

SHIRLEY RYAN ABILITYLAB
WHAT JOB SEEKERS WITH DISABILITIES AND EMPLOYERS
NEED TO KNOW ABOUT JOB ACCOMMODATIONS

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>> EDWARD HITCHCOCK: Thank you very much. Close to afternoon, I suppose. I'm Ed Hitchcock, an occupational therapist. I'll be talking a little about general accessibility and what is called assistive technology.

I am an OT, so I'll be talking about a few things that kind of cross into the speech

I'm going to go a little bit mile wide and inch deep in terms of the techniques and the options that I present with some hope we'll be able to circle back at the end of the presentation, if you've got stuff you want me to show more in-

subcognitive level for the most efficient way possible. If somebody just wants to type a message to their family member, "what time are you home," they may not need to go through the in-depth options I have available. Because it may be fine for them to type one at a time and maybe that text message takes about a minute to send, but that's fine.

I want to know what are the goals. If you want to lose this for competitive employment, we might need to up that game a little bit, right? But if somebody doesn't want that, that is going to be kind of important.

I have a lot of people who think the technology is kind of cool, right?

iPads, iPhones, they're kind of cool, right? I get a lot of people coming in and they want to use it and it's kind of cool. And that's not -- you know, the human factors that go into using a piece of technology are really actually quite important. If something doesn't look well, if somebody has -- you may know this, they're not the most esthetically oriented person in the world, so I may not care, but if this piece of stuff hanging off of me doesn't look good for someone, that's going to be an important factor. And a lot of that goes into what we call technology tolerance. Back in the old days when we used to have VCRs, we used to say if you were someone who can remote program your VCR to record a show at a later time,... who knows VCRs?

If you can remote control your VCR to record a show at a later time, we used to say you had a high technology tolerance. You're probably going to see at various times today that something will go wrong with my technology, right? And if it does, how do I deal with that?

Nature of my job, I'm kind of good at that. But if someone doesn't have that option for technology tolerance we have to look at that in terms of the reliability of what is there and set up the expectations around that.

Briefly, I obviously need to know what is going on with someone's vision. That's a pretty profound issue, no pun intended. It's often overlooked in the rehab field. If there's relatively minor visual deficits, it will have a pretty profound influence on the use of a screen, right? I want to know about cognition, new learning, short-term memory, are there options I need to use? A lot more options are available now just on your smartphone for things like reminders and calendar appointments and things like that.

To try to compensate for some of those issues. I spend a lot of time talking about upper extremity impairment, because that has the influence on how I am operating my given piece of technology, right?

I'll talk a fair amount about positioning 4.2 Tm0 g612 92 reW* nBT/F1 12 Tf12fry to co2(o)23(n)23(i)22

of an ergonomic nightmare. I either have hands up to where I can see my monitor comfortably or my hands are down and my neck is forward

So I often talk about some of the simple things. Let's move the monitor up so I'm not in a posture or having to go in this posture of going up or down. Kind of a few basic things

to use a given thing, that honestly is going to be the most important case for adoption of technology or not.

I talk a lot about trials whenever possible. I try to get somebody to do a trial. I see a lot of patients who don't have funding for the equipment that we talk about, so even a relatively small amount of money can be a big deal to someone if they're on a fixed income. So I spend a fair amount of time figuring out how to get a free trial or some other ways of getting stuff free before I ask somebody to purchase software.

By the same token we try to do purchases with return policies. Just makes life easier when possible.

So a little more about some of the goals. I mentioned briefly earlier that I would be talking about communication. If somebody does have -- you know, communication, obviously, we talk about --

Of course.

Pay no attention to the man behind the screen, right?

Should I keep talking?

Okay, sounds good. I might have stood there for quite a while more.

So, yeah, communication. Obviously if somebody is verbally having issues, it may be a situation where someone cannot speak at all. It may be a situation where somebody might be able to say some things but might not be able to get, like, a longer or more in-depth communication out.

Or may be a situation where somebody needs clarification on relatively advanced topics, but even on a face-to

So face-to-face communication is kind of its own thing, if there's a significant speech deficit.

