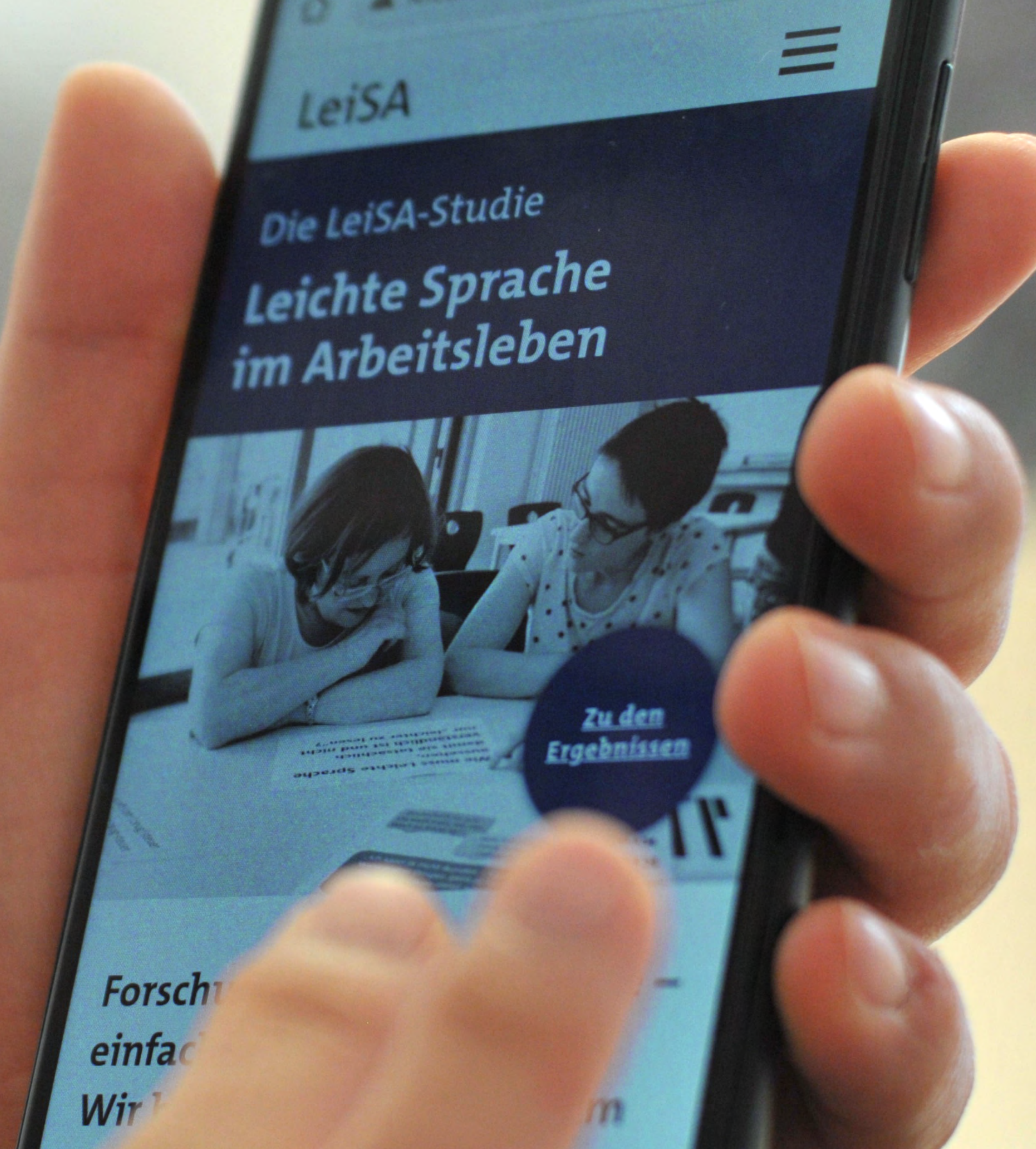


Sabina Sieghart

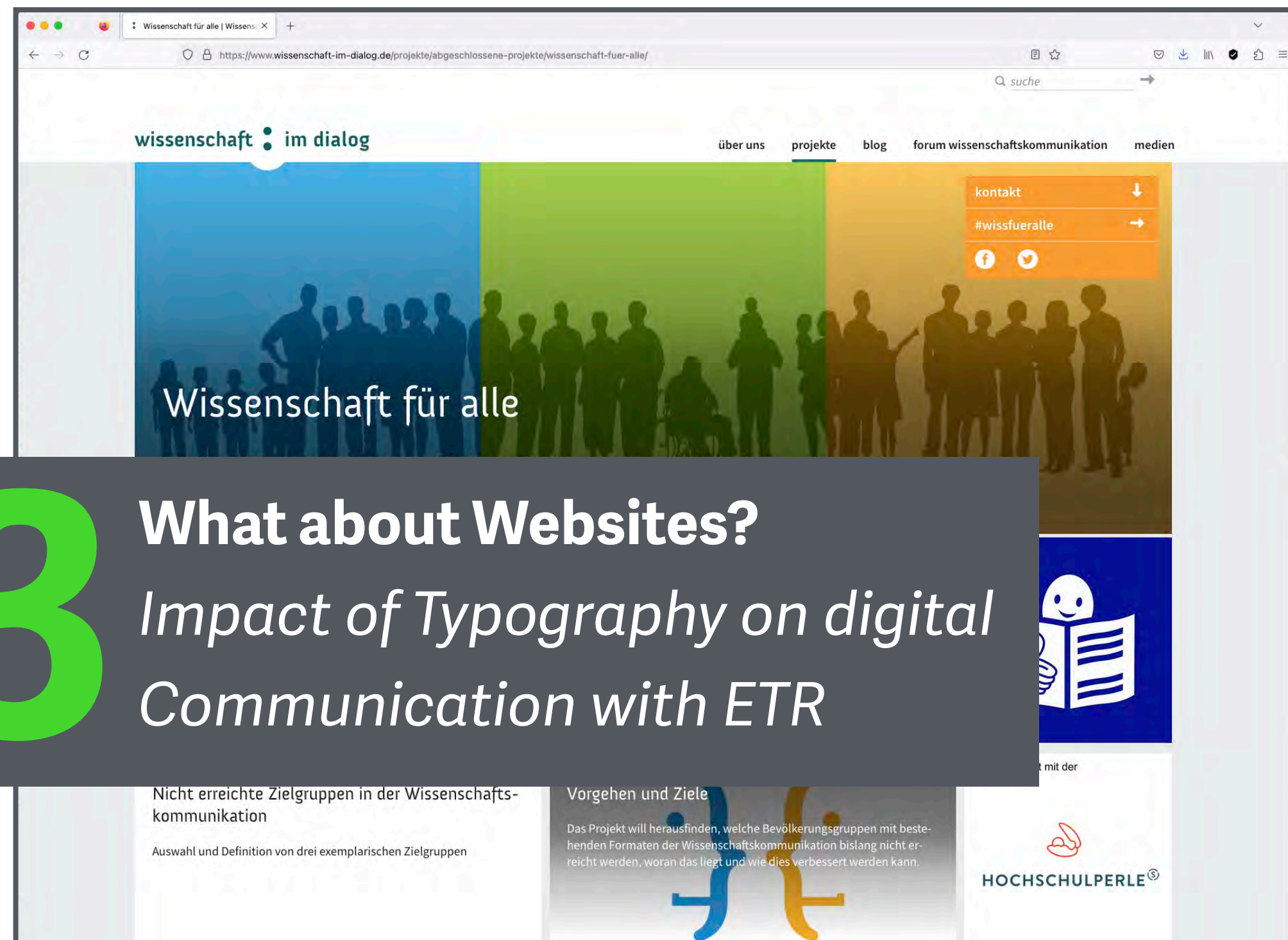
The Impact of Typography in
Communication with Easy-to-Read.




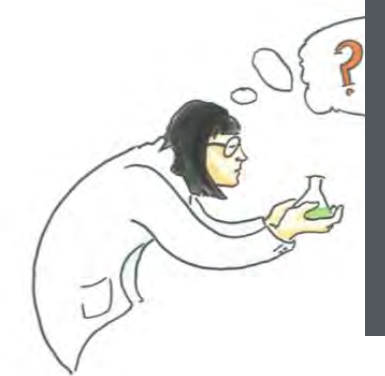



Field of Research

- 15% of the population have reading difficulties
- Easy-to-Read (ETR) language simplifies text for readers with so-called „cognitive impairments“
- Most of the research in the linguistic and social sciences
- German Easy-to-Read has strict rules

Design helps understanding



3 What about Websites?
Impact of Typography on digital Communication with ETR

	<p>Beschreibung für das Projekt „Wissenschaft für alle“ in Leichter Sprache</p>
	<p>1 Does this special design help? <i>Impact of Macrotypography on Comprehensibility</i></p>
	<p>Wissenschaftler und Wissenschaftlerinnen forschen über die Welt. Zum Beispiel über:</p> <ul style="list-style-type: none"> - Krankheiten - Sprachen - Geräten zum Beispiel Handys und Autos
	<p>Forschung ist manchmal schwer zu verstehen. Aber Forschung ist für alle Menschen wichtig.</p>
	<p>Es gibt Menschen, die F Das heißt Wissenschaft Kommunikation heißt mi Wissenschafts-Kommunikation spricht über Forschung.</p>

2 Why Arial 14pt?
Influence of Fonts on Reading Performance



- Participants mostly categorized the text types correctly and assigned them to the right design genres.
- Test sheets presented in both design variants were recognized better in their conventional design.
- Participants with so-called mental disabilities associated the generic ETR design with their own environment.

Sieghart, 2020, Visible Language | Bock, 2020, deGruyter



12 MINÄ OLEN SOKEATEKSTI

Se vaikuttaa monin!

VAIKUTTAA Minä olen sokeateksti. Syntymästäni saakka. Kesti kauan aikaa, kunnes ymmärsin, mitä on olla sokea teksti: sellaisella.

Binä olen sokeateksti. Syntymästäni saakka. Kesti kauan aikaa, kunnes ymmärsin, mitä on olla sokea teksti. Syntymästäni saakka. Kesti kauan aikaa, kunnes ymmärsin, mitä on olla sokea teksti: sellaisella.

Minä olen sokeateksti. Syntymästäni saakka. Kesti kauan aikaa, kunnes ymmärsin, mitä on olla sokea teksti: sellaisella.

Minä olen sokeateksti. Syntymästäni saakka. Kesti kauan aikaa, kunnes ymmärsin, mitä on olla sokea teksti: sellaisella.

- A design pattern solves a design problem, e.g. a headlines creates a hierarchy and allows skimming
- Patterns work because they have been adapted directly to our perceptual system, not just because we have learnt them.

Os nyt todellaikin luet minut loppuun Saakka

OLENKO SEN: Mutta olenko sen vuoksi huono teksti? Tiedän, että nimillä ei koskaan tule ohimään...



Illustration _____ Arial

Illustration _____ Thesis serif

Which font is good for Easy-to-Read?

