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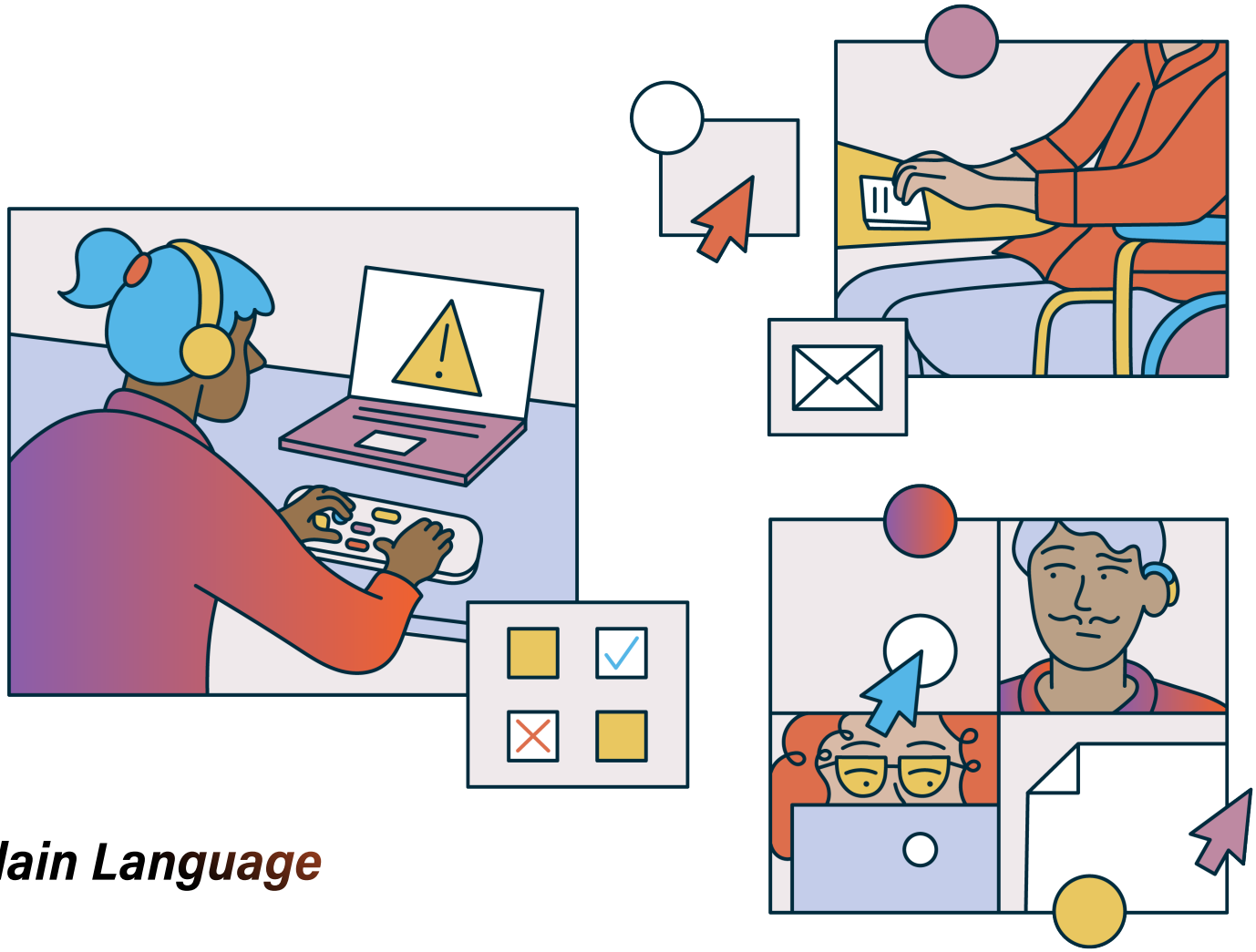

Plain Language

Screened Out

How Computer Hiring Tests Affect Disabled Workers

Michal Luria
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WHEN SHARING THIS REPORT, PLEASE USE THIS INFORMATION:

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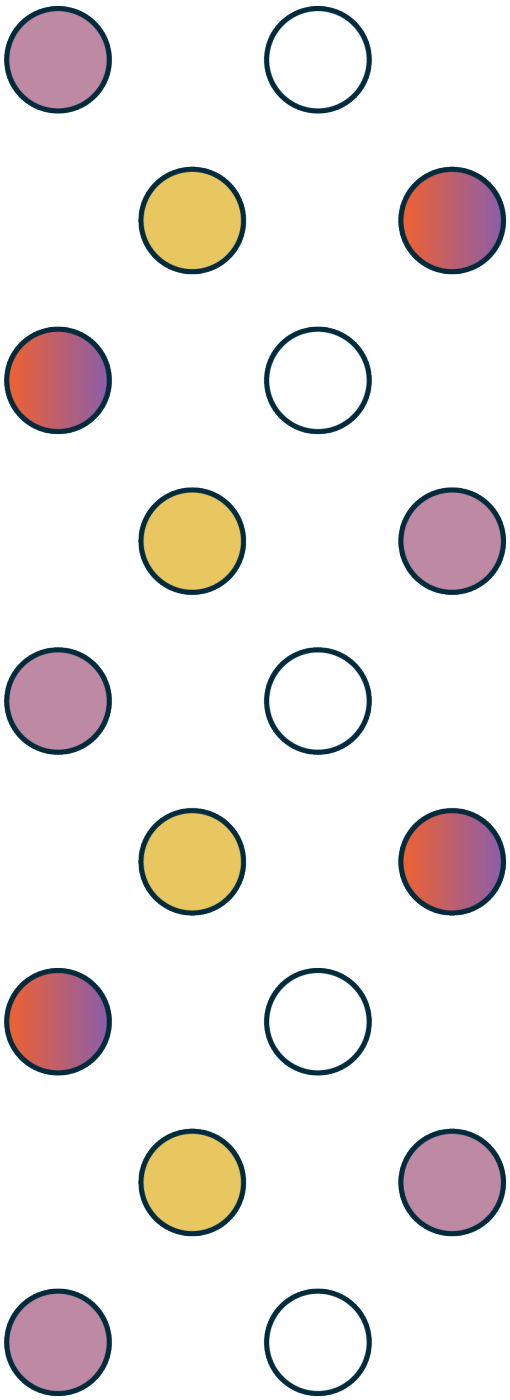


Accessible

When disabled people can easily get around somewhere or use something.

The Americans with Disabilities Act (ADA)

A U.S. law that protects disabled people from discrimination.

Artificial intelligence

When a computer program does things that normally need to be done by humans. We call artificial intelligence "AI" for short.

Discrimination

When someone gets treated unfairly because of who they are. For example, racism is discrimination against people of color. Ableism is discrimination against disabled people.

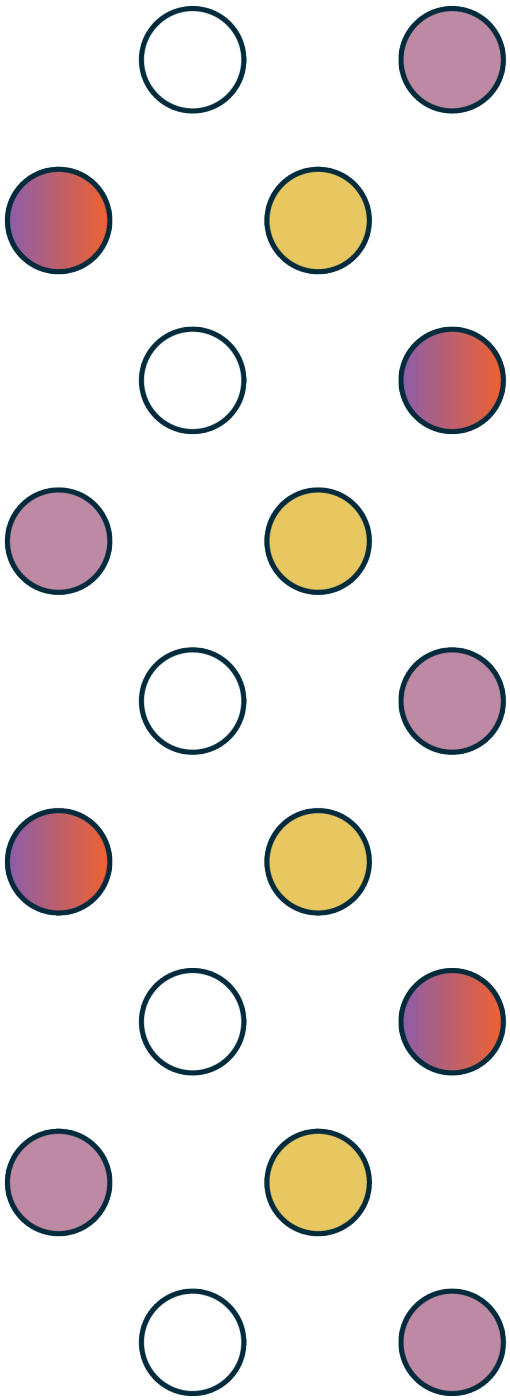
Participant

Someone who takes part in a study.

