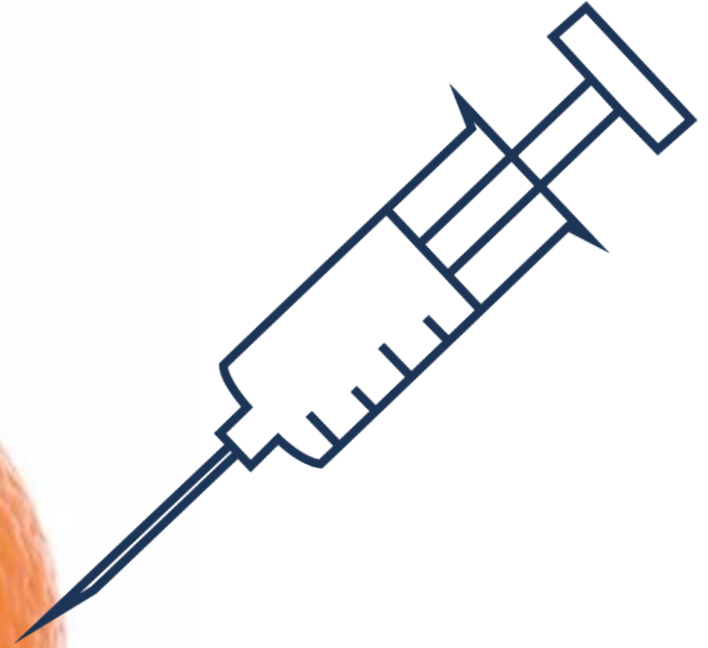


Video-based psychomotor skill assessment

Media & Learning 2025

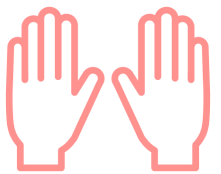
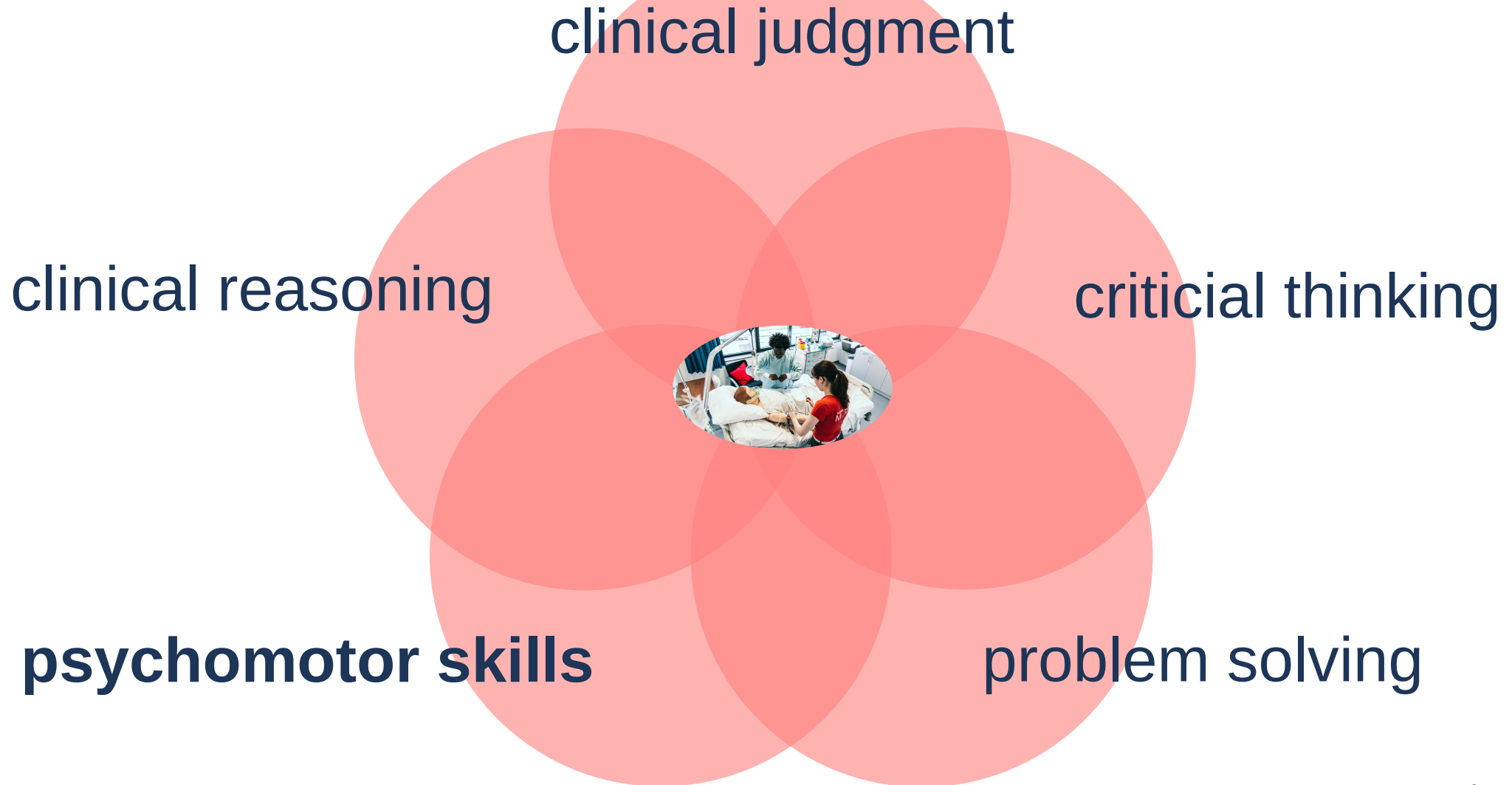