Arial



12 pt



Thesis-Family

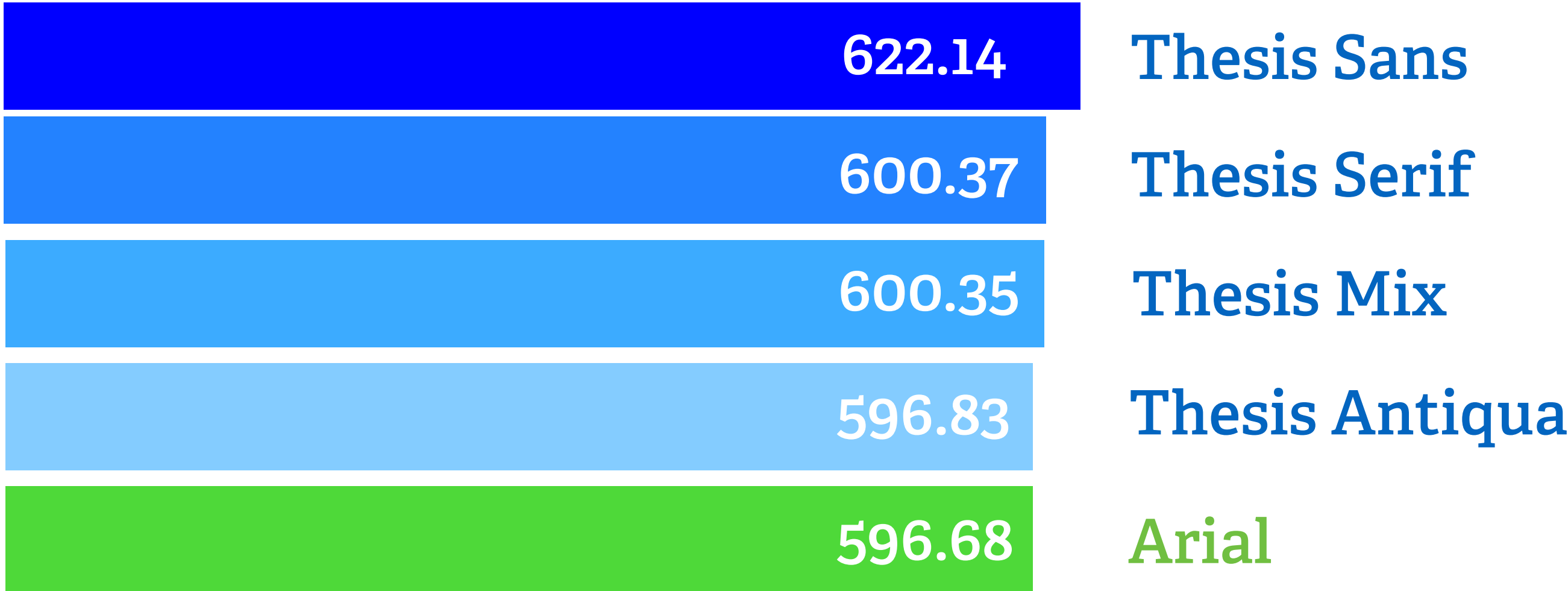


12,5 pt

Thesis Sans, Mix, Serif
The AntiquaB

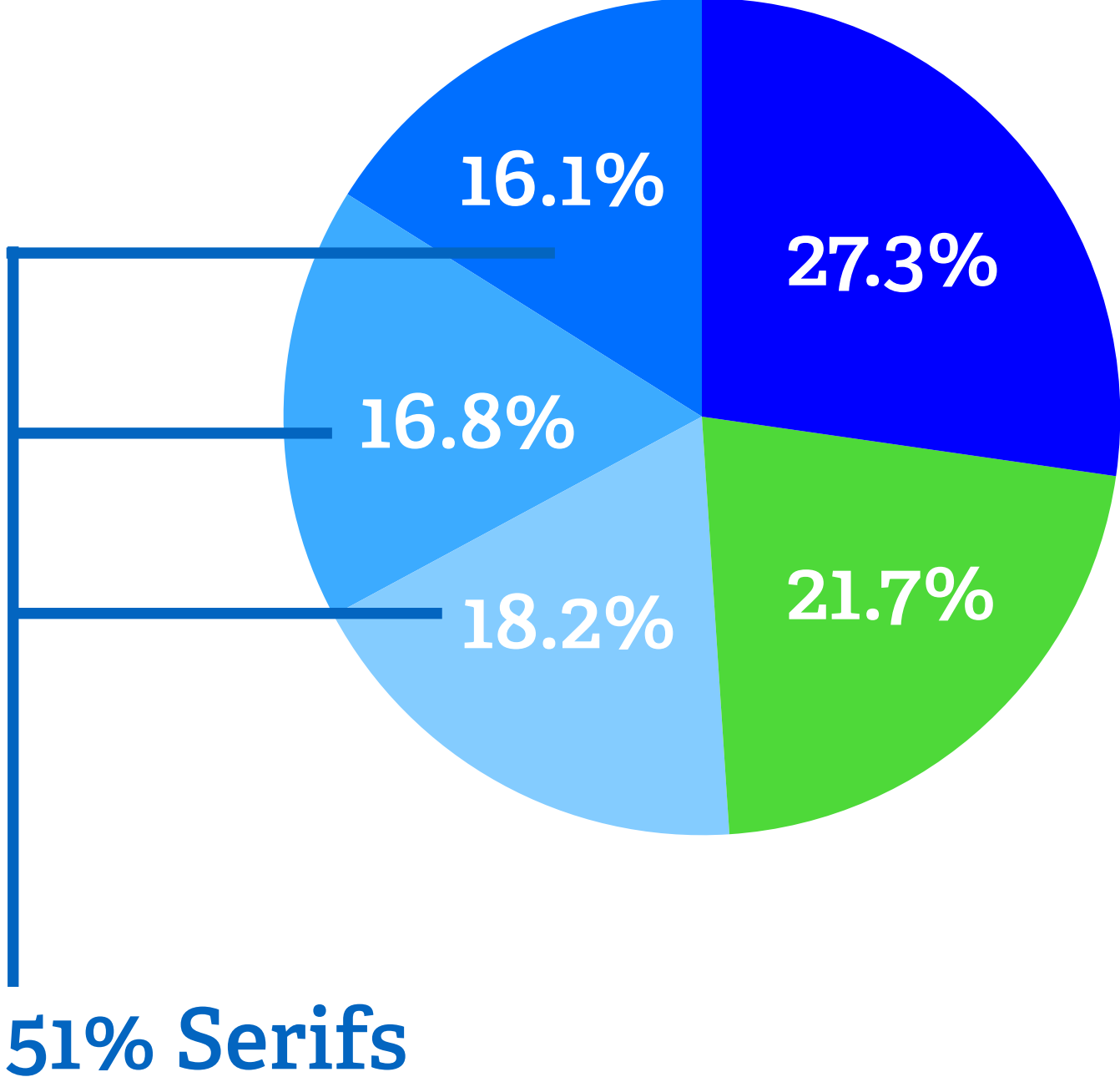
Font read the fastest

Characters per minute

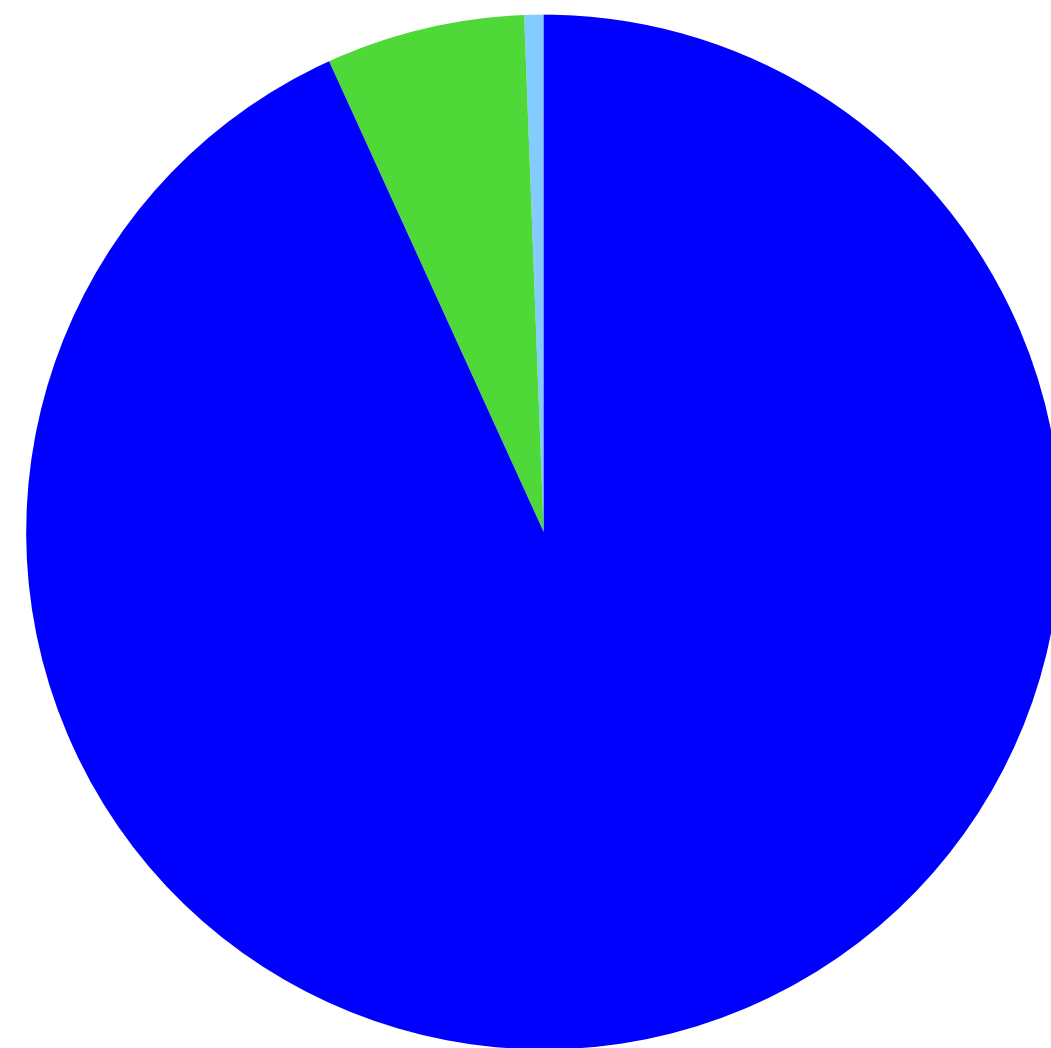


(Mean, N= 145)

Font read the fastest



Type size



(Mean, N= 145)

