Job Retention: Perspectives of Individuals with Blindness and Low Vision

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Abstract

BACKGROUND: People with blindness and low vision (BLV) encounter many obstacles in retaining employment. Recent legislation has refocused vocational rehabilitation (VR) efforts toward job retention and career advancement among persons with disabilities.

OBJECTIVE: We investigated the skills, including technology, and other issues that influenced job retention among persons with BLV to gain in-depth knowledge that is not typically available using survey methods or secondary data sources.

METHODS: Intensive interviews using a semi-structured protocol were conducted with 11 persons with BLV and an employment history. Interviews were transcribed, summarized by major themes, and approved by participants. A qualitative software program assisted in further coding, identifying additional themes, and organizing participants' information.

RESULTS: Participants recommended that others with BLV be proficient in assistive technology use, develop networks, and be persistent in achieving goals. Participants had positive and challenging experiences with technology, employers, and the VR service delivery system. Participants reported stress associated with their jobs and concern about their workplace efficiency.

CONCLUSIONS: Results suggest that job retention continues to be problematic for persons with BLV. Service delivery systems should explore policies and services that support job retention. Further research concerning job stress, assistive technology, and workplace efficiency is needed.

Keywords: blindness and low vision, job retention, employment, assistive technology

Job Retention: Perspectives of Individuals with Blindness and Low Vision

The state-federal vocational rehabilitation (VR) system serves people with disabilities preparing for and obtaining employment, as well as attempting to retain their jobs or advance in their careers (Workforce Innovation and Opportunity Act [WIOA] of 2014, 2016). Even with these services, people with blindness or low vision (BLV) continue to experience lower employment levels (McDonnall & Sui, 2019) and earn less (Erickson et al., 2020) than their peers without BLV. Some people with BLV do not continue working (McKnight et al., 2021), thus jeopardizing their current and future economic stability (Wu & Hyde, 2019). This study used intensive interviews to gain new insight into issues associated with job retention among persons with BLV and allows us to assess whether their experiences are consistent with previous research.

Job Retention and Vocational Rehabilitation

Persons new to BLV typically have an adjustment period, where they adapt to the physical, emotional, and vocational consequences of vision loss, and this adjustment may interfere with job retention. Some persons with BLV needed an adjustment period of approximately two years before being ready to work (Bruce & Baker, 2005). Many people with BLV who did not retain employment said that it was not their choice to stop working and that they would like to return to work (Crudden & Steverson, 2021). Return to, or continued engagement in employment may also depend on personal characteristics. People who retained employment after BLV described themselves as "outgoing, persistent, laid back, and having a positive attitude" (Crudden, 2002, p. 617).

Employed persons who experience BLV face various challenges associated with learning adaptive skills while retaining employment. For example, employed persons with BLV reported difficulty performing their jobs at the same efficiency level as before the onset of BLV (Crudden

& Steverson, 2021; Crudden, 2002). The problem with efficiency is likely associated with

learning to work with BLV, particularly accessing print. Print access has been identified as a

barrier to employment for persons with BLV (Crudden et al., 1998, 2005; Rumrill et al., 1997).

Some studies found braille skills helpful for employment (Bell & Mino, 2013; Bell & Silverman,

2018) but becoming proficient in braille is more challenging for persons who experience BLV

later in life.

Obtaining and using technology to access print is an important facilitator of employment

and job retention (Coffey et al., 2014; Crudden, 2002; Gerber, 2003; Sikka & Stephens, 1997),

but persons with BLV must have the computer skills necessary to use print access technology.

Computer skills and ongoing technical and skills acquisition throughout one's career are critical

to employment and job retention among persons with disabilities (Hope & Rice, 1995). VR

applicants with BLV who retained employment typically received rehabilitation technology

services (Crudden et al., 2018). Persons with BLV identified assistive technology as the most

helpful VR service received, though many requested additional training in assistive technology

(Crudden & Steverson, 2021).

Although technology allows persons with BLV more opportunities to access print,

technology presents challenges in the workplace. For example, persons with BLV may need to

modify inaccessible computer programs or find strategies to make mainstream technology

compatible with access technology (Makkawy & Long, 2021). Persons with BLV should be

knowledgeable about assistive technology solutions or have resources available when problems

arise because many information technology professionals lack knowledge about assistive

technology (Gerber, 2003; Makkawy & Long, 2021). When persons with BLV do not receive

print documents in an accessible format and must convert it themselves, it takes time away from

their regular job duties. The time spent away from their normal job duties reduces their

workplace efficiency and causes workplace stress (Crudden, 2002). Colleagues of employees

with BLV should ensure document accessibility to facilitate efficiency and collaboration

(Wahidin et al., 2018).

Employer attitudes toward persons with BLV have been repeatedly identified as an

employment barrier (Coffey et al., 2014; Crudden et al., 1998; McDonnall et al., 2013), and

those attitudes may influence job retention. Lack of knowledge about accommodations (Dong et

al., 2017) and disabilities (McDonnall et al., 2014) can influence employer attitudes and cause

employers to be less willing to grant accommodation requests (Dong et al., 2017) to employees

with BLV. Among ten people who retained employment after BLV, only two continued with the

same employer, and although most study participants experienced negative interactions with

coworkers that caused them stress, supervisors were more supportive (Crudden, 2002).

