

Summary of nonparametric statistics analysis for the latent trait estimates of Interest/Enjoyment in the third study for signed up students

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Table 1: Summary of Scheirer-Ray-Hare results for the latent trait estimates of Interest/Enjoyment in the third study for signed up students

	Df	Sum Sq	H	p.value	Sig
Type					
Type:Type	1	116.659	0.531	0.466	
Type:CLRole	1	398.500	1.813	0.178	
Type:Type:CLRole	1	413.063	1.879	0.170	
Type:Residuals	47	10060.778			

Signif. codes: 0 “***” 0.01 “**” 0.05

Table 2: Descriptive statistic of the pair wilcoxon analysis for the latent trait estimates of Interest/Enjoyment in the third study for signed up students

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type:CLRole.less.1	ont-gamified.Apprentice	15	0.31	10.53	158	38	-1.78	0.039	0.362	medium
Type:CLRole.less.2	ont-gamified.Master	9	0.51	15.78	142	38	-1.78	0.039	0.362	medium
Type:CLRole.greater.1	ont-gamified.Master	9	0.51	18.44	166	121	1.75	0.041	0.331	medium
Type:CLRole.greater.2	w/o-gamified.Apprentice	19	0.11	12.63	240	121	1.75	0.041	0.331	medium

Table 3: Full descriptive statistic of the pair wilcoxon analysis for the latent trait estimates of Interest/Enjoyment in the third study for signed up students

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type.less.1	ont-gamified	24	0.51	27.60	662.5	362.5	0.73	0.767	0.102	small
Type.less.2	w/o-gamified	27	0.11	24.57	663.5	362.5	0.73	0.767	0.102	small
Type.greater.1	ont-gamified	24	0.51	27.60	662.5	362.5	0.73	0.236	0.102	small
Type.greater.2	w/o-gamified	27	0.11	24.57	663.5	362.5	0.73	0.236	0.102	small
Type.two.sided.1	ont-gamified	24	0.51	27.60	662.5	362.5	0.73	0.472	0.102	small
Type.two.sided.2	w/o-gamified	27	0.11	24.57	663.5	362.5	0.73	0.472	0.102	small
Type:CLRole.less.1	ont-gamified.Apprentice	15	0.31	10.53	158.0	38.0	-1.78	0.039	0.362	medium
Type:CLRole.less.2	ont-gamified.Master	9	0.51	15.78	142.0	38.0	-1.78	0.039	0.362	medium
Type:CLRole.greater.1	ont-gamified.Apprentice	15	0.31	10.53	158.0	38.0	-1.78	0.963	0.362	medium
Type:CLRole.greater.2	ont-gamified.Master	9	0.51	15.78	142.0	38.0	-1.78	0.963	0.362	medium
Type:CLRole.two.sided.1	ont-gamified.Apprentice	15	0.31	10.53	158.0	38.0	-1.78	0.078	0.362	medium
Type:CLRole.two.sided.2	ont-gamified.Master	9	0.51	15.78	142.0	38.0	-1.78	0.078	0.362	medium
Type:CLRole.less.11	ont-gamified.Apprentice	15	0.31	16.90	253.5	133.5	-0.31	0.382	0.054	none
Type:CLRole.less.21	w/o-gamified.Apprentice	19	0.11	17.97	341.5	133.5	-0.31	0.382	0.054	none
Type:CLRole.greater.11	ont-gamified.Apprentice	15	0.31	16.90	253.5	133.5	-0.31	0.625	0.054	none
Type:CLRole.greater.21	w/o-gamified.Apprentice	19	0.11	17.97	341.5	133.5	-0.31	0.625	0.054	none
Type:CLRole.two.sided.11	ont-gamified.Apprentice	15	0.31	16.90	253.5	133.5	-0.31	0.764	0.054	none
Type:CLRole.two.sided.21	w/o-gamified.Apprentice	19	0.11	17.97	341.5	133.5	-0.31	0.764	0.054	none
Type:CLRole.less.12	ont-gamified.Apprentice	15	0.31	11.67	175.0	55.0	-0.32	0.382	0.068	none
Type:CLRole.less.22	w/o-gamified.Master	8	0.21	12.62	101.0	55.0	-0.32	0.382	0.068	none
Type:CLRole.greater.12	ont-gamified.Apprentice	15	0.31	11.67	175.0	55.0	-0.32	0.630	0.068	none
Type:CLRole.greater.22	w/o-gamified.Master	8	0.21	12.62	101.0	55.0	-0.32	0.630	0.068	none
Type:CLRole.two.sided.12	ont-gamified.Apprentice	15	0.31	11.67	175.0	55.0	-0.32	0.763	0.068	none
Type:CLRole.two.sided.22	w/o-gamified.Master	8	0.21	12.62	101.0	55.0	-0.32	0.763	0.068	none
Type:CLRole.less.13	ont-gamified.Master	9	0.51	18.44	166.0	121.0	1.75	0.961	0.331	medium
Type:CLRole.less.23	w/o-gamified.Apprentice	19	0.11	12.63	240.0	121.0	1.75	0.961	0.331	medium
Type:CLRole.greater.13	ont-gamified.Master	9	0.51	18.44	166.0	121.0	1.75	0.041	0.331	medium
Type:CLRole.greater.23	w/o-gamified.Apprentice	19	0.11	12.63	240.0	121.0	1.75	0.041	0.331	medium
Type:CLRole.two.sided.13	ont-gamified.Master	9	0.51	18.44	166.0	121.0	1.75	0.082	0.331	medium
Type:CLRole.two.sided.23	w/o-gamified.Apprentice	19	0.11	12.63	240.0	121.0	1.75	0.082	0.331	medium
Type:CLRole.less.14	ont-gamified.Master	9	0.51	10.89	98.0	53.0	1.64	0.952	0.399	medium
Type:CLRole.less.24	w/o-gamified.Master	8	0.21	6.88	55.0	53.0	1.64	0.952	0.399	medium
Type:CLRole.greater.14	ont-gamified.Master	9	0.51	10.89	98.0	53.0	1.64	0.053	0.399	medium
Type:CLRole.greater.24	w/o-gamified.Master	8	0.21	6.88	55.0	53.0	1.64	0.053	0.399	medium
Type:CLRole.two.sided.14	ont-gamified.Master	9	0.51	10.89	98.0	53.0	1.64	0.106	0.399	medium
Type:CLRole.two.sided.24	w/o-gamified.Master	8	0.21	6.88	55.0	53.0	1.64	0.106	0.399	medium
Type:CLRole.less.15	w/o-gamified.Apprentice	19	0.11	14.00	266.0	76.0	0.00	0.505	0.000	none
Type:CLRole.less.25	w/o-gamified.Master	8	0.21	14.00	112.0	76.0	0.00	0.505	0.000	none
Type:CLRole.greater.15	w/o-gamified.Apprentice	19	0.11	14.00	266.0	76.0	0.00	0.505	0.000	none
Type:CLRole.greater.25	w/o-gamified.Master	8	0.21	14.00	112.0	76.0	0.00	0.505	0.000	none

Table 3: *(continued)*

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type:CLRole.two.sided.15	w/o-gamified.Apprentice	19	0.11	14.00	266.0	76.0	0.00	1.000	0.000	none
Type:CLRole.two.sided.25	w/o-gamified.Master	8	0.21	14.00	112.0	76.0	0.00	1.000	0.000	none