

Iteration 1

Step	Description	Chi-square	PSI	Items	Person	Outcome
1	Initial analysis	407.42, p<0.0001	0.910	2.34	2.03	Item fit issues for 1, 3, 4, 17, 19, 24, 25, 27 Disordered thresholds for items 1, 9, 27, 30 DIF for institution (items 14, 27, 28), clinical educator gender (item 14), student gender (item 19) 122 misfitting persons Local dependence multiple items
2	Rescore item 27	316.97, p<0.0001	0.928	2.13	1.11	Item fit issues for 17, 19, 24, 25, 27 Disordered thresholds for items 1, 30 DIF for institution (items 14, 27), clinical educator gender (item 14), student gender (item 19) 4 misfitting persons Local dependence multiple items
3	Rescore item 30	316.87, p<0.0001	0.928	2.13	1.11	Item fit issues for 17, 19, 24, 25, 27 Disordered thresholds for items 1, 14 DIF for institution (items 14, 27), clinical educator gender (item 14), student gender (item 19) 4 misfitting persons Local dependence multiple items
4	Delete item 27 (fit SD 6.497)	237.22, p<0.0001	0.926	1.83	1.07	Item fit issues for 19, 24, 25 Disordered thresholds for item 1 DIF for institution (items 14, 28), clinical educator gender (item 14), student gender (item 19) 3 misfitting persons Local dependence multiple items
5	Delete item 24 (fit SD 3.985)	220.17, p<0.0001	0.924	1.83	1.02	Item fit issues for 19, 25 Disordered thresholds for item 1 DIF for institution (items 14, 28), clinical educator gender (item 14) 3 misfitting persons Local dependence multiple items

6	Delete item 25 (fit SD 4.904)	186.89, p=0.002	0.916	1.74	1.01	Item fit issues for 19, 26 Disordered thresholds for item 1 DIF for institution (item 14), clinical educator gender (item 14) 7 misfitting persons Local dependence multiple items
7	Delete 7 misfitting persons	186.21, p=0.002	0.922	1.73	1.01	Item fit issues for 19, 26 Disordered thresholds for items 1, 3 DIF for institution (item 14), clinical educator gender (item 14), student gender (item 19) No misfitting persons Local dependence multiple items
8	Delete item 14 (due to DIF)	184.17, p=0.001	0.920	1.75	1.02	Item fit issues for 19, 26 Disordered thresholds for items 1, 3 DIF for institution (item 28), student gender (item 19) 2 misfitting persons Local dependence multiple items
9	Delete item 19 (due to DIF)	167.77, p=0.006	0.915	1.70	1.00	Item fit issues for 3, 26 Disordered thresholds for items 1, 3 No DIF 1 misfitting person Local dependence multiple items
10	Delete item 3 (fit SD -2.566)	170.11, p=0.001	0.912	1.59	0.99	Item fit issue for 26 Disordered thresholds for item 1 DIF for institute (item 28) 1 misfitting person Local dependence multiple items
11	Delete item 26 (fit SD 2.974)	138.57, p=0.066	0.903	1.57	0.97	Item fit issues Disordered thresholds for item 1 No DIF 5 misfitting persons Local dependence multiple items

12	Delete 5 misfitting persons	137.08, p=0.078	0.907	1.56	0.95	No item fit issues Disordered thresholds for item 1 No DIF No misfitting persons Local dependence multiple items
13	Delete item 1 (unable to resolve disordering)	139.43, p=0.030	0.904	1.50	0.95	No item fit issues No disordered thresholds No DIF 2 misfitting persons Local dependence multiple items
14	Delete 2 misfitting persons	135.76, p=0.048	0.904	1.52	0.93	No item fit issues No disordered thresholds DIF for institute (item 28) No misfitting persons Local dependence multiple items
15	Delete item 28 (due to DIF)	133.23, p=0.030	0.904	1.58	0.92	No item fit issues No disordered thresholds No DIF 4 misfitting persons Local dependence multiple items
16	Delete 4 misfitting persons	129.61, p=0.051	0.901	1.55	0.90	No item fit issues No disordered thresholds No DIF No misfitting persons Local dependence multiple items
17	Delete item 17 (after subtest of items 17/18 due to r=0.550)	124.98, p=0.046	0.894	1.50	0.81	Item fit issues for 4, 9 No disordered thresholds No DIF No misfitting persons Local dependence multiple items
18	Delete item 21 (after subtest of	134.01, p=0.005	0.888	1.62	0.85	Item fit issues for 4, 9 No disordered thresholds

