

# Digital accessibility & inclusion

Toolkit: personas – canvases – research – inspiration  
Version 1.0 | 20 September 2024



# Let's get to work

## **We want (and we must)**

Naturally, you want all customers to fully benefit from your (digital) services and products. You strive to provide everyone with the same excellent customer service, aiming to serve every individual. That's your belief, or it's described in your organization's mission statement, or maybe it's a key performance indicator (KPI).

It's all about inclusion and digital accessibility. For the latter, there's an important incentive: starting mid-2025 the European Accessibility Act (EAA) will go into effect. This legislation mandates that; **"...individuals with (functional) disabilities should have the same (online) access and user experiences throughout the European Union as individuals without (functional) disabilities."**

Moreover, by ensuring all of your (digital) services and products comply with this legislation, all of your users will benefit. Consider that even those without permanent disabilities may face temporary (functional) impairments, such as a broken arm, stress, cataract surgery, or an ear infection.

## **No time to waste**

So, let's dive in! Start by using the personas (pages 4 -11) alongside some helpful canvases (pages 12 -17).

Alternatively, get inspired (pages 18 -21) by exploring key considerations for researching and designing digitally accessible and inclusive services. Try out a simulation tool and watch a few videos we have selected.

We haven't developed all of this from scratch, instead we've looked closely at what others have already done in this field. Credits to all of the organisations and sources used are listed on page 22.

Interested in learning more or participating in an interactive workshop on this topic?

Please contact:

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Perspective | Renske Verweijen | [info@perspective.amsterdam](mailto:info@perspective.amsterdam)

# BUT WHAT IS IT EXACTLY?

Digital accessibility:

Everyone, with or without disabilities, has the same opportunity to use all (digital) forms of facilities, information and services.

Digital inclusion:

The set of solutions and strategies to combat inequality and exclusion, and enable participation in the digital society.

# Part 1: Personas

Physical, cognitive, digital & identity

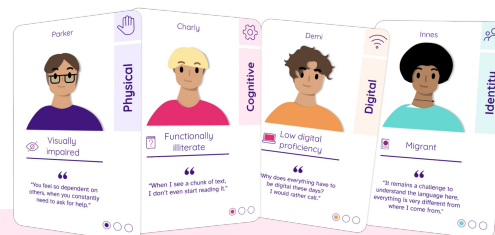
# Parker, Charly, Demi & Innes

Thankfully, we find that more and more organisations are recognising the importance of developing products and services that are easily accessible to everyone. However, “everyone” is quite a large and diverse group, within which some individuals experience barriers for various reasons. To support your development and design efforts by highlighting groups that encounter barriers, we have created a set of personas. Each persona represents a segment of the population for whom, for whatever reason, digital accessibility may present challenges.

Here they are in a nutshell:

- There are all kinds of **Physical** limitations that make websites, apps and other digital services not easily accessible or usable. Parker, who is visually impaired, along with Patrick and Pip, will help you consider the needs of individuals facing physical challenges.
- **Cognitive** limitations can also create obstacles in the digital world. Charly can help you empathise with people with cognitive disabilities or barriers, just like Chris and Casper.
- Sometimes people are unable to keep up because they lack **Digital** skills or they don't have the right tools. For example, did you know that about 8% of the Dutch do not have a smartphone, tablet, laptop or PC? Demi, Dylan and David represent this group.
- Cultural background or **Identity** can affect how someone relates to images or text, potentially making them feel less welcome or understood. Innes, who is a migrant, along with Iris and Ivan, represent this group.

# The personas



## Physical

- Colourblind
- Visually impaired
- Physically impaired
- Impaired hearing
- Limited hand mobility
- Wheelchair

## Digital

- Low digital proficiency
- No smartphone
- Old computer
- No (fast) internet
- Shortage of data



## Cognitive

- Functionally illiterate
- Concentration problems
- Dyslexia
- ADHD
- Non-congenital brain injury
- Stress


## Identity

- Migrant
- Age, gender
- Cultural background
- Ethnicity
- Nationality
- Religion

Parker





Physical





Visually impaired


“  
“You feel so dependent on others, when you constantly need to ask for help.”