Many people find employment through social networking, and persons with BLV have

identified networking as an effective employment facilitator (Coffey et al., 2014; Crudden et al.,

1998). VR professionals should recognize that people with disabilities need support to expand

their typically smaller social networks to facilitate employment (Potts, 2005). Employed people

with BLV, particularly those in good health, were more likely to have stronger support networks

than those not employed (Brucker et al., 2017). Support from friends, family members, and

professionals was a significant predictor of continued employment among people who

experienced BLV (McKnight et al., 2021). In another study, participants identified receiving

support from family and friends as helpful to job retention, but participants also reported having

a strong work ethic and being highly motivated, sometimes for financial reasons (Crudden,

2002).

VR providers have assisted people with chronic health conditions (Allaire et al., 2005; Hammond et al., 2017) and people with BLV in job retention (Crudden et al., 2018). Most employed VR applicants with BLV retain their jobs (Crudden et al., 2018). Persons with BLV recognized the value of VR services to assist them in getting an education, training, or using equipment, but when VR counselors were perceived as being overworked or less well-trained, service recipients tended to believe VR was less effective in addressing more challenging issues (Crudden et al., 1998).

Purpose and Research Questions

Given the renewed attention to job retention of persons with disabilities associated with WIOA (2016), we sought to gain in-depth knowledge about the lived experience of how persons with BLV cope with the many complicated issues related to job retention. As a part of this investigation, we focused on two research questions: (a) What skills, including technology, are generalizable across employment situations that facilitate job retention? and (b) What issues are associated with job retention when people experience vision loss?

Method

Participants

A national job retention and advancement survey of persons with BLV (see Crudden & Steverson, 2021 for more information) included an option to participate in a follow-up study. Of 388 useable surveys, 272 respondents were willing to participate in follow-up interviews. Participant groups were constructed that considered time of vision loss (before or after employment) and job retention status (retained with the same employer, a different employer, or did not retain). At least one respondent was selected from each group, and more participants were invited from larger groups. Participants were limited to persons at least legally blind who

did not work for a VR agency. Researchers attempted to recruit a diverse pool in terms of gender

and race and to include at least one person employed with a National Industries for the Blind

(NIB) program. NIB and its network of affiliated programs employ people with BLV in

manufacturing and service activities with the federal government and some commercial

businesses (NIB, 2021). This purposive sampling method yielded participants with knowledge

and experience about attempting to retain employment with BLV.

Attempts to contact eight survey respondents yielded no response, two declined

participation, one ended communication in the informed consent process, one was deceased, and

one had no current contact information due to job loss. Thus, attempts to include 13 people were

unsuccessful. When attempts to gain participation failed, we selected another person from the

same group. Table 1 displays the groups and the number of participants from each group. Three

participants experienced a change in employment status between the survey and participation in

the interviews. Two participants moved from full to part-time employment, one by their choice;

an unemployed participant accepted a job and chose part-time status. The final sample included

11 participants ages 30 to 64 years ($M = 42.82$, $SD = 11.54$). Of the 11 participants, seven were

female, and six were White, three were Black, and one Asian. See Tables 2 and 3 for participant

profiles and additional demographic information, respectively.

Protocol Development

Researchers developed an 8-item protocol based on the survey responses and a review of

the literature. Members of the National Research and Training Center national advisory board,

most with BLV, reviewed the protocol and gave feedback. Our purpose was to understand the

participants' careers and their VR and technology experiences associated with job retention. The

interview protocol is in Table 4.

Procedure

Researchers contacted participants via email with information about the study, including an informed consent statement. Interested participants responded, provided consent, and scheduled interviews. The first author conducted audio interviews in the summer and fall of 2020 via telephone or videoconferencing software (i.e., Zoom, Microsoft Teams, or WebEx). Interviews were recorded and transcribed verbatim for analysis. Interview participants received a $50 gift card. The Mississippi State University Institutional Review Board for the Protection of Human Subjects approved this study.

Data Analysis

An iterative approach was used to develop summaries from transcribed interviews. Researchers initially reviewed transcripts while listening to recorded interviews to confirm accuracy. The authors reviewed all transcripts multiple times and prepared a summary template based on interview topics. Participants' comments were categorized and summarized by topic, and researchers revised the template as summaries developed. Researchers repeatedly compared each summary to the corresponding transcript, identified illustrative quotes, assigned each participant a pseudonym, and generated follow-up queries for participants. To promote accuracy and to protect the identity of the participants, each participant reviewed their summary. Participants suggested edits for accuracy or to further ensure their confidentiality and provided additional details at their discretion. Researchers edited and returned the summaries to the participants until all issues were resolved and each participant approved their final summary. Follow-up requests were made electronically or by phone, and participants responded by phone or email. The iterative review process with participant involvement promoted transparency in the research process, ensured that participants were actively involved in how their experiences were

perceived, and promoted clarity in accurately understanding details of the participants'
experiences.

