completing the highest and two lowest preferred. We gathered the videos -- and we randomly selected four 30 second video clips from each task starting at random place and times and spliced the clips together to create a two minute videos for each task. We showed the teacher the videos of the tasks on an ipad without telling the teacher which tasks were identified as high or low preferred. After the teacher watched each video, she's answered these questions.

First how happy was the adolescent during the video ranging from one, very unhappy to five very happy. Second how engaged was the adolescent during the video, ranging from one, not engaged to five, very engaged. Third how likely would you be to suggest the task as a vocation for the adolescent ranging from one not likely to five very likely.

We collected the data for two participants, Harold and Trevor, now we are getting at the qualitative aspects of if they are predicting activities that result in different responds when the adolescent is asked to do the activity for an extended period of time.

Here is the data. I am showing you graphs of the ratings across the three questions we asked. Each question is shown in a different graph and the groupings of bars are for the two participants. Black bars show the high yes is preferred tasks and the light grey bar is the lowest preferred by the MSWO and the dark grey by the preference assessment identified as lowest preferred in the paired choice.

Remember for Harold the three different kinds of tasks produced different amounts of engagement when we did qualitative measures of the engagement in the assessment where the highest preferred task resulted in the highest engagement and the lowest preferred task in the MSWO resulted in moderate engagement and the low yes in paired choice resulted in low engagement.

Harold's teacher rated sledding and sweeping the highest preferred and results in equal happiness. This suggested that Harold didn't seem as happy when typing. In terms of engagement the teacher rated the lowest preferred task and the one that resulted in the lowest result of quantitative engagement in the assessments as resulting in the highest rating of five in the engagement assessment, but in the end recommended that sledding be the vocational activities that she recommended for use.

Recall that Trevor's data was different. He engaged quantitatively in an equivalent amount across the three activities, greetings and cleaning and sorting. His teacher rated his happiness as being five in greeting and cleaning but less in

engagement -- and engagement as high in greeting and cleaning as well but different ratings in terms of recommendations. She recommended that greeting, the highest preferred task be the one that she would recommend as Trevor's vocational task were she to move forward with these.

So although Trevor engaged in equivalent amounts of engagement -- across the three tasks, they still resulted in differential qualitative ratings by his teacher.

So what did we learn from the data. Well the teachers felt strongly about particular tasks. The fact that the teachers rated the recommendations in a way that aligned with the outcomes of the assessments was interesting to us because it suggested that the teachers were able to label qualitative aspects of the student's engagement with the task predicted by the preference assessments we did at the start of the study.

One of the things we thought was interesting was that the engagements ratings were not strongly correlated with our direct measures of engagement. For Harold we obtained low quantitative measures of engagement but his teacher rated with the lowest preferred -- recorded high levels of engagement with the task when shown the video clips and it seems like this may be due to how we define engagement. So for the sweeping task -- Harold would squat down, pick up the trash with his fingers and move them to the pan instead of using the broom. We did not score that as engagement which resulted in a fairly low amount of engagement because we did not feel like that was appropriate work related behavior but it is possible that his teacher viewed that as being moment towards the completion of the task and perhaps her personal definitions of engagement were different. We did not define engagement for the teachers, we did that because we wanted the teachers to use their own judgment calls about this rather than trying to match explicitly what we obtained. It was interesting that it did not match for either of the two participants.

Another interesting feature that the teachers changed the student's IEP goals as a result of their participation. So both of the teachers noted that when they did the annual IEP evaluations after seeing the videos of the two participants engaged in vocational tasks and learning about the preferences at the end of the experiment -- they changed the IEP goals to be more focused on tasks they thought the students would enjoy.