complexity nursing skill development



psychomotor skills





learn



see



practice



prove



do



maintain



formative
assessment



summative
assessment





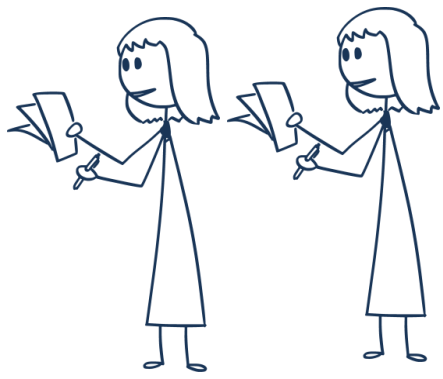


**teacher-led
synchronous**



**student-led
asynchronous**



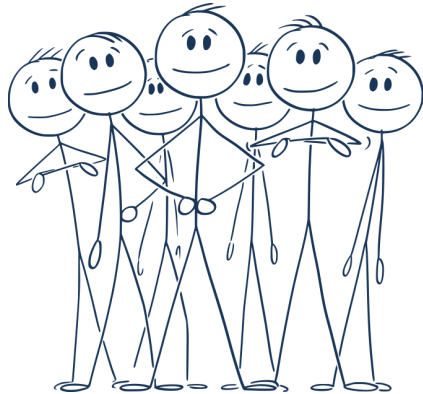


INTRA-rater

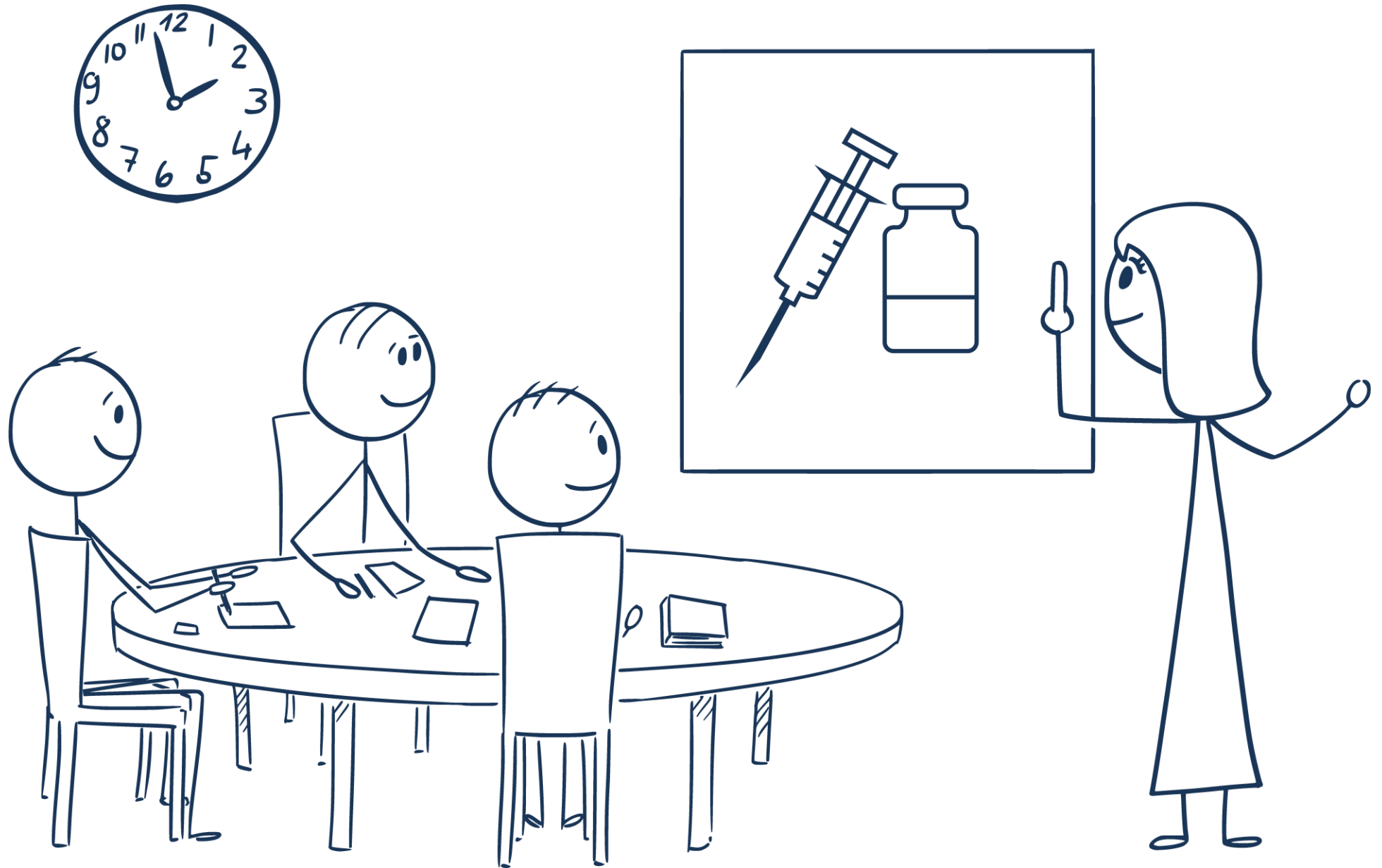
reliability?

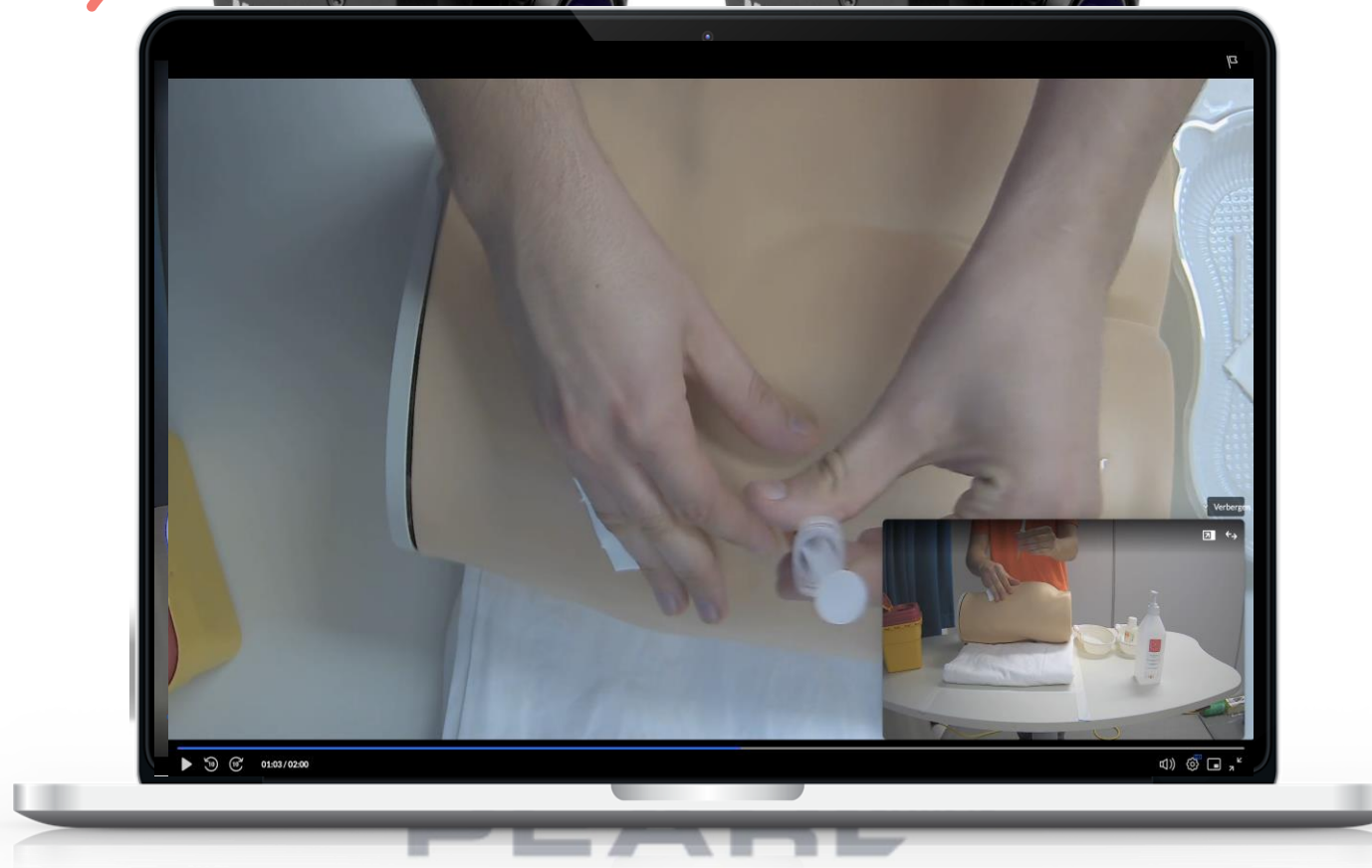
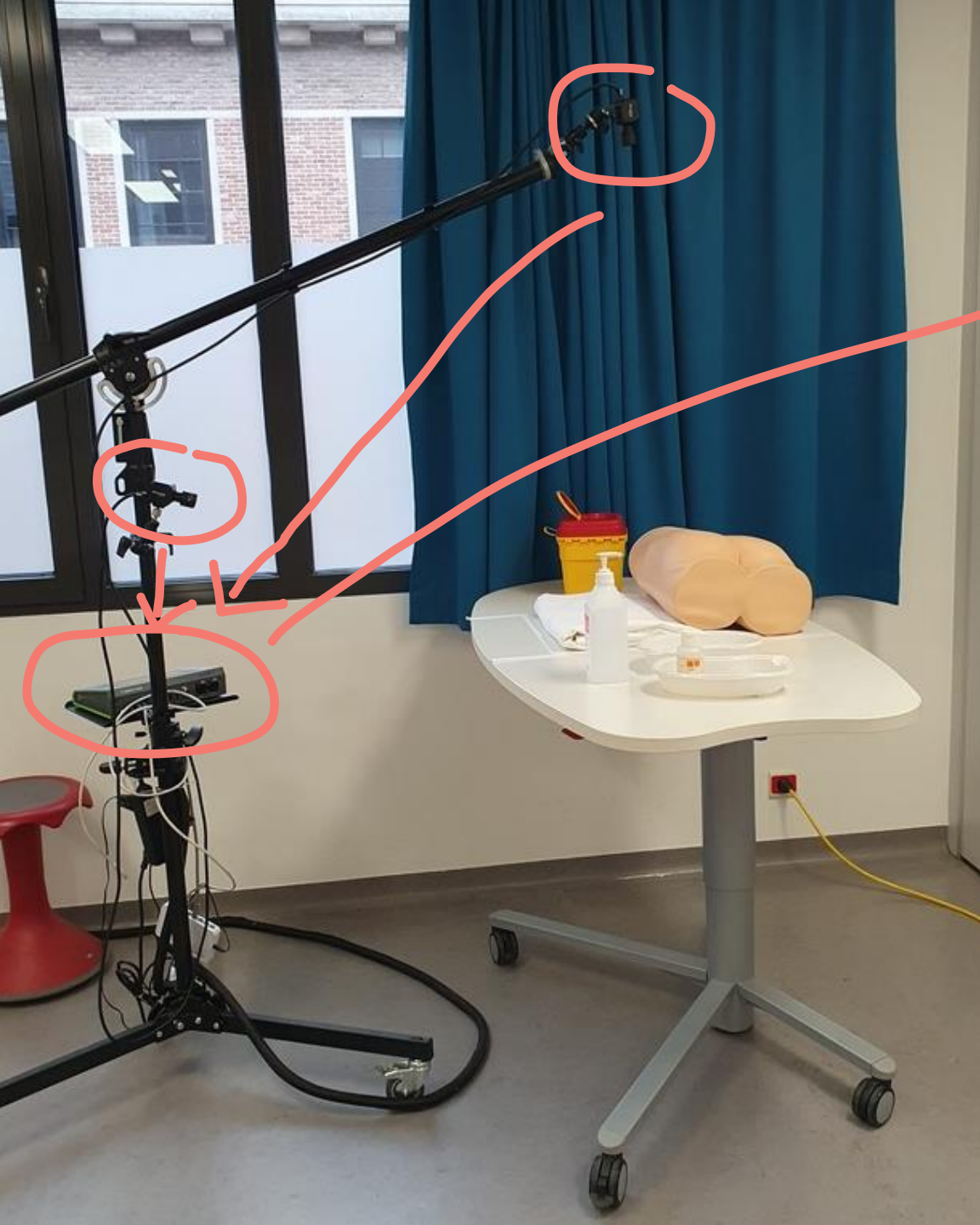


