

ASSESSING USE OF WORK INSTRUCTIONS THROUGH EYE- TRACKING

Erik Billing
Rebecka Herin
Patrick Oden
Emmie Fogelberg
Atieh Hanna
Beatrice Alenljung
Maurice Lamb

www.his.se/diga



1977

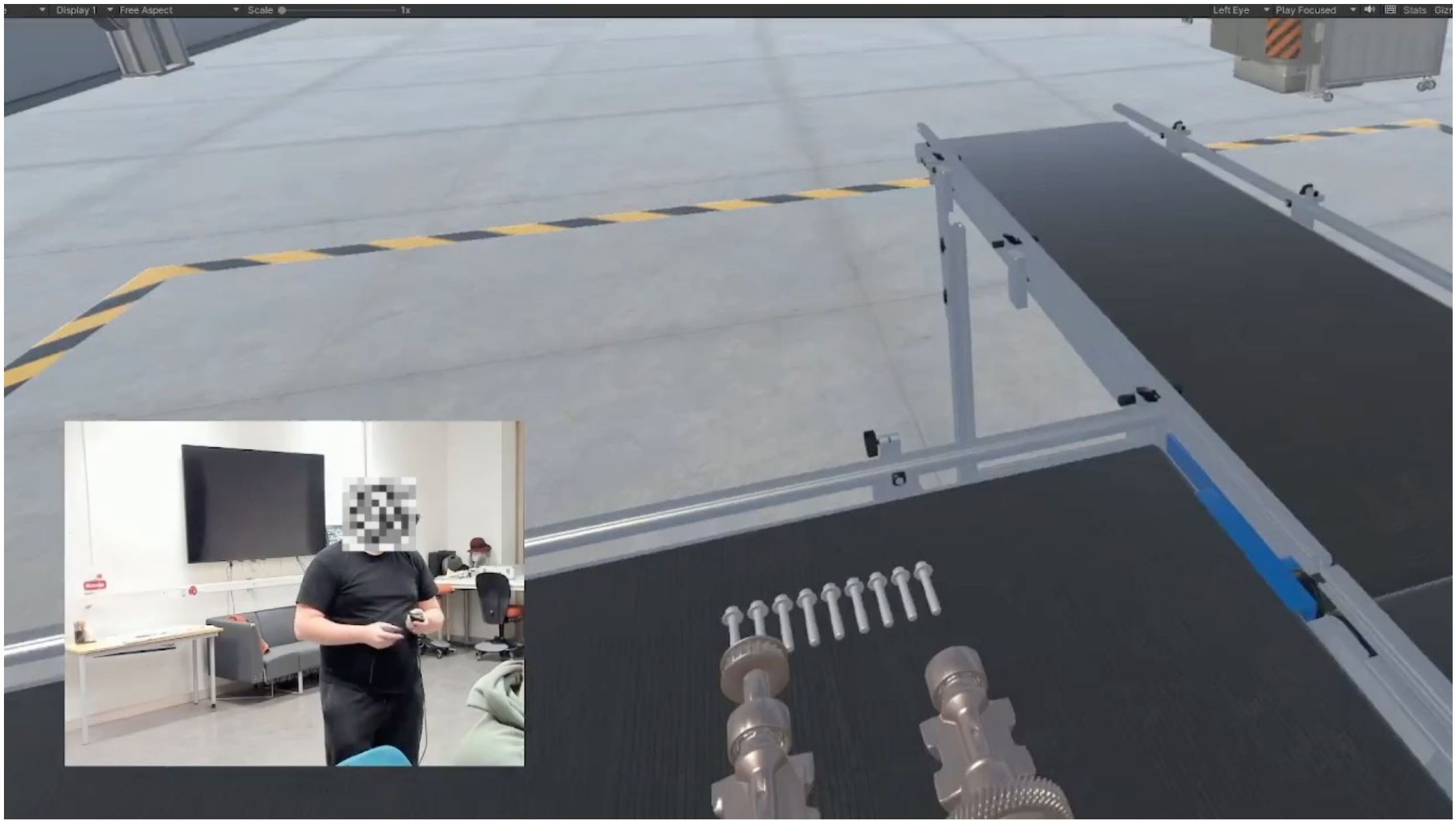


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The augmented worker!