Technologies

Tools that make people's lives easier. For example, computers and AI are technologies.

About This Report



Technologies are tools that make people's lives easier. Companies have started using new technologies when hiring workers. For example, some businesses use computer hiring tests to help decide who to hire. You might have heard of computer hiring tests like:

- Personality tests
- Cognitive tests (tests that check how someone's brain works)
- And many more we will talk about in this report

Some companies also use artificial intelligence to make decisions about their hiring tests. **Artificial intelligence** is when a computer program does things that are normally done by humans. We call artificial intelligence "AI" for short.

AI and computer hiring tests have become a big part of hiring workers in all different kinds of jobs. Some people say this is a good thing. These people think computer hiring tests can help businesses find good workers faster.

Some people also think computers can help with discrimination. **Discrimination** is when someone gets treated unfairly because of who they are. For example, racism is discrimination against people of color. Ableism is discrimination against disabled people. Some people think that computer hiring tests can't discriminate like humans do. These people think computer hiring tests are more fair for everyone.

But not everyone thinks computer hiring tests are a good thing. Researchers and advocates have found lots of problems with computer hiring tests. They even found out that computer hiring tests might make discrimination worse.

This report is about a research study. The study is about disabled workers applying for jobs. The study looks at how these workers do on different computer hiring tests. The study also asks disabled workers how they feel about these job tests.

We hope this report helps people learn more about computer hiring tests. We hope workplaces, researchers, advocates, and policy-makers will read this report. This report can show the good and bad points of using computer hiring tests. Then, we can work together to figure how the best ways to use technology to help disabled workers.

What We Did

We talked with a group of workers with disabilities to learn about their experiences. These people were the participants in our study. Participant means someone who takes part in a study.

The study focused on two groups of participants:

- People who have an hourly job, or want an hourly job
- Lawyers and law students who are looking for lawyer jobs.

We chose these 2 groups because it takes a lot more school and work experience to be a lawyer. We thought lawyers might get affected by job tests in different ways that hourly workers.

Participants did a few computer hiring tests. Participants did not take the real tests. They took practice versions of computer hiring tests instead. These job tests were:

- A personality test
- Cognitive tests (tests to see how someone's brain works)
- A video interview that was "scored" by an AI. An AI decided what someone was feeling during the interview.

You can find a list of all the computer hiring tests we used at the end of this report.

After the tests, we interviewed participants about the tests. We asked participants how they felt about the tests.

What We Found Out

Disabled workers felt discriminated against when they did computer hiring tests. They felt like the job tests were not accessible. **Accessible** means that disabled people can easily get around somewhere or use something.

The people who made computer hiring tests said these tests could help stop discrimination. But participants said the computer hiring tests were discriminating against them. Participants felt like the computer hiring tests got made to "*screen disabled people out*". That means that these tests will be able to figure out who is disabled, and not hire disabled people. One participant said, *"They're using these tests knowing that people with disabilities aren't going to do well on them, and are going to get self-screened out".*

Participants felt like the people who made computer hiring tests didn't think about disabled people. The ways certain job tests got designed made them less accessible. Some participants even had trouble taking the tests at all.

Some participants felt like the computer hiring tests were not accessible on purpose. They thought the computer hiring tests were discriminating on purpose, not by accident. One participant said that it *"felt like it was a test of, 'how disabled are you?'"* Participants also felt like the computer hiring tests didn't measure how well someone would do at the actual job.

Participants couldn't decide if there was a way to make computer hiring tests better or more fair. Some participants thought computer hiring tests weren't all bad. These tests can be helpful to hire someone who can't take a test or do an interview in-person. But participants said these tests should always have a human making sure the tests are fair.

Most participants didn't think there was a way to make computer hiring tests fair. They think that because of the ways these tests get designed and used, the tests will always discriminate. One participant said that, because humans are not perfect, humans make technology that is not perfect. And since humans discriminate, technology that gets made also discriminates. Even though people say technology can't discriminate, it still happens because humans made technology.

Workplaces and people who make computer hiring tests need to look at what they are doing. They need to make sure they aren't discriminating against disabled workers. If new technologies get made to help with hiring, the people making it need to think about disabled people.

What Should Get Done About Computer Hiring Tests?

This list is for people who make computer hiring tests, and workplaces who use computer hiring tests. We made this list based on what participants had to say about computer hiring tests. Doing these things won't fix everything that is wrong with computer hiring tests. But they are good first steps to help disabled people get less hurt by computer hiring tests. People can ask themselves these questions when making or deciding to use a computer hiring test.

Do we need to use this computer hiring test? A computer hiring test might not be the best way to test someone's skills at work. Workplaces should decide whether or not a computer hiring test needs to happen or not. A lot of time, workplaces could do

something else instead (ex. A video interview, or a written test without AI). Using these ideas instead could help some disabled workers experience less discrimination.

Some workplaces will still choose to use computer hiring tests. If they do, they need to make sure the tests are fair. The tests need to measures only the skills needed to do a job. If they try to measure other things, that could lead to discrimination.

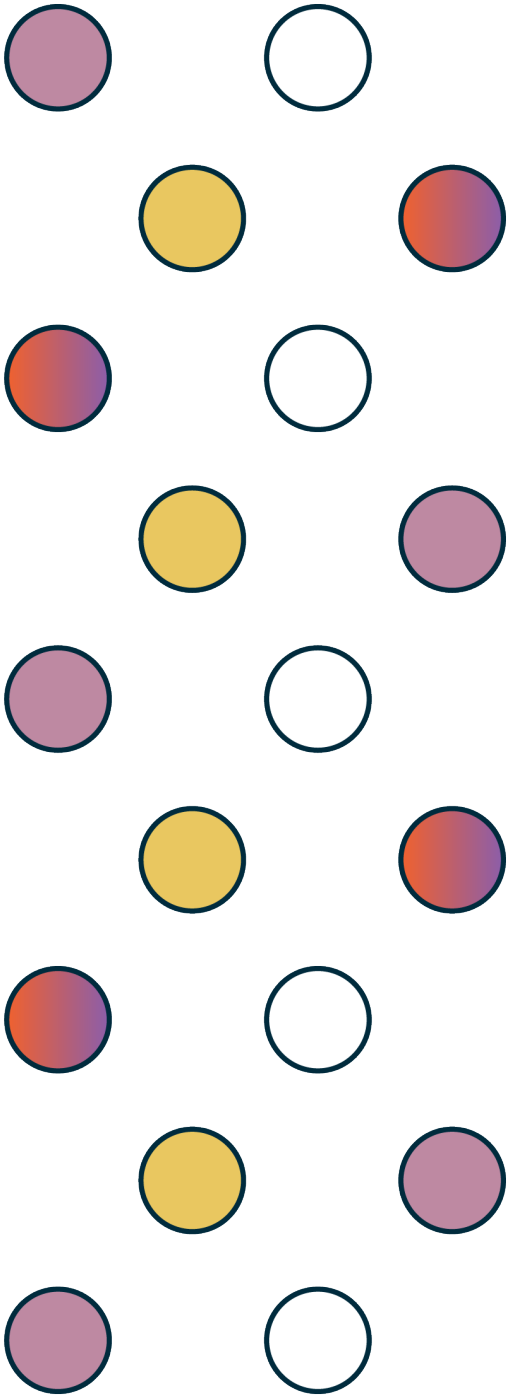
Are the computer hiring tests accessible? Companies need to make sure the job tests they use are accessible. Workplaces should follow accessibility guidelines that already exist. For example, the Web Content Accessibility Guidelines (WCAG), or from the Partnership on Employment and Accessible Technologies (PEAT). Workplaces need to make sure that job tests will work for workers with all different kinds of disabilities.

How do we use computer hiring tests in a fair way? There are other ways that workplaces can use computer hiring tests while trying to stop discrimination. For example, companies can have a human look over all the computer hiring tests.

Job tests can also be used as a small part of someone getting hired, instead of as the only part of getting hired. For example, a computer hiring tests can also get used with a written test or interview.

Lastly, workplaces should be clear about when they use computer hiring tests. They should also give information about how the results from the computer hiring test will get used.

To Start



> **"It was soul crushing [...] AI is great and all, but these are people's lives." - A participant after finishing some computer hiring tests**

AI has become popular to use these days. Many workplaces use AI every day. Some companies use AI to find and hire new workers. Finding and hiring workers takes a lot of time and effort. That's why some people think having AI do this job is a good thing. But when AI makes decisions about hiring, those decisions aren't always fair. The AI could discriminate against people, like people with disabilities.

In this report we focus on computer hiring tests. We will talk about how these tests affect workers with disabilities. The tests we will look at are:

- Cognitive tests (tests to see how someone's brain works)
- Personality tests that are made to feel like a game
- Video interviews that get scored by AI

How Does Technology Get Used in Hiring

Technology is a part of every part of hiring. Technology gets used to send ads for jobs to workers. Technology gets used to decide which people get to interview for a job. Technology even gets used in interviews themselves.