INTER-rater



STUDY





Automatisch opslaan 01_Dataset_IM 83 — Opgeslagen

Start Invoegen Teken en Pagina-indeling Formules Gegevens Controleren Beeld Automatiseren Ontwikkelaars

Calibri (Hoofdt tekst) 12 A⁺ A⁻

B I U

Standaard

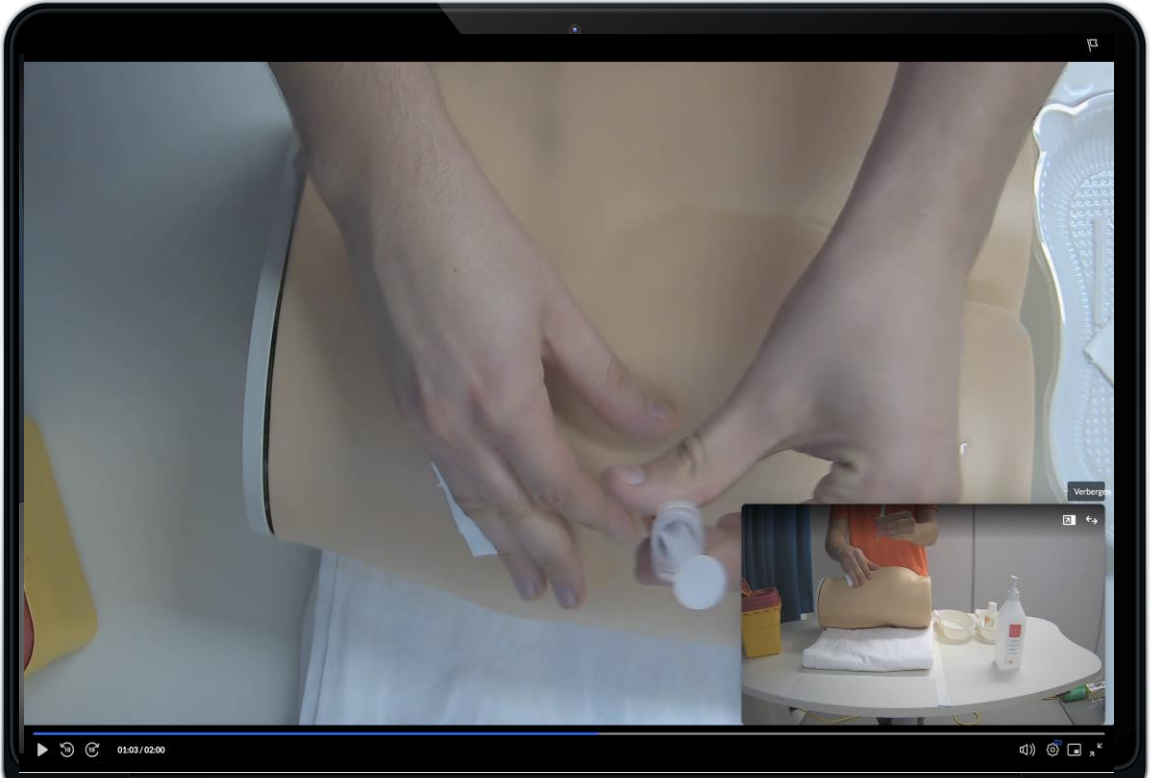
Voorwaardelijke opmaak Opmaken als tabel Celstijlen