Charly





Cognitive





Functionally illiterate


“  
“When I see a chunk of text, I don't even start reading it.”



Demi





Digital


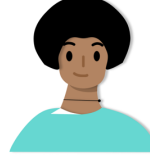


Low digital proficiency


“  
“Why does everything have to be digital these days? I would rather call.”



Innes





Identity



Migrant

“  
“It remains a challenge to understand the language here, everything is very different from where I come from.”



Patrick





Physical





Tremor


“  
“It is almost impossible for me to type in amounts or a PIN code, it becomes a big mess.”



Pip





Physical


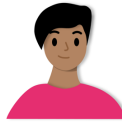


Deaf


“  
“I keep having trouble with payments, but calling the bank for an explanation is not an option for me.”



Chris





Cognitive





Alzheimer's


“  
“It's incredibly important to me that they don't keep changing everything in the app.”



Casper





Cognitive





Autism


“  
“When there is pressure and people are watching all my movements, it becomes difficult for me.”



Dylan





Digital





Old smartphone


“  
“A new phone is too expensive. Because we can't update, the banking app stopped working.”



David





Digital





No computer


“  
“I've never worked on a computer. The children share a laptop for their homework.”



Iris





Identity





LGBTQIA+


“  
“It would be great if I don't always see the standard example of a family, then I also feel welcome.”



Ivan





Identity



Cultural background

“  
“We think about money very differently at home. It makes me nervous contacting the bank.”

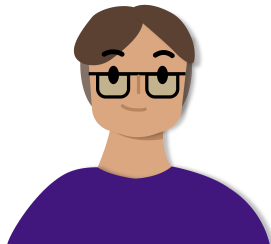


# Physical

Parker



Physical



Visually impaired



“You feel so dependent on others, when you constantly need to ask for help.”



## Also consider



Tremor

Deaf

Colourblind

Blind

Difficulty walking

Impaired hearing

Wheelchair

Limited hand mobility

## Numbers



Approximately 14.5% of adults in the Netherlands have one or more impairments related to hearing, vision, or mobility.



More than 300,000 people are visually impaired or completely blind.



8% of all men have some form of colour blindness, while the rate is slightly less than 0.5% for women.



Approximately 1.5 million people are hearing impaired or completely deaf.



More than 780,000 people are in a wheelchair.

## Banking

- 55% of blind people and 31% of the visually impaired do not bank independently.
- 37% of deaf people do not bank independently.
- More than 175,000 people have limited hand mobility and cannot handle a smartphone or bank tokens well.
- 42% of people with limited hand mobility do not bank independently.

## Barriers

- Information not easily perceptible due to not being easily visible or audible.
- Awkward to operate: buttons, mouse/trackpad, and input fields require sophisticated motor skills.
- Not physically accessible: thresholds, payment machine too high, stairs.
- Time pressure when logging in/logging in/purchasing.

## What would help

- Speech technology.
- Zoom options and keyboard navigation.
- Contrasting colours.
- Accessible use of drop-down menus or drag-and-drop options.
- Sufficient time to complete a task online without being logged out.
- Large buttons and input fields that do not require precision.
- Videos with subtitles and sign language.
- Alerts or notifications that can be heard, felt, and seen.

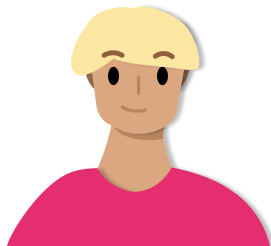


# Cognitive

Charly



Cognitive



Functionally illiterate



“When I see a chunk of text, I don’t even start reading it.”