Researchers imported participant-approved summaries into Quirkos, a qualitative
software program, for further analysis. Codes were categorized using expanded themes from the
summary template. Additional themes were added as patterns emerged from the iterative review.
As themes developed, researchers used the software package to cross-check codes and their
relation to the research questions. Researchers also utilized Quirkos to determine counts for
demographic data and the number of participants for each theme. Researchers selected
illustrative quotes associated with the themes.

Results

Our research questions focused on identifying generalizable skills and other issues
influencing job retention among persons with BLV. We begin with a summary of the
participants' employment status and advancement potential. Results are organized under two
broad areas, generalizable skills and issues associated with retention. When discussing job
retention, participants made numerous comments about efforts to become employed. Participants
appeared to link the challenges of obtaining and retaining employment. Generalizable skills
included technology proficiency, networking, and persistence. When identifying other issues
influencing job retention, we asked participants about demographics and their experiences with
the VR system. Participants initiated conversations about interactions with employers and
concerns regarding workplace efficiency. Themes and their definitions are in Table 5.

Frank and Tasha work in NIB programs; Tasha telecommutes part-time, and Frank
works full-time. Two participants work full-time for government agencies, Diane for state and
Iris for federal governments. Beth is a self-employed attorney. Three other participants work

part-time, Greg and Emma by choice. The three participants unable to retain

employment reported negative experiences attempting to return to work. Hal is working with VR

to find a full-time job. Anne is independently seeking part-time employment, and Casey hopes to

obtain further education but is not currently pursuing it.

One of our prompts for employed participants concerned their potential to advance in

their jobs. Greg and Iris anticipate retiring without advancing from their current positions. Both

received regular raises, but Greg had no upward mobility path, and Iris applied for but was not

promoted to a supervisory position. Although self-employed, Beth would like to be employed

full-time with an agency but needs updated technology and training in technology use. Tasha,

employed part-time, was concerned she may lose her time-limited position. Frank was

attempting to secure additional technical training to advance to another position. Emma,

employed part-time, assumed more skilled duties but received no commensurate salary

adjustment; she has not approached the salary she had before BLV. Tran, employed part-time

during the COVID sequestration, was optimistic that he would return to full-time work.

However, Tran needs more education and training to advance beyond that position. Diane moved

from part-time to full-time work and an appointment with a state agency where her employment

is more secure; however, ongoing accessibility issues make her job so stressful she has

considered looking for another job. Diane advanced by changing employers, each time to a better

position.

Generalizable Skills

All participants shared information about technology use and the skills they believe other

people with BLV should have to succeed at work. Two additional themes emerged as

generalizable skills from the data: networking and persistence.

Technology

Nine participants identified "a solid foundation in basic computer skills" as necessary to get or retain employment. Some participants mentioned specific programs, like spreadsheets, email, or web-conferencing, and others specific brands. Three mentioned using a smartphone as a valuable skill.

In addition to general technology skills, participants said assistive technology skills are necessary for employment or retention. Several noted that having updated screen readers, or any technology, is "a challenge" but necessary, as well as "be[ing] able to learn new skills quickly." Example comments included this from Diane: "Even if you know how to use talking software like JAWS, it's still an ongoing learning curve because you're always having to learn how to navigate different things and accommodate technology updates." Tran believes everyone "need[s] to know a combination of multiple screen readers because screen readers have their idiosyncrasies. They work with some webpages better than others, with some products better than others." He related:

> I think that's where it becomes more challenging…if you're good at
> remembering keyboard commands, then you can be very efficient at
> navigating products like Teams. If you have a difficult time memorizing a
> lot of keyboard commands, it does get to be really challenging to navigate
> the interface.

Participants discussed the importance of print access, whether using braille, magnification, or audio. Nine mentioned the importance of a screen reader or magnification to access a computer. Emma recommended "audio rather than magnification because audio allows faster work, which is essential in a work environment." Two participants recommended that

everyone have at least basic braille skills. Two participants recommended a refreshable braille

display and one a braille notetaking device.

While recognizing the benefits of technology, participants also discussed problems

associated with its use. Four participants said ongoing technology changes threaten their job

retention, with Greg expecting technology updates to cause him to retire early. As Diane put it, "I

definitely feel…this technology barrier…It's very hit or miss on whether things are going to be

accessible or not to speech." Diane, who changed jobs several times, further explained:

I try to always apply for jobs where it looks like things are going to be

accessible so that I don't give myself this extra stress of trying to figure

all these things out daily. But in reality, any job a person does, things

change over time. And so, you may have to use like five different software

programs that work with speech. And if you've learned how to do different

keystrokes, and different updates come, and it's still doable. But then a

new system for something could come in at any job, at any time. So, it's a

challenge.

Five participants identified inaccessible websites as a barrier, and two additional

participants discussed general issues with inaccessible technology. For example, Iris explained

that inaccessible technology prevented her from working remotely during a global pandemic, "I

was out for three and a half months during COVID because…the electronic record was not

accessible…And the organization just dealt with it because there wasn't a better solution."