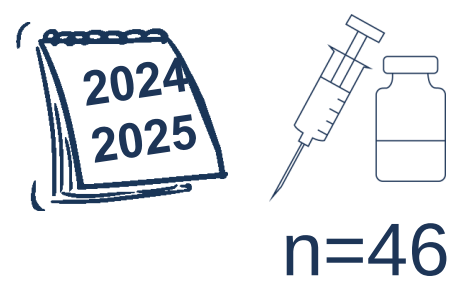
Invoegen Verwijderen Opmaak

Bewerken Vertrouwelijk

Q73

	P	Q	R	S	T	U	V	W	X	Y	Z
	video	opmerking tijdens video opname	1) Ontmet handen	2) Bepaalt correcte injectieplaats (bovenste kwadrant, niet hoger dan heupkam)	3) Controleert injectieplaats op huidlaesies	4) Bevochtigt kompres met onsmettingmiddel, zonder dop aan te raken	5) Ontmet injectieplaats circulair naar buiten toe	6) Neemt droog kompres tussen pink en ringvinger van niet dominante hand	7) Neemt spuit in dominante hand	8) Verwijdert op steriele wijze beschermhuls naald en legt deze niet meer neer	9) Trekt huid en subcutaan vetweefsel tot 3 cm opzij zonder te drukken (2-track)
1											
68	https://thomasmore.mediaspace.kaltura.com/m		8	8	2	8	8	7	7	8	8
69	https://thomasmore.mediaspace.kaltura.com/m		8	1	2	8	3	7	5	8	3
70	https://thomasmore.mediaspace.kaltura.com/m		8	6	2	3	3	7	7	8	8
71	https://thomasmore.mediaspace.kaltura.com/m		8	8	2	8	3	7	7	8	8
72	https://thomasmore.mediaspace.kaltura.com/m		8	1	2	6	8	5	7	8	3
73	https://thomasmore.mediaspace.kaltura.com/m		8	8	7	8	8	4	7	8	3
74	https://thomasmore.mediaspace.kaltura.com/m		8	3	2	8	8	7	7	8	8
75	https://thomasmore.mediaspace.kaltura.com/m		8	8	2	6	8	7	5	8	1
76	https://thomasmore.mediaspace.kaltura.com/m		8	3	2	6	3	2	7	8	3
77	https://thomasmore.mediaspace.kaltura.com/m		8	3	2	6	8	4	7	8	8
78	https://thomasmore.mediaspace.kaltura.com/m		8	8	2	6	8	2	7	8	8
79	https://thomasmore.mediaspace.kaltura.com/m		8	8	2	6	8	7	5	8	3
80	https://thomasmore.mediaspace.kaltura.com/m		8	3	7	8	8	4	7	8	8
81	https://thomasmore.mediaspace.kaltura.com/m		8	8	7	8	8	7	5	8	3
82	https://thomasmore.mediaspace.kaltura.com/m		1	3	2	8	8	7	7	8	8
83	https://thomasmore.mediaspace.kaltura.com/m		8	8	7	8	8	7	7	8	8
84	https://thomasmore.mediaspace.kaltura.com/m		8	8	7	8	3	7	7	8	8
85	https://thomasmore.mediaspace.kaltura.com/m		8	8	7	8	8	7	7	8	8
86	https://thomasmore.mediaspace.kaltura.com/m		8	8	2	6	8	4	5	8	8
87	https://thomasmore.mediaspace.kaltura.com/m		8	8	2	8	3	7	5	8	3
88	https://thomasmore.mediaspace.kaltura.com/m		8	8	2	3	8	7	7	8	8
89	https://thomasmore.mediaspace.kaltura.com/m		8	8	2	8	8	7	7	8	8
90	https://thomasmore.mediaspace.kaltura.com/m		8	8	7	3	8	7	5	8	8
91	https://thomasmore.mediaspace.kaltura.com/m		8	8	5	6	8	7	7	8	8



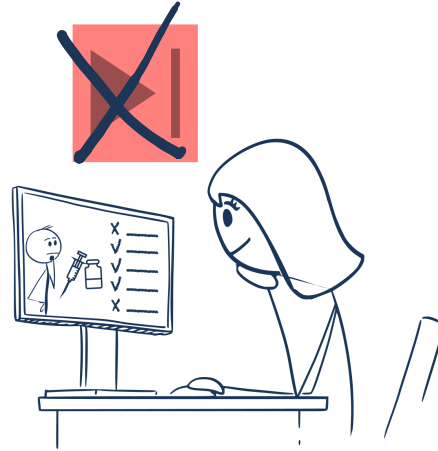


INTRA-rater



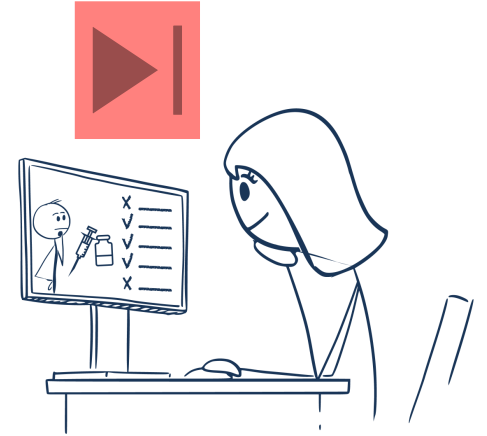
1

2 months



2

2 months



3

ICC=0.819 ($p < .001$)

$p = .167$ (Friedman test)