	items 21/22 due to r=0.540)					No DIF 2 misfitting persons Local dependence multiple items
19	Delete 2 misfitting persons	134.01, p=0.005	0.890	1.62	0.85	Item fit issues for 4, 9 No disordered thresholds No DIF 2 misfitting persons Local dependence multiple items
20	Delete item 9 (fit SD -2.718)	111.62, p=0.061	0.881	1.49	0.84	Item fit issues for 4 No disordered thresholds No DIF 1 misfitting person Local dependence multiple items
21	Delete misfitting person	111.62, p=0.061	0.882	1.49	0.84	Item fit issues for 4 No disordered thresholds No DIF No misfitting persons Local dependence multiple items
22	Delete item 4 (fit SD -2.697)	102.94, p=0.090	0.874	1.35	0.84	No item fit issues No disordered thresholds No DIF No misfitting persons Local dependence multiple items
23	Delete item 6 (after subtest of items 6/7 r=0.325, and 2/6 r=0.276)	97.44, p=0.089	0.868	1.35	0.83	No item fit issues No disordered thresholds No DIF 2 misfitting persons Local dependence multiple items
24	Delete 2 misfitting persons	97.19, p=0.092	0.868	1.34	0.82	No item fit issues No disordered thresholds No DIF No misfitting persons

						Local dependence multiple items
25	Delete item 22 (after subtest of items 22/23 r=0.410)	88.535, p=0.135	0.854	1.50	0.85	No item fit issues No disordered thresholds No DIF 7 misfitting persons Local dependence multiple items
26	Delete 7 misfitting persons	86.89, p=0.163	0.843	1.44	0.80	No item fit issues No disordered thresholds DIF for institution (item 13) No misfitting persons Local dependence multiple items
27	Delete item 13 (due to DIF)	91.17, p=0.045	0.830	1.29	0.83	No item fit issues No disordered thresholds No DIF 1 misfitting persons Local dependence multiple items
28	Delete item 12 (after subtest of items 11/12 r=0.220)	66.47, p=0.425	0.809	1.20	0.82	No item fit issues No disordered thresholds No DIF 1 misfitting persons Local dependence multiple items
29	Delete item 29 (after subtest of items 29/30 r=0.338)	66.06, p=0.275	0.800	1.20	0.83	No item fit issues No disordered thresholds No DIF 3 misfitting persons No local dependence
30	Delete 3 misfitting persons	66.06, p=0.275	0.802	1.20	0.83	p-value range 0.061 Lower CI 0.031-0.038 Upper CI 0.091-0.101

Iteration 2

Step	Description	Chi-square	PSI	Items	Person	Outcome
1	Initial analysis	407.42, $p < 0.0001$	0.910	2.34	2.03	Item fit issues for 1, 3, 4, 17, 19, 24, 25, 27 Disordered thresholds for items 1, 9, 27, 30 DIF for institution (items 14, 27, 28), clinical educator gender (item 14), student gender (item 19) 122 misfitting persons Local dependence multiple items
2	Delete item 27 (fit SD 6.138)	237.36, $p < 0.0001$	0.926	1.83	1.07	Item fit issues for 19, 24, 25 Disordered thresholds for items 1, 30 DIF for institution (items 14, 28), clinical educator gender (item 14), student gender (item 19) 3 misfitting persons Local dependence multiple items
3	Delete item 19 (due to DIF and fit SD -3.229)	236.59, $p < 0.0001$	0.922	1.74	1.05	Item fit issues for 24, 25 Disordered thresholds for items 1, 14, 30 DIF for institution (items 14, 28), clinical educator gender (item 14) 3 misfitting persons Local dependence multiple items
4	Delete 3 misfitting persons	239.02, $p < 0.0001$	0.921	1.68	1.03	Item fit issues for 24, 25 Disordered thresholds for items 1, 21, 30 DIF for institution (items 14, 28), clinical educator gender (item 14) No misfitting persons Local dependence multiple items
5	Rescore item 21	239.02, $p < 0.0001$	0.921	1.68	1.03	Item fit issues for 24, 25 Disordered thresholds for items 1, 30 DIF for institution (items 14, 28), clinical educator gender (item 14) No misfitting persons Local dependence multiple items
6	Rescore item 30	239.02, $p < 0.0001$	0.921	1.68	1.03	Item fit issues for 24, 25