Networking

All participants attributed their ability to obtain, retain, or advance in employment to their

support systems, including friends, family, organized groups, and the VR system. Participants

discussed how the lack of support systems can hinder employment. Four participants mentioned

friends, and two talked about their association with the National Federation of the Blind (NFB).

Tran reported that networking helped him get his first job, and continued networking helped him

advance to a better job. Tran's NFB mentor taught him "the importance of networking and

listening to people regardless of who they are or who you think they might be." Tran explained:

> He taught me that as a young person, much of what I know could be
>
> wrong and that the only failure I would experience in life would be
>
> dependent on whether I allowed myself to grow and hold myself
>
> accountable for learned mistakes.

Participants mentioned how networking helped them navigate the VR system to get needed

employment tools. Casey stated:

> I had a few friends who had been through rehab recently ahead of me…If
>
> you don't ask for something, they [VR] don't suggest things to you that
>
> might be helpful…I had a few friends that knew…if you ask for this kind
>
> of recorder or…that these things would actually help you, and that you'd
>
> rather go more toward the speech software than trying to scramble any
>
> little bit of usable vision and getting a magnifier, a CCTV… just things
>
> like that...If you don't ask, [VR] does not say, 'Are you sure you don't need
>
> this?'

> Four participants mentioned "the importance of networking" to find employment

opportunities; three also mentioned the professional and emotional support gained from their

networks. Five participants said networking created opportunities to speak with other individuals

with BLV to understand various career options. Example comments included Greg stating,

"Research your desired job as much as possible and speak with people who are blind who work in those jobs." Iris stated, "Talking to others who are blind and in the field is also helpful." Several participants also recommended that people with BLV develop their networks early, even as children, to learn from and encourage each other. As Beth noted, "There wasn't any opportunity to learn what others were doing, learn what others had done, or who had succeeded where."

Persistence

Six participants recommended that people with BLV "be persistent" in looking for and retaining employment. Tasha stated, "Keep believing and apply for as many things as you possibly can because you never know." Other comments included:

> You might temporarily quit…but keep going. Because I can tell you…
> I've known so many people with vision disabilities…They try to do
> jobs…but different things happen…Then, they don't even seek work
> anymore, and they receive Social Security, or maybe they receive Social
> Security and just get a part-time job…I would think they won't always feel
> the best about themselves because then they're not using their skills and
> their gifts…I would just say having goals and being a planner, and just
> trying not to quit. Try to just keep going and build on your progress…
> Diane

> If you give yourself the space and patience to find those solutions, it will
> be totally worth it in the end. And you deserve and have the right to pursue
> your interest in something. And honestly, at the end of the day…having
> gone through the problem-solving process that you're going through, and it

sucks… it's going to be miserable…in the moment, but it's going to be so

worth it. Beth

Three participants advised others to "push themselves out of their comfort zones" and

noted there are "different ways of arriving at the same type of fulfilling career." A couple of

participants mentioned that a part of being persistent and pushing yourself is self-advocacy.

Issues associated with job retention

Our second research question sought to identify issues other than skills that influenced

job retention among people with BLV. As a part of this investigation, we included queries about

VR and personal characteristics, and the first two themes address these issues. Themes about

employers and efficiency concerns emerged from analyzing narrative comments.

VR system

Although participation in VR services was not an eligibility requirement, all participants

had experience with VR and expressed awareness that VR services positively influenced their

employment. Four identified center-based training, and four identified financial assistance with

higher education as helpful. Participants discussed receiving computers and assistive technology

and blindness skills training. Two participants mentioned receiving help completing online job

applications. Two participants were appreciative of job coaches. Beth related the following about

a VR summer work program: "I socialized. I worked on becoming a mature young adult. I

learned about…respecting authority and being responsible and having obligations and

responsibility…I'm sure that improved my confidence in my ability to be a good worker." Casey

explained:

Going there [the rehabilitation center] and starting mobility [training],

being able to ride buses, not being dependent on everyone…that really

freed me up and started me…I came back to the computer classes, the

daily living skills classes. I even thought, why would I ever use

braille…and now I do use it, and it's been very helpful.

Two participants were hired by the rehabilitation centers where they received training. Emma, who initially intended to be a homemaker, stated, "Going through the program just restores that hope. And that's…happened to me." She was pleased to have the opportunity to work in a teaching capacity. However, Emma also related:

The [change in] income obviously took its toll. It's quite different from

what I used to make—and then having to adapt to that. So, give me that

opportunity. I would definitely move forward, even at my age…because I

still have a lot of work in me. I still have a lot of attributes and training

and definitely would grow in…upper management.

Casey was less satisfied with her employment, explaining that she felt pressured to take the job. She stated:

I know, at first, I was a lot more shy and did not have as much confidence.

You know, like I said, I just kind of didn't really feel I had a choice, or

speaking up, or to take that job when she offered it instead of saying,

'Hey, wouldn't it be better if I went and did my education first?' You

know? So, that has developed a little more over the years.