AI is one big type of technology. Many people are paying attention to how AI gets used in hiring these days. AI in hiring can look like many different things. For example, AI can get used to help make computer hiring tests. AI can also get used to decide how well someone did on a computer hiring test.

It's hard to know how many people are using hiring technologies like computer hiring tests. There isn't research about who is using what technology. The government also doesn't have rules about how to use hiring technologies.

The numbers we do have show that hiring technologies get used a lot. There is a part of government called the Equal Employment Opportunity Commission. They do a lot of work about jobs and

disability. They said that they think 4 out of 5 workplaces use AI in their hiring. And almost every Fortune 500 company uses AI. The Fortune 500 companies are the biggest companies in the U.S. Another report found out that 3 out of 4 companies with more than 100 workers use personality tests. More and more of these companies use AI to score these personality tests.

The people who make and sell AI tools for hiring say AI is a good thing. AI can help workplaces find good workers faster. They even say it can help stop discrimination. But research shows this is not true. Using AI in hiring can be unfair, and might be against the law in some cases. AI makes it harder to protect people's privacy in hiring. AI makes it easier for workplaces to be racist and ableist. AI makes it easier for workplaces to discriminate against someone for their gender. AI might discriminate against people in ways that are hard to tell. That makes it even harder to do something about it.

There also isn't proof that computer hiring tests actually help figure out who will be a good worker. One study found that cognitive tests don't do a good job of telling if someone will do well at a job. In the past, cognitive tests also got made in ways that discriminate against people of color.

Many computer hiring tests ask about things that aren't important for doing a job. For example, personality tests measured things like how positive someone was, or if they had a lot of energy. These questions can screen out people with disabilities like autism, depression, and anxiety.

How Do Hiring Technologies Affect Disabled Workers?

It is hard to find work as a disabled person. Workplaces have ableist ideas about what a good worker looks like. Disabled people sometimes have to choose to hide their disabilities to get a job. It can be hard to know the right time to tell a workplace about a disability. And some workplaces don't think about what disabled workers need.

The Americans with Disabilities Act (ADA) is a U.S. law that protects disabled people from discrimination. The ADA helped many disabled people get jobs. But many disabled people still don't have jobs. Compared to non-disabled people, only half as many disabled people have jobs. And twice the number of disabled people are out of work, compared to non-disabled people.

Hiring technologies like AI can create even more problems. AI programs usually don't think about the needs and experiences of disabled people. For example, a recent study about disability and hiring used an AI program called OpenAI GPT-4. They used GPT-4 to rank people's résumés for an imaginary job. The study found out the GPT-4 gave lower rankings to résumés of people who might have disabilities. If GPT-4 read that someone got an award for disability work, GPT-4 would say that person was less of a fit for the job. This is discrimination, and can mean disabled workers don't get hired. Some of these problems come from disabled people being ignored. People who make decisions about hiring don't think about disabled people. Whether they use AI or not, that makes it harder for disabled people to get hired.

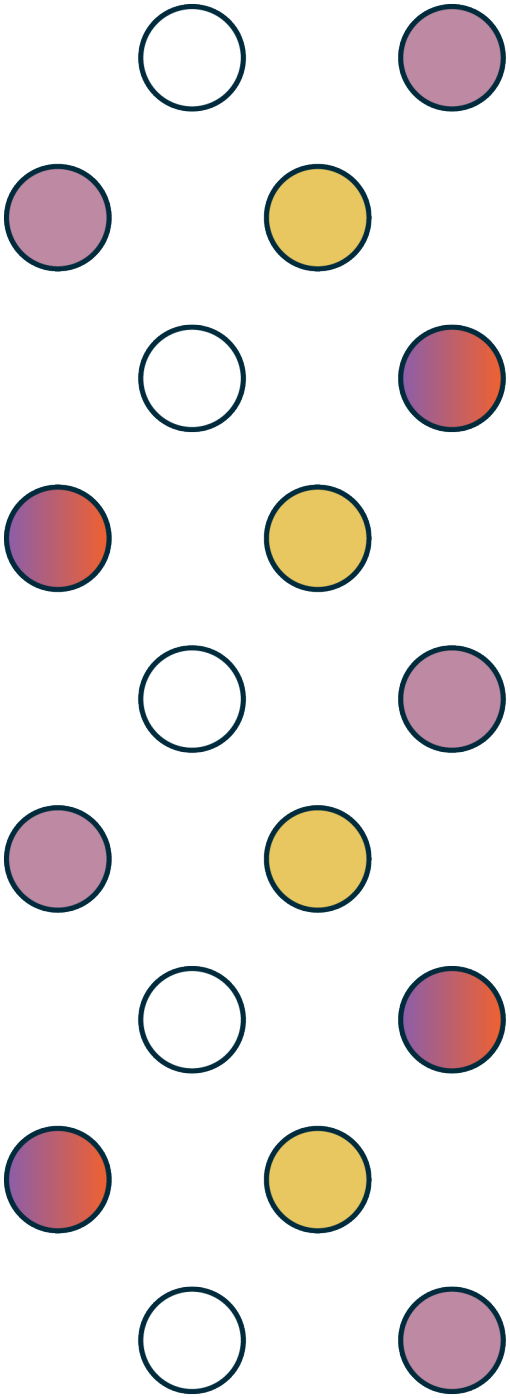
Hiring tools that get made without talking to disabled people are usually not accessible. For example, some computer hiring tests record what someone's face looks like. Other computer hiring tests record what someone says. Then, AI looks at these recordings and tries to guess what someone thinks or feels. For example, if someone's face seems too nervous, they might not get chosen for the job.

But this doesn't work well for many kinds of disabilities. There are lots of disabilities that can make someone's face look different. There are lots of disabilities that affect how someone talks, or whether or not they can talk. Using AI in these cases discriminates against disabled people.

We know that AI and other hiring technologies can hurt people. But we need more research about people with disabilities. We found out there isn't much research about how disabled people use computer hiring tests. We wanted to find out how computer hiring tests affect disabled people looking for work. We also wanted to see what people with different kinds of disabilities thought about computer hiring tests.

People who make computer hiring tests don't want there to be rules for how they get used. They have their own studies to say that computer hiring tests don't cause discrimination. People who make AI also don't talk a lot about disability or discrimination. That's why the goal of our research is to help everyone learn about how computer hiring tests hurt disabled workers. We hope researchers will get something out of this paper, but also want the public to read this paper. We hope this paper can be used to make better policies around hiring technologies and AI.

How We Did The Research For This Report



To see how hiring technologies discriminate, it's important to talk to the people being discriminated against. That is why our research focuses on talking to disabled workers. We ask these workers to try a few computer hiring tests. Then, we interviewed them about their experiences doing the computer hiring tests. We asked them to think about how their disability affected their experience.

Participants

The study had 17 participants who did all the computer hiring tests and the interview. Our study had participants with many different kinds of disabilities. Our study had participants who had:

- Vision disabilities, like being Blind or low vision.
- Hearing disabilities, like being Deaf or hard of hearing.
- Cognitive disabilities. These disabilities affect how someone thinks.
- Ambulatory disabilities. These disabilities affect how someone moves – for example, someone who uses a wheelchair.
- Self-care and independent living disabilities. These disabilities make it harder for someone to live on their own or take care of themselves.
- And more, like pain disorders, autism, and sleep disorders.

In our study, we gave each participant a number. This number helped us know who said what things, while keeping that person's personal information private.

You can find out more about each participant in Table 1. The table gets read left-to-right.

Study Participant Information

Participant Number	Age	Worker Type	Disability
01	28	Lawyer or Law Student	Cognitive, Ambulatory
02	23	Lawyer or Law Student	Ambulatory
03	37	Lawyer or Law Student	Vision
04	44	Lawyer or Law Student	Vision
05	28	Lawyer or Law Student	Vision
06	59	Lawyer or Law Student	Brain Injury
07	29	Hourly Worker	Ambulatory, Self-care, Independent Living
08	37	Hourly Worker	Hearing, Vision, Cognitive, Ambulatory, Ind. Living, Autism
09	18	Hourly Worker	Cognitive
10	20	Hourly Worker	Autism
11	21	Hourly Worker	Hearing-Deaf
12	23	Hourly Worker	Ambulatory, Cognitive, Independent Living
13	25	Hourly Worker	Cognitive
14	34	Hourly Worker	Ambulatory, Ind Living
15	22	Hourly Worker	Cognitive, Independent living, Ehlers-Danlos (pain disorder), Epilepsy (seizures), Narcolepsy (sleep disorder), Vision
16	42	Hourly Worker	Vision, Multiple Sclerosis (MS)
17	51	Hourly Worker	Hearing, Vision, Cognitive, Independent living

▲ **Table 1. All participants in the study, including their disability, age, and their worker type.**

We also tried to have participants of different ages, races, and genders in our study.