						Disordered thresholds for item 1 DIF for institution (items 14, 26), clinical educator gender (item 14) No misfitting persons Local dependence multiple items
7	Delete item 1 (unable to resolve disordering)	218.47, p<0.0001	0.919	1.63	1.03	Item fit issues for 24, 25 No disordered thresholds DIF for institution (items 14, 28), clinical educator gender (item 14) 1 misfitting person Local dependence multiple items
8	Delete item 24 (fit SD 3.720)	204.69, p<0.0001	0.916	1.62	0.98	Item fit issue for 25 No disordered thresholds DIF for institution (items 14), clinical educator gender (item 14) No misfitting persons Local dependence multiple items
9	Delete item 25 (fit SD 4.164)	155.73, p=0.032	0.908	1.56	0.98	Item fit issue for 26 No disordered thresholds DIF for institution (items 14), clinical educator gender (item 14) 5 misfitting persons Local dependence multiple items
10	Delete 5 misfitting persons	155.73, p=0.032	0.913	1.56	0.98	Item fit issue for 26 No disordered thresholds DIF for institution (items 14), clinical educator gender (item 14) No misfitting persons Local dependence multiple items
11	Delete item 26	148.91, p=0.037	0.905	1.53	0.95	No item fit issues No disordered thresholds DIF for institution (items 14), clinical educator gender (item 14) 6 misfitting persons Local dependence multiple items
12	Delete 6 misfitting persons	139.61, p=0.106	0.909	1.54	0.93	No item fit issues No disordered thresholds DIF for institution (items 14), clinical educator gender (item 14)

						No misfitting persons Local dependence multiple items
13	Delete item 14	133.91, p=0.109	0.906	1.56	0.93	No item fit issues No disordered thresholds No DIF No misfitting persons Local dependence multiple items
14	Delete item 17 (after subtest 17/18, r=0.567)	129.22, p=0.101	0.900	1.55	0.91	Item fit issue for 4 No disordered thresholds DIF for institution (item 13) No misfitting persons Local dependence multiple items
15	Delete item 3 (after subtest 2/3, r=0.487)	117.81, p=0.185	0.896	1.42	0.91	No item fit issues No disordered thresholds DIF for institution (item 13) No misfitting persons Local dependence multiple items
16	Delete item 13	106.72, p=0.304	0.890	1.31	0.91	No item fit issues No disordered thresholds No DIF No misfitting persons Local dependence multiple items
17	Delete item 6 (after subtest 2/6 r=0.325 & 4/6 r=0.343)	103.15, p=0.266	0.886	1.23	0.90	No item fit issues No disordered thresholds No DIF No misfitting persons Local dependence multiple items
18	Delete item 11 (after subtest 10/11 r=0.202 & 11/12 r=0.251)	97.61, p=0.273	0.880	1.14	0.90	No item fit issues No disordered thresholds DIF for institution (item 28) No misfitting persons Local dependence multiple items

19	Delete item 29 (after subtest 29/30 $r=0.374$)	87.78, $p=0.396$	0.876	1.14	0.88	No item fit issues No disordered thresholds DIF for institution (item 28) 2 misfitting persons Local dependence multiple items
20	Delete 2 persons	87.78, $p=0.396$	0.878	1.14	0.88	No item fit issues No disordered thresholds DIF for institution (item 28) No misfitting persons Local dependence multiple items
21	Delete item 28	88.62, $p=0.238$	0.873	1.15	0.87	No item fit issues No disordered thresholds No DIF 2 misfitting persons Local dependence multiple items
22	Delete 2 persons	88.62, $p=0.238$	0.874	1.15	0.87	No item fit issues No disordered thresholds No DIF No misfitting persons Local dependence multiple items
23	Delete item 21 (after subtest 21/22 $r=0.511$)	96.36, $p=0.04$	0.864	1.33	0.84	No item fit issues No disordered thresholds No DIF 2 misfitting persons Local dependence multiple items
24	Delete 2 persons	96.36, $p=0.04$	0.866	1.33	0.84	No item fit issues No disordered thresholds No DIF No misfitting persons Local dependence multiple items
25	Delete item 8 (after subtest 8/9)	73.60, $p=0.360$	0.859	1.17	0.85	No item fit issues No disordered thresholds

	r=0.202)					No DIF 1 misfitting person Local dependence multiple items
26	Delete item 4 (after subtest 2/4 r=0.207)	62.40, p=0.568	0.846	1.05	0.85	No item fit issues No disordered thresholds No DIF 3 misfitting persons Local dependence items 22 & 23
27	Delete 3 persons	62.63, p=0.560	0.844	1.05	0.84	No item fit issues No disordered thresholds No DIF No misfitting persons Local dependence items 22 & 23
28	Delete item 22 (after subtest 22/23 r=0.379)	70.78, p=0.160	0.826	1.24	0.85	No item fit issues No disordered thresholds No DIF 8 misfitting persons No local dependence
29	Delete 8 persons	65.26, p=0.298	0.827	1.18	0.82	p-value range 0.02 Lower CI 0.002-0.008 Upper CI 0.037-0.049