Three participants believed VR was not equipped to provide the support needed to gain, retain, or advance their employment. Beth explained that no one discussed potential difficulties taking required professional examinations or negotiating salary offers. Tasha gave up pursuing a teaching credential after receiving no assistance arranging a testing accommodation. Tasha

expressed dissatisfaction with the lack of VR assistance she received after earning her degree,

stating, "I find [it] ironic that they [VR] pay for us to go to school and get degrees or trade, but

yet, they don't really have much partnerships within the community or throughout the state." Iris

related that the VR counselor referred her to a NIB program stating, "I interviewed, and they

offered me the job that I turned down, and they [VR] were so mad at me…You [VR] paid for my

master's degree. Wouldn't it make sense that I do something related to that?"

Frank stated the counselors "get discouraged and stop" trying to help, so he took a job in

a NIB program. Tasha was advised to work in a NIB program or a call center. She reported

frustrations with the VR system while acknowledging the constraints of counselors' jobs:

> They're swamped. I'm not their only client…They're juggling 40, 50
>
> different people, which is fine, but I feel like they get so caught up in
>
> probably what their bosses are probably telling them with budgets and this
>
> and that. That yes, we do fall behind the wayside.

Only Casey reported that her counselor discouraged employment. She related:

> I told the [VR] counselor that I thought I would like to go to school to be a
>
> massage therapist. And she told me, 'Why would you want to do that?
>
> You know it's hard, and you would make more money on SSI.'
>
> So…that…was…discouraging when I still had the impetus…that I was
>
> excited about the thought that I could work.

Five participants discussed concerns with the timeliness of VR services, with three noting

that program participants must be persistent with the counselor. Anne reported an eight-year gap

between when she applied for VR services and when she learned about the possibility of center-

based rehabilitation training from her friends. When she asked her counselor why it was not

offered to her, she was told that because it was in another city and she had children, the

counselor did not believe it was feasible. Casey, seeing a VR counselor for years, learned about

center-based training in her community from another paratransit traveler. Tran described

working with VR as a "hit or miss kind of thing" and stated he would need to be:

> ...a lot more vocal if I…want any assistance. I've been very fortunate that
>
> my job did return part-time. So, I am able to support my family, and we
>
> have health insurance, which was the primary reason why I took it even
>
> though [the job] is only part-time. So…, if…I want any kind of assistance
>
> from VR at this point, I will have to be more vocal in advocating for my
>
> needs.

Seven participants expressed a need for additional education, with four of those wanting

assistance getting an undergraduate degree. Five participants want more training in assistive

technology use, and four need updated assistive technology.

Personal Factors

Participants identified some of the personal characteristics that helped them retain

employment. Three mentioned personal persistence. Anne stated, "I had all of that anxiety, my

good days, my bad days. But at the end of the day, I knew that…if I wanted to live for my

kids…I had to keep pushing…" Beth had a similar comment, stating she had the desire to "push"

herself, and Hal said he enjoyed a challenge.

Three participants discussed their ability to learn, describing themselves as "faster

learners," "willing to learn new things," and able to "learn independently." Beth and Iris said

they were detail-oriented. Tran and Emma mentioned they were good communicators, and Greg

mentioned he was good with people. Emma and Tran said they were self-advocates, and Casey

and Tasha said they had good memories. Other positive qualities included being open-minded,

flexible, and having good record-keeping or time management skills.

Ten participants reported experiencing stress associated with employment. Greg was

concerned his part-time status made him a target for being laid off. Learning assistive technology

skills while working was challenging for four participants, with Emma reporting that she had to

take personal leave to participate in rehabilitation training. Iris also explained, "…it didn't feel

like I could leave my job because it would not be there when I came back, and I knew that. And

people told me that." Five participants said that keeping current with technology was stressful,

particularly with the additional complications associated with assistive technology. Iris and Tran

said their jobs, in general, were very stressful.

Participants were not asked if they regarded themselves as financially self-sufficient;

however, two part-time (Tran and Emma) and two full-time (Beth and Frank) employees

indicated that finances were a concern; eight mentioned finances directly or indirectly. Paying

for technology (hardware and/or software) was a stressor for four participants. Frank stated

that he would continue his job at NIB for financial reasons while looking for a job more

compatible with his long-term goals. Tran will continue with part-time employment while

looking for something full-time. Emma changed jobs after experiencing vision loss and has a

drastically reduced income. Hal was eager to get a job for financial reasons.

Employers

Ten participants discussed employers' unwillingness to make or unawareness about

job accommodations or experiencing employers' discrimination. Only Casey reported

struggling with when to disclose her BLV to employers. A placement agency refused to work

with Hal due to his BLV. Anne related that a potential employer refused to interview her due to

anticipated technical problems using a screen reader on the job. Comments concerning

employers' and employees' lack of knowledge about workplace accommodations included:

When it got to the point to where my vision wasn't really doing well

enough to continue to do my job, you know, I reached out…But they're

not aware of what type of accommodations somebody with vision

loss…had or what tools I needed to retain my job. It was my job to find

that out. I didn't know which way to turn. I didn't know. I was like, I have

no idea… So, we were both bumping our heads until I just got frustrated.