Test material 12 pt

93.1% good

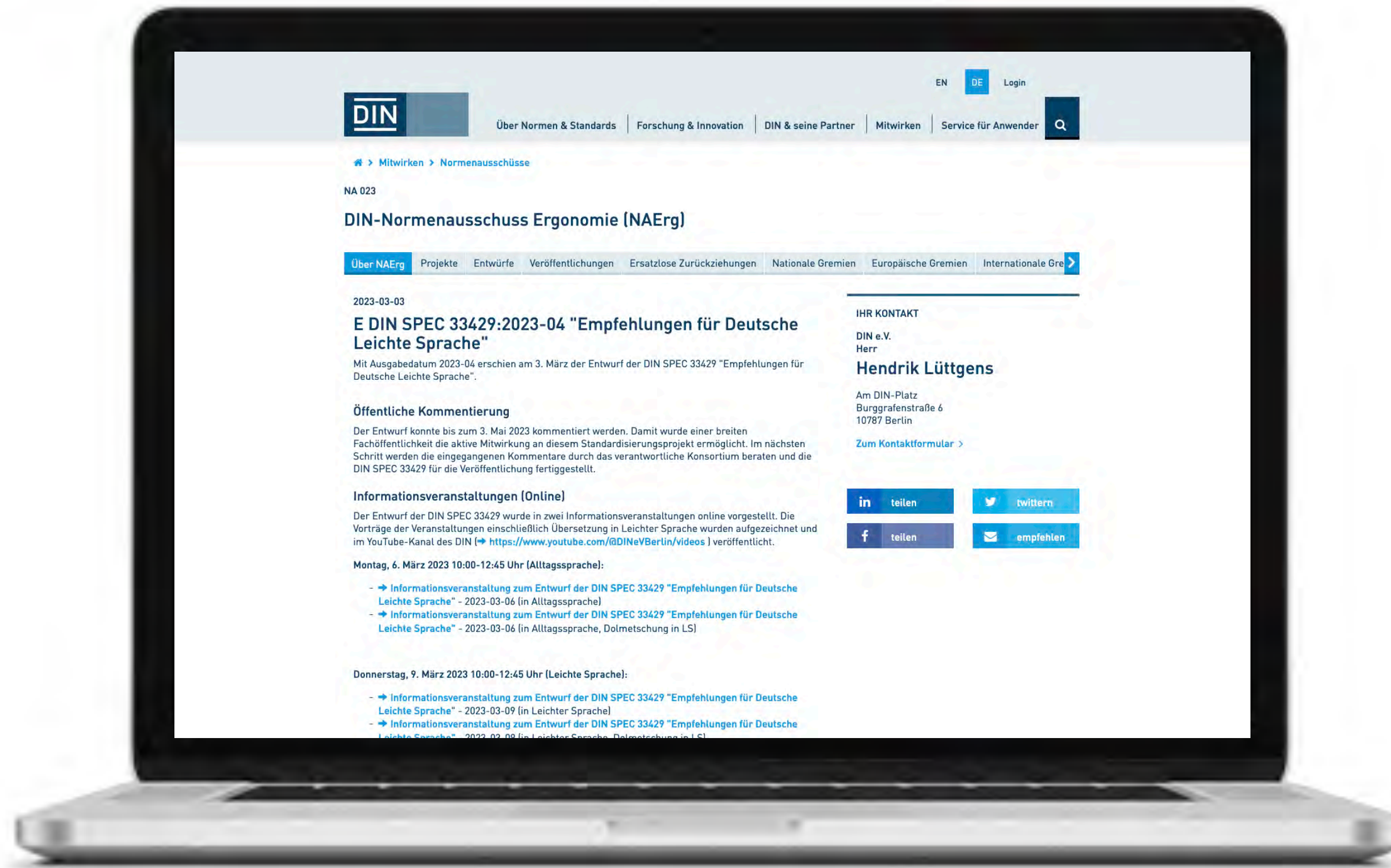
0.6 % too big

6.2% too small

- Fonts of the Thesis Family are read faster than Arial.
- Serif fonts are no problem.
- Font size 12 pt is sufficient for A5. (Consider x-height!)

Sieghart, 2023 | Design Issues, 39.3.

Results are implemented in new DIN



- DIN Spec Leichte Sprache will replace old guidelines
- was initiated by the German ministry of social affairs (BMAS)
- DIN will be part of briefings for accessible communication
- Group of designers and illustrators was sent to the DIN committee by the German Designtag

Science Communication in ETR of LeiSA-Study

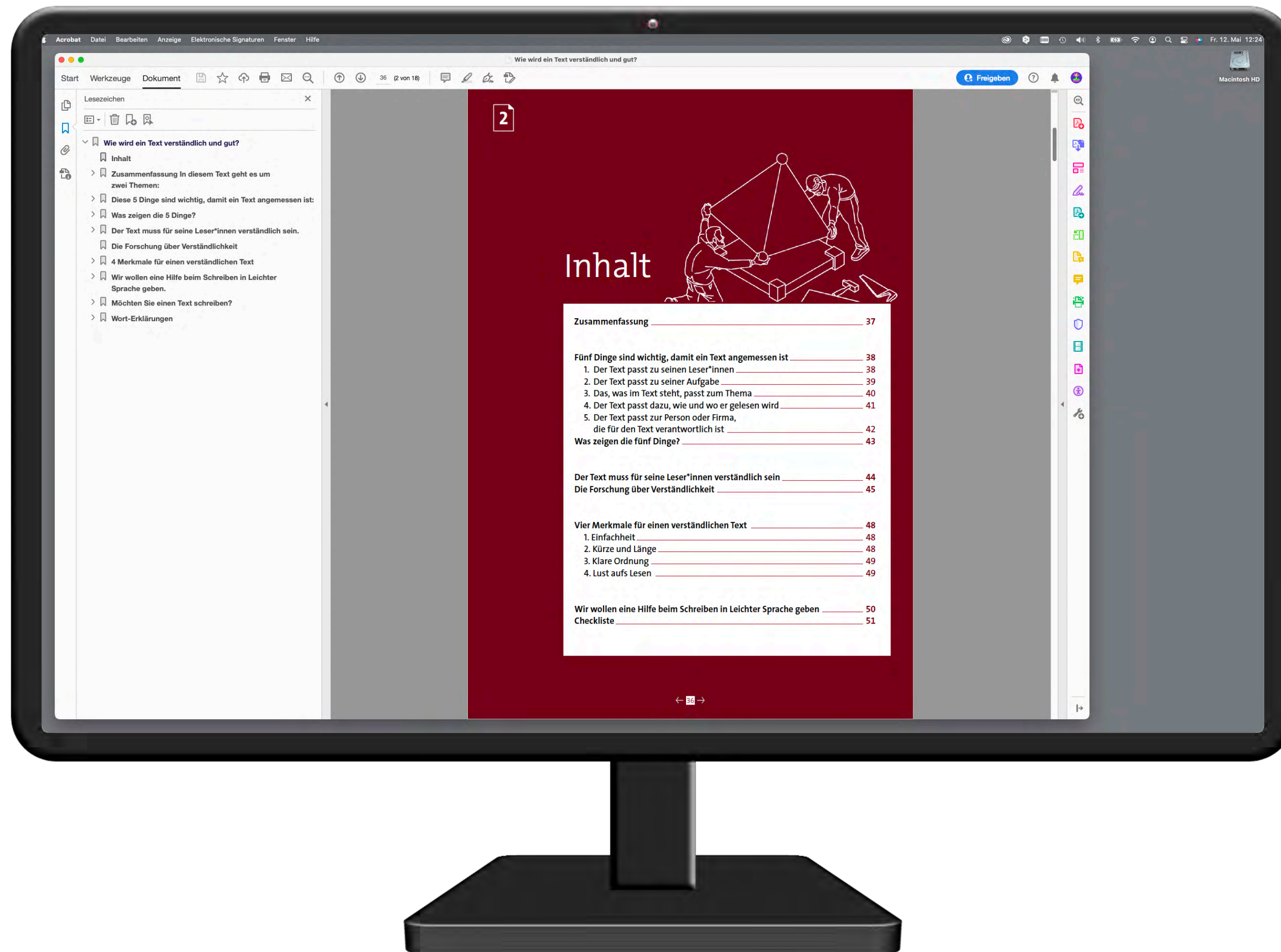
Interdisciplinary, participative set-up

3 linguists, 3 social scientist, 1 designer, 6 co-researchers with cognitive impairments

Design Study, 20 test persons, 3 test sessions

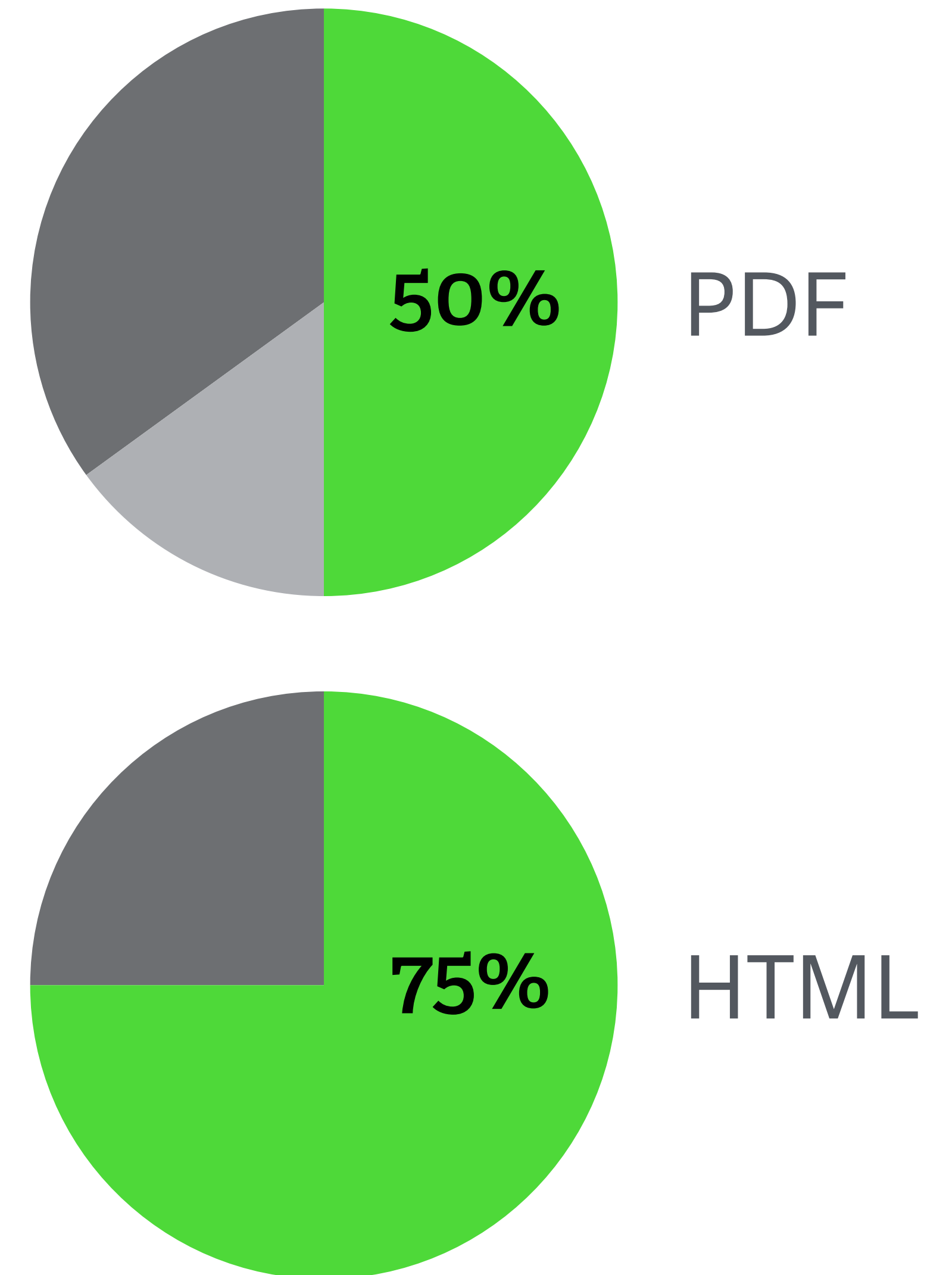
- Do ETR readers understand digital design patterns?
- Which typographic design might help understanding?

