1 Summaries of Nonparametric Statistics Analysis

Table 1: Summary of Scheirer-Ray-Hare results

	Df	Sum Sq	H	p.value	Sig
gain.theta					
gain.theta:Type	1	0.281	0.001	0.975	
gain.theta:CLRole	1	3459.620	12.558	0.000	**
gain.theta:Type:CLRole	1	475.858	1.727	0.189	
gain.theta:Residuals	53	11492.240			

Signif. codes: 0 "**" 0.01 "*" 0.05

2 Summaries of Wilcoxon Data Analysis

Table 2: Descriptive statistic of the pair wilcoxon analysis

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r
gain.theta.Type:CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.1	non-gamified.Apprentice	13	0.58	19.31	251	160	2.88	0.002	0.544
gain.theta.Type:CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.2	ont-gamified.Master	15	0.34	10.33	155	160	2.88	0.002	0.544
gain.theta.Type:CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.1	non-gamified.Apprentice	13	0.58	19.31	251	160	2.88	0.003	0.544
gain.theta.Type:CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.2	ont-gamified.Master	15	0.34	10.33	155	160	2.88	0.003	0.544
gain.theta.Type:CLRole.non-gamified.Master:ont-gamified.Apprentice.less.1	non-gamified.Master	14	0.31	11.64	163	58	−2.05	0.021	0.381
gain.theta.Type:CLRole.non-gamified.Master:ont-gamified.Apprentice.less.2	ont-gamified.Apprentice	15	0.66	18.13	272	58	−2.05	0.021	0.381
gain.theta.Type:CLRole.non-gamified.Master:ont-gamified.Apprentice.two.sided.1	non-gamified.Master	14	0.31	11.64	163	58	−2.05	0.041	0.381
gain.theta.Type:CLRole.non-gamified.Master:ont-gamified.Apprentice.two.sided.2	ont-gamified.Apprentice	15	0.66	18.13	272	58	−2.05	0.041	0.381
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.greater.1	ont-gamified.Apprentice	15	0.66	21.13	317	197	3.50	0.000	0.640
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.greater.2	ont-gamified.Master	15	0.34	9.87	148	197	3.50	0.000	0.640
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.two.sided.1	ont-gamified.Apprentice	15	0.66	21.13	317	197	3.50	0.000	0.640
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.two.sided.2	ont-gamified.Master	15	0.34	9.87	148	197	3.50	0.000	0.640

Signif. codes: 0 "**" 0.01 "*" 0.05

Table 3: Full descriptive statistic of the pair wilcoxon analysis

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value
gain.theta.Type.non-gamified:ont-gamified.less.1	non-gamified	27	0.50	28.93	781	403	−0.03	0.491
gain.theta.Type.non-gamified:ont-gamified.less.2	ont-gamified	30	0.45	29.07	872	403	−0.03	0.491
gain.theta.Type.non-gamified:ont-gamified.greater.1	non-gamified	27	0.50	28.93	781	403	−0.03	0.516
gain.theta.Type.non-gamified:ont-gamified.greater.2	ont-gamified	30	0.45	29.07	872	403	−0.03	0.516
gain.theta.Type.non-gamified:ont-gamified.two.sided.1	non-gamified	27	0.50	28.93	781	403	−0.03	0.981
gain.theta.Type.non-gamified:ont-gamified.two.sided.2	ont-gamified	30	0.45	29.07	872	403	−0.03	0.981
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.less.1	non-gamified.Apprentice	13	0.58	16.15	210	119	1.36	0.915
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.less.2	non-gamified.Master	14	0.31	12.00	168	119	1.36	0.915
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.greater.1	non-gamified.Apprentice	13	0.58	16.15	210	119	1.36	0.093
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.greater.2	non-gamified.Master	14	0.31	12.00	168	119	1.36	0.093
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.two.sided.1	non-gamified.Apprentice	13	0.58	16.15	210	119	1.36	0.185
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.two.sided.2	non-gamified.Master	14	0.31	12.00	168	119	1.36	0.185
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.less.1	non-gamified.Apprentice	13	0.58	12.38	161	70	−1.27	0.109
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.less.2	ont-gamified.Apprentice	15	0.66	16.33	245	70	−1.27	0.109
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.greater.1	non-gamified.Apprentice	13	0.58	12.38	161	70	−1.27	0.900
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.greater.2	ont-gamified.Apprentice	15	0.66	16.33	245	70	−1.27	0.900
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.two.sided.1	non-gamified.Apprentice	13	0.58	12.38	161	70	−1.27	0.217
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.two.sided.2	ont-gamified.Apprentice	15	0.66	16.33	245	70	−1.27	0.217
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.less.1	non-gamified.Apprentice	13	0.58	19.31	251	160	2.88	0.999
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.less.2	ont-gamified.Master	15	0.34	10.33	155	160	2.88	0.999
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.1	non-gamified.Apprentice	13	0.58	19.31	251	160	2.88	0.002
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.2	ont-gamified.Master	15	0.34	10.33	155	160	2.88	0.002
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.1	non-gamified.Apprentice	13	0.58	19.31	251	160	2.88	0.003
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.2	ont-gamified.Master	15	0.34	10.33	155	160	2.88	0.003
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.less.1	non-gamified.Master	14	0.31	11.64	163	58	−2.05	0.021
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.less.2	ont-gamified.Apprentice	15	0.66	18.13	272	58	−2.05	0.021
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.greater.1	non-gamified.Master	14	0.31	11.64	163	58	−2.05	0.982
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.greater.2	ont-gamified.Apprentice	15	0.66	18.13	272	58	−2.05	0.982
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.two.sided.1	non-gamified.Master	14	0.31	11.64	163	58	−2.05	0.041
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.two.sided.2	ont-gamified.Apprentice	15	0.66	18.13	272	58	−2.05	0.041
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.less.1	non-gamified.Master	14	0.31	15.71	220	115	0.44	0.674
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.less.2	ont-gamified.Master	15	0.34	14.33	215	115	0.44	0.674
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.greater.1	non-gamified.Master	14	0.31	15.71	220	115	0.44	0.341
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.greater.2	ont-gamified.Master	15	0.34	14.33	215	115	0.44	0.341
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.two.sided.1	non-gamified.Master	14	0.31	15.71	220	115	0.44	0.683
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.two.sided.2	ont-gamified.Master	15	0.34	14.33	215	115	0.44	0.683
gain.theta.CLRole.ont-gamified.Apprentice:ont-gamified.Master.less.1	ont-gamified.Apprentice	15	0.66	21.13	317	197	3.50	1.000
gain.theta.CLRole.ont-gamified.Apprentice:ont-gamified.Master.less.2	ont-gamified.Master	15	0.34	9.87	148	197	3.50	1.000
gain.theta.CLRole.ont-gamified.Apprentice:ont-gamified.Master.greater.1	ont-gamified.Apprentice	15	0.66	21.13	317	197	3.50	0.000

Table 3: *(continued)*

Group		N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.greater.2	ont-gamified.Master	15	0.34	9.87	148	197	3.50	0.000

Table 3: *(continued)*

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.two.sided.1	ont-gamified.Apprentice	15	0.66	21.13	317	197	3.50	0.000
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.two.sided.2	ont-gamified.Master	15	0.34	9.87	148	197	3.50	0.000

Signif. codes: 0 "**" 0.01 "*" 0.05