## Also consider



Alzheimers

Autism

Dyslexia

Concentration problems

Stress

Non-congenital brain injury

ADHD

## Numbers



You are considered functionally illiterate if you have difficulty reading, writing, and/or calculating. This is 2.5 million people in NL. Of these, 70% are younger than 65 years old.



In NL approximately 4% of people are dyslexic.



Approximately 200,000 people have Alzheimer's, of which around 8,000 are under 65 years old.



In the Netherlands, approximately 190,000 people have a form of autism.



In the Netherlands, approximately 645,900 people have a non-congenital brain injury.

## Banking

- 27% of the functionally illiterate do not bank independently.
- Approximately half of the functionally illiterate prefer to handle banking digitally.
- 55% of people with a mild intellectual disability do not bank independently.

## Barriers

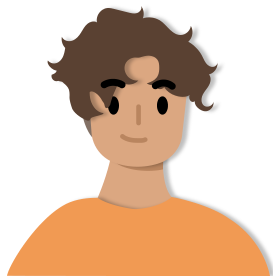
- Information is not understandable: complex language, jargon, abbreviations, etc.
- Concentration problems: distractions from banners, pop-ups, busy backgrounds.
- Difficulty in distributing attention (“filtering”).
- Time pressure when registering/logging in/purchasing.

## What would help

- Simple language: short active sentences with easy language.
- Spelling checkers.
- Multiple-choice answers.
- Alternatives to support text, such as images and speech.
- Calm pages.
- Sufficient time to complete an online task without being logged out.

# Digital

Demi



Low digital proficiency



“Why does everything have to be digital these days? I would rather call!”



Digital

## Also consider



Old smartphone

No computer

No smartphone

Old computer

Shortage of data

No (fast) internet

## Numbers



Approximately 11% of Dutch people aged 16 to 65 have little to no experience with computers.



Approximately 2.5 million people have difficulties working with digital devices.



Approximately 8% of Dutch people do not have a smartphone, tablet, laptop, or PC.



In a 2019 study, 1.2 million Dutch people reported never having used the internet.

## Banking

- 43% of people with low digital proficiency do not bank independently.
- Though, more than half of them prefer to bank digitally!
- Bank customers with low digital skills are afraid of making mistakes.
- People without a computer most often delegate all of their banking tasks. They often feel that banks do too little for them.

## Barriers

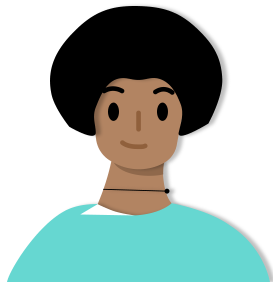
- Digital services being the only option.
- Difficulty with internet, computer, and software use.
- Needing to ask for help.
- No access to (fast) internet.
- Older devices where apps can no longer be updated.
- No credit or data bundles.
- Little to no privacy when using the internet outside the home.

## What would help

- Possibility to call or visit in person. Offer non-digital alternatives.
- Simple design of products and services (UX/UI).
- Take outdated devices into account.
- Support in the form of digital banking courses and simple manuals with step-by-step instructions.

# Identity

Innes



Identity



Migrant



“It remains a challenge to understand the language here, everything is very different from where I come from.”



## Also consider



LGBTQIA+

Cultural background

Age

Gender

Ethnicity

Nationality

Religion

## Numbers



4 million people in the Netherlands have a migrant background (a person is considered to have a migrant background if at least one parent was born abroad).



1 in 15 people identify as LGBTQIA+.



43% of people in the Netherlands aged 15 or older say they belong to a religious or philosophical group (18% Catholic, 13% Protestant, 6% Muslim, 6% other, and 57% none).



On average, a Dutch citizen is 42.4 years old.

## Banking

- The preference for digital banking is relatively high amongst non-Western migrants. They primarily conduct their banking via mobile phones and less frequently using a laptop or PC.
- In terms of age, elderly people often do not bank independently; 12% of 65-74 year olds and 24% of those over 75.
- 75+ individuals who do not manage their banking independently are the most dissatisfied with handling their banking affairs.