We have a long established method of choices for helping individuals with all autism and other disabilities. Choice boards, options for work break -- which task are you going to do first? We can modify the procedures that we have already to suit the needs of individuals that don't have complex verbal repertoires

We may need to measure preference for individuals other than just looking at what tasks individuals will comply. Remember that Trevor regardless of what task we put in front of him, he engaged in the task consistently. So he spent almost 100% of every session working on the tasks and then he was just a really compliant kid. So if we were to use just the engagement measure to try to predict which tasks Trevor would enjoy and look at the amount of time he would spend engaged we might end up in a situation like the guy in the cartoon. With when you agree to do lots of things you do lots of things whether you want to do them or not. Just because people will do something doesn't mean they want to or enjoy doing it.

Identifying a vocation is hard enough for typically developing individuals and caregivers. There are not clear guidelines about how to make decisions even when there are lots of resources available and identifying an enjoyable vocation and taking the steps to prepare appropriately for that vocation can be really stressful for

both the individual and their families. This task is made more difficult when the individual has weak verbal skills and can't describe the tasks they would enjoy and those they would prefer to avoid.

These weak verbal skills can make it difficult for caregivers to help with vocational planning.

Recall that when I first planned the study I was excited about including the IEP goals that would specify what the participants would enjoy and what they would like to avoid and what the potential career paths were. Recall several of the participants were 17 years old. They only have a few years remaining in the educational system.

Planning might be critical for individuals that need preparation and practice to be prepared for a job they love as might be the case for individuals are autism who are non verbal. We may need to start early with vocational training for these individuals. Starting early might allow us to develop meaningful IEP goals early on in the educational process for the individuals with disabilities. Based on the results of our study we believe teachers and other providers might benefit from training on how to identify preferences of non verbal individuals and that strategies like the paired choice and MSWO assessments might be useful to improve educational and vocational outcomes for individuals with low verbal skills.

We need to remember that just because individuals don't have the complex verbal skill of their peers doesn't mean they don't have the same likes, dislikes and preferences for all activities including vocational activities.

Thank you so much for joining me today and for listening I think there is a few minutes. I don't know if the platform can take questions but I am happy to answer them or you are welcome to send me an e-mail at the address on the screen. Thanks.

>> Thank you I am going to unmute the lines in case people have questions.

Any questions? What are the next steps? You mentioned what you have learned from this but I am curious about the next studies

>> CLAIRE ST. PETER: Yes so we are continuing to recruit participants. We would like to get a larger sample size of participants who complete the entire study so we can knee the same outcomes hold when we have more than just three participants. So that is one thing. The second thing is I think that Molly's results are not a fluke. She had our lowest verbal abilities of the participants so she was essentially completely non verbal in terms of very very limited use of alternative communication and very few vocal skills and we need to modify procedures. So that we can make sure we are providing services for the full spectrum of services.

And the third thing is to start disseminating the packages in ways that are easy for teachers and providers to learn how to do it. We have good data from the assessment models in terms of identifying reinforcers that suggest people can learn them quickly and I would like to see if the same holds true in the modified versions for vocational training.

>> I don't know if Dr. James is on but I know there is a focus on transitions in support groups. This helps in some ways. Would you have other suggestions for families and providers that might be working on this through support group efforts?

>> CLAIRE ST. PETER: Yes the biggest thing is to know there are limitations to the ways the preferences are often -- limitations to the ways the preferences are identified that families should be aware of so that if they encounter that we used the pictorial inventory -- that families are aware of the inventories and

can tell if it is appropriate for their child. And that there are ways to identify the preferences even if the traditional inventory measures are not appropriate for their child. And to be good advocates.

>> That's great. Thank you. Any other questions? Comments? You do have comments in the chat. Saying it is a wonderful presentation by the way.

>> CLAIRE ST. PETER: Well thanks. Valerie?

>> Thank you for taking the time to share with everyone details of your research and some of your early findings, it was fascinating.

>> CLAIRE ST. PETER: Thank you so much. None of this would have happened without the support of the ED so I can take credit for execution only. I have to toss the credit back to you guys for making it possible so thank you guys for everything.

>> Looking forward to hearing more.

>> Okay well thank you. With that we are finished. And again, thank you for spending your time with us.

>> CLAIRE ST. PETER: Thank you. Have a wonderful afternoon.

>> You too.