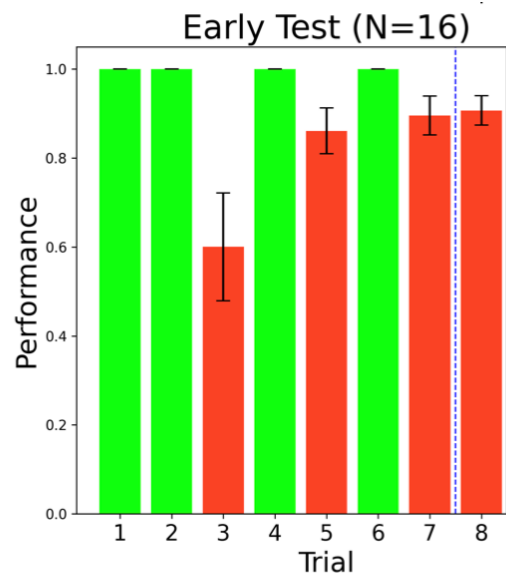
- Previous research show mixed results
- Instructions presented in augmented reality (AR) are always present, regardless if the individual worker needs them or not



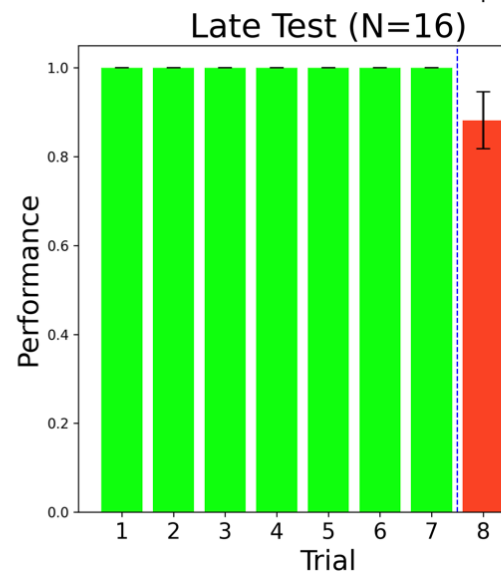




Learning with guidance in VR



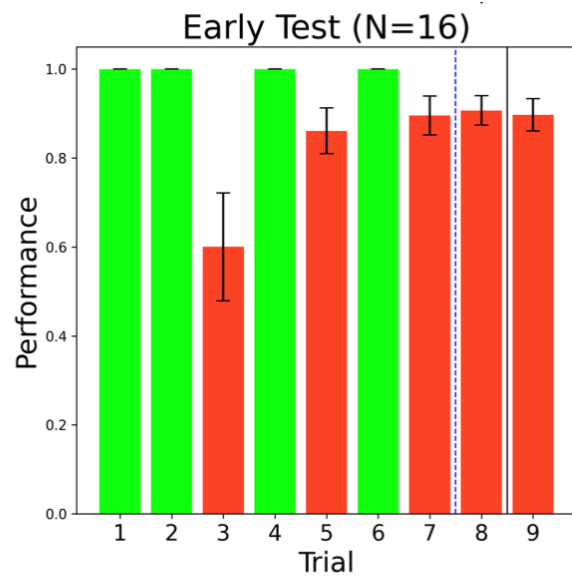
10 minute delay between 7 & 8





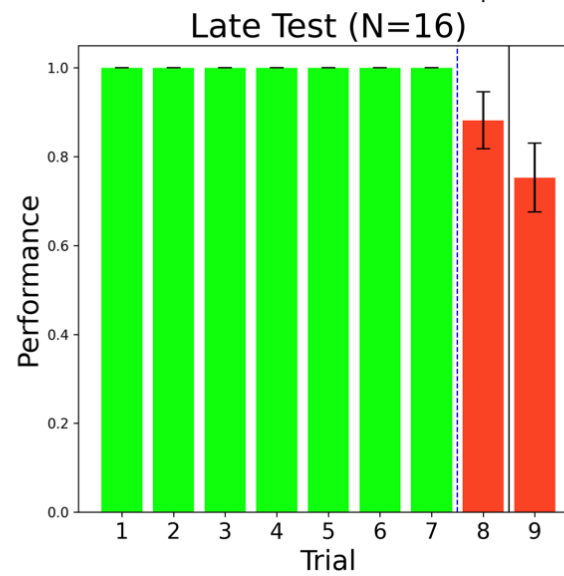
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10 minute delay between 7 & 8