## Barriers

- Not knowing your way in the Netherlands (unfamiliarity with services, customs).
- Feeling unwelcome.
- Not seeing yourself reflected in images, examples, or language use.
- Experiencing discrimination.
- Experiencing minority stress.
- Experiencing acculturation stress (conflicting values between culture and identity).
- Economic or social exclusion.
- Lack of access to education.

## What would help

- Inclusive and simple language. So help and support are accessible.
- Inclusive examples, names, and images (no stereotypes).
- Celebrate diversity and embrace differences.
- Specific services that offer more time and attention, such as a senior helpline.

# Part 2: Canvases

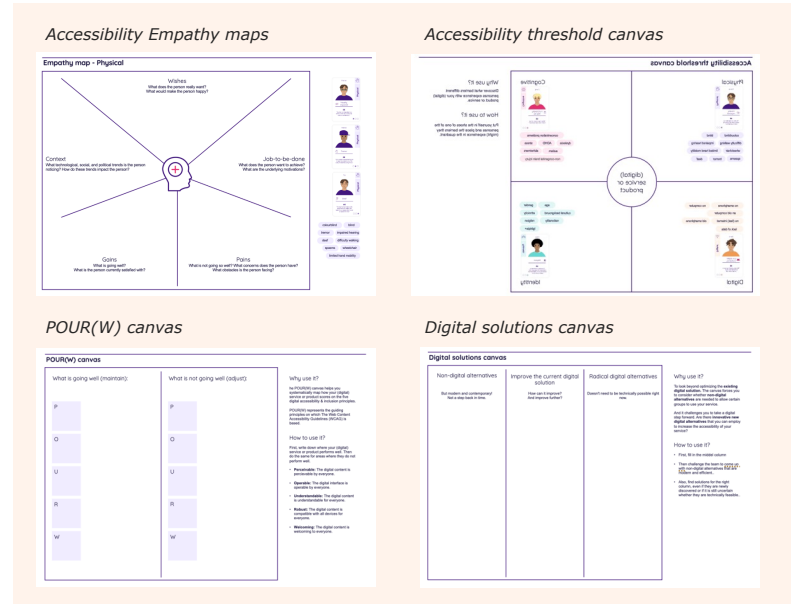
Accessibility Empathy Maps, Accessibility Barrier Canvas, POUR(W) Canvas, Digital Solutions Canvas

# Canvases

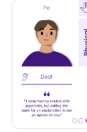
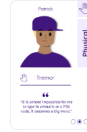
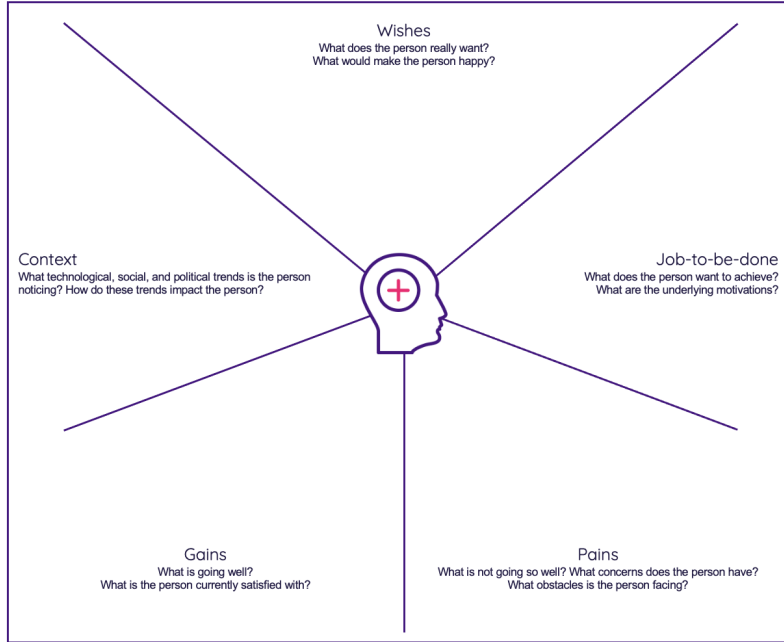
In this section of the toolkit, you'll find canvases designed to help you kickstart your efforts in digital accessibility and inclusion. These canvases assist in considering the perspective of your target audience, forming hypotheses, and integrating accessibility and inclusion principles into your product or service.