Genders

- **Women:** 8
- **Men:** 5
- **Non-binary:** 2
- **Genderqueer:** 1
- **Both woman and non-binary:** 1

Races

- **White:** 8
- **Black:** 3
- **Hispanic or Latino:** 1
- **Pacific Islander:** 1
- **More than one race:** 1
- **Middle Eastern:** 1

Age

- 19 to 59

The study focused on two groups of participants:

- People who have an hourly job, or want an hourly job
- Lawyers and law students who are looking for lawyer jobs

We call these 2 groups "hourly workers" and "lawyers" in the rest of the report. Of the 17 participants, 11 were hourly workers and six were lawyers.

We wanted to hear from people with different kinds of work experience. We chose these 2 groups because it takes a lot more school and work experience to be a lawyer. But it doesn't take a lot of school or work experience to get most hourly jobs. We thought lawyers might get affected by job tests in different ways that hourly workers. We specifically chose lawyers because many law firms already use computer hiring tests to hire people. Since we didn't have many participants in the study, we don't compare the experiences of lawyers and hourly workers.

What We Did

Participants had to do three parts of the study. First, they did 2 rounds of computer hiring tests. Then, they did an interview about their experiences.

The computer hiring tests were not the ones actual workplaces use. They were "practice" versions that were made to be just like regular computer hiring tests. Participants did a set of up to eight computer hiring tests. A researcher helped participants find the tests on the computer. But the researcher did not help participants at all with the test itself.

Participants got their "score" on the computer hiring test after they finished each test. Normally, a worker would not get their score if they were applying for a real job. But because the study used a "practice" test, they got to see the scores. Some participants did not see or were not interested in seeing their scores.

The computer hiring tests we used were made to measure many kinds of skills. The tests tried to measure people's personalities and behavior. For example, the tests might measure how well someone pays attention, or how likely they are to take risks. Some of the tests were made to feel like a game instead of a test. Other tests were cognitive tests. These tests the way someone thinks about certain topics. For example, they might test how good someone is at math or reading. There was also an emotional intelligence test, which tests how someone understands feelings. The last test was a video interview. In the video interview, AI looked at how people's faces looked to guess what they were feeling.

You can find a list of all the computer hiring tests we used at the end of this report.

After doing all the tests, participants did a 1-hour online interview with a researcher. Some of the questions were the same for each participant. There was also time for participants to answer other questions from the researcher as they came up. Participants shared their experiences doing the computer hiring tests. They talked about what they thought about workplaces using these tests in real life. and perceptions of the tests and their potential use in a hiring process. All computer hiring tests and interviews took place between November 2023 and May 2024.

The results in this report are from going over all of the interviews. We also use information from the computer hiring tests. We can see how participants did on each test, and how they felt about the testing. This is important information to see if there are any patterns in how things went for each participant.

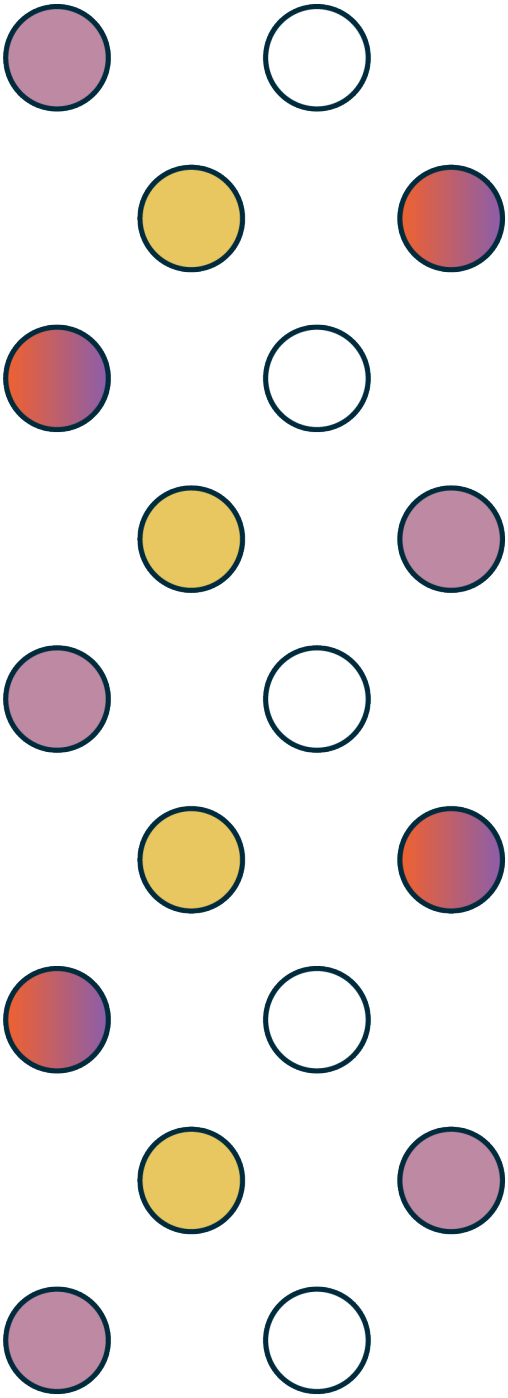
Making This Research Better in the Future

There are some things our study could not say for certain because we did a small study. Because we talked to a small group of people, we can't know if what they said is true for all disabled people. We also couldn't know if certain disabilities are affected by computer hiring tests more than others. In the future, more research can be done about this with more participants.

Second, in the study we used "practice" computer hiring tests. We know these tests are similar to most computer hiring tests. But we can't know if these are the exact same tests that workplaces use. In the future, studies could be done with other versions of computer hiring tests.

Lastly, we don't know how workplaces use the scores people get on computer hiring tests. Some studies say that they get used to screen workers out. But we can't say for certain. We also don't know how long the computer hiring tests are at different workplaces. The job tests we used were 2 hours long. If they were different amounts of time, they might affect disabled people in different ways. Future research could use computer hiring tests that take different amounts of time.

What We Found Out



Below, we talk about what we found out from talking to disabled workers about doing computer hiring tests. What we say here might not apply to all computer hiring tests. But the problems disabled people faced doing these tests are important to try and solve. These problems might apply to many parts of hiring technologies.

In the interviews, participants sometimes had a hard time telling the different computer hiring tests apart. Instead, they gave feedback about the experience of going through all the tests.

In this report, we talk about how different participants scored on the computer hiring tests. We show what they had to say about the test, along with their score. This can help show how different tests affect people with different kinds of disabilities.

1. Computer hiring tests are harder for Disabled Workers

1.1 Participants felt that most computer hiring tests discriminated

Many participants had the same things to say about computer hiring tests. They felt like computer hiring tests used discrimination. Every computer hiring test had ways they could discriminate against people. It was hard for participants to tell if one computer hiring test discriminated more or less than others. Participants felt like all the computer hiring tests were hard for them. All the tests kept participants from feeling like they could get hired.

This discrimination might be by accident. People who make computer hiring tests might not think of disabled workers. They might have been told that disabled people don't or can't work. So they end up making computer hiring tests that don't work well for disabled people.

But some participants think computer hiring tests discriminate on purpose. They think computer hiring tests leave out disabled people on purpose. Participants said workplaces could use these tests so they don't have to hire disabled people.

Participants talked about how computer hiring tests "screen out" disabled people. They talked about what happens when a disabled worker takes these tests. Here is an imaginary example of what might happen:

> Devon has a cognitive disability. It takes extra time for Devon to think and make choices. But Devon can still work, and does a good job with the right help. He has worked for the same clothes store for 10 years, but it is shutting down.
>
> Devon wants to work at a new clothes store. The new store gives Devon a computer hiring tests. Some of the tests move really fast. Devon doesn't do well on the tests. So the new clothing store won't hire him.
>
> But it shouldn't matter that Devon did bad on the tests. We know Devon does good work at clothing stores. The computer hiring test didn't measure how well Devon could do at work. The test only showed the clothing store that Devon moved slower than others who took the test. It isn't fair to Devon that he didn't get the job. He was discriminated against because of his disability.

Many people that make and sell computer hiring tests think they will help stop discrimination. But the participants in this study think computer hiring tests make discrimination worse.

When workplaces use computer hiring tests, they can get away with discrimination more easily. Discriminating against disabled people is against the law. Disabled people can start a lawsuit if they think they were discriminated against. Some disabled people start lawsuits against workplaces that won't hire them. But these lawsuits usually don't work when computer hiring tests get used. That's because workplaces can say, "We decided not to hire this person because they failed the test. It had nothing to do with disability."

Many people that make and sell computer hiring tests think they will help stop discrimination. But the participants in this study think computer hiring tests make discrimination worse. We asked participants if they thought computer hiring tests could help stop discrimination in hiring. Most participants said they did not think computer hiring tests could help. Some participants thought everything about computer hiring tests was ableist.

Some participants thought computer hiring tests could sometimes help stop discrimination. But this could only happen for tests that aren't affected by someone's disability. That would make sure others couldn't know if the person taking the test has a disability. But this would be very hard to do. We talk more about this idea later in the report.

1.2 Computer hiring tests are not accessible to people with disabilities

Participants said that the computer hiring tests were not accessible to them. Many participants had trouble doing well on the tests. Some participants could not even finish the tests.