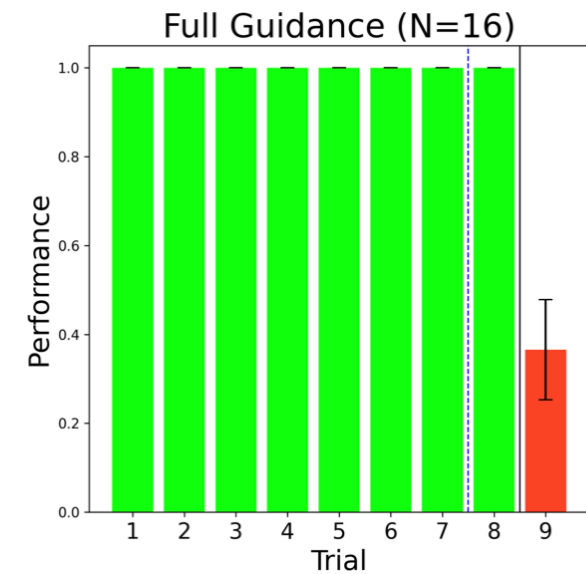
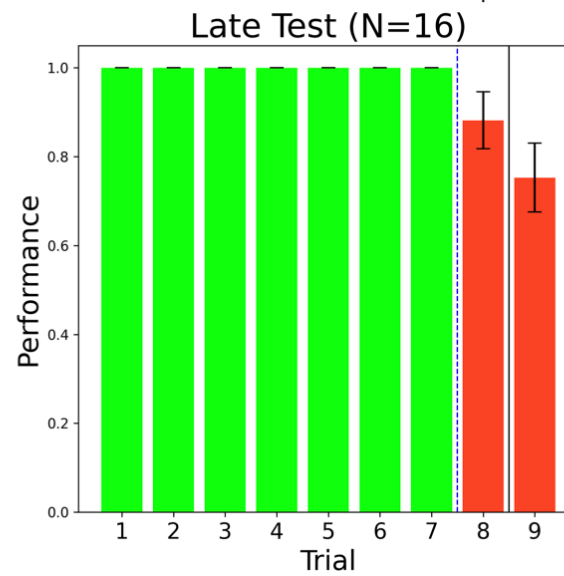
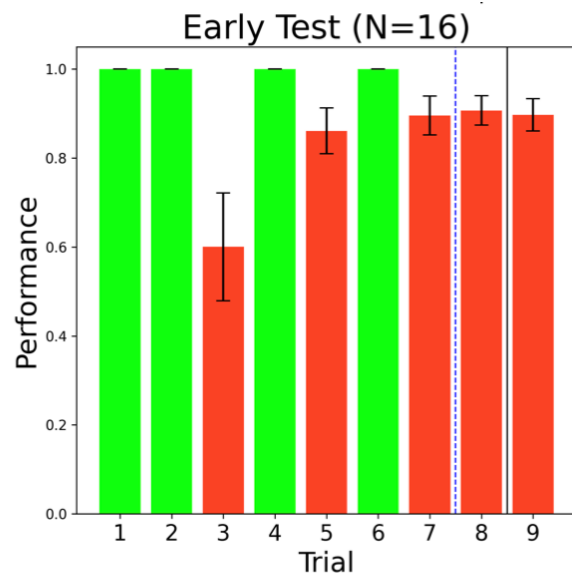
7 day delay between 8 & 9





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Learning with guidance in VR



10 minute delay between 7 & 8

7 day delay between 8 & 9



Some excerpts from interviews with employees at Volvo

- *“Yes, the sprint [screen based instructions] is like our bible [...] If we follow the sprint, we can’t go wrong.” [participant 2]*
- *“Of course, there can be issues with the sprint, but it’s very, very, very rare. [...] So maybe someone made a mistake somewhere and then we make an error. But if you follow the sprint, it’s not your fault, it’s the technician’s fault.” [participant 6]*
- *“It’s the sprint that controls things. [It] tells you what to do. Without it, you wouldn’t be able to work.” [participant 7]*



Neon Player - v6.0.0

The main video player shows a first-person view of a person working in a workshop. The person is wearing a yellow high-visibility vest and is looking at a computer monitor. The monitor displays a technical drawing of a mechanical part. The person's hand is visible, pointing at the monitor. The workshop is filled with various tools and equipment.

00:00:57.823

Export window

Fixations

Warn

Settings saved

Recording Information

Recording ID
e474f2fc-ffac-4fb2-8935-b6366b7b8718

Recorded Date
2025-12-16 16:01:53 CET

Wearer
w17

Plugins

Add/Remove

Audio

Events

+ Add event type

Export All

Fixations & Saccades

+ Add viz

Gaze Data

+ Add viz

Reference Image Mapper

Reference image path
/Users/sander/.../107 Sprint.png

Start time
0.00

Stop time
600.00

Min matches
10

Outline color

Gaze color

Gaze radius
15

Font
Arial 12

Area Of Interest

Remap

Export Eaf

Rebuild mapping on export



ELAN 6.6 - Fp 102.eaf

File Edit Annotation Tier Type Search View Options Window Help

Grid Text Subtitles Lexicon Comments Recognizers Metadata Controls

Volume: 100

Fp 102 2025-12-16-10-19-52.mp4

Mute Solo

Rate: 100

00:00:53.800 Selection: 00:00:53.800 - 00:00:54.000 200

Selection Mode Loop Mode

Screen [14]