The canvases are meant to be completed collaboratively, step by step. It's often helpful to begin with some broad ideas to stimulate creativity and then refine these ideas as new information and insights emerge. They provide a shared space for team members to contribute their thoughts without any idea being considered final. The canvases are tools to guide your thinking through different aspects of your challenge, not simply checklists to be completed.

For physical workshops, the canvases are also available as A0-sized PDFs that you can print. To request a copy, please contact [info@perspective.amsterdam](mailto:info@perspective.amsterdam).

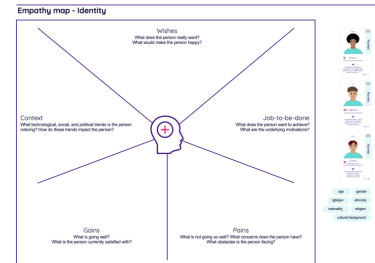
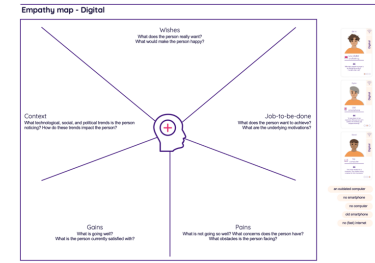
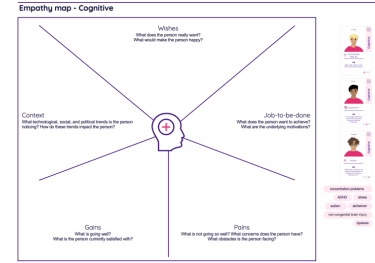


## Empathy map - Physical

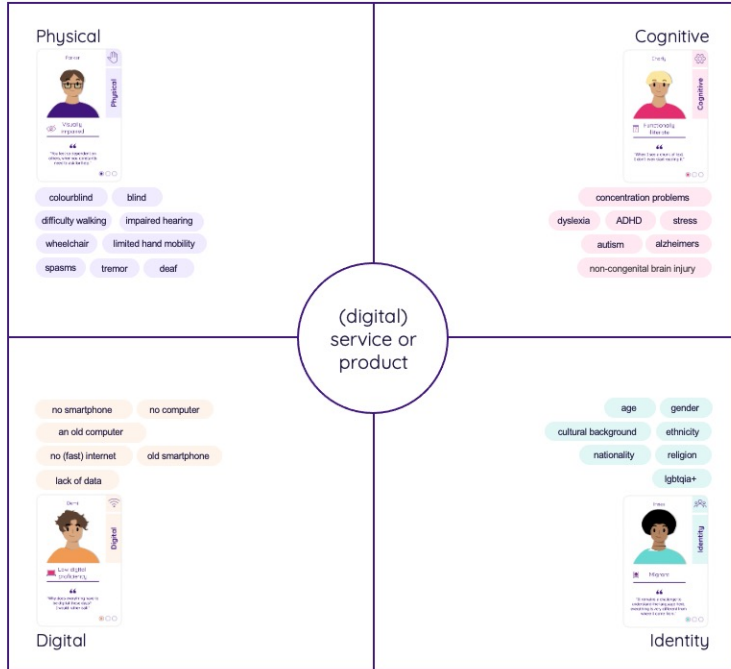


- colourblind
- blind
- tremor
- impaired hearing
- deaf
- difficulty walking
- spasms
- wheelchair
- limited hand mobility

All canvases can be requested in A0 format via: [info@perspective.amsterdam](mailto:info@perspective.amsterdam)



## Accessibility threshold canvas



### Why use it?

Discover what barriers different personas experience with your (digital) product or service.