With or without speech deficits, obviously being able to use the phone, texting has gotten much more integrated into our working environment, I think. Obviously doing Skype or FaceTime or audio or video calls over the Internet. Social networking has become a lot more important to some people's jobs, right? Some people, when I started in the field, we didn't have Facebook. Now there are whole jobs that are influence mediators.

Those are important and might be things I handle with assistive technology that people might have goals for.

Coming back to the communication devices and how those kind of integrate, they are essentially designed for that face-to-face communication, but they also will handle a lot of the phone, texting, etc., etc.

So if I connect my phone, I can text message through my communication device.

So if I'm not able to access my phone directly, maybe I'm using my communication device to do that.

I can email. In general, those devices are a lot more expensive and they're not necessarily suitable for everyone. Right?

In general I talked about funding a minute ago. Most of what I deal with is not funded through health insurance but communication devices are.

There's some hoops we have to go through. It's not dependent on employment. It's dependent on medical need. So we can usually get that done.

There are those options for computer access and environmental control, but I will say they are really designed best for face-to-face communication. The rest of the stuff, it's a little like a Swiss army knife. Technically speaking you can build a house with a Swiss army knife, right? You've got a saw, a screwdriver. You can use it as a hammer. Should anybody actually build a house with a Swiss army knife? Probably not, right?

So it does a lot of different things. Not necessarily very well. But it's an option, and that would be something that we'll use. In fact, it's a big issue with the adoption. I do have people who don't want to depend on a device for face-to-face communication. But they use them for texting. So be it. And that's great. And I think we should use it that way. Okay?

Computer access. Obviously being able to do email, Word processing, reviewing documents, generating documents versus reviewing documents are obviously distinct goals, and there are very different tools that might be used for that, right?

Internet access is pretty much a prerequisite for employment at this point, right?

Does somebody need to get into databases or spreadsheets?

The quickest way to watch me turn white is to have a patient come in and ask me, how do I get into Microsoft Access?

I have no idea how to use that program to start with. I'll find the tools that will let you do it, but I'm glad you know what to do in that program.

And there are options that will allow you to do that.

So a little about some of those tools. I'm going to kind of briefly go through different options and show some of them as we go. Keyboards for accessing a computer or a smartphone or what have you. Obviously the size can make a difference. There could be small keyboards, large keyboards, and so on. Just real briefly. Where did it go?

This is a big keys keyboard with a Keyguard on it. If somebody wants to tap away at it, we have them upstairs. Basically, obviously, as the name implies, it's a computer cue board with fake keys. For perspective, this is like a standard desktop keyboard that you probably all have at your desk or laptop versus a smaller keyboard.

So sometimes the size makes a big difference. The Keyguard is just the plastic overlay that fits over it. I have a lot of people with a tremor who they might not be able to kind of get to the keys if I had this off, they would be hitting all the keys with their whole hand. But they can get to where they want and then hit the individual key with one finger.

Keyguard can make a big difference for accuracy in that sense.

So Keyguards are often helpful.

Configuration gets overlooked a lot, but if I have a one-handed typist, sometimes there's a con fig which is in the software of your operating system, I think the Mac also, but puts closer used keys to one area versus the standard what we call the QWERTY layout.

A bunch of different options along those lines.

Quick questions on keyboards?

Anything anybody uses in particular?

That I didn't mention?

All right, let's talk about mouses. One of these years I will learn the plural of computer mouse, but I haven't figured that one out.

Touch screens are relatively ubiquitous. There are a variety of options for using your hands on a mouse, above and beyond kind of your standard desktop mouse or your track pads.

If I'm using it with an upper extremity, maybe I don't have good isolated finger control. There will be options like track balls and things like that that can be helpful for a lot of people. I can use my head. I can use my eyes to control all of those options.

Dwell clicking will make a difference to some people. Rather than physically clicking the mouse. I should explain. Rather than physically clicking the mouse, I bring the mouse cursor where I want to click and hover for a pre-determined length of time. Might be one second or half a second, a s10 g6-10(71 70 G[()]23(.)] TJETQq0.00 464.6 371 7Tm0 g0 G[()] TJETQ(s)1

I mentioned the infrared issue earlier. I worked in clients with sunny offices and the sunlight knocked out the infrared capabilities, so there's nice know if there's Bluetooth connection or gyroscopic option, so that makes a difference in that office environment, right?