Participants said that the computer hiring tests were not accessible to them. Many participants had trouble doing well on the tests. Some participants could not even finish the tests. There were many parts of the test that were not accessible. Sometimes it had to do with how the tests looked. Other times it had to do with what someone had to do in the test.

Accommodations are changes that make things easier for people with disabilities. Disabled people have the right to get accommodations from the ADA. Disabled workers are supposed to be able to get accommodations during any kind of hiring test. But most participants did not see any accommodations in the computer hiring test. Some participants assumed they could not get accommodations. Other participants looked for accommodations and could not find any. They also could not figure out if there was anyone they could ask for accommodations.

The hiring tests we used let disabled workers have 25% more time to finish the test. For example, if the test normally took an hour, a disabled person would get 1 hour and 15 minutes. But there were no other kinds of accommodations for the tests. Most participants did the computer hiring tests as best they could. But sometimes, participants had to skip a test.

Below, we talk more about the ways computer hiring tests are not accessible.

What Test-Takers See

One big thing that made computer hiring tests less accessible was how they looked. Many computer hiring tests use a lot of color. Color gets used in the background of tests, and for things like buttons to push. But this made things a lot harder for people with vision disabilities, or who were colorblind. There was also no way to change the colors to be easier to see. One participant who was colorblind said:

> *"The games that you had to play, the text on screen and the background color made it very difficult to see. I'm colorblind so it was really difficult. There was no option to change the color to something that I could see. That made things even harder."*

The computer hiring tests that were like games were usually less accessible to look at. But every computer hiring test had problems with what showed on the screen. The biggest problem was that the tests could not be read by screen-readers. Screen-readers

make computers accessible to people with vision disabilities. That means participants who used screen-readers could not do the tests at all. They were forced to guess if they were clicking in the right places. They had to spend extra time making sure they chose the right answers.

The way the computer hiring tests looked affected how people scored on the test. One test had participants solve math problems on a screen. Another test made participants choose if an object was facing left or right. These tests were very hard for participants with vision disabilities. Only one participant with vision disabilities was able to finish the "right or left" test. Only two participants with vision disabilities finished the math test. And both these participants got very low scores.

How Much Information Is In Each Test

Many participants with cognitive disabilities pointed out another problem with computer hiring tests. These tests made participants have to read too much information at once. Some of the tests had so many things to look at, they became hard to understand.

One participant said that each page had too much information. They said they could not figure out what information was useful and what wasn't. Things like the font size and page layout made things more difficult.

Sometimes, information was shown on many parts of the screen at the same time. This forced participants to change what they were looking at very quickly. Having to do this made some participants overwhelmed. Some participants wondered why each test had so much information. One participant with cognitive and vision disabilities said:

> *"There's a bunch of small details and numbers that are added to some of the questions. They have nothing to do with how you're solving it. It's just extra information and makes it more confusing. It's just more stuff to read on top of the fact you're timed."*

These problems felt even worse because the tests felt very long to participants. One participant with a brain injury did a computer hiring test called the "Situation Judgment" test. This test asks people what they would do in different situations at work. The test is the longest test we used, and can take up to 1 hour. After finishing the test, the participant said, "*I seriously wanted to scream and pull my hair out.*"

5 out of 7 participants with cognitive disabilities either couldn't finish the situational judgment test, or got a score of less than 25%.

[P]articipants didn't understand how the game helped workplaces understand a worker's skills. They asked, "*Why games?*" and called the games "*ridiculous*" and "*silly*".

But more importantly, participants said the games were made to be distracting. These tests added information participants did not need, and were overwhelming to participants.

How Each Test Has Participants Show Their Skills

In the study, we chose 8 different types of computer hiring tests. We wanted to see how disabled workers felt about each of these tests. We found out that some tests were less accessible than others.

The tests that caused participants the most problems were the test that felt like games. For example, one test asked participants to fill up balloons to earn points. But participants didn't understand how the game helped workplaces understand a worker's skills. They asked, "*Why games?*" and called the games "*ridiculous*" and "*silly*".

But more importantly, participants said the games were made to be distracting. These tests added information participants did not need, and were overwhelming to participants. Computer hiring tests that are like games may be harder for disabled people. Workplaces could use different kinds of hiring tests to check for the same skills. For example, workplaces could use written words to ask about something instead of using a game.

Participants had a lot of trouble with a test called the "emotional intelligence" test. This test asked participants to guess what someone was feeling based on a picture of someone's face. They could choose feelings like anger, disgust, surprise, fear, or happiness. People with vision disabilities could not see the faces, so they could not take the test. The rest of the participants who could take the test did not do well. The average score for all participants was 32 out of 100.

But that doesn't mean these participants don't have "emotional intelligence." For example, it can be hard for autistic people to tell what someone is feeling from their face. But that doesn't mean autistic people don't understand feelings. The problem is the computer hiring test. The test doesn't think about how people with disabilities may understand things differently.

How Each Test Uses Words

Participants felt like the computer hiring tests assumed that everyone communicates in the same way. For example, we talked to one participant with a hearing disability. They said that they would have liked to use American Sign Language (ASL) for the computer hiring tests. ASL is this participant's first language, not English. This participant used ASL during school tests, which helped them do well. But they did not get that choice during the computer hiring tests. This participant thought they might do better on the computer hiring tests if they had used ASL.

"...It should say, for instance, if you're visually disabled, we offer an audio version of the instructions. If you're dyslexic, we offer an audio version. If you are slow, if you have anxiety, and you need more time, well, click here."

When computer hiring tests assume people communicate in the same way, the tests become less accessible. And sometimes, this keeps disabled people from doing the tests at all.

Changing the language for a test changes how people understand the test. It also changes how people answer the test questions. For example, video interviews get used a lot in computer hiring tests. The participant who uses ASL said they think their words come across more clearly when they sign. But the AI that looks at the video interview might not be able to understand ASL. So someone who uses ASL won't know if their answers are getting recorded correctly or not. They might feel forced to try speaking English instead. Or, if they can't speak, they might not be able to do the test at all.

Computer hiring tests were not accessible in a lot of ways. So participants tried to find their own ways to make them more accessible. One blind participant used their screen reader to figure out the "balloon game" hiring test. This game made participants click on a balloon to inflate it. But blind participants could not see the balloon. So instead, this participant used a computer program that checks for words a screen-reader misses. This program is called optical character recognition (OCR). The participant used the OCR to find the "inflate" button for the balloon. This helped the participant finish the test.

But most people with vision disabilities won't know how to do this. Disabled people should not have to make their own accommodations to make the tests work for them. This takes time and effort that non-disabled people don't have to do. Workplaces need to make hiring tests that work for disabled people. Workplaces need to give people accommodations if hiring tests don't work for them.

Participants wanted computer hiring tests to have more choices about how they looked. They wanted more choices for accommodations for each test. One participant with a hearing, vision and cognitive disability said:

> *"Maybe a dropdown menu with large font and bright colors...It should say, for instance, if you're visually disabled, we offer an audio version of the instructions. If you're dyslexic, we offer an audio version. If you are slow, if you have anxiety, and you need more time, well, click here."*

2. Participants worried that computer hiring tests don't work, and hurt workers

2.1 The tests were confusing, too simple, or didn't have to do with the job

"...For someone with a disability trying to get through the test, it really felt like it was a test of, 'how disabled are you?'"

Many participants didn't understand what the computer hiring tests were trying to measure. They didn't understand how computer hiring tests could tell if a worker would do a good job. Some tests were more clear about what they were measuring. For example, the math test was measuring how well someone could do quick math. But other tests were not clear about what they were measuring. This made participants confused and frustrated. One participant with a brain injury said:

> *"I think the tests were really measuring how fast you could understand information. But I don't think that's what the people who made the test would say. For someone with a disability trying to get through the test, it really felt like it was a test of, 'how disabled are you?'"*

This made participants think more about how all kinds of tests affect disabled people. They said that computer hiring tests are better for people who are already good at tests. But many people with disabilities have trouble with tests. Many tests are not accessible, or got made for non-disabled people. One participant with a brain injury talked about who gets hired after taking computer hiring tests:

> *"It's not going to be the best person for the job. It's going to be who can beat the test. It's the way the test is made. It punishes you for understanding information differently."*

Computer hiring tests also don't give workers the chance to share what they really think. Many computer hiring tests have multiple-choice answers. But these answers didn't always say what participants thought. Participants got forced to choose an answer anyway, even if they didn't like the answer. Some computer hiring tests said that each question only had one "right" answer. These problems make it hard for people with cognitive disabilities to know what to do. And some disabled people get so confused and angry that they won't take these tests at all. That means that workplaces miss out on hiring good workers with disabilities.

2.2 Computer hiring tests did a bad job measuring work skills

Most participants felt that the scores they got on the tests didn't show their real skills. They also felt like the questions in the tests didn't measure the skills they thought were important for work. For example, one autistic participant shared their thoughts about the emotional intelligence test. They said the test doesn't do a good job measuring how autistic people judge how others feel:

> *"When you're just looking at a picture to judge how someone feels, it's just a guessing game, Especially if you're somewhere on the autism spectrum. A lot of people with those disabilities will guess how someone feels based on their real-life situation. If someone can't read faces well, the test won't measure how well they understand feelings."*

Most of the computer hiring tests had a set of answers to choose from. Participants could not choose different answers, or add information to their answer. Many tests made it seem like there was only one "right" answer.