### How to use it?

Put yourself in the shoes of one of the personas and place the barriers they (might) experience in the quadrant.

All canvases can be requested in A0 format via: [info@perspective.amsterdam](mailto:info@perspective.amsterdam)

## POUR(W) canvas

What is going well (maintain):	What is not going well (adjust):
P	P
O	O
U	U
R	R
W	W

### Why use it?

The POUR(W) canvas helps you systematically map how your (digital) service or product scores on the five digital accessibility & inclusion principles.

POUR(W) represents the guiding principles on which The Web Content Accessibility Guidelines (WCAG) is based.

### How to use it?

First, write down where your (digital) service or product performs well. Then do the same for areas where they do not perform well.

- **Perceivable:** The digital content is perceivable by everyone.
- **Operable:** The digital interface is operable by everyone.
- **Understandable:** The digital content is understandable for everyone.
- **Robust:** The digital content is compatible with all devices for everyone.
- **Welcoming:** The digital content is welcoming to everyone.

All canvases can be requested in A0 format via: [info@perspective.amsterdam](mailto:info@perspective.amsterdam)



## Digital solutions canvas

Non-digital alternatives	Improve the current digital solution	Radical digital alternatives
But modern and contemporary! Not a step back in time.	How can it improve? And improve further?	Doesn't need to be technically possible right now.

### Why use it?

To look beyond optimizing the **existing digital solution**. The canvas forces you to consider whether **non-digital alternatives** are needed to allow certain groups to use your service.

And it challenges you to take a digital step forward. Are there **innovative new digital alternatives** that you can employ to increase the accessibility of your service?

### How to use it?

- First, fill in the middle column
- Then challenge the team to come up with non-digital alternatives that are modern and efficient..
- Also, find solutions for the right column, even if they are newly discovered or if it is still uncertain whether they are technically feasible..

All canvases can be requested in A0 format via: [info@perspective.amsterdam](mailto:info@perspective.amsterdam)

# Part 3: Tools & inspiration

Simulation tools, checklist inclusive research, inspirational video content, sources

# SIMULATION TOOLS

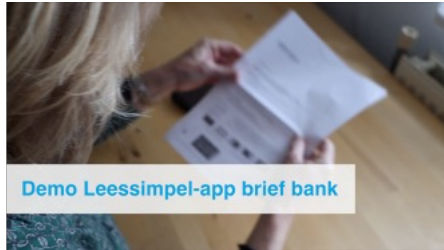
Simulation tool	Application	What can you simulate?	Persona
<a href="#">Funkify</a>	Chrome plug-in	Cognitive impairments, dyslexia, motor and visual impairments based on personas.	Physical, Cognitive
<a href="#">Netlify</a>	Website	Various impairments including dyslexia, colour blindness, blindness, ADHD, hearing loss, and tunnel vision.	Physical, Cognitive
<a href="#">Web Disability Simulator</a>	Chrome plug-in	Colour blindness, visual impairment, dyslexia, Parkinson's, and illiteracy.	Physical, Cognitive
<a href="#">Zien app</a>	App	Various visual conditions.	Physical
<a href="#">Escape Koffer</a>	Product	The Escape Koffer allows people to experience what it's like to struggle with reading and writing. Players get stuck with the comprehension and realize how frustrating this can be.	Cognitive
<a href="#">LVB Media Experience</a>	Website	With the LVB Media Experience, you can experience the obstacles that people with mild intellectual disabilities (LVB) encounter when using digital services.	Cognitive, Digital
<a href="#">Beleving</a>	course	At Beleving in Zeist, you can experience life with a visual impairment through a guided tour in the dark with a white cane and various other activities.	Physical