Digital Communication with ETR



Successful Usage

Code	Age	Reading Level	Overall Success html-Usage	Access Own Mobile Phone	Access Own PC	Access Own Tablet	Overall Success PDF-Usage
PU12	30	4	x	Smartphone	Computer		crash
200	37	3-4	x			Tablet	x
ME	52	3	–		Computer (Laptop)		–
F7	47	5	x	Smartphone		Tablet	crash
T93	28	3-4	x	Smartphone	Computer		x
M87	34	3	x	Smartphone	Computer		x
C31	30	3	–	Smartphone	Computer		x
A10	37	3	x	Smartphone			x
B5	31	4	x	Smartphone	Computer		–
FR10	26	3-4	x	Smartphone			x
MR1	39	4-5	x	Smartphone	Computer		x
ML	25	3	x	Smartphone			–
27C	20	2	–	Smartphone	Computer (Eltern)		crash
ABC	40	3-4	x	Smartphone		Tablet	x
10	60	4-5	–	Smartphone (new)			crash
A3	29	2-3	x	Nur Telefon			–
A2	30	4-5	x	Smartphone			x
28B	24	4	x	Smartphone			–
M7	19	4	–			Tablet	x
MC14	30	3	x	Smartphone			–



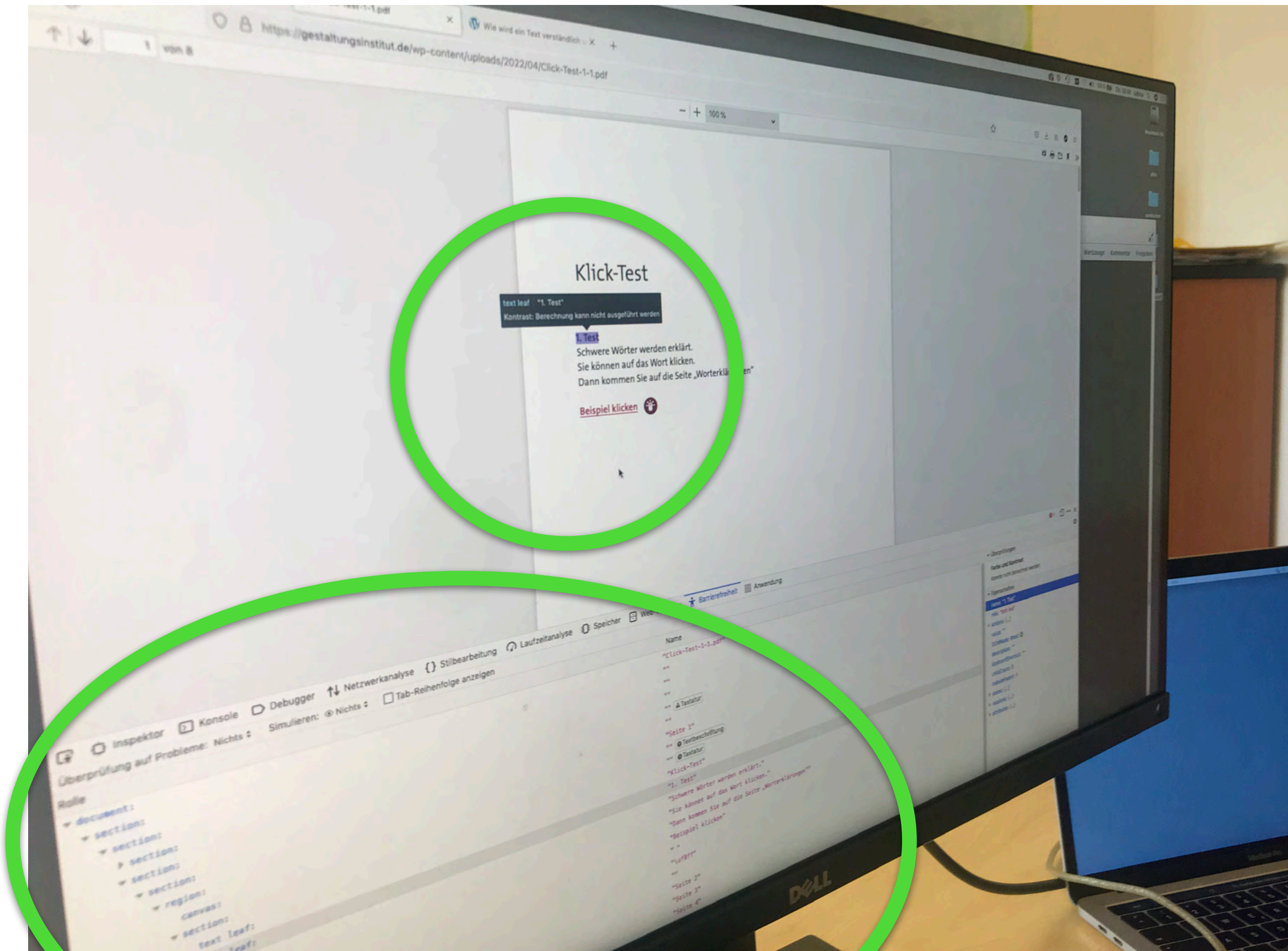
What makes PDF difficult for ETR readers

USER SIDE

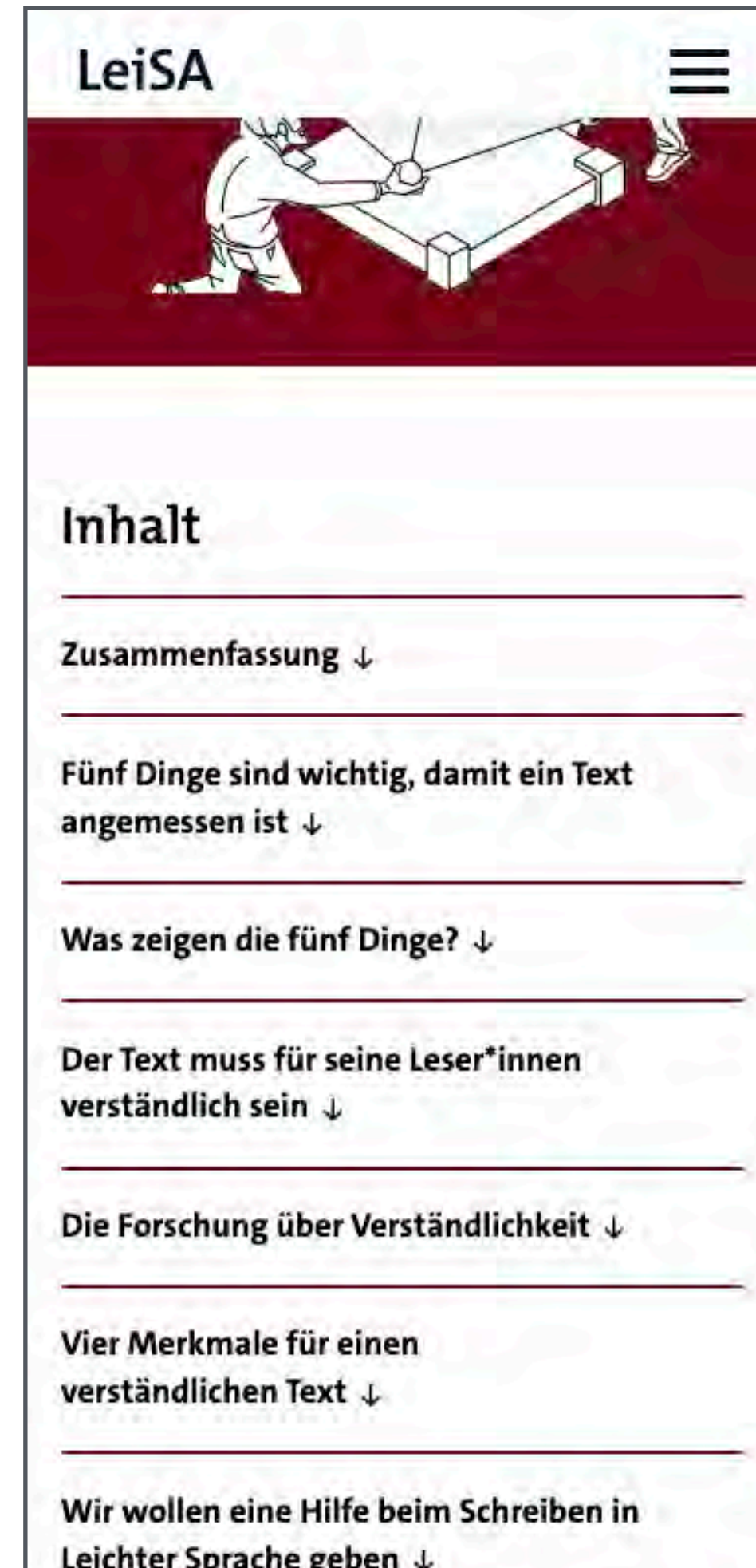
- Little access (<--> co-researchers)
- Low digital knowledge on PC

PRODUCT SIDE

- Various control bars
- Additional functionalities
- Higher affordance mouse vs. finger
- Less customization possible



What makes PDF difficult for ETR readers



USER SIDE

- Little access (<--> co-researchers)
- Low digital knowledge on PC

PRODUCT SIDE

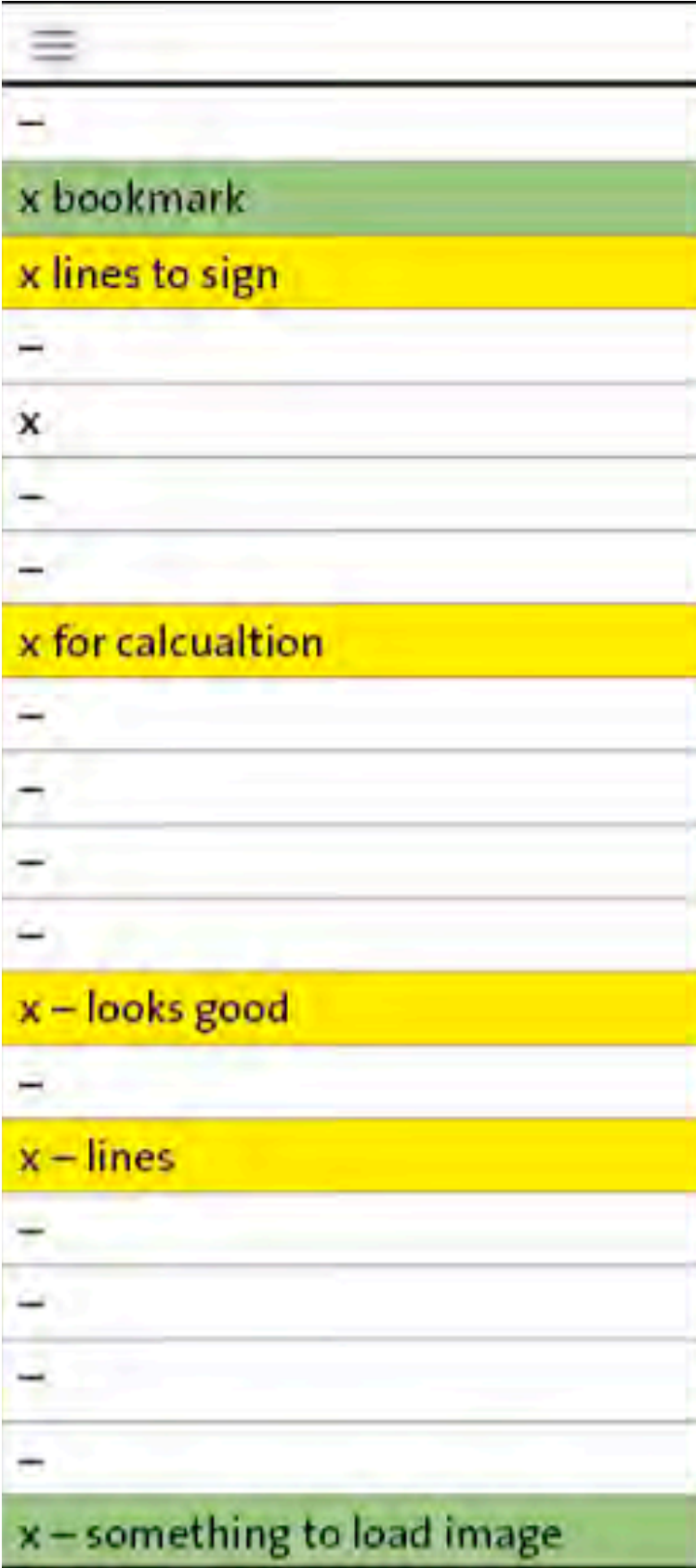
- Various control bars
- Additional functionalities
- Higher affordance mouse vs. finger
- Less customization possible