XY differential. If I'm somebody that has a lot of difficulty moving my head up and down, but I've got pretty good right to left, some mouse programs will allow me to change the relative speed of the horizontal motion versus the vertical motion. To make it a little more accurate and easy for my patient to access the whole screen.

So those are options that we might think about or consider using.

Just a few examples what I just talked about. And I should say, again, I'm not Best Buy. But I did try to include some brand names of the products in here. So if you're good with Google, you probably can find someone who will sell it, but obviously you're welcome to contact us or talk to somebody in the assistive tech department here, and my email is in the presentation. But if you are specifically looking for a product, I tried to write the brand names in here with one exception, which I'll talk about, okay?

And, yeah, these are just a few of the different examples of some of the more modern options out there.

So electronic eye gaze. So I'm not going to be able to show this very effectively. It's just kind of really tough to do it to a large group of people. But if people want to come up and either try it or watch me do it a little more, we'll try it with my camera in a minute.

There are various eye gaze systems that are available. As the name implies, they track your eye movements. Wherever it is that you look, you can then kind of control and/or type.

They are relatively expensive. They're getting a lot cheaper. We used to be \$25,000+. At this point I can get a functional eye gaze camera for computer access for 8 or \$900. There's one that is about 150 which I'm using for training, as well as thinking about as a supplement for people.

So they are relatively expensive, but nonetheless it's getting better.

The new -- has anybody tried the new iPhone eye tracking?

I'm told it's there. I'm guessing it's not very good, but interested to see. A lot of this stuff is getting integrated a lot more just into the world, right?

Sometimes they're difficult to use for standard computer software. I will demonstrate that in a minute.

So I should add this augmentative alternative communication, that's what I was talking about related to speech deficits earlier, but this software is where I show eye gaze a little more effectively.

So let's give that a try. So, again, I want to make it clear I'm doing this under the influence -- so you can see it on the camera. Remember everything I said about ergonomics earlier, you would not do it the way I'm doing it right now. But basically, if I'm positioned in the right spot -- you can just stick it up on the table. Thank you very much.

If I'm positioned in the right spot...

Can you guys see the relatively large red dot that is swinging all the way around on whatever it is I'm looking at?

>> AUDIENCE MEMBER: Yes.

>> EDWARD HITCHCOCK: Great. It doesn't help that my device is vibrating. There we go.

So I'm obviously in a really awkward spot here, but I'm typing by staring at my letters. That's an example of the dwell software.

So I am typing at the O or I'm looking at the O. I just got the P. So I'm just going to back space. Oops, I don't want to clear everything.

I do want to be clear if I was better positioned, probably would help if I recalibrated to the environment that I'm in. It actually interestingly enough, I'll try it again, thank you for doing that. I will try it again.

It's reflecting.

So basically if somebody would like to see that a little more -- a little better demonstrated, happy to show it afterwards, b

listening to the radio, listening to an audio book, placing a phone call by voice, writing email by voice, because you're driving, so they wanted you to -- instead of a text message by voice and email by voice, that's --

Right, that's what people do.

But the smartphones, you're not looking at your phone, right? But they did the cognitive distraction interview and they found writing an email or text by voice is among the most distracting things you can do while on the road. You might think you're staring at the road, but you're really not. So it just kind of illustrates my point. There's a lot more cognition that goes into this than one might think.

So the speaker dependent speech recognition like Dragon allows me to use correction strategies, allows me to use the novel vocabulary and stuff like that.

Once this is up and running...

Click minimize.

Dragon, where is my glasses?

I usually carry three pairs of glasses, one for my ID, one for the top of my head and one for my nose and then I usually find them.

Click cancel.

Click minimize.

Press F5.

Press F5.

Press F5.

So I'm going to cheat for a moment. Open Word 2016.

Click blank document.

Set the font to 28.

Sorry, I was cheating there because PowerPoint is giving me problems. Period.

I don't normally give a lecture or I don't routinely use Dragon with PowerPoint while I'm giving a lecture, period.

Delete "I don't normally give a lecture or."

Go to end.

But this allows me to pretty much do anything I need to do on the computer as well as type using my voice, period.

I will say I haven't done a couple of things that I probably should do, like adjusting the sound settings to this environment. I'm using a microphone, which means I'm getting auditory feedback. I'm in a much more echo-y room, period. But it's going to make a couple mistakes in that end, period.