Assembly [17]

Kitting [7]

Preparation [7]

Booklet [0]

Colleague [0]

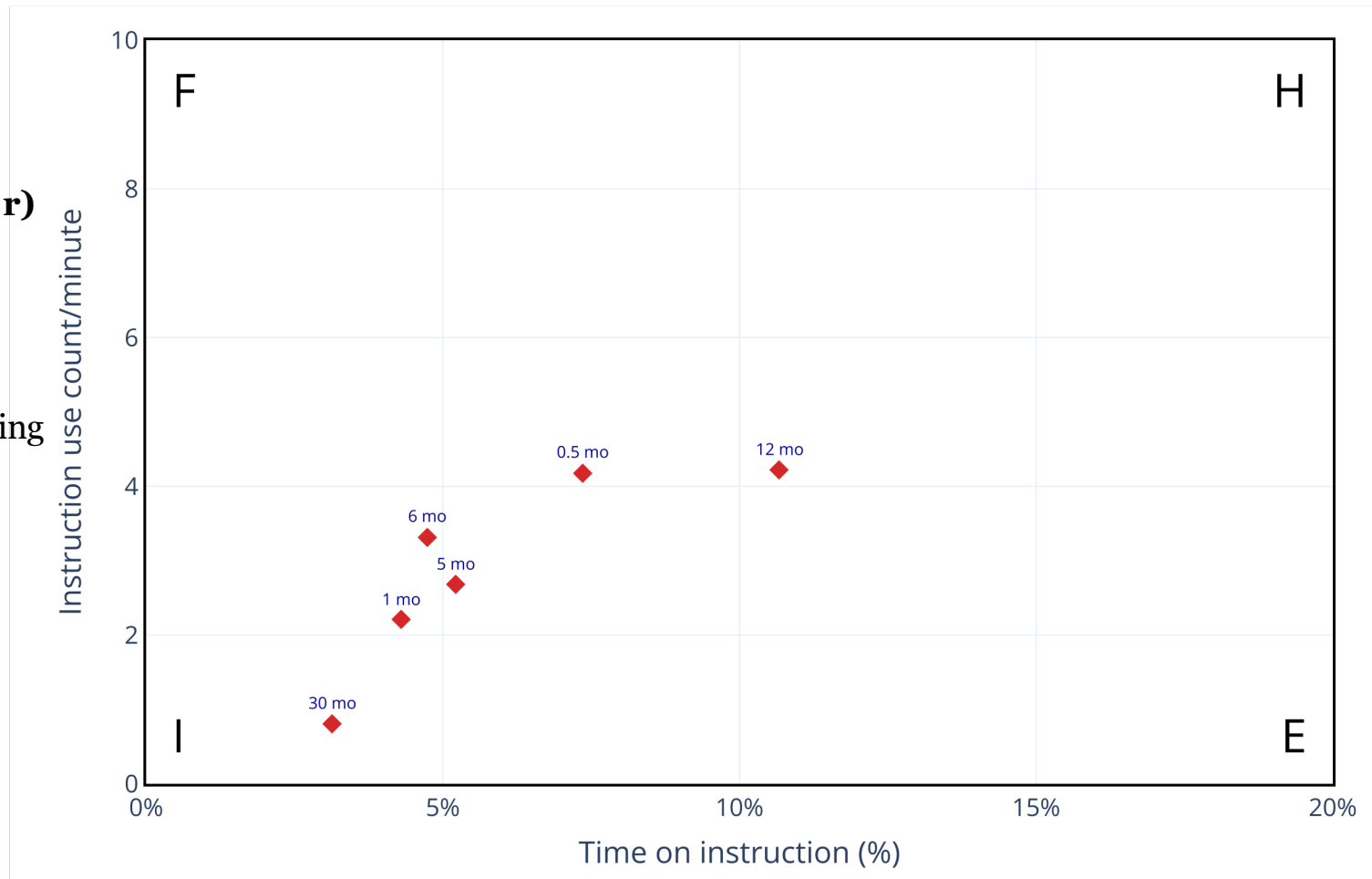


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Correlation analysis (Pearson r)

- Work experience ~ instruction use frequency (y-axis):
 $r = -0.64$
- Work experience total time gazing on instructions (x-axis):
 $r = -0.25$

Pilot results, small number of participant





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