DESIGN

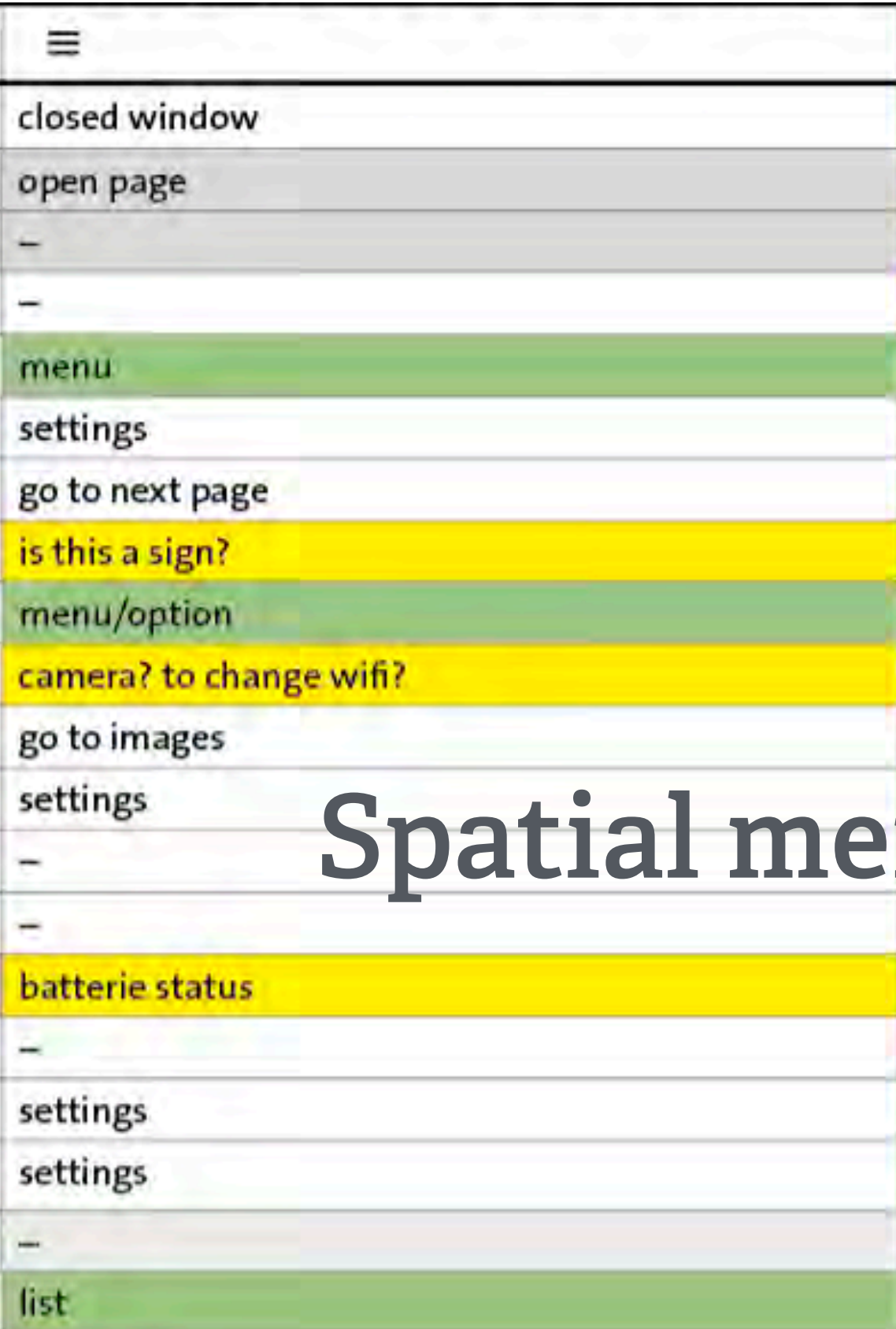
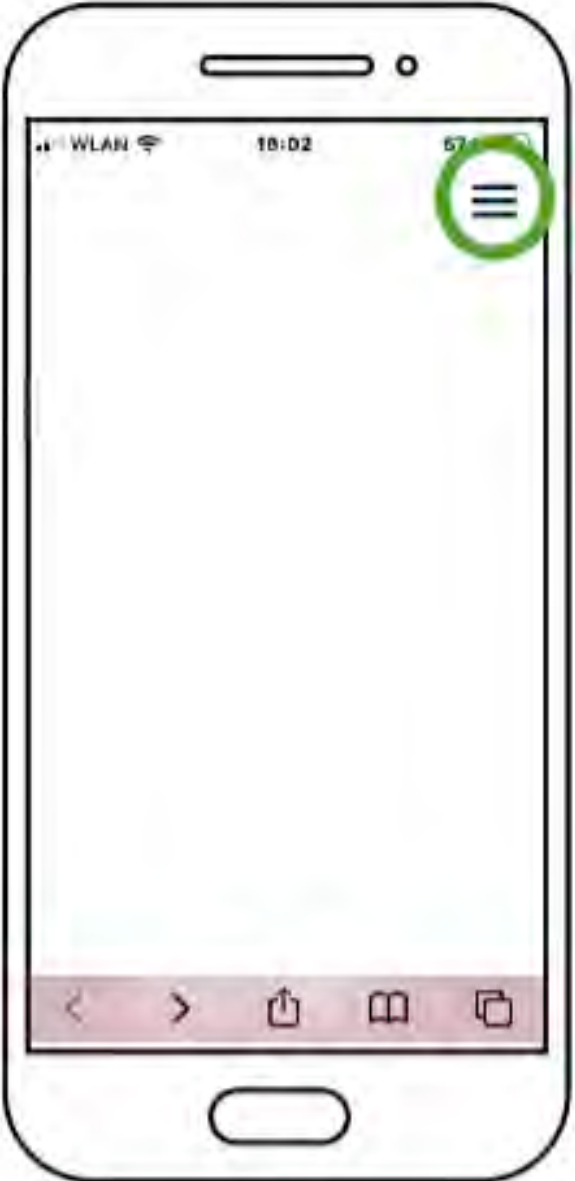
- PDF has complex design
- HTML has less text per viewpoint
- Higher extraneous cognitive load?

Is the design pattern „hamburger“ understood?