I'm like, you know what? I can't continue my job because I can't

see. Emma

There's a lot of assumptions…made sometimes that everyone with a

disability needs the same software. Like there's one software…whatever

your disability is. So, some people, I don't think, either know, or they don't

think it through, to think that there may be hundreds of different software

programs and equipment for people to use. Diane

Other examples of comments regarding employers included:

I really think a lot of them, I was one of the top couple people. But I really

think they were in doubt whether their systems would work with speech,

or they thought it would be too much of a challenge to figure that all out

because a lot of offices are relying on paperwork so much, too. Diane

I began applying for jobs that I thought I qualified for, but they didn't

exactly say…that they weren't going to hire me because I was blind.

But…during the interviews that I was going to - and I know [in] one of the

interviews I did tell them that I was blind - you can hear in their voice

that…because of my visual impairment and me being blind…I was not

going to get the job. Anne

Iris had low vision when hired, but after additional vision loss, there was the expectation

she would be unable to continue to perform her job duties and would retire. She persisted and

retained her job. However, Anne did not keep her job, stating, "They would give me…easy tasks

to do around the daycare, maybe clean up, or sit with the child, or give someone a break, and

stuff like that. But they had no knowledge either of…other programs."

Diane's supervisor would not allow co-workers to read documents or provide

other assistance. For Casey, after eight years of employment, a new supervisor reduced

her hours, instructed her to rely on untrained volunteers or busy colleagues for assistance,

and generally "was trying to push me out." Casey stated, "I wasn't making that much, and

he [my spouse] could see I was miserable all the time. Just dealing with those constantly.

So that was the reason I left the job."

Diane had trouble getting assistive technology in a timely manner and found her

supervisor unsupportive. She reported:

This was the first time in my life where I got treated badly enough that I

was ready to quit, but I didn't. I filed a complaint. I've never had

somebody treat me like that in a job. And I've had…nine jobs, counting

this one…You never know what you're going to experience.

Emma, who reported that after losing more vision, she had difficulty observing

nonverbal behaviors, reading labels for inventory, managing money, and training new

employees, related the following:

I was in the same position at [the telecommunications company] for over

ten years. And I applied and applied and applied, and I could never get up

above where I was…I grew a lot. Trust me, after 28 years, you know, I

came from the ground floor. But then…I hit a wall, and there was no more

advancement. Advancement opportunities? Absolutely, a lot of them. And

I was never chosen. And that was huge for me. And, you know, hindsight,

thinking back…I believe it was my vision. And since they couldn't, didn't

even know how to accommodate me, I would be more of a problem, I

think, for them.

Workplace efficiency

Six participants expressed concerns about their lack of efficiency in completing job tasks

and meeting productivity expectations, which influenced their job retention and, potentially, their

career advancement. Four participants had difficulties completing job tasks when losing vision;

three left their jobs. Beth explained that she spent so much time accessing print materials in

graduate school that her grades were lower, thus negatively impacting her eligibility for a

research assistantship, and subsequently, her internships and employment. Lack of job

accommodations, particularly updated assistive technology that matched the job demands, was

frequently mentioned as an obstacle to efficiency.

Four participants reported that technology changes caused work delays and reduced

productivity. Iris said a lack of accessible training materials necessitated the use of weekends or

evenings to stay current with sighted peers. Participants were also frequently required to convert

print documents to an accessible format, thus decreasing their efficiency. Iris reported problems

opening attachments and was told, "Well, we'll just come and open you an attachment every

time you need to open." A solution was found, but it took her seven steps rather than one. Beth explained, "I feel like my efficiency has been challenged many, many times just because I'm the one…finding the workaround. I'm the one spending more time doing something that…could have been easier maybe but wasn't." Tran related, "As a person with a disability, it almost seems like we have to work 50 to 100% harder…or smarter in order to access the tools and services that we need."

Diane explained that she had trouble moving from magnification to speech access, and experienced supervisors who believed she did not have the skills rather than understanding the problem was the equipment. She stated:

> As soon as I lost the vision…completely, I needed speech. And I had more
>
> surgeries. So now, I don't see light or anything…I was real successful at
>
> being able to accomplish things. And then as soon as I needed
>
> speech…that's when it really had more of an impact on being able to apply
>
> for jobs and get jobs…I'd say at that point that I lost my vision, it really
>
> became a barrier to having to use speech for any computer work.

Discussion

Participants discussed the skills and other issues influencing their efforts to retain employment. Themes associated with job retention included using technology and concerns about its use, using networks, being persistent in achieving goals, working with employers, experiencing stress, navigating the VR system, and being efficient at work. It appears that the participants satisfied with their jobs stayed with the same employers and advanced in their careers, though perhaps they did not have the same opportunities as someone without BLV.

Participants' comments indicate that many of the skills and issues associated with job retention also influenced their experiences preparing for and obtaining employment.