INTER-rater



72 videos

6 raters



train the trainer



46 videos

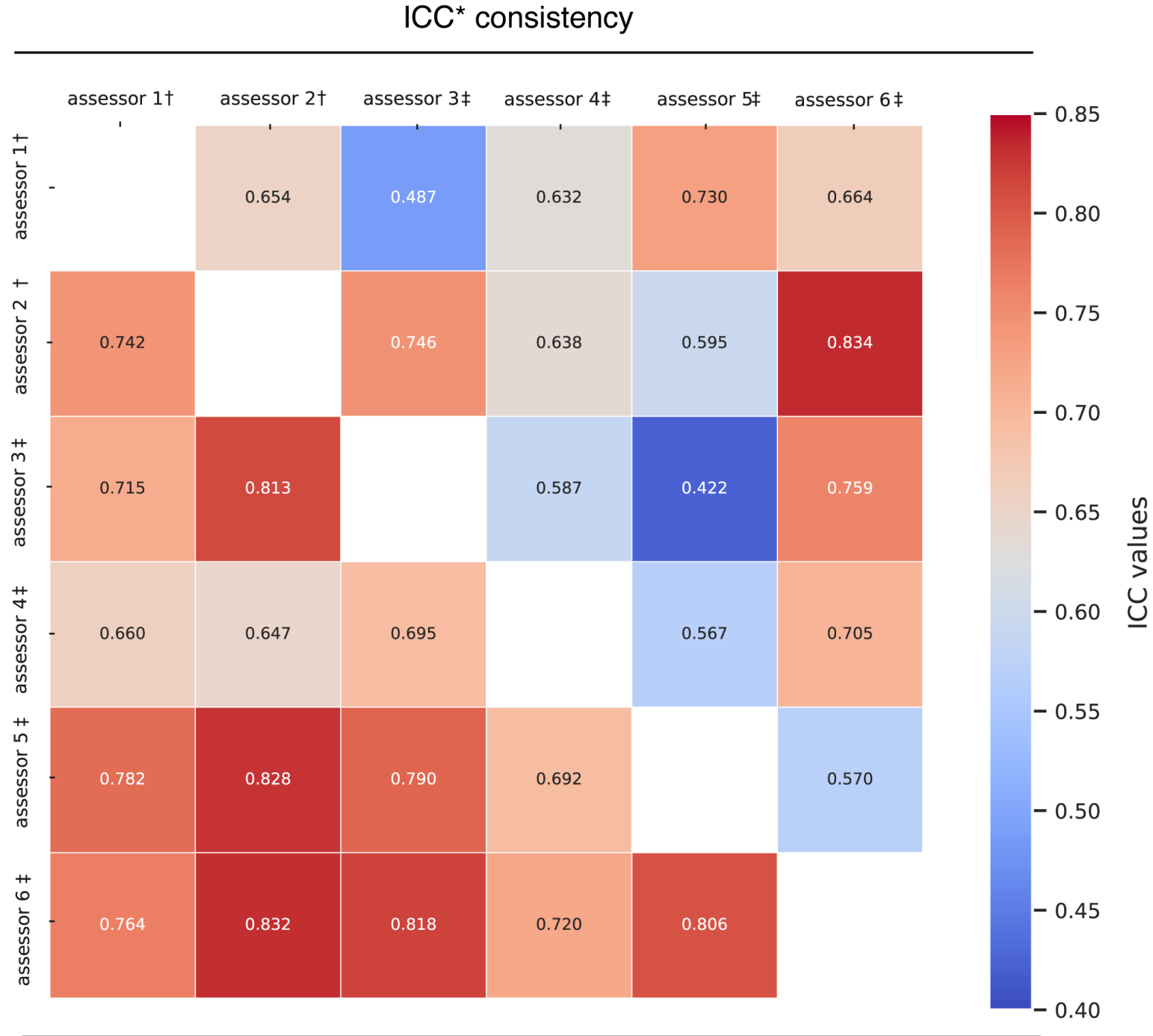
5 raters



consensus meeting



ICC* absolute agreement

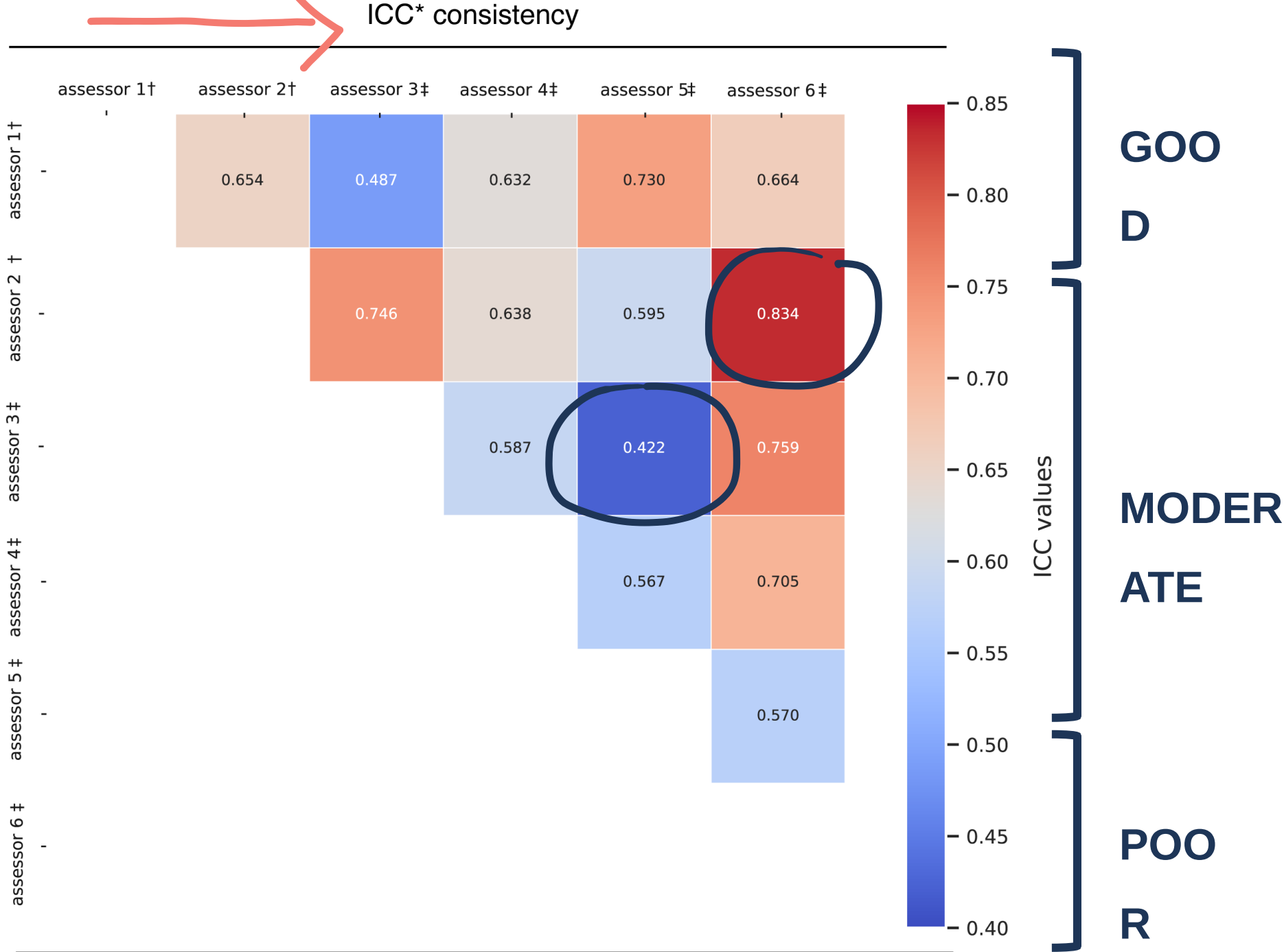


* Two-way random effects model; single measures; $p < .001$; ‡ nursing expertise; † no nursing expertise



min. ICC = 0.422
max. ICC = 0.834

($p < .001$)