QUESTIONNAIRE 1



QUESTIONNAIRE 2



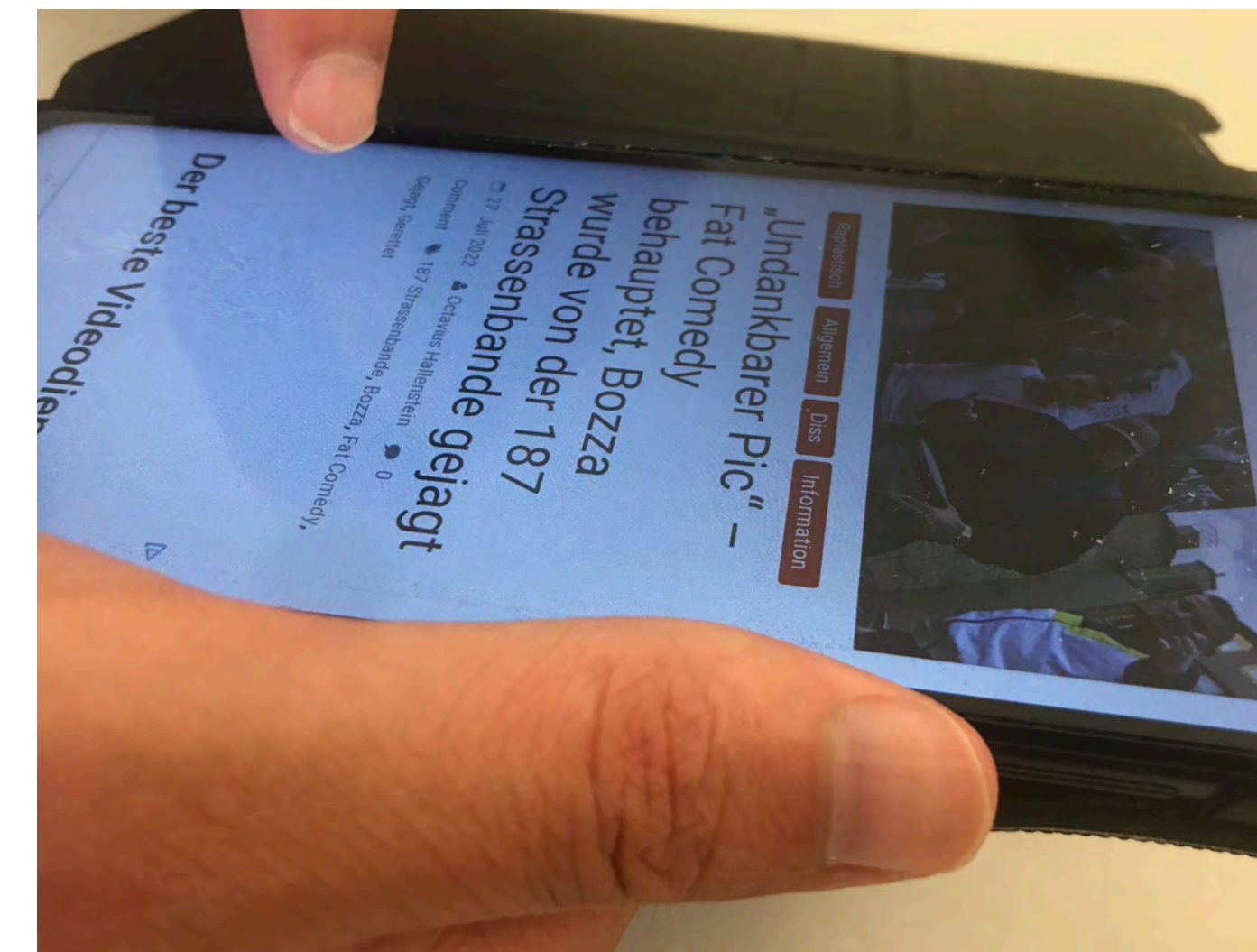
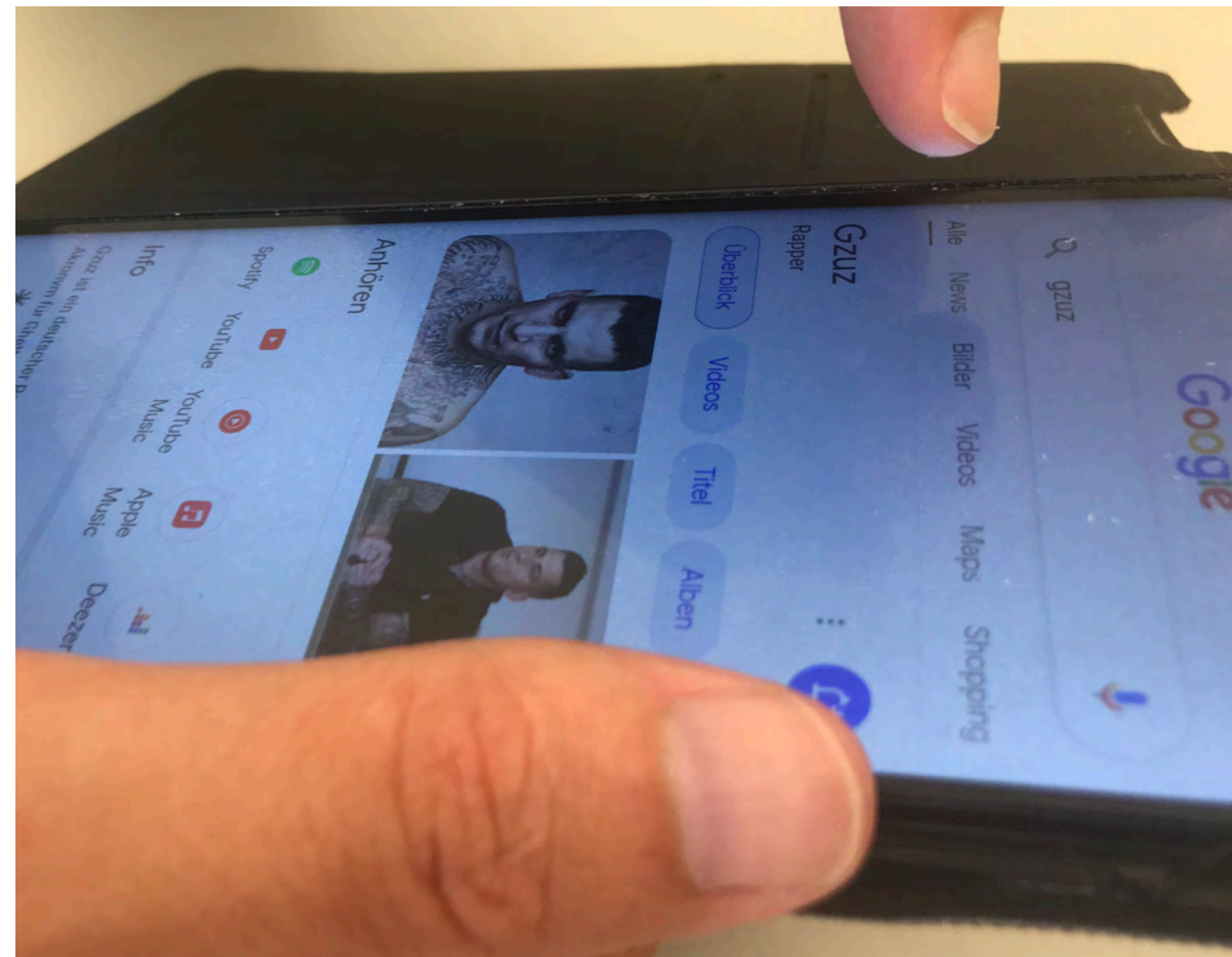
Spatial memory?

Are new digital design patterns used?

Code	Size	Scroll	Klick link	x-Button	☰ Button	⬆ Button	Notes Go-to-Top-Button ⬆
PU12	ok	x	x	x	x	x	known and used
200	ok	x	x – unknown	x	x	x	known and used
ME	140%*	x	x	N/A	–	x – help	unkown, used after explanation
F7	115%	x – wrong direction	x	x	x – don't know	x – help	unkown, used after explanation
T93	ok	x	x	x	x – menu	x	known and used
M87	ok, later zoom	x	x	x	x – menu	x	known: automatic up
C31	ok	x	x – help	(x) – help	x	x – help	unkown, <i>don't have it on my device</i> , scrolls
A10	ok, later zoom	x – alternativ term	x – crash	x	x	x	unkown, used after explanation
B5	ok	x	x	x	x – menu	N/A	N/A
FR10	ok**	x	x – motoric diff.	x	x	x – help	unkown, used after explanation
MR1	ok	x	x	x	x	N/A	N/A
ML	ok	x	x	x	x – settings	x	known: <i>go back up</i>
27C	ok**	x – alternativ term	x	x	x	x – help	unkown, <i>on my device its status</i>
ABC	ok	x	x	x	x – don't know	x – help	unkown, used after explanation
A10	ok	x – alternativ term	x	– scrolls	– (scrolls)	N/A	N/A
A3	ok	x	x – tedious	x	x	N/A	N/A
A2	ok	x	x	x	x	x	known: <i>leads you up</i>
28B	ok	x	x	N/A	x – audio settings	x	known: <i>moves you up</i>
M7	ok	x	x	x	x	x	known: <i>arrow! goes up!</i>
MC14	ok	x – wrong direction	x	x	x – list	x	unkown, <i>never had that</i>
total	16 ok 2 zoom 2 zoom in test *ME needs glasses *M87: 50% one eye **despite large settings on own device	18 no problem 2 wrong direction 4 known with alternativ term (schieben, ziehen, raufziehen)	4 with problems 8 can explain meaning others click anyway 3 problems motorically	16 operate 2 N/A (was not used) 1 scrolls to close window 1 needs help	18 click on it t 3 understand menu 2 think it is settings	10 use it 6 with help 4 N/A (was not used in test)	8 know and use 7 do not know, use after explanation 1 cannot use with explanation 4 N/A

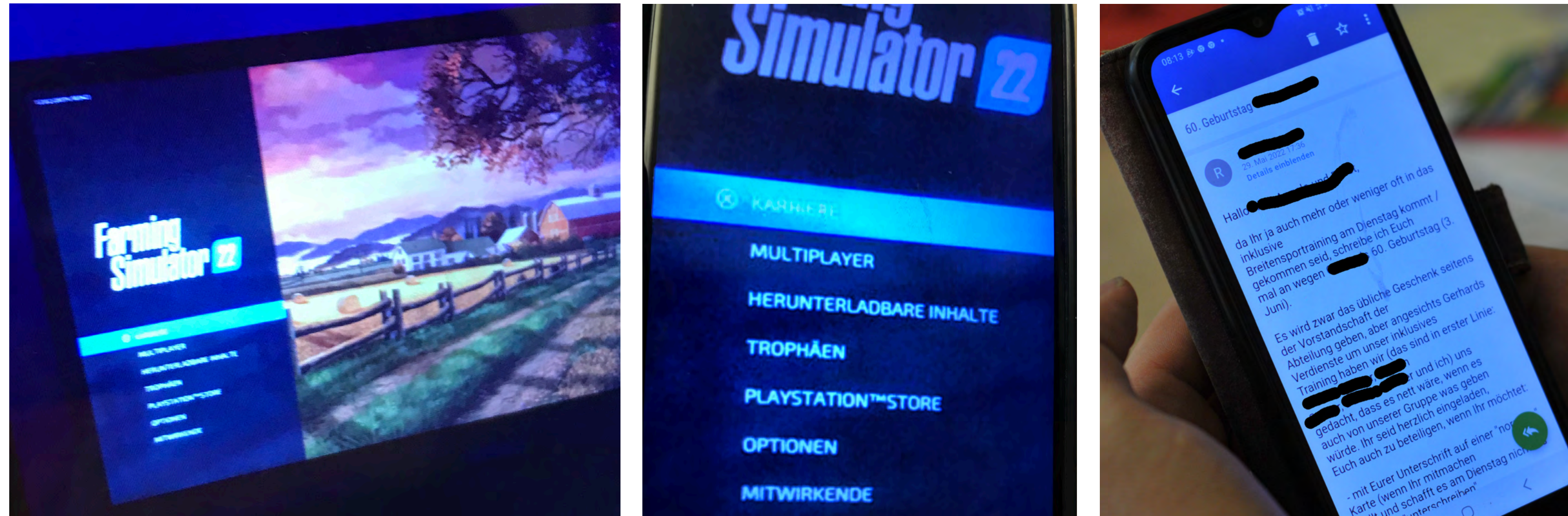


Work arounds to compensate low reading skills



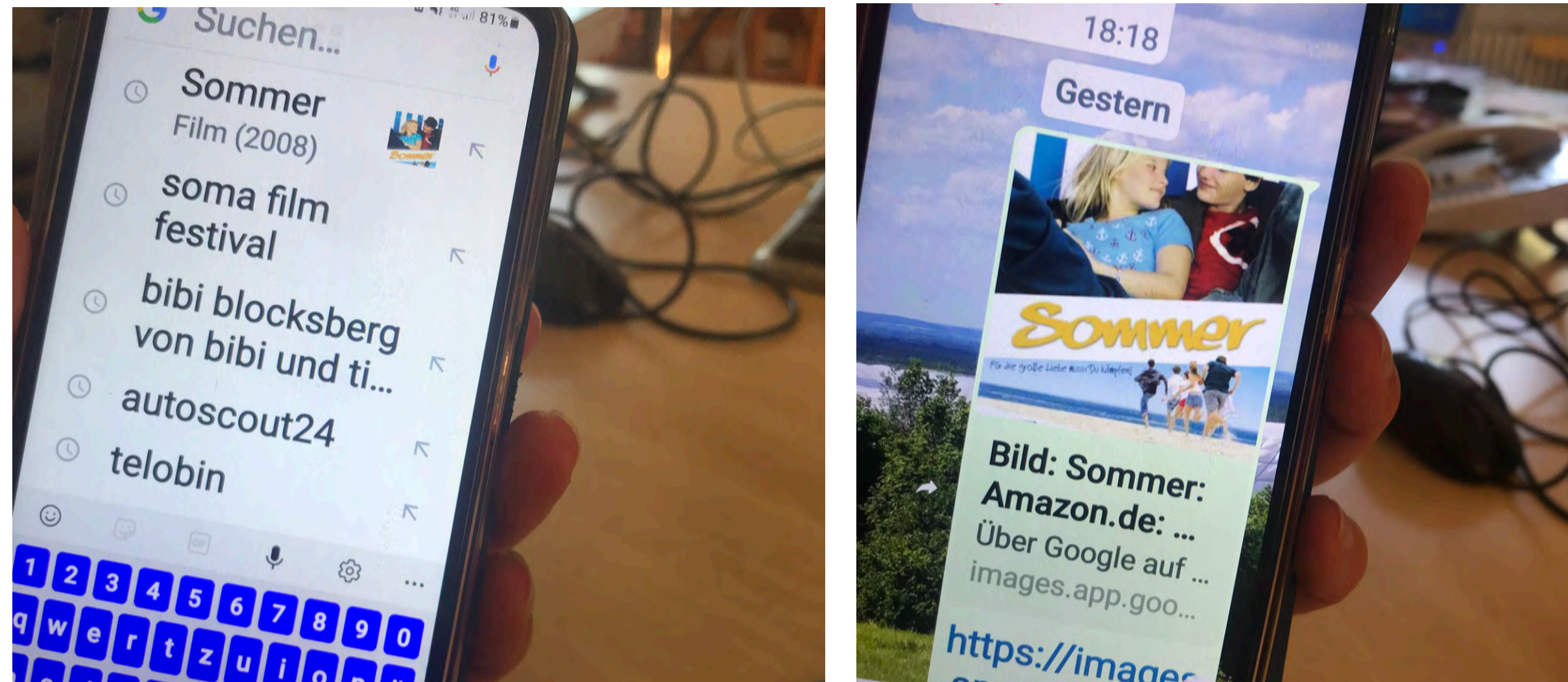
- Selection via image-headline-combination