Period.

Feel free to point that out a little more firmly next time.

Correct echo-y.

Correct...

Spell that. E-C-H-O-E-Y.

Move left two.

Backspace.

Choose one.

Go to end.

So I just added the novel word to my vocabulary. Which does not really exist, but I wanted to use it.

Period.

And that's something I'm able to do with Dragon that I cannot do with the network dependent, speaker independent packages, period.

Open Google Chrome.

Click maximize.

Click Gmail.

Press C.

Kimberly.

Press Enter key.

Go to subject.

Scratch that.

Press Tab key.

Hide there.

Press tab key.

I don't think Eddie wants to go to soccer, period. I mean, tomorrow night, by the way, period.

Press control-enter.

Welcome to my sordid domestic life.

But I can use Dragon to do anything on the computer pretty much that I want to do and relatively productively. I was being a little more facetious with that email than I might normally be.

I would really sit down and think about getting Wednesday night into my thing if I wasn't in front of you all and running out of time.

But those are options that I might consider using.

Very powerful.

>> AUDIENCE MEMBER: I just wanted to understand where you can purchase a one-handed keyboard.

>> EDWARD HITCHCOCK: I would suggest that you -- so right off the top of my head I would say a tap keyboard, T-A-P. It's one we have upstairs. I will say that most of the one-handed -- that's commercially available right now, a BAT keyboard B-A-T, is also available. They're both what are called chording keyboards. You type your five fingers in a variety of patterns. I don't begin to have them memorized, so I'm not going to get this right, but, for example, if I tap... I want to say it's my middle three fingers down, I will have produced an H. E is, I think, my one index finger. The tap keyboard is an A-E-I-O-U for my individual fingers. And then an N is my -- these two fingers together. A T is these two fingers together, and so on. Both of them require some training, obviously. I do want to... you know, I don't sell any products. I do kind of urge that people seek an assistive technology referral. You can actually try them in our department upstairs if you go through the referral process or you're obviously welcome to identify a referral somewhere else if you so desire. Basically I would suggest people do that before you just purchase them online, which is about the only way you can do it.

>> AUDIENCE MEMBER: What floor are you on?

>> EDWARD HITCHCOCK: The 19th floor.

>> AUDIENCE MEMBER: Thank you.

>> EDWARD HITCHCOCK: You're welcome. Other questions or comments?

Please, Jessica...

>> AUDIENCE MEMBER: We do have employers in the room, and how does Shirley Ryan Tech help with employers in general?

>> EDWARD HITCHCOCK: Depending on what the funding is we will go out to an employment place and try to take a look at the environment there. More commonly we try to have people come to see us. Again, it kind of goes through the process of what I was just talking about. I need to know what the client wants to do for their job. Presumably they have vocational goals. And it was mentioned a few times, that kind of takes us into a higher level of needing to use this stuff to really make people efficient as possible.

But we can have them trial the equipment while they're with us. Do some to have basic training to at least get people to a functionally adequate point of view if not perfection, and then have them take it on some work tasks as much as possible. I would really suggest again the same thing of just going through the process of getting a referral, which just simply starts with a doctor's order. Then we can hash out having people

come in, evaluate what the options might be and then really have patients or clients trial the options in the environment that we're in. Then we go from there.

Thank you.

Question over there?

>> AUDIENCE MEMBER: With a doctor's order, would you be able to get coverage for a vocational --

>> EDWARD HITCHCOCK: Yeah, we get coverage from a few different places. We will take health insurance if they will cover it. Some health insurance covers vocational issues. Some do not. But there's a slightly different restriction in terms of kind of -- I hate to say "teach to the test," but we have to teach to the point of view of medical necessity versus vocational issues, depending on the insurance. But we do take medical insurance for really the vast -- for most of our clients. But we also will talk about setting up private pay arrangements with an employer or what have you.

Other questions or comments?

We do favor a team approach at Shirley Ryan, so if there are compliments and affirmation, I will take those. Complaints should be directed to Deb Crown. And, yeah, I think at this point I will -- thank you guys for coming. I think my email is in the PowerPoint, so if anybody has further follow-up or what have you, pl.64nk my h0th