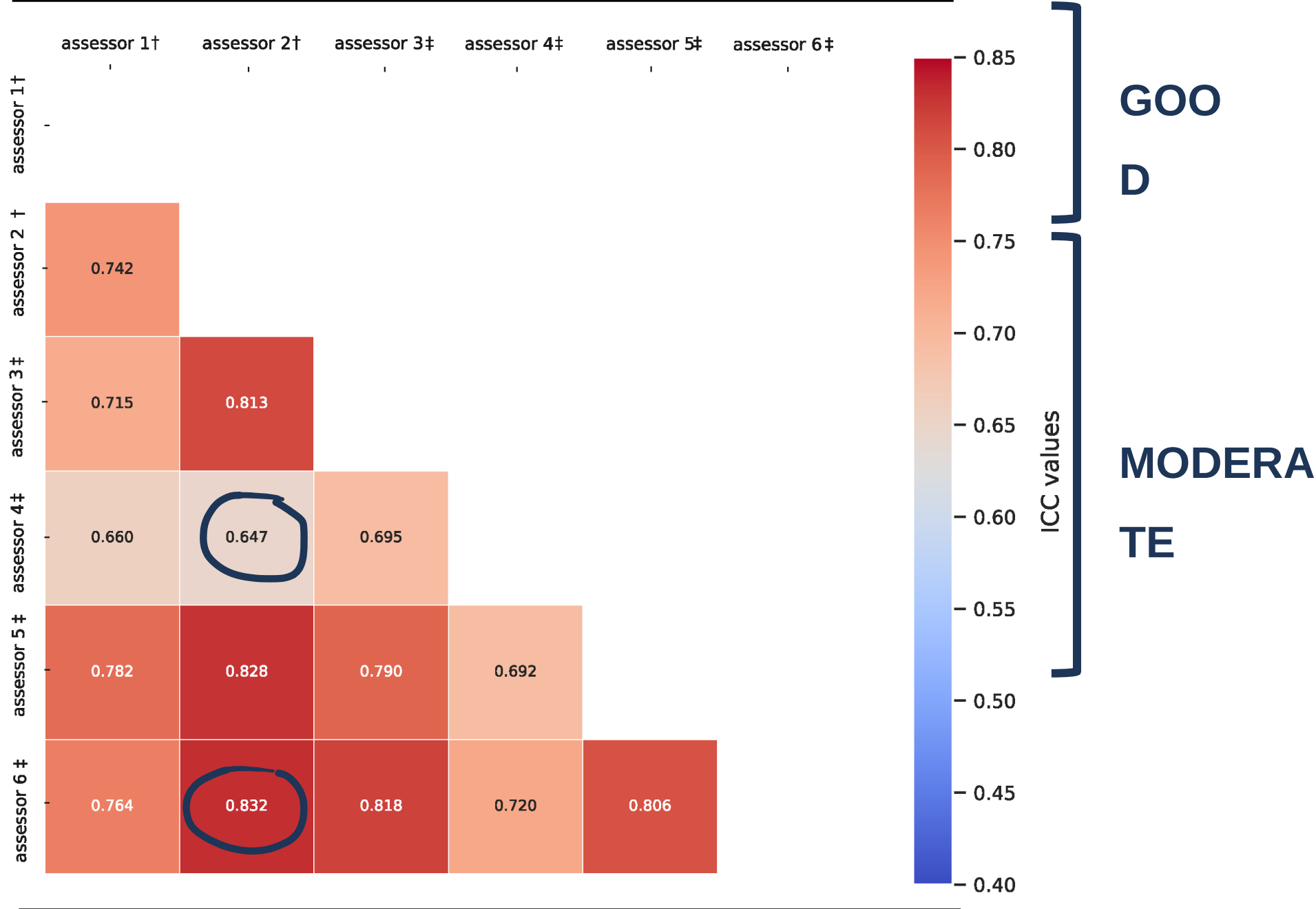
* Two-way random effects model; single measures; $p < .001$; ‡ nursing expertise; † no nursing expertise



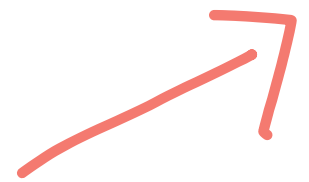
min. ICC = 0.660
max. ICC = 0.832

($p < .001$)

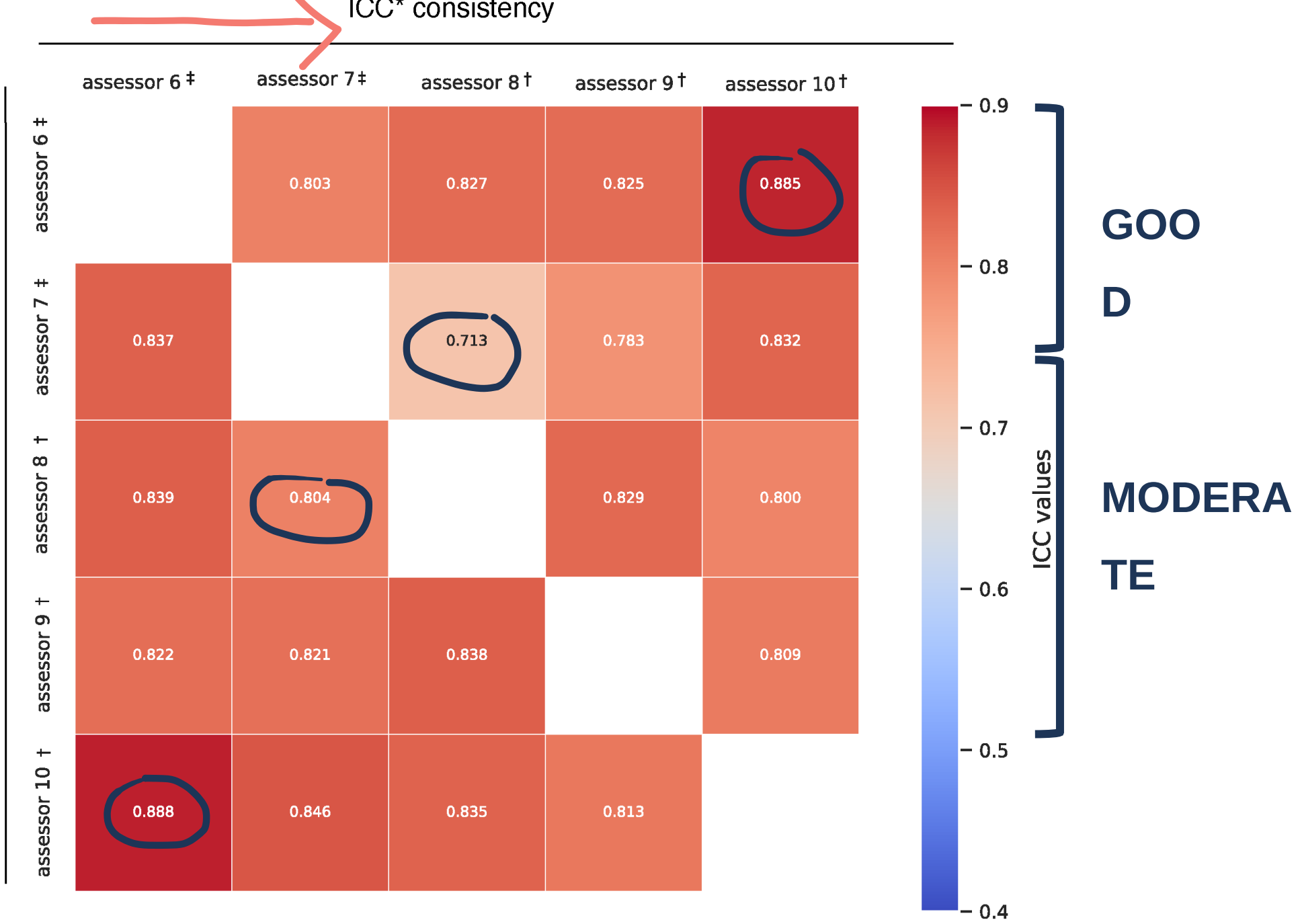
ICC* absolute agreement



* Two-way random effects model; single measures; $p < .001$; ‡ nursing expertise; † no nursing expertise