One test that used set answers was the Situational Judgment test. Participants said they wished they could explain their answers. Participants sometimes didn't agree with any of the answers. They wish they had the space to share how they actually felt.

Some participants wished workplaces would just look at resumes and past work experience. They thought their past work experience was enough proof they could do a good job. But then these participants got bad scores on the job hiring tests. That showed participants that the tests can't tell if someone will actually do well at work or not.

One lawyer participant with a brain injury got a 4 out of 100 on a computer hiring test. They said this about their experience:

> *"I go to court. I write and argue motions (talk to the judge). I do so much more than what that 4 says about how stupid I am. I'm not stupid!"*

But the problem with computer hiring tests is about more than just one test. Participants thought all these tests did a bad job showing someone's work skills. They worried that could lead to people with disabilities not getting hired. Some participants thought they would never be able to get a job that used computer hiring tests. Some even thought that they would not have the job they have now if they had to pass a test to get it.

Participants felt the computer hiring tests also didn't measure what people are good at. The tests only showed things that people were bad at. That means the tests don't get the full picture of who someone is. One participant with an ambulatory disability said:

> *"These scores don't really capture me. I don't think these scores could really capture anyone. What if a bunch of people who knew each other took the tests, and shared their scores. Then everybody could see, 'Oh, maybe the tests are wrong. Maybe we shouldn't use this to hire people. Maybe we're not getting the full picture.'"*

2.3 AI does a bad job "scoring" video interviews

One of the computer hiring tests we used was a video interview. AI got used to look at the video and say what feeling it thought someone felt based on their face. For example, an AI might look at a video and decide someone in the video was sad.

Participants did not like the idea of AI looking at their videos. They thought the AI might discriminate against disabled people.

A participant with a cognitive disability and other disabilities explained why this could create discrimination. They said that autistic people can't always control what their faces look like. An AI could say an autistic person's face "looks angry" or "looks too nervous." That isn't fair to autistic people.

Sometimes, AI will judge videos by how happy someone looks. AI will say a video interview went better if the person being interviewed smiled the whole time. But some disabled people might not know how to smile for a long time. For example, people with vision disabilities may not think about how their face looks. But if they don't smile, they could "fail the test." This is not fair.

One participant had a disability that affected how their face looked. They could not smile or frown. AI would not know what to do if someone with this kind of disability did a video interview.

When we looked at what AI said about the video interviews, it seemed like it might be discriminating. The AI looked at the faces in each video interview. It sorted the faces people made into 6 categories. They were "happy," "neutral," "disgust," "angry," "sad," or "surprise."

14 participants finished the video interview. But only 1 participant made a face that the AI said was "happy." For that participant, the AI said that all the other faces they made were "disgust." Most people's faces got sorted into "neutral," "angry," or "surprised."

We don't know for sure how non-disabled people do on these video interviews. So we can't say for sure that disabled people do worse.

2.4 Online testing might be helpful sometimes, but usually not for disabled workers

Participants agreed that computer hiring tests hurt disabled workers. But some said that getting to do the tests online could be helpful. One participant said it's more comfortable to take tests at home. They added that taking tests at home could make people less nervous.

Participants said one good thing about computer hiring tests was getting to do them on their own time. For example, someone who already has a job might not be able to go to an in-person interview. But they can use their free time to do a computer hiring test for a new job.

Participants had some good things to say about video interviews. In these interviews, they got to see the questions beforehand. Then, they could take time to record their answers. After that, their recording would get sent to the workplace they applied to. Participants never had to talk to an interviewer. This made the interviews easier for some people to do.

But not all participants liked how the video interviews went. Some people thought it was hard to "talk to themselves" because there was no interviewer there. Participants also couldn't tell how an interviewer might have felt about their answers. This is an important part of an interview. Someone might change how they answer future questions based how their interviewer reacts.

3. Computer hiring tests force people to say they are disabled. Disabled workers might not want others to know that

It is against the law in the U.S. for workplaces to ask if someone has a disability. Some jobs make their workers see a doctor. These jobs can't force someone to see a doctor before they get hired.

But most participants said that the computer hiring tests made it clear they had a disability. A workplace could guess if someone is disabled if they do badly on the test. Or, someone might have to ask for accommodations to take the test. Then, the workplace would know that person has a disability. Participants felt like they would have to let someone know about their disability, or they would fail the test.

One participant with a vision disability talked more about the emotional intelligence test. This participant could not see the faces on the screen. If they were taking a real test, they would have to tell the workplace about their vision disability. In this way, computer hiring tests make it clear who has a disability.

Some participants wanted their workplaces to know about their disability. They thought taking a computer hiring test might be a good way to talk about disability at work. One participant said that if a workplace didn't seem to understand disability, then they didn't want to work there.

But in the end, most participants wanted to choose if they told their work about their disability. They did not want computer hiring tests to make that choice for them. Having to think about disability also made it harder for some participants to focus on the test. These participants spent so much energy trying to hide their disability, that it made the test harder.

"It honestly just makes you feel bad. It doesn't [tell you] how you can fix yourself or why the test is important. It doesn't seem important, especially if they give these tests for maybe minimum wage jobs. Having worked in retail, it's pointless and just frustrating."

4. Computer hiring tests were too hard and made people feel upset

Participants had lots of bad experiences with computer hiring tests. Many participants talked about being frustrated and overwhelmed by the tests.

Many times, this meant participants could not finish the computer hiring tests. Or, they did a bad job on the tests. More than half the participants had at least one test they could not finish. 4 out of 10 participants got less than a 5 out of 100 on a test.

The computer hiring test participants did the worst on was the math test. Only 1 participant finished the test and got more than a 5 out of 100. Everyone else didn't finish, or got less than a 5.

Having to do these tests made participants feel bad about themselves. One participant with an ambulatory disability said:

> *"Overall I felt frustrated, sh**ty, wasting time and very stressed. I ended up feeling overwhelmed by those tests. Obviously, they appear to some people as pretty easy, but they did not seem that way to me at all."*

Another participant with vision, cognitive, and other physical disabilities added:

> *"It honestly just makes you feel bad. It doesn't [tell you] how you can fix yourself or why the test is important. It doesn't seem important, especially if they give these tests for maybe minimum wage jobs. Having worked in retail, it's pointless and just frustrating."*

Participants said they got extra frustrated with the tests not being accessible. Every new test had different ways it was not accessible. This was overwhelming for participants. One participant said they got so overwhelmed that they just "*started guessing and clicking stuff.*"

Another participant with low-vision had trouble reading what was on the screen. They spent all their energy reading and had no energy to answer the questions on the screen.

Computer hiring tests affect people's self-esteem. If they do badly, they might feel like they will never get a job. If they have enough bad experiences with hiring tests, they might stop looking for work. One participant with Multiple Sclerosis and a vision disability said:

"You might get defeated in some of the questions. That might fall into like, 'Well, maybe I shouldn't work because I can't even answer these little simple questions.'"

"You might get defeated in some of the questions. That might fall into like, 'Well, maybe I shouldn't work because I can't even answer these little simple questions.'"

People with disabilities already have fewer jobs compared to non-disabled people. But computer hiring tests might make this gap even worse. People with disabilities might choose to stop applying to jobs with computer hiring tests. And since more and more jobs use these tests, there will be less chances for disabled people to work. As one participant said:

"Honestly, if I was applying to a job, and they said, 'Here, take all these tests,' I'd just go try to find a different job. I wouldn't put myself through that"

5. Participants wanted humans to be part of computer hiring tests. They also wanted the tests to only be one part of getting hired. And they wanted to understand how the tests would get used to make hiring choices

Participants had different thoughts about computer hiring tests. Some thought that all these tests discriminated against disabled people. Others thought there were ways that computer hiring tests could be made more accessible. Whether in one group or the other, participants all agreed on these 3 points.

5.1 Humans need to be part of the tests

Participants said that computer hiring tests need to have a human looking over them. Most computer hiring tests make decisions without humans. For example, an AI might throw out applications from people who get less than 65 on the math test. This isn't fair to people who have trouble with tests but still do good work.

One participant made a good point about this. They said that workplaces should never use computer hiring tests, unless they talk with each person about their results. That gives people the chance to explain how they did and show who they are.

Some participants thought tests scored by AI should get scored by humans instead. And some participants thought the only way to be fair about hiring is to meet people face-to-face.

5.2 Testing should only be one part of getting hired

Participants said that computer hiring tests shouldn't get used to "*screen people out*." Tests can be helpful to give workplaces more information about someone's skills. But, as a participant with a vision disability said, they can't tell "*much about the person themselves.*"

That's why, if computer hiring tests get used, they shouldn't be the only thing that matters. Workplaces need to also look at résumés and live interviews. There are also some kinds of computer hiring tests that should never get used. For example, using AI to judge faces can cause discrimination.