Results support previous research identifying technology as an essential factor in obtaining or retaining employment (Crudden, 2002; Gerber, 2003; Hope & Rice, 1995; Sikka & Stephens, 1997). Using technology to access print via magnification, braille, or an audio program is the first step in technical literacy. Participants must have the skills to manage and share information using various programs associated with the tasks, such as email, spreadsheets, a calendar, or a smartphone. A few participants mentioned using web-conferencing programs, a skill that will likely increase in demand given events associated with the rise in remote work. Participants' interest in pursuing additional training in technology skills may be related to their recognition that to be efficient at the job, they must be proficient in technical tasks. These comments support the critical role of access to technology training for persons with BLV before and during employment (Gerber, 2003; Hope & Rice, 1995). Makkawy & Long (2021) found similar results when interviewing participants specific to virtual workplace experiences. VR providers should consider evaluating assistive technology training programs to ensure participants learn the skills needed to be competitive in today's work environment. VR programs may consider offering additional training to employed persons with BLV to increase knowledge about updated and emerging technology and learn new skills to meet evolving job demands.

The participants were united in the importance of technology at work, and many discussed concerns about workplace efficiency. However, no participants discussed typing or keyboarding as an essential work-related skill. The participants appear adequate or proficient typists, with nine estimating their typing speed as at least 45 words per minute. As technology

use increases, keyboarding skills are increasingly important. Being a skilled keyboard user may

assist persons with BLV in using technology in the workplace.

Braille skills were also not discussed in detail, though all but one participant had some

braille skills, and that participant could use magnification. Eight participants preferred audio,

which requires technology use. Participants proficient in braille seemed to find it beneficial in

the workplace. Two participants who learned braille later in life found it helpful, though it

appeared for personal rather than work use. These comments indicate that it may be advisable to

discuss the benefits of using braille with persons who were not exposed to it earlier in life.

Although participants recognized the benefits of technology in accessing job tasks, they

frequently experienced job-related stress associated with technology. It often took them more

time to access information readily available to co-workers using print, thus reducing their

workplace efficiency. Also, technology caused them stress dealing with employers, who

differed in how they responded to accommodation requests. Participants were reluctant to rely on

co-workers or volunteers to access documents, preferring independent electronic access or an

employee designated to assist with accommodations. Ongoing updates in mainstream software

programs, combined with the subsequent impact of how those programs work with assistive

technology, were additional stressors. Gerber's study (2003) included similar frustrations. VR

programs could partially address these stressors with ongoing technical training and services

pre- and post-employment. VR providers should examine their policies to determine the

feasibility of providing updated technology to employees with BLV when employers do not

provide it. Further research examining how repeated requests to supervisors for assistance with

technology, accessing documents, obtaining updates, and other accommodations influence the

employer-employee relationship appears needed. Because workplace stress and issues associated

with time devoted to print access seem to be ongoing concerns for persons with BLV (Crudden, 2002; Wahidin et al., 2018), additional research about addressing this issue would be helpful.

Participants expressed that mentoring or peer support helped them obtain, retain, and advance in their jobs and recommended that others develop peer support networks. In addition to the emotional support, peers appeared helpful in sharing resources and job accommodation strategies. VR providers can be beneficial to people with BLV in finding and accessing national and local groups and online resources for support. VR providers should also be mindful that their support can be influential in assisting persons with BLV in their efforts to continue employment (McKnight et al., 2021).

Participants recognized the value of their personal characteristics, especially persistence, in retaining employment and advised others with BLV to be persistent. This theme is consistent with previous research (Crudden, 2002) that identified persistence as a characteristic of persons with BLV trying to stay employed. Some participants believed their determination to meet challenges and learn new things contributed to their ability to retain or advance in their jobs. Potentially, developing networks will encourage persons with BLV to be persistent in their efforts to gain, retain, and advance in employment.

Participants valued the services VR provided, with several discussing their appreciation for support getting higher education, skills training, and technology. However, there seemed to be a general sentiment that program participants must be knowledgeable about and request specific services rather than the VR provider educating the participants about and offering services. For example, some participants discussed how they benefited from center-based training. Yet, two participants learned about such services from other parties and received center-

based training only after requesting it. VR program participants must receive the information

needed to make informed choices about services.

Another frustration with VR services could broadly be characterized as insufficient

career counseling and guidance. VR funded college education for eight participants, including

graduate education for three of the four who completed graduate programs. One person with a

graduate degree worked as a receptionist, another with a graduate degree did packaging at a NIB

program. The remaining two graduate degree holders worked in professions commensurate with

their education, but one experienced negative feedback from VR when she turned down a job

at a NIB program. Two participants felt VR providers pressured them to accept jobs when they

wanted to pursue additional education; both were dissatisfied with their incomes, believing they

could earn more with higher education. These examples highlight the importance of working

with individuals to identify careers that match their abilities and interests and allow them to

become financially secure.

WIOA (2016) has refocused attention on job retention, career advancement, and the

ability to be economically self-sufficient. Some of these participants are current VR program

participants, but others have not been involved with VR for several years. Consequently, these

participants have likely not yet experienced the impact that WIOA legislation may have on VR

service delivery. VR agencies may still be evaluating their policies to determine if changes are

needed to fully realize WIOA requirements (Crudden & Steverson, 2018). Another issue

associated with the timing of our investigation concerns the COVID-19 pandemic. Several

employed participants noted how the pandemic influenced their current jobs. Others explained

how the pandemic hindered their efforts to return to work or advance in employment.