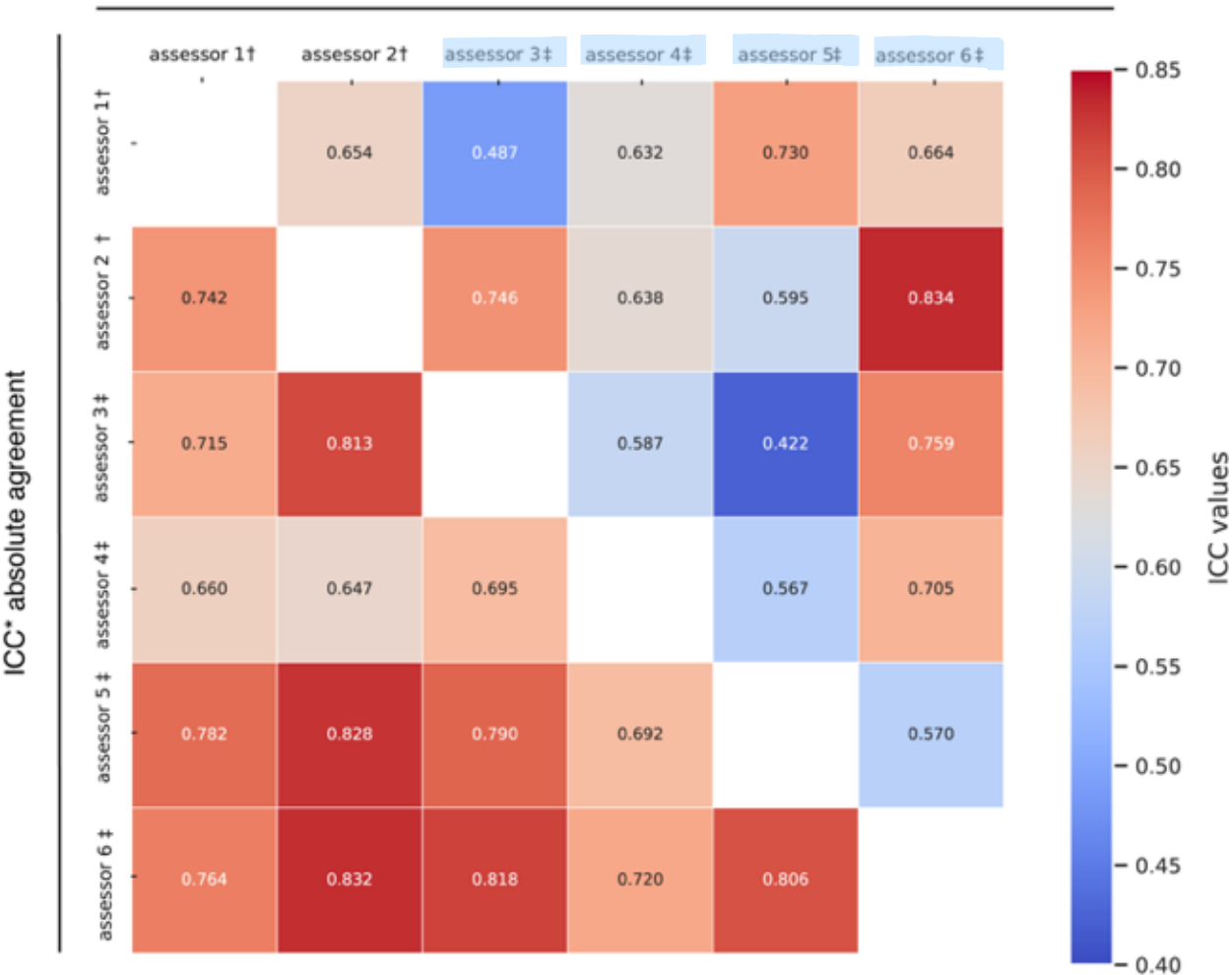
ICC* absolute agreement



* Two-way random effects model; single measures; p<.001; ‡ nursing expertise; † no nursing expertise