Work arounds to compensate low reading skills



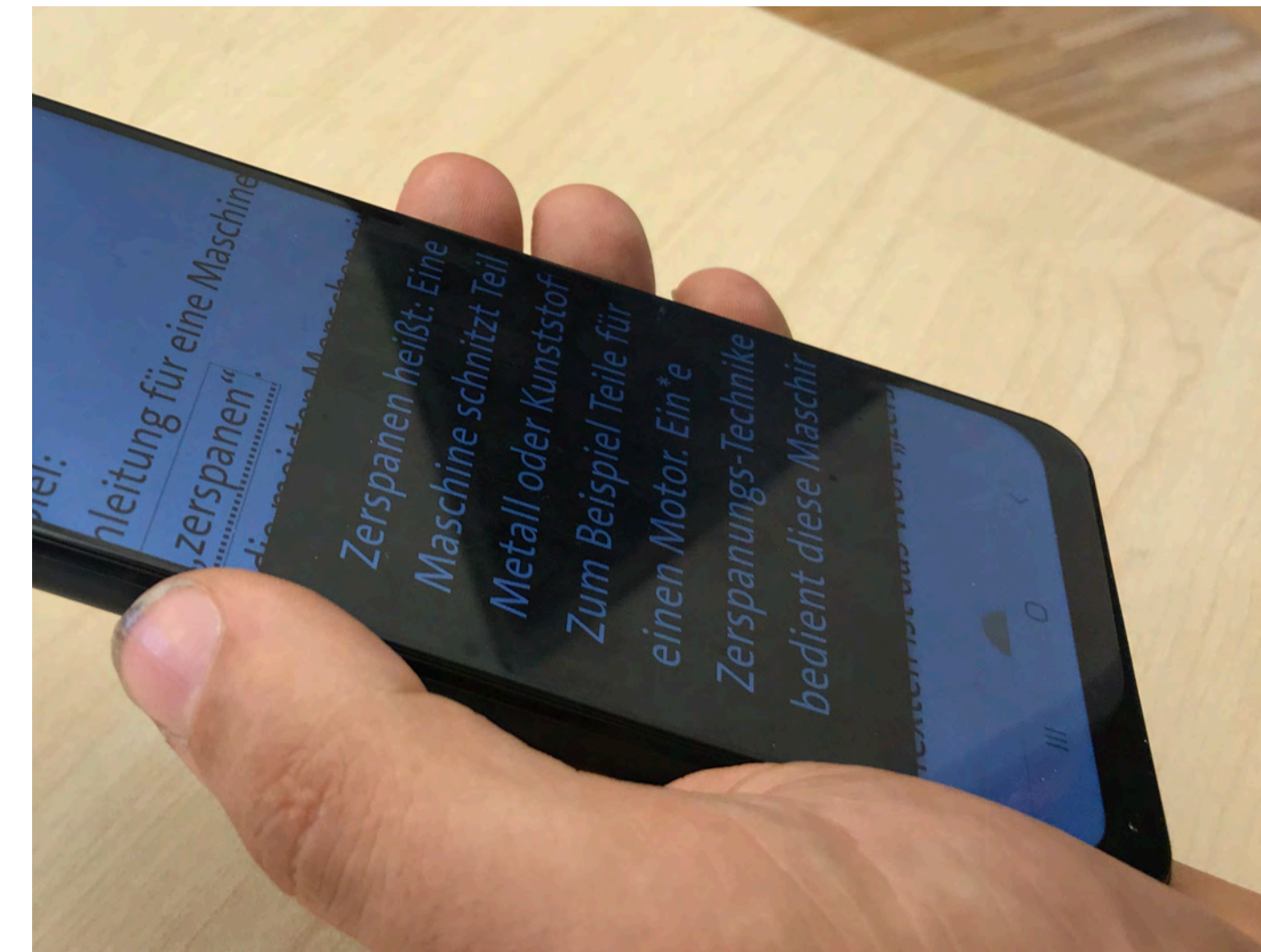
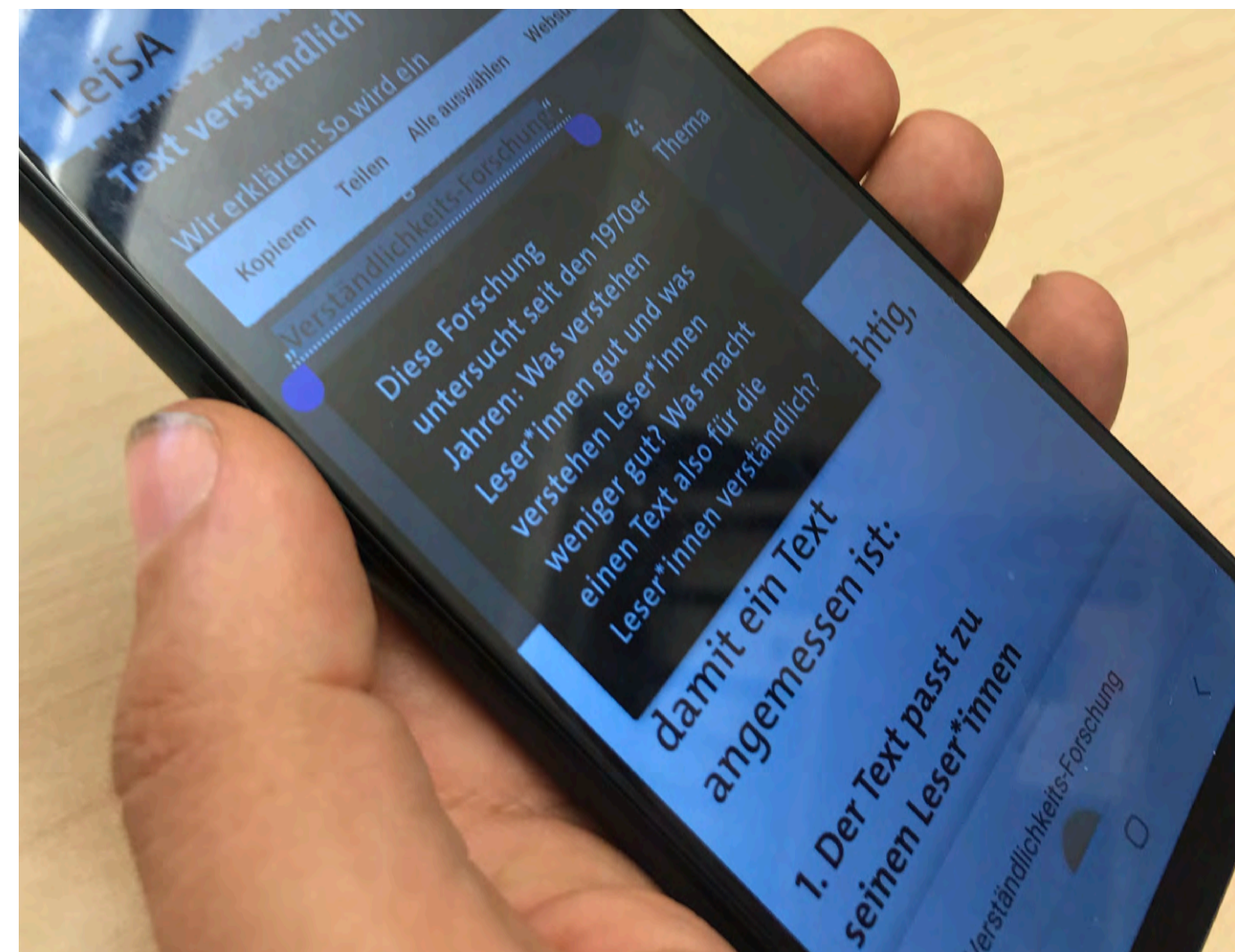
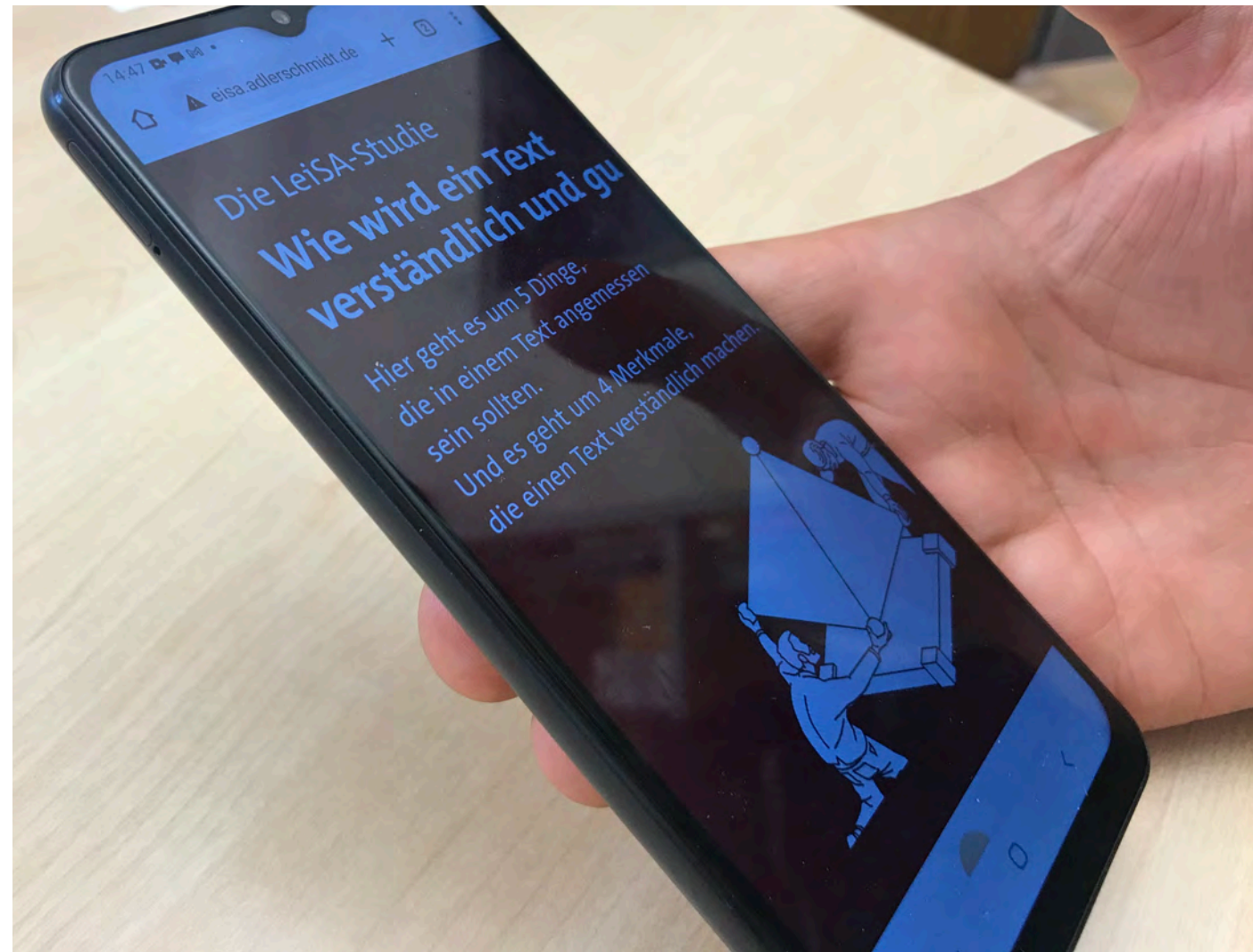
- Selection via image-headline-combination
- Visual orientation and skimming for relevant information