Limitations associated with this research include using a small, purposive sample and the possibility that the researchers failed to identify key themes from the data. Our research questions guided our interview protocol, and participants had the opportunity to raise other topics they regarded as important. However, we may have missed learning about issues that influenced their job retention and career path because we did not directly inquire about them. Results are not intended to be generalized to a larger population. This analysis supplements other data sources as it gives persons with BLV a voice to explain their individual experiences.

Each of our participants has a unique story concerning how technology, the VR system, and their personal characteristics influenced their ability to retain employment. We found common themes concerning how technology and VR assisted and challenged participants' job retention efforts despite participants' differences. Participants described the stressors associated with job retention but benefited from persistence and support networks and recommended assistive technology proficiency to others. Readers are urged to evaluate how these results may lead to a greater understanding of how people with BLV address the various challenges associated with job retention.

necessarily represent the policy of the Department of Health and Human Services and should not

indicate endorsement by the Federal Government.

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Table 1

Number of Participants Interviewed from Employment Groups

Employment and Vision Loss Onset Group	Available Participants	Participants Interviewed
1. Vision loss before employment, working, one employer	24	1
2. Vision loss before employment, working, changed employer	127	4
3. Vision loss before employment, not working	51	3
4. Vision loss after employment, working, one employer	17	1
5. Vision loss after employment, working, changed employer	22	1
6. Vision loss after employment, not working	25	1

Table 2

Participant Profiles

Participant	Employment/ Vision Loss Onset Group	Current/ Most Recent Job Title	Vision Loss Before/After Employment	Self-Reported Level of Vision	Age Group	Education
			Employed			
Beth	1	Attorney[c]	Before	Legally blind[d]	30s	Graduate degree
Diane	2	Administrative	Before	Totally blind	40s	Bachelor's degree
Emma	5	Independent living instructor[b]	After	Legally blind[d]	Over 50	Some college, no degree
Frank	2	Assembly[a]	Before	Totally blind	40s	Graduate degree
Greg	2	Receptionist[b]	Before	Totally blind	Over 50	Graduate degree
Iris	4	Social worker	Before	Totally blind	Over 50	Graduate degree
Tasha	3	Customer service representative[ab]	Before	Legally blind[e]	30s	Bachelor's degree
Tran	2	Product manager[b]	Before	Totally blind	30s	Some college, no degree
			Unemployed			
Anne	6	Call center	After	Legally blind[e]	30s	Some college, no degree
Casey	3	Public relations/Activities director	Before	Legally blind[e]	40s	Associate's degree
Hal	3	Clerical/Administrative support	Before	Severe visual impairment	30s	Bachelor's degree

[a]Employed at NIB program, [b]Employed part-time, [c]Self-employed, [d]Some functional vision, [e]Minimal functional vision

Table 3

Participant Demographics

Variable	n
Secondary Disability – Yes	2
VR Paid for Higher Education – Yes	8
US Region	
Northeast	5
South	3
West	2
Midwest	1
Preferred Reading Method	
Audio	8
Braille	3
Braille Skills	
None	1
Minimal	4
Moderate	1
Proficient	5
Typing Speed	
25 words per minute	1
45 words per minute	3
60+ words per minute	6
Mentor – Yes	4
Organization[a] Membership	
American Council of the Blind	4
National Federation of the Blind	5
None	3

Note. $N = 11$.

[a]One person belonged to both the ACB and NFB.

Table 4

Interview Protocol

All:
Please describe your career path and give your opinion about how the fact that you have a visual disability shaped it.
Potential prompts:
Are there opportunities for you to advance in your job?
Do you anticipate your employment would ever be at risk?
There is now a movement for VR to not just help people get employed, but to help them keep their jobs, move up in their jobs, and have well-paying jobs that allow people to take care of themselves. What does that movement mean for you?
How did your personal qualities influence your employment path and decisions?
Potential prompt:
What recommendations do you have to others in similar circumstances?
What else would you like to tell me about your employment experiences or your thoughts about the VR system?

Employed Only:
What base-level technology do you believe that all persons with vision loss should be able to use at work?
Potential prompts:
How did you learn about and to use assistive technology?
How do you stay updated about technology?
Has technology that is not accessible to you played a role in your career path?
How have vocation rehabilitation services influenced your employment?
Potential prompt:
Could VR help you any way now?

Unemployed Only:
Please tell me how you came to be unemployed.
Potential prompts:
What is keeping you from returning to work?
Could VR help you in any way to return to work?
If you were going to go back to work, what technology or assistive technology would you need to learn to use?

Table 5

Themes and Codes

Theme	Codes
Generalizable skills	
Technology	Computer skills, assistive technology skills, print access, obstacles, and websites
Networking	Support from family, friends, organized groups, and service providers; importance to employment
Persistence	Not giving up and pushing limits
Issues associated with job retention	
VR system	Benefits and challenges of services and needs
Personal factors	Self-described characteristics and stressors
Employers	Attitudes and accommodation problems
Workplace efficiency	Difficulty meeting job demands