

Summary of nonparametric statistics analysis for the latent trait estimates of Interest/Enjoyment in the first study for students with effective participation

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Table 1: Summary of Scheirer-Ray-Hare results for the latent trait estimates of Interest/Enjoyment in the first study for students with effective participation

	Df	Sum Sq	H	p.value	Sig
Type					
Type:Type	1	362.143	1.860	0.173	
Type:CLRole	1	50.021	0.257	0.612	
Type:Type:CLRole	1	439.215	2.256	0.133	
Type:Residuals	44	8300.621			

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 first study for students with effective participation

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type:CLRole.less.1	non-gamified.Master	10	-0.94	9.20	92	37	-1.94	0.026	0.396	medium
Type:CLRole.less.2	ont-gamified.Master	14	0.34	14.86	208	37	-1.94	0.026	0.396	medium

Table 3: Full descriptive statistic of the pair wilcoxon analysis for the latent trait estimates of Interest/Enjoyment in the first study for students with effective participation

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type.less.1	non-gamified	20	-0.79	21.25	425.0	215.0	-1.36	0.088	0.197	small
Type.less.2	ont-gamified	28	0.05	26.82	751.0	215.0	-1.36	0.088	0.197	small
Type.greater.1	non-gamified	20	-0.79	21.25	425.0	215.0	-1.36	0.914	0.197	small
Type.greater.2	ont-gamified	28	0.05	26.82	751.0	215.0	-1.36	0.914	0.197	small
Type.two.sided.1	non-gamified	20	-0.79	21.25	425.0	215.0	-1.36	0.176	0.197	small
Type.two.sided.2	ont-gamified	28	0.05	26.82	751.0	215.0	-1.36	0.176	0.197	small
Type:CLRole.less.1	non-gamified.Apprentice	10	-0.08	12.55	125.5	70.5	1.56	0.942	0.349	medium
Type:CLRole.less.2	non-gamified.Master	10	-0.94	8.45	84.5	70.5	1.56	0.942	0.349	medium
Type:CLRole.greater.1	non-gamified.Apprentice	10	-0.08	12.55	125.5	70.5	1.56	0.063	0.349	medium
Type:CLRole.greater.2	non-gamified.Master	10	-0.94	8.45	84.5	70.5	1.56	0.063	0.349	medium
Type:CLRole.two.sided.1	non-gamified.Apprentice	10	-0.08	12.55	125.5	70.5	1.56	0.126	0.349	medium
Type:CLRole.two.sided.2	non-gamified.Master	10	-0.94	8.45	84.5	70.5	1.56	0.126	0.349	medium
Type:CLRole.less.11	non-gamified.Apprentice	10	-0.08	12.50	125.0	70.0	0.00	0.506	0.000	none
Type:CLRole.less.21	ont-gamified.Apprentice	14	-0.03	12.50	175.0	70.0	0.00	0.506	0.000	none
Type:CLRole.greater.11	non-gamified.Apprentice	10	-0.08	12.50	125.0	70.0	0.00	0.506	0.000	none
Type:CLRole.greater.21	ont-gamified.Apprentice	14	-0.03	12.50	175.0	70.0	0.00	0.506	0.000	none
Type:CLRole.two.sided.11	non-gamified.Apprentice	10	-0.08	12.50	125.0	70.0	0.00	1.000	0.000	none
Type:CLRole.two.sided.21	ont-gamified.Apprentice	14	-0.03	12.50	175.0	70.0	0.00	1.000	0.000	none
Type:CLRole.less.12	non-gamified.Apprentice	10	-0.08	11.80	118.0	63.0	-0.41	0.348	0.084	none
Type:CLRole.less.22	ont-gamified.Master	14	0.34	13.00	182.0	63.0	-0.41	0.348	0.084	none
Type:CLRole.greater.12	non-gamified.Apprentice	10	-0.08	11.80	118.0	63.0	-0.41	0.663	0.084	none
Type:CLRole.greater.22	ont-gamified.Master	14	0.34	13.00	182.0	63.0	-0.41	0.663	0.084	none
Type:CLRole.two.sided.12	non-gamified.Apprentice	10	-0.08	11.80	118.0	63.0	-0.41	0.695	0.084	none
Type:CLRole.two.sided.22	ont-gamified.Master	14	0.34	13.00	182.0	63.0	-0.41	0.695	0.084	none
Type:CLRole.less.13	non-gamified.Master	10	-0.94	10.00	100.0	45.0	-1.47	0.074	0.299	small
Type:CLRole.less.23	ont-gamified.Apprentice	14	-0.03	14.29	200.0	45.0	-1.47	0.074	0.299	small
Type:CLRole.greater.13	non-gamified.Master	10	-0.94	10.00	100.0	45.0	-1.47	0.930	0.299	small
Type:CLRole.greater.23	ont-gamified.Apprentice	14	-0.03	14.29	200.0	45.0	-1.47	0.930	0.299	small
Type:CLRole.two.sided.13	non-gamified.Master	10	-0.94	10.00	100.0	45.0	-1.47	0.149	0.299	small
Type:CLRole.two.sided.23	ont-gamified.Apprentice	14	-0.03	14.29	200.0	45.0	-1.47	0.149	0.299	small
Type:CLRole.less.14	non-gamified.Master	10	-0.94	9.20	92.0	37.0	-1.94	0.026	0.396	medium
Type:CLRole.less.24	ont-gamified.Master	14	0.34	14.86	208.0	37.0	-1.94	0.026	0.396	medium
Type:CLRole.greater.14	non-gamified.Master	10	-0.94	9.20	92.0	37.0	-1.94	0.975	0.396	medium
Type:CLRole.greater.24	ont-gamified.Master	14	0.34	14.86	208.0	37.0	-1.94	0.975	0.396	medium
Type:CLRole.two.sided.14	non-gamified.Master	10	-0.94	9.20	92.0	37.0	-1.94	0.053	0.396	medium
Type:CLRole.two.sided.24	ont-gamified.Master	14	0.34	14.86	208.0	37.0	-1.94	0.053	0.396	medium
Type:CLRole.less.15	ont-gamified.Apprentice	14	-0.03	13.50	189.0	84.0	-0.65	0.266	0.122	small
Type:CLRole.less.25	ont-gamified.Master	14	0.34	15.50	217.0	84.0	-0.65	0.266	0.122	small
Type:CLRole.greater.15	ont-gamified.Apprentice	14	-0.03	13.50	189.0	84.0	-0.65	0.741	0.122	small
Type:CLRole.greater.25	ont-gamified.Master	14	0.34	15.50	217.0	84.0	-0.65	0.741	0.122	small

Table 3: *(continued)*

Group		N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type:CLRole.two.sided.15	ont-gamified.Apprentice	14	-0.03	13.50	189.0	84.0	-0.65	0.532	0.122	small
Type:CLRole.two.sided.25	ont-gamified.Master	14	0.34	15.50	217.0	84.0	-0.65	0.532	0.122	small