Work arounds to compensate low reading skills



- Selection via image-headline-combination
- Visual orientation and skimming for relevant information
- Combination of functionalities

Work arounds to compensate low reading skills



- Selection via image-headline-combination
- Visual orientation and skimming for relevant information
- Combination of functionalities
- Text reduction strategies

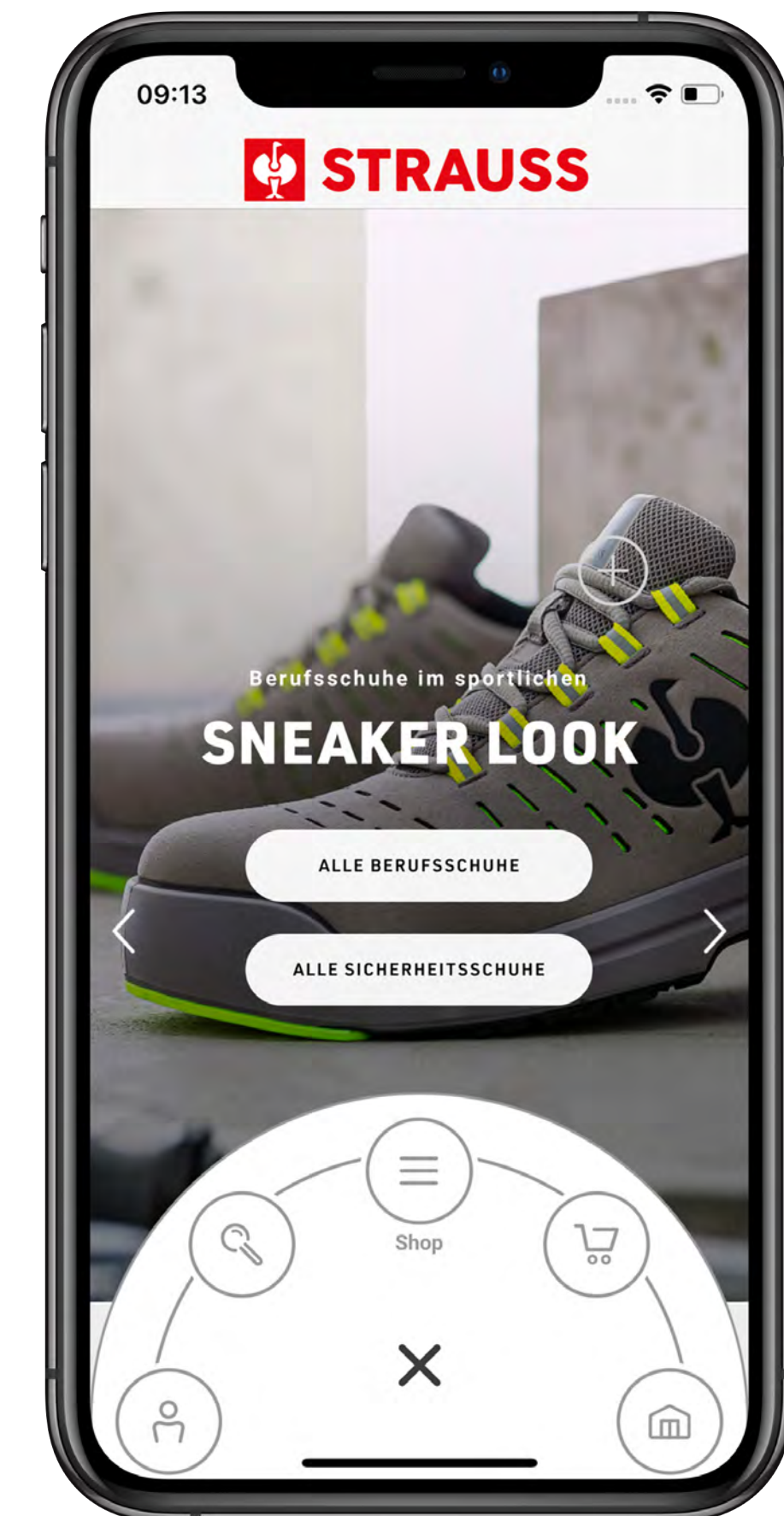
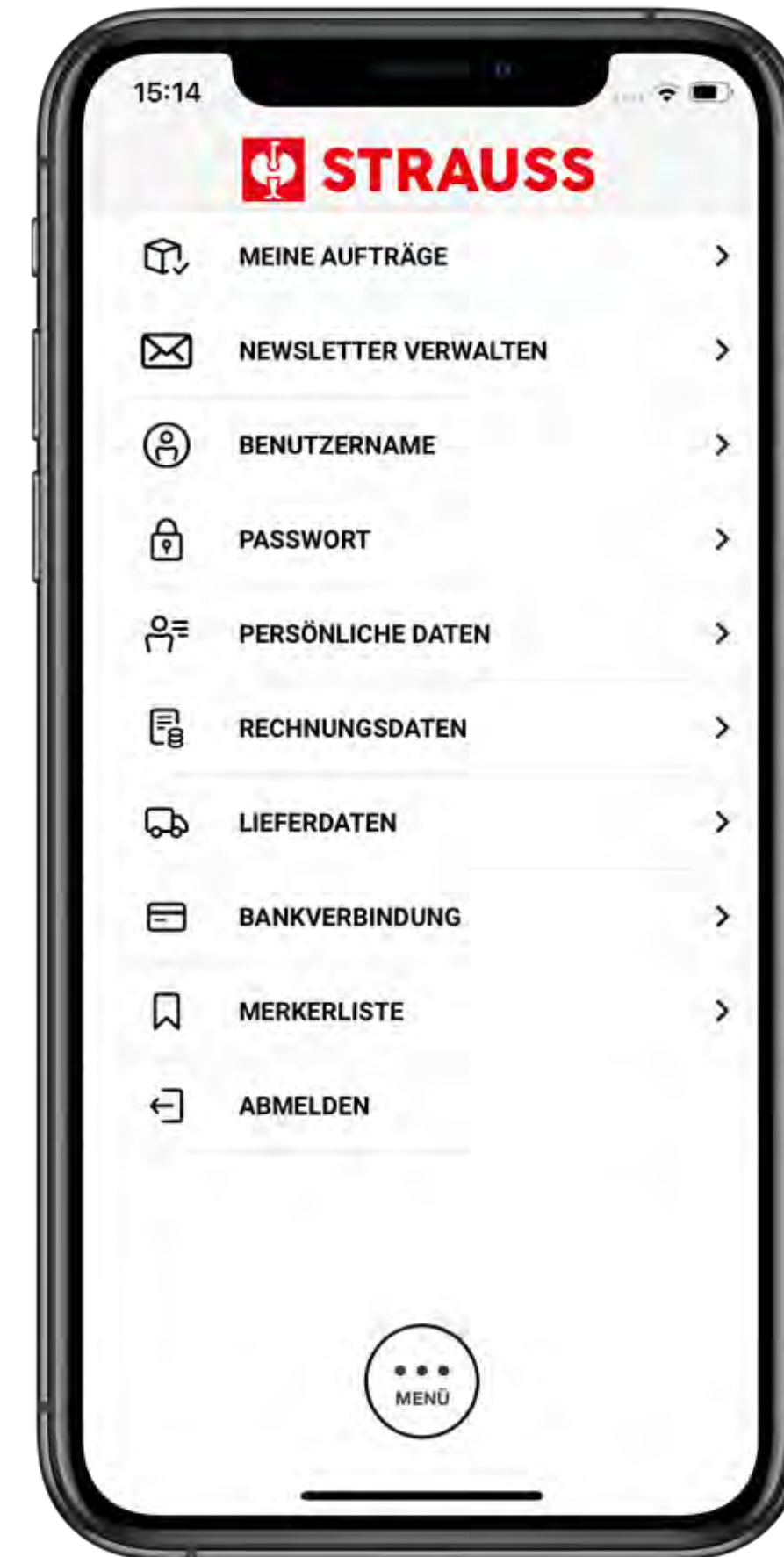
Chances in digital communication

... I'm really good with the cell phone. It's the easiest for me than using the computer or writing or reading on paper.

- Reading is strenuous
- Reading on screen is perceived easier
- Smartphone allows independent access and being part of communities

Next study: Test Designs of helpful Patterns

- Abundant (button) design
- Text-image combinations
- Text reduction options
- Spatial arrangement



What are your suggestions
for the next study?

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Reading list

STUDIES 1 + 2: DESIGN RESEARCH

- Sieghart, Sabina. 2017.** "Leichte Sprache – Design für alle. Ein kritisches Statement aus der Designpraxis" in *Leichte Sprache im Spiegel theoretischer und angewandter Forschung*, 495–499. Berlin: Frank & Timme.
- Sieghart, Sabina. 2019.** "Leichte Sprache, Typografie & Angemessenheit." In *Lesbar. Typografie in der Wissensvermittlung*, 124–132, Zurich: Triest
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- Sieghart, Sabina. 2023.** "The Influence of Fonts on the Reading Performance in Easy-to-Read Texts: A Legibility Study with 145 Participants" *DesignIssues: Volume 39, Number 3*, 30–44

STUDY 1: LINGUISTIC RESEARCH

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- Bock, Bettina M. 2020.** "Makrotypografie als Verständlichkeitsfaktor. Empirische Studie zum Erkennen von Textsorten am Beispiel der 'Leichten Sprache'." In: *Zeitschrift für angewandte Linguistik* 72, 1–32, Berlin: deGruyter Mouton

ANALYSIS MODEL of APPROPRIATENESS

- Bock, Bettina M. and Sabina Sieghart. 2019.** *Poster für die Junge Akademie* (http://gestaltungsinstitut.de/wp-content/uploads/2020/05/Poster_Analysemodell_291119.pdf)

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- Spitzmüller, Jürgen. 2006.** "Typographisches Wissen: die Oberfläche als semiotische Ressource." In: *Oberfläche und Performanz. Untersuchungen zur Sprache als dynamischer Gestalt*, 459–486. Tübingen: Niemeyer
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