# Checklist inclusive research

- **Check your bias:** inclusive mindset | check your own prejudices | learning
- **Stakeholder buy-in:** legislation | expand your audience| foolproof
- **Take your time:** timing& duration interviews | lead time | preparation
- **Recruit the right people:** who and when | early involvement | smart recruiting | together
- **Acknowledge diversity:** recognising diversity| tolerate vs. normalise| life events (temporary)
- **Words matter:** A2B1 language use | addressing identity | etiquette
- **Research design done right:** provide information | method choice | location
- **Show the world:** accessible presentation | in the right context | experience gap
- **Normalize it:** allocate budget | cultural shift | within your organisation too

For more inspiration look on: <https://www.pharos.nl/infosheets/inclusief-onderzoek/> and <https://medium.com/inclusive-research>.

# Inspirational video content



Source: [Betaalvereniging Nederland](#)



Source: [Betaalvereniging Nederland](#)



Source: [Betaalvereniging Nederland](#)



Source: [Betaalvereniging Nederland](#)



Source: [Alliantie Digitaal Samenleven](#)



Source: [ING](#)

# Sources

Research on Accessible Banking:

[https://www.dnb.nl/media/twyi3pla/impact-digitalisering\\_nl\\_web.pdf](https://www.dnb.nl/media/twyi3pla/impact-digitalisering_nl_web.pdf)

[https://toegankelijkbankieren.nl/wp-content/uploads/2024/06/Toegankelijkheidsmonitor\\_eindrapport\\_juni-2024.pdf](https://toegankelijkbankieren.nl/wp-content/uploads/2024/06/Toegankelijkheidsmonitor_eindrapport_juni-2024.pdf)

The following sources were used for the development of the personas:

<https://inclusie.gebruikercentraal.nl/doelgroepen>

<https://uit.stanford.edu/accessibility/design-personas>

<https://www.gov.uk/government/publications/understanding-disabilities-and-impairments-user-profiles>

<https://www.ilsemarien.com/single-post/2015/11/15/new-report-8-profiles-of-digital-inequalities>

<https://www.allesoversport.nl/thema/feiten-en-cijfers-over-het-aantal-mensen-met-een-beperking/>

<https://oogfonds.nl/oogklacht/kleurenblind/>

<https://www.lezenenschrijven.nl/>

<https://balansdigitaal.nl/kennisbank/ontwikkelingsproblemen/welke-ontwikkelingsproblemen-zijn-er/wat-is-dyslexie>

<https://herseninstituut.nl/over-het-brein/de-ziekte-van-alzheimer/>

<http://www.autisme.nl/>

<https://hersenz.nl/hersenletsel/feiten-cijfers-niet-aangeboren-hersenletsel>

<https://www.rijksoverheid.nl/onderwerpen/laaggeletterdheid/hulp-bij-verbetering-digitale-vaardigheden>

<https://geletterdheidinzicht.nl/>

<https://www.digitaleoverheid.nl/overzicht-van-alle-onderwerpen/digitale-inclusie/voor-wie-is-dit-belangrijk/>

<https://www.movisie.nl/publicatie/feiten-cijfers-rij>

<https://longreads.cbs.nl/nederland-in-cijfers-2023/welk-geloof-hangen-we-aan/>

# Make an appointment with us!

**PER  
SPEC  
TIVE.**

This toolkit is offered by het programma Toegankelijk Bankieren (a collaboration between the four largest banks.), de Nederlandse Vereniging van Banken (NVB) and Betaalvereniging Nederland | [www.toegankelijkbankieren.nl](http://www.toegankelijkbankieren.nl)

The toolkit was developed by Perspective| [www.perspective.amsterdam](http://www.perspective.amsterdam). If you and your team want to get started with the toolkit and need support, please contact Renske Verweijen at [info@perspective.amsterdam](mailto:info@perspective.amsterdam).