Some participants thought of a more helpful way computer hiring tests could be used. They could be used to see what kind of job someone might do best at a workplace. Then, people can get matched with a job that works best for them. A participant with an ambulatory disability came up with an example. They said that workplaces might see test scores and think, "*Oh, this person doesn't do as well with risk-taking. We're going to move them into a position where risk-taking is a small part of their job.*"

Participants had different opinions about when to use computer hiring tests. Many participants thought it would make sense to do the tests first. Then, they could have a job interview to talk about how they did.

Other participants thought seeing the computer hiring tests first would be overwhelming. They might decide to not do the tests because they are too hard. That means they would never make it to an interview. Or, if they get to the interview, they might feel too bad about the tests to do well on the interview.

Both sides agreed that computer hiring tests don't work on their own. They should be one small part of hiring someone.

5.3 Workers should understand how the tests get used

Participants agreed that workers should have more information about computer hiring tests. They should know when the tests will be used and what they will be used for. They should also know how the tests affect if someone gets hired or not.

"It's a little shady to make someone take a test that they don't know what it's measuring. Especially because workplaces have much more power than people looking for work."

One participant talked about how knowing more about computer hiring tests can help workers:

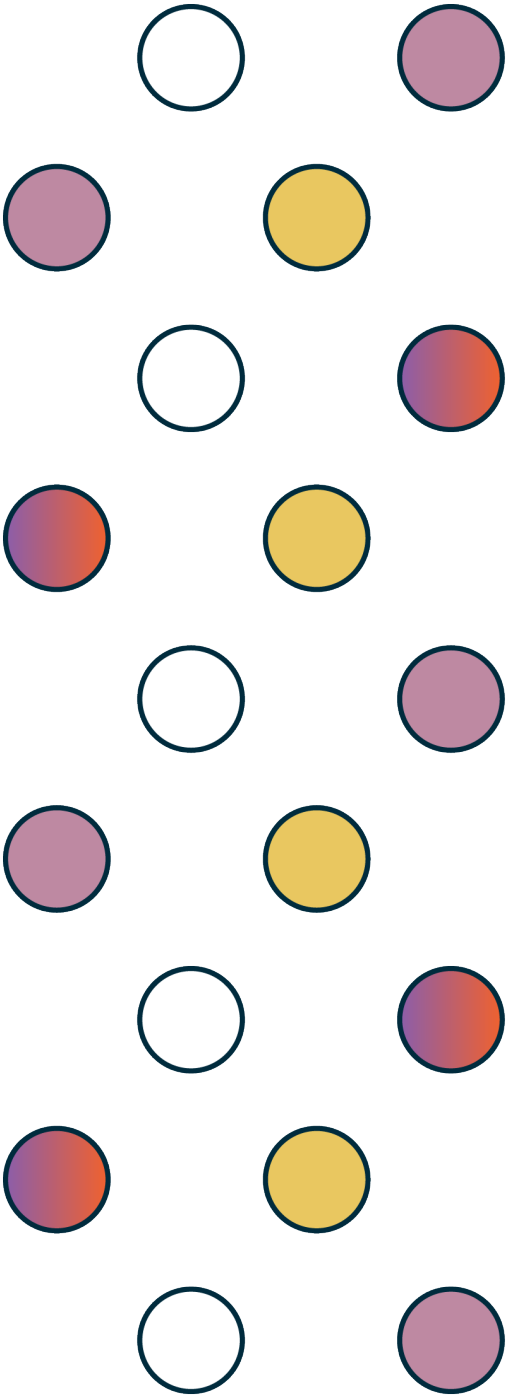
> *"If I know what they're looking for while I'm taking the test, then I can apply that. I can take the tests while thinking about what they're looking for. This can make me less stressed and also help me focus on my answers. As a disabled person, I want as much information as possible to make decisions. I want to understand what they're looking for while I'm doing the test. I don't want to focus on the wrong thing. For example, if they want you to be as fast as possible, they should explain that. If they want you to be as in-depth as possible, they should explain that."*

A participant with cognitive and ambulatory disabilities added to this idea. They said:

> *"It's a little shady to make someone take a test that they don't know what it's measuring. Especially because workplaces have much more power than people looking for work. Workplaces should say 'We will use computer hiring tools. If you apply here, that means you are okay with that.'"*

Participants said they would want to know if a workplace will use computer hiring tests. If they knew, some participants said they would not apply for those jobs.

Summary and Looking At The Future



Participants with disabilities had trouble doing computer hiring tests. One problem was the hiring tests themselves. The tests took a lot of time and energy. They made people feel upset and frustrated.

Participants dealt with computer hiring tests that were not accessible. Some participants didn't even stay in the study because the tests were too hard. Even the people who finished all the tests did not like the experience. They said if a job asked them to do the tests, they would look for a different job.

Another problem is how computer hiring tests get used to make decisions. Participants thought these tests discriminated against disabled people. They worried the tests would make it even harder for disabled people to get jobs.

Participants felt like their low scores were not fair. The tests were not laid out in a way that made sense to them. Getting low scores on one test made people stressed out, which made them do worse on the next test. Overall, participants felt like the tests didn't show how well they would actually do at a job. All these things show that computer hiring tests don't work for disabled people.

Some participants thought changing computer hiring tests could make them better. Tests could add in accommodations for all different kinds of disability. That would make things more fair for workers with disabilities.

There are already guidelines about how to make things accessible online. But many computer hiring tests don't follow these guidelines. It would be a good start if the people who made computer hiring tools followed these guidelines. But we also need to do more research on how to make computer hiring tests more accessible. For example, future research could add some accommodations to a computer hiring test to see if that helps people do better.

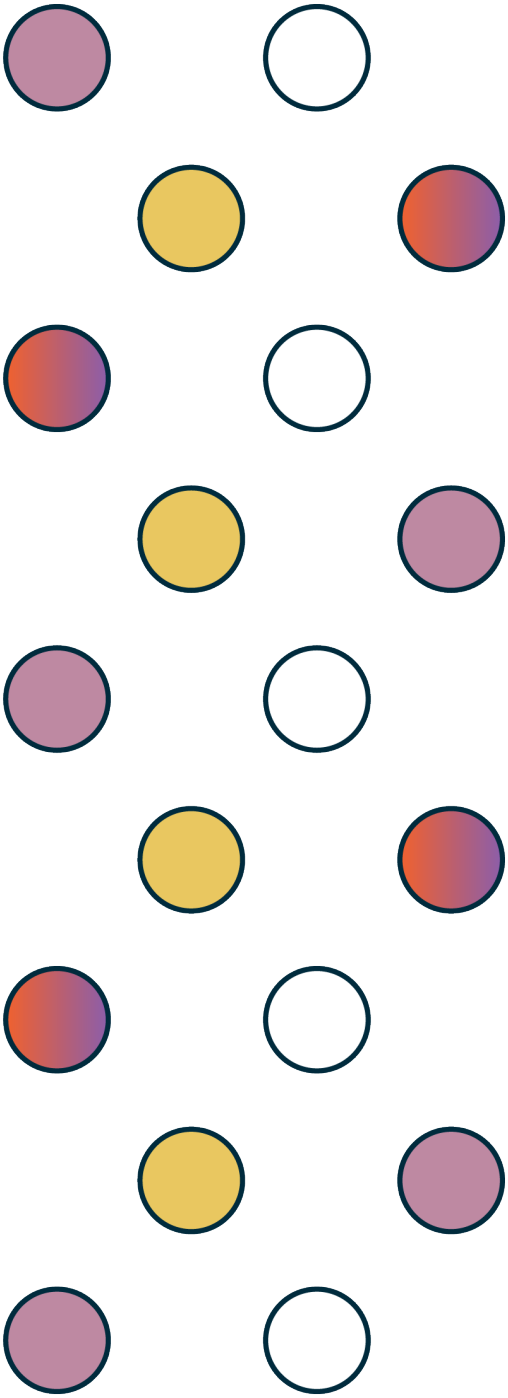
But many participants thought that parts of the computer hiring tests discriminated against them. They thought there was no way to fix the discrimination in the tests. That's why these participants thought no workplaces should use computer hiring tests.

For example, some computer hiring tests measure things that have nothing to do with a job. If disabled workers score low on these tests, they might not get jobs even if they're a good worker. If that happened, it would be discrimination.

Different people with disabilities have different needs. Even people with the same disability might need different things. Someone might need part of a hiring test to get changed just for them. But a computer can't make those changes — only humans can. So even if the test has some accommodations, it will still discriminate against people with disabilities.

Participants talked about ways computer hiring tests could still get used in a good way. They said that these tests should only be one part of getting hired. Computer hiring tests should not get used to "screen out" workers who do badly. Humans should always look over the tests and talk to the people who took the tests. And workplaces should be clear about how computer hiring tests get used. That can help people understand what to do for the test.

What We Think Should Happen Next



This study shows there are a lot of problems when companies give hiring tests to disabled people. The next section is for the people who make, sell, and use computer hiring tests. We will talk about we think should happen to help fix these problems.

The goal of this report was to hear from people with disabilities. The things we say in this section are based on what study participants said.

