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	59.062	0.763	0.382	
gain.theta:CLRole	1	404.890	5.233	0.022	*
gain.theta:Type:CLRole	1	61.808	0.799	0.371	
gain.theta:Residuals	26	1718.239			

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:non-gamified.Master.greater.1	non-gamified.Apprentice	11	5.21	9.00	99	33	2.58	0.003	0.690
gain.theta.Type:CLRole.non-gamified.Apprentice:non-gamified.Master.greater.2	non-gamified.Master	3	0.88	2.00	6	33	2.58	0.003	0.690
gain.theta.Type:CLRole.non-gamified.Apprentice:non-gamified.Master.two.sided.1	non-gamified.Apprentice	11	5.21	9.00	99	33	2.58	0.005	0.690
gain.theta.Type:CLRole.non-gamified.Apprentice:non-gamified.Master.two.sided.2	non-gamified.Master	3	0.88	2.00	6	33	2.58	0.005	0.690
gain.theta.Type:CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.1	non-gamified.Apprentice	11	5.21	9.91	109	43	1.76	0.041	0.441
gain.theta.Type:CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.2	ont-gamified.Master	5	0.75	5.40	27	43	1.76	0.041	0.441

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	14	3.60	17.00	238.0	133.0	0.87	0.809
gain.theta.Type.non-gamified:ont-gamified.less.2	ont-gamified	16	2.59	14.19	227.0	133.0	0.87	0.809
gain.theta.Type.non-gamified:ont-gamified.greater.1	non-gamified	14	3.60	17.00	238.0	133.0	0.87	0.197
gain.theta.Type.non-gamified:ont-gamified.greater.2	ont-gamified	16	2.59	14.19	227.0	133.0	0.87	0.197
gain.theta.Type.non-gamified:ont-gamified.two.sided.1	non-gamified	14	3.60	17.00	238.0	133.0	0.87	0.394
gain.theta.Type.non-gamified:ont-gamified.two.sided.2	ont-gamified	16	2.59	14.19	227.0	133.0	0.87	0.394
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.less.1	non-gamified.Apprentice	11	5.21	9.00	99.0	33.0	2.58	1.000
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.less.2	non-gamified.Master	3	0.88	2.00	6.0	33.0	2.58	1.000
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.greater.1	non-gamified.Apprentice	11	5.21	9.00	99.0	33.0	2.58	0.003
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.greater.2	non-gamified.Master	3	0.88	2.00	6.0	33.0	2.58	0.003
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.two.sided.1	non-gamified.Apprentice	11	5.21	9.00	99.0	33.0	2.58	0.005
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.two.sided.2	non-gamified.Master	3	0.88	2.00	6.0	33.0	2.58	0.005
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.less.1	non-gamified.Apprentice	11	5.21	12.73	140.0	74.0	0.89	0.813
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.less.2	ont-gamified.Apprentice	11	4.68	10.27	113.0	74.0	0.89	0.813
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.greater.1	non-gamified.Apprentice	11	5.21	12.73	140.0	74.0	0.89	0.195
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.greater.2	ont-gamified.Apprentice	11	4.68	10.27	113.0	74.0	0.89	0.195
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.two.sided.1	non-gamified.Apprentice	11	5.21	12.73	140.0	74.0	0.89	0.390
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.two.sided.2	ont-gamified.Apprentice	11	4.68	10.27	113.0	74.0	0.89	0.390
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.less.1	non-gamified.Apprentice	11	5.21	9.91	109.0	43.0	1.76	0.964
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.less.2	ont-gamified.Master	5	0.75	5.40	27.0	43.0	1.76	0.964
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.1	non-gamified.Apprentice	11	5.21	9.91	109.0	43.0	1.76	0.041
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.2	ont-gamified.Master	5	0.75	5.40	27.0	43.0	1.76	0.041
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.1	non-gamified.Apprentice	11	5.21	9.91	109.0	43.0	1.76	0.084
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.2	ont-gamified.Master	5	0.75	5.40	27.0	43.0	1.76	0.084
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.less.1	non-gamified.Master	3	0.88	4.67	14.0	8.0	−1.32	0.113
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.less.2	ont-gamified.Apprentice	11	4.68	8.27	91.0	8.0	−1.32	0.113
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.greater.1	non-gamified.Master	3	0.88	4.67	14.0	8.0	−1.32	0.915
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.greater.2	ont-gamified.Apprentice	11	4.68	8.27	91.0	8.0	−1.32	0.915
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.two.sided.1	non-gamified.Master	3	0.88	4.67	14.0	8.0	−1.32	0.214
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.two.sided.2	ont-gamified.Apprentice	11	4.68	8.27	91.0	8.0	−1.32	0.214
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.less.1	non-gamified.Master	3	0.88	4.67	14.0	8.0	0.15	0.571
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.less.2	ont-gamified.Master	5	0.75	4.40	22.0	8.0	0.15	0.571
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.greater.1	non-gamified.Master	3	0.88	4.67	14.0	8.0	0.15	0.464
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.greater.2	ont-gamified.Master	5	0.75	4.40	22.0	8.0	0.15	0.464
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.two.sided.1	non-gamified.Master	3	0.88	4.67	14.0	8.0	0.15	0.929
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.two.sided.2	ont-gamified.Master	5	0.75	4.40	22.0	8.0	0.15	0.929
gain.theta.CLRole.ont-gamified.Apprentice:ont-gamified.Master.less.1	ont-gamified.Apprentice	11	4.68	9.41	103.5	37.5	1.14	0.874
gain.theta.CLRole.ont-gamified.Apprentice:ont-gamified.Master.less.2	ont-gamified.Master	5	0.75	6.50	32.5	37.5	1.14	0.874
gain.theta.CLRole.ont-gamified.Apprentice:ont-gamified.Master.greater.1	ont-gamified.Apprentice	11	4.68	9.41	103.5	37.5	1.14	0.140

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	5	0.75	6.50	32.5	37.5	1.14	0.140

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	11	4.68	9.41	103.5	37.5	1.14	0.278
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.two.sided.2	ont-gamified.Master	5	0.75	6.50	32.5	37.5	1.14	0.278

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