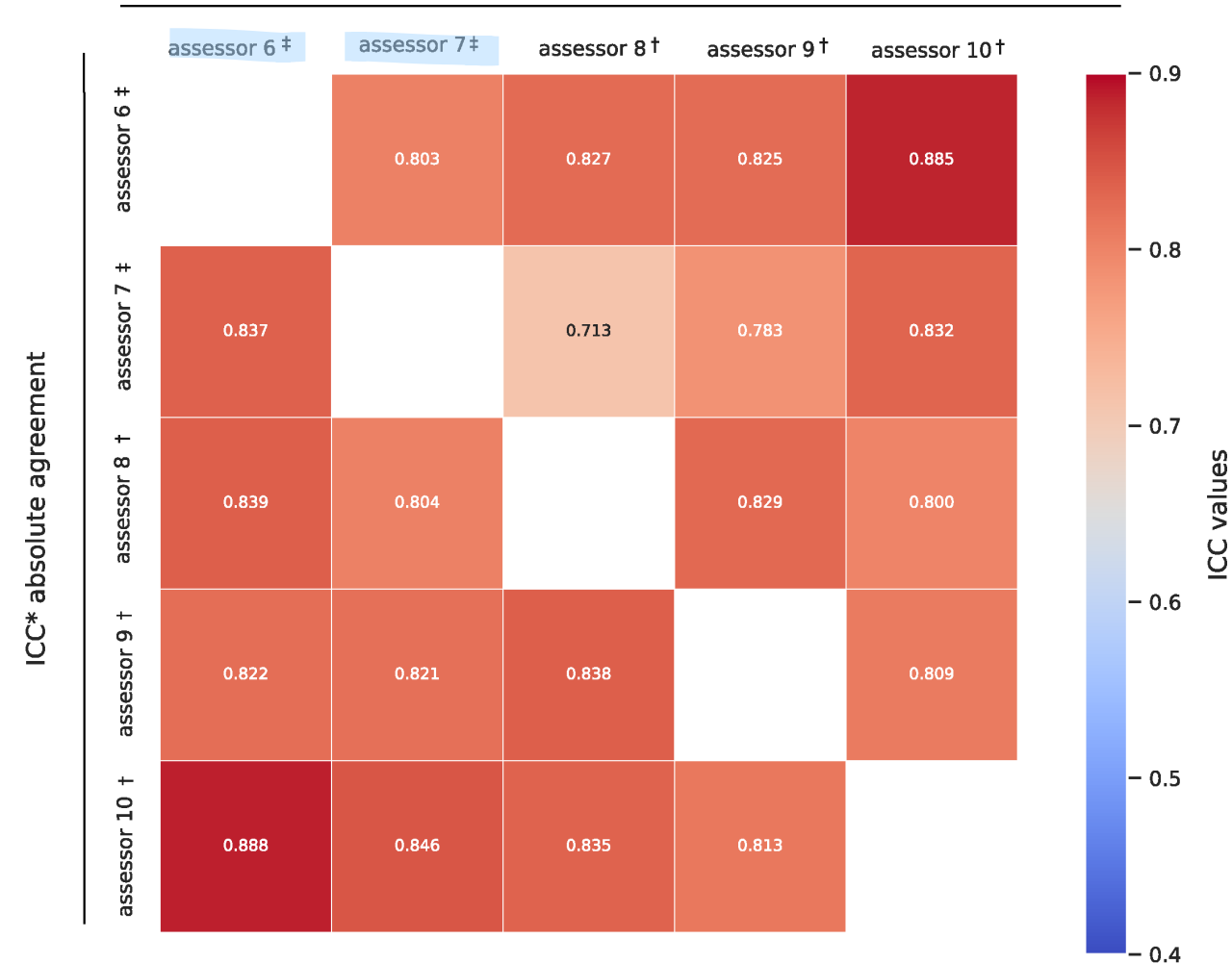
ICC* consistency



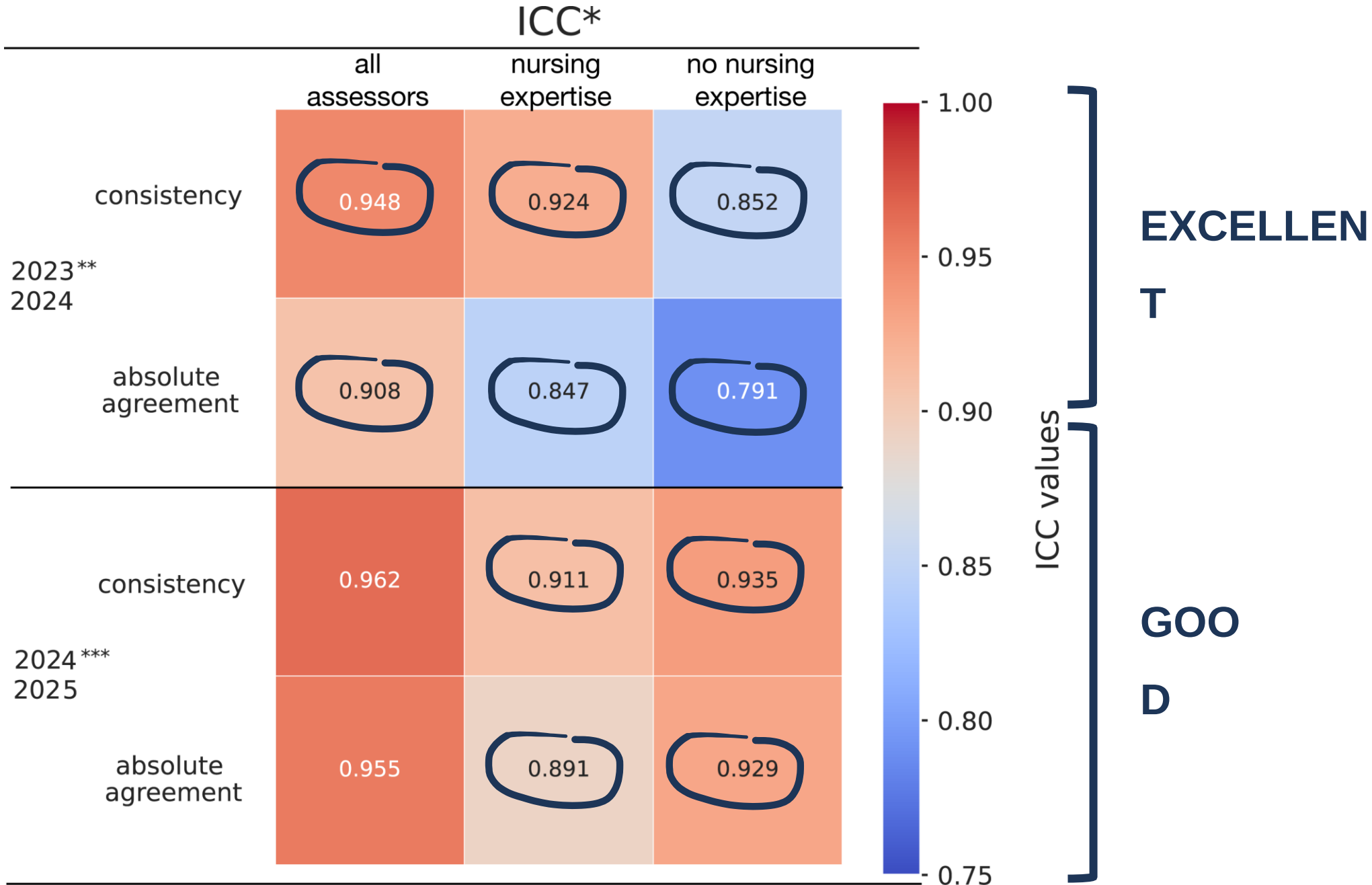
* Two-way random effects model; single measures; $p < .001$; ‡nursing expertise; †no nursing expertise



ICC* consistency



* Two-way random effects model; single measures; $p < .001$; ‡nursing expertise; †no nursing expertise

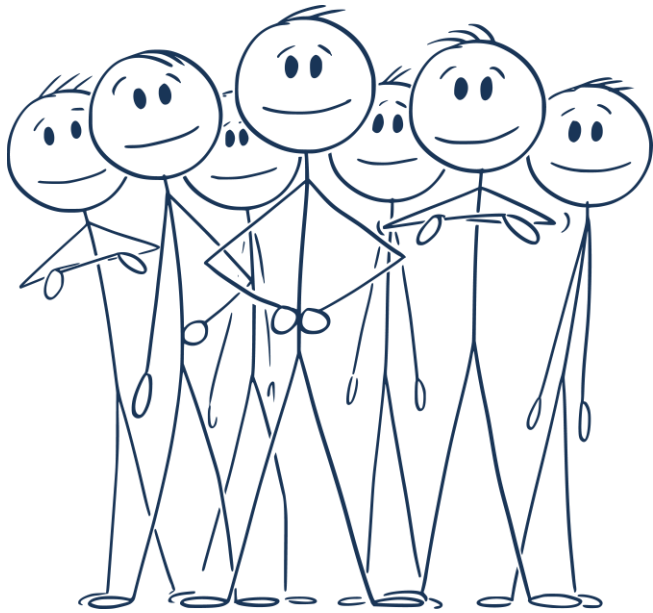


* two-way random effects model; average measures; $p < .001$

** all assessors (n=6); assessors nursing expertise (n=4); assessors without nursing expertise (n=2)

*** all assessors (n=5); assessors nursing expertise (n=2); assessors without nursing expertise (n=3)

INTER-rater



students 3rd year
bachelor nursing



118 videos



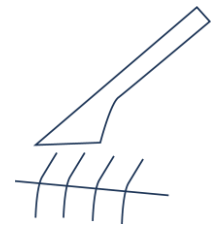
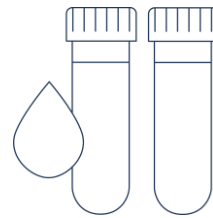
8 raters

‘consistency’: ICC=0.960 ($p<.001$)

‘absolute agreement’: ICC=0.941 ($p<.001$)



to do



correct

incorrect

not executed

sterility error

01:24 / 02:31

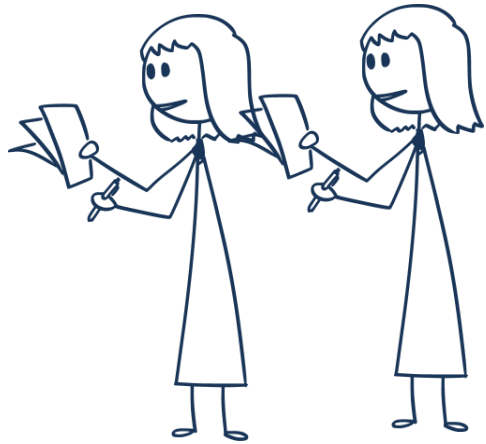


take

home

messages

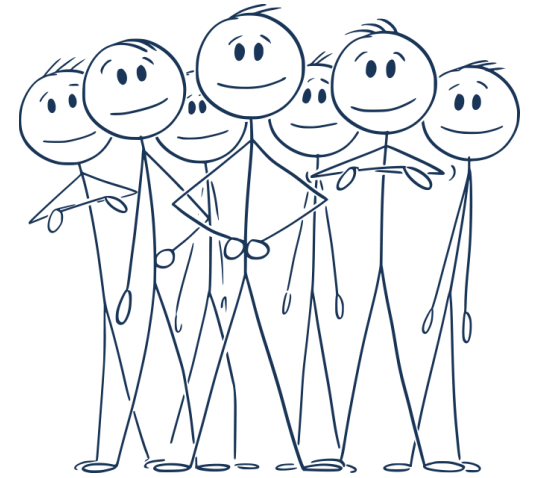
single measures
**poor - good
reliability**



**good
reliability**



average measures
**good - excellent
reliability**



average measures
**excellent
reliability**



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