Some of the problems we talk about will be very hard to solve. Some might not be able to get solved at all. We hope people will listen to the directions in this report. Listening to them won't fix all the ways disabled people get discriminated against in hiring. But it would be a good start to making things better.

1. Make sure computer hiring tests are accessible and measure the right things

People who make and use computer hiring tests should first ask, "**Do we need this test?**" There may be a better way to measure someone's skills without using a test.

If there is no better way, then people who make these tests need to make sure the tests are fair. People who make computer hiring tests usually don't think about disabled workers. Thinking about disability when making a hiring test could make the test more fair. This also means making sure each test measures skills that are actually important for the job.

The second question that should get asked is, "**Is this test accessible?**" There are already online guidelines about accessibility. Some of them are:

- Web Content Accessibility Guidelines (WCAG)
- Partnership on Employment and Accessible Technologies (PEAT)

Then, people who make computer hiring tests should "test" the test itself. They should get people with all kinds of disabilities to take the test. These people should get to give feedback to make the test better. That way, the test will be more accessible for everyone.

Sometimes, there is no way to make a computer hiring test more accessible. Workplaces should not use computer hiring tests that are not accessible.

2. Use ways to make computer hiring tests more fair

There may be ways to make some computer hiring tests fair and accessible. But just being fair and accessible. Computer hiring tests still might "screen out" disabled workers. Here are some things workplaces can do to help stop that from happening:

- **Humans need to be part of the tests.** Workplaces should use as few computer hiring tests as they can. But if they need to use tests, a human should look over every test. Computers or AI should not get to "score" the tests on their own.

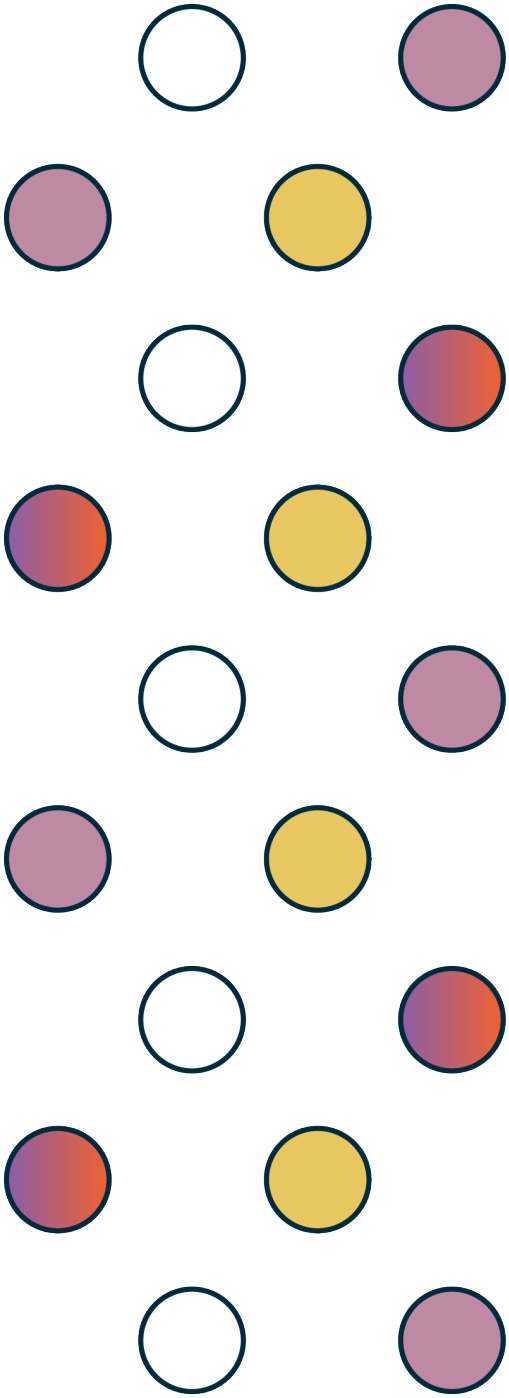
  Workplaces need to make sure they have a good system for people to ask for accommodations. They should make sure a human on their staff knows how to give accommodations.

  Humans are more likely to believe something if a computer says it. That can make some workplaces give more credit to computer hiring tests. So workplaces need to say how each computer hiring test should get used. They need to decide how important each test is and why. And they need to make sure these choices are fair.

- **Testing should only be one part of getting hired.** Computer hiring tests should get used along with other ways to get to know a worker. Things like résumés, in-person interviews, and looking at past work are good ways to learn about a worker. Workplaces should look at all this information when deciding who to hire. They should not just look at the computer hiring test scores.

- **Workers should understand how the tests get used.** Disabled workers need information about when computer hiring tests will get used. This gives them time to ask for accommodations. It also shows workers that the workplace is trying to be fair about hiring.

About The Computer Hiring Tests



We chose 8 computer hiring tests for participants to do. Hourly workers were asked to do 7 tests, and lawyers were asked to do 8 tests. The tests were split into 2 parts to make it easier for people. This means each test session was 2 hours long, for 4 hours of testing total. We chose the computer hiring tests by looking at ads for hiring technology companies. We also looked at materials from hiring test "prep" companies. These companies make computer hiring tests, but also say they can help people learn how to do well on computer hiring tests.

Work Personality Questionnaire (7-12 minutes long)

This test asks participants to agree or disagree with a set of statements about work. For example, "I enjoy working with others." The test has 90 questions. The test tries to figure out someone's personality and what they like at work.

Balloon Test Gamified Assessment (4-8 minutes long)

The test shows a cartoon deflated balloon on a forest background. Participants are asked to click a button to "inflate" each of 15 balloons. Participants have to "collect" tokens from the balloons before they burst. Each balloon bursts after getting inflated a random number of times. A participant gets no tokens if the balloon bursts. The test says it is checking for 3 things:

- How much risk someone takes or how emotional they are
- How well they will manage working and making decisions
- How social someone is

This test was made to be just like a test made by Pymetrics. Pymetrics is an AI company that makes many computer hiring tests that feel like games. In 2022, Pymetrics was bought by Harver, another seller of computer hiring tests.

Directional Attention Gamified Assessment (7-13 minutes long)

Participants see 7 objects that each face either right or left. For example, a row of 7 fish, where some face right and some face left. This test wants people to focus on the object in the center. Participants are asked to choose "right" or "left" to say which direction the center object is facing. The test goes fast, and happens 85 times in a row. This test says it is measuring how well someone can pay attention. It also says it is testing someone's self-control. This test was made to be just like a test made by Pymetrics.

Emotional Intelligence Gamified Assessment (3-4 minutes long)

This test shows participants 40 photographs of people showing a range of emotions. Participants are asked to say what feeling is shown in each picture. The goal of the test is to check someone's emotional intelligence, or how someone understands feelings. This test is similar to the Pictures of Facial Affect test. This test was made by Paul Ekman and is now sold by Harver.

Arithmetic Gamified Assessment (5-6.5 minutes long)

In this test, participants are asked to solve a set of simple math problems. The screen shows four "bubbles" with math equations in different areas of the screen. On the top of the screen, there is a "target" number. Participants are asked to "pop" any bubbles that match the target number. For example, if the target number is 7, participants might "pop" 3+4 or 7x1. The test has a time limit. Bubbles disappear and come back with new equations every few seconds. This tests measures how well someone does as quick math.

Watson-Glaser, *lawyers only* (25-40 minutes long)

The Watson-Glaser test checks how people use logic to make choices. The tests checks 5 different categories to see when people assume things. It checks how people use information in a question to come up with an answer. For example, participants would

see a sentence with part in bold. They had to say whether or not the person speaking assumed anything in the bold part. An example sentence is: "My friend should have less sugary drinks in his diet. **Eating too much sugar can be bad for your teeth.**" The test has 40 questions and lasts a total of 40 minutes.

Situational judgment test
(25-60 minutes long)

This test has a set of 18 real-life problem-solving situations in a workplace. For each situation, 4 choices for what to do are shown. Participants are asked to say which of the 4 would be the best and worst way to handle the situation. For example: "You work as a Manager at a clothing store. A customer comes up to you is clearly upset. You can't tell exactly what the customer is saying, but other customers are starting to notice something is wrong. What do you do?" The website for this test says it checks for 9 different work skills. These skills are: solving problems, focusing on customers, delivering results, planning and organizing, leading, coming up with new things, working with co-workers, communicating, and convincing people.

Video interview
(15-20 minutes long)

For the last test, participants were asked to do an online job interview. The interview was asynchronous, which means there was no interviewer there asking questions. The participants recorded videos of answers to a set of nine interview questions. The interview had questions about retail jobs for hourly workers. The interview had questions about law jobs for lawyers.

The video recorder showed one question at a time. Participants could start recording any time they were ready. Each answer could only be up to 2 minutes and 30 seconds. Participants knew that AI would get used to check what their faces looked like during the interview. This interview did not use AI to check how people talked, even though many other video interviews do.

To Learn More

We used information from many other papers and websites to write our report. The list of these websites and papers is below. You can click each link to learn more. Most of these papers and websites are not written in plain language.

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