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	102.128	0.543	0.461	
gain.theta:CLRole	1	1420.158	7.554	0.006	**
gain.theta:Type:CLRole	1	748.997	3.984	0.046	*
gain.theta:Residuals	43	6376.717			

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	10	0.56	16.80	168	113	2.52	0.005	0.514
gain.theta.Type:CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.2	ont-gamified.Master	14	0.32	9.43	132	113	2.52	0.005	0.514
gain.theta.Type:CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.1	non-gamified.Apprentice	10	0.56	16.80	168	113	2.52	0.011	0.514
gain.theta.Type:CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.2	ont-gamified.Master	14	0.32	9.43	132	113	2.52	0.011	0.514
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.greater.1	ont-gamified.Apprentice	14	0.65	19.93	279	174	3.49	0.000	0.660
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.greater.2	ont-gamified.Master	14	0.32	9.07	127	174	3.49	0.000	0.660
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.two.sided.1	ont-gamified.Apprentice	14	0.65	19.93	279	174	3.49	0.000	0.660
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.two.sided.2	ont-gamified.Master	14	0.32	9.07	127	174	3.49	0.000	0.660

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	19	0.54	25.79	490	300	0.74	0.771
gain.theta.Type.non-gamified:ont-gamified.less.2 · ont-gamified	28	0.43	22.79	638	300	0.74	0.771
gain.theta.Type.non-gamified:ont-gamified.greater.1 · non-gamified	19	0.54	25.79	490	300	0.74	0.236
gain.theta.Type.non-gamified:ont-gamified.greater.2 · ont-gamified	28	0.43	22.79	638	300	0.74	0.236
gain.theta.Type.non-gamified:ont-gamified.two.sided.1 · non-gamified	19	0.54	25.79	490	300	0.74	0.471
gain.theta.Type.non-gamified:ont-gamified.two.sided.2 · ont-gamified	28	0.43	22.79	638	300	0.74	0.471
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.less.1 · non-gamified.Apprentice	10	0.56	10.00	100	45	0.00	0.516
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.less.2 · non-gamified.Master	9	0.50	10.00	90	45	0.00	0.516
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.greater.1 · non-gamified.Apprentice	10	0.56	10.00	100	45	0.00	0.516
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.greater.2 · non-gamified.Master	9	0.50	10.00	90	45	0.00	0.516
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.two.sided.1 · non-gamified.Apprentice	10	0.56	10.00	100	45	0.00	1.000
gain.theta.CLRole.non-gamified.Apprentice:non-gamified.Master.two.sided.2 · non-gamified.Master	9	0.50	10.00	90	45	0.00	1.000
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.less.1 · non-gamified.Apprentice	10	0.56	10.60	106	51	−1.11	0.142
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.less.2 · ont-gamified.Apprentice	14	0.65	13.86	194	51	−1.11	0.142
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.greater.1 · non-gamified.Apprentice	10	0.56	10.60	106	51	−1.11	0.870
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.greater.2 · ont-gamified.Apprentice	14	0.56	13.86	194	51	−1.11	0.870
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.two.sided.1 · non-gamified.Apprentice	10	0.56	10.60	106	51	−1.11	0.285
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Apprentice.two.sided.2 · ont-gamified.Apprentice	14	0.65	13.86	194	51	−1.11	0.285
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.less.1 · non-gamified.Apprentice	10	0.56	16.80	168	113	2.52	0.996
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.less.2 · ont-gamified.Master	14	0.32	9.43	132	113	2.52	0.996
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.1 · non-gamified.Apprentice	14	0.32	9.43	132	113	2.52	0.005
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.greater.2 · ont-gamified.Master	14	0.56	16.80	168	113	2.52	0.005
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.1 · non-gamified.Apprentice	10	0.56	16.80	168	113	2.52	0.011
gain.theta.CLRole.non-gamified.Apprentice:ont-gamified.Master.two.sided.2 · ont-gamified.Master	14	0.32	9.43	132	113	2.52	0.011
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.less.1 · non-gamified.Master	9	0.50	10.78	97	52	−0.69	0.258
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.less.2 · ont-gamified.Apprentice	14	0.65	12.79	179	52	−0.69	0.258
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.greater.1 · non-gamified.Master	9	0.50	10.78	97	52	−0.69	0.762
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.greater.2 · ont-gamified.Apprentice	14	0.65	12.79	179	52	−0.69	0.762
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.two.sided.1 · non-gamified.Master	9	0.50	10.78	97	52	−0.69	0.516
gain.theta.CLRole.non-gamified.Master:ont-gamified.Apprentice.two.sided.2 · ont-gamified.Apprentice	14	0.65	12.79	179	52	−0.69	0.516
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.less.1 · non-gamified.Master	9	0.50	14.33	129	84	1.32	0.910
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.less.2 · ont-gamified.Master	14	0.32	10.50	147	84	1.32	0.910
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.greater.1 · non-gamified.Master	9	0.50	14.33	129	84	1.32	0.101
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.greater.2 · ont-gamified.Master	14	0.32	10.50	147	84	1.32	0.101
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.two.sided.1 · non-gamified.Master	9	0.50	14.33	129	84	1.32	0.201
gain.theta.CLRole.non-gamified.Master:ont-gamified.Master.two.sided.2 · ont-gamified.Master	14	0.32	10.50	147	84	1.32	0.201
gain.theta.CLRole.ont-gamified.Apprentice:ont-gamified.Master.less.1 · ont-gamified.Apprentice	14	0.65	19.93	279	174	3.49	1.000
gain.theta.CLRole.ont-gamified.Apprentice:ont-gamified.Master.less.2 · ont-gamified.Master	14	0.32	9.07	127	174	3.49	1.000
gain.theta.CLRole.ont-gamified.Apprentice:ont-gamified.Master.greater.1 · ont-gamified.Apprentice	14	0.65	19.93	279	174	3.49	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	14	0.32	9.07	127	174	3.49	0.000	0

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	14	0.65	19.93	279	174	3.49	0.000	0	
gain.theta.Type:CLRole.ont-gamified.Apprentice:ont-gamified.Master.two.sided.2	ont-gamified.Master	14	0.32	9.07	127	174	3.49	0.000	0	

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