

Summary of nonparametric statistics analysis for Differences of Scores in the first study for signed-up students

Table 1: Summary of Scheirer-Ray-Hare results for Differences of Scores in the first study for signed-up students

	Df	Sum Sq	H	p.value	Sig
difScore					
difScore:Type	1	16.906	0.061	0.804	
difScore:CLRole	1	5127.194	18.612	0.000	**
difScore:Type:CLRole	1	123.516	0.448	0.503	
difScore:Residuals	53	10158.883			

Signif. codes: 0 ‘***’ 0.01 ‘**’ 0.05

Table 2: Descriptive statistic of the pair wilcoxon analysis for Differences of Scores in the first study for signed-up students

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type:CLRole.greater.1	non-gamified.Apprentice	13	1.81	17.77	231.0	140.0	2.38	0.008	0.458	medium
Type:CLRole.greater.2	non-gamified.Master	14	0.62	10.50	147.0	140.0	2.38	0.008	0.458	medium
Type:CLRole.two.sided.1	non-gamified.Apprentice	13	1.81	17.77	231.0	140.0	2.38	0.016	0.458	medium
Type:CLRole.two.sided.2	non-gamified.Master	14	0.62	10.50	147.0	140.0	2.38	0.016	0.458	medium
Type:CLRole.greater.11	non-gamified.Apprentice	13	1.81	18.88	245.5	154.5	2.63	0.004	0.496	medium
Type:CLRole.greater.21	ont-gamified.Master	15	0.43	10.70	160.5	154.5	2.63	0.004	0.496	medium
Type:CLRole.two.sided.11	non-gamified.Apprentice	13	1.81	18.88	245.5	154.5	2.63	0.007	0.496	medium
Type:CLRole.two.sided.21	ont-gamified.Master	15	0.43	10.70	160.5	154.5	2.63	0.007	0.496	medium
Type:CLRole.less.1	non-gamified.Master	14	0.62	9.64	135.0	30.0	-3.27	0.000	0.608	large
Type:CLRole.less.2	ont-gamified.Apprentice	15	2.37	20.00	300.0	30.0	-3.27	0.000	0.608	large
Type:CLRole.two.sided.12	non-gamified.Master	14	0.62	9.64	135.0	30.0	-3.27	0.001	0.608	large
Type:CLRole.two.sided.22	ont-gamified.Apprentice	15	2.37	20.00	300.0	30.0	-3.27	0.001	0.608	large
Type:CLRole.greater.12	ont-gamified.Apprentice	15	2.37	21.47	322.0	202.0	3.71	0.000	0.678	large
Type:CLRole.greater.22	ont-gamified.Master	15	0.43	9.53	143.0	202.0	3.71	0.000	0.678	large
Type:CLRole.two.sided.13	ont-gamified.Apprentice	15	2.37	21.47	322.0	202.0	3.71	0.000	0.678	large
Type:CLRole.two.sided.23	ont-gamified.Master	15	0.43	9.53	143.0	202.0	3.71	0.000	0.678	large

Table 3: Full descriptive statistic of the pair wilcoxon analysis for Differences of Scores in the first study for signed-up students

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type.less.1	non-gamified	27	1.13	28.43	767.5	389.5	-0.25	0.404	0.033	none
Type.less.2	ont-gamified	30	1.44	29.52	885.5	389.5	-0.25	0.404	0.033	none
Type.greater.1	non-gamified	27	1.13	28.43	767.5	389.5	-0.25	0.599	0.033	none
Type.greater.2	ont-gamified	30	1.44	29.52	885.5	389.5	-0.25	0.599	0.033	none
Type.two.sided.1	non-gamified	27	1.13	28.43	767.5	389.5	-0.25	0.809	0.033	none
Type.two.sided.2	ont-gamified	30	1.44	29.52	885.5	389.5	-0.25	0.809	0.033	none
Type:CLRole.less.1	non-gamified.Apprentice	13	1.81	17.77	231.0	140.0	2.38	0.993	0.458	medium
Type:CLRole.less.2	non-gamified.Master	14	0.62	10.50	147.0	140.0	2.38	0.993	0.458	medium
Type:CLRole.greater.1	non-gamified.Apprentice	13	1.81	17.77	231.0	140.0	2.38	0.008	0.458	medium
Type:CLRole.greater.2	non-gamified.Master	14	0.62	10.50	147.0	140.0	2.38	0.008	0.458	medium
Type:CLRole.two.sided.1	non-gamified.Apprentice	13	1.81	17.77	231.0	140.0	2.38	0.016	0.458	medium
Type:CLRole.two.sided.2	non-gamified.Master	14	0.62	10.50	147.0	140.0	2.38	0.016	0.458	medium
Type:CLRole.less.11	non-gamified.Apprentice	13	1.81	14.00	182.0	91.0	-0.30	0.393	0.057	none
Type:CLRole.less.21	ont-gamified.Apprentice	15	2.37	14.93	224.0	91.0	-0.30	0.393	0.057	none
Type:CLRole.greater.11	non-gamified.Apprentice	13	1.81	14.00	182.0	91.0	-0.30	0.625	0.057	none
Type:CLRole.greater.21	ont-gamified.Apprentice	15	2.37	14.93	224.0	91.0	-0.30	0.625	0.057	none
Type:CLRole.two.sided.11	non-gamified.Apprentice	13	1.81	14.00	182.0	91.0	-0.30	0.786	0.057	none
Type:CLRole.two.sided.21	ont-gamified.Apprentice	15	2.37	14.93	224.0	91.0	-0.30	0.786	0.057	none
Type:CLRole.less.12	non-gamified.Apprentice	13	1.81	18.88	245.5	154.5	2.63	0.997	0.496	medium
Type:CLRole.less.22	ont-gamified.Master	15	0.43	10.70	160.5	154.5	2.63	0.997	0.496	medium
Type:CLRole.greater.12	non-gamified.Apprentice	13	1.81	18.88	245.5	154.5	2.63	0.004	0.496	medium
Type:CLRole.greater.22	ont-gamified.Master	15	0.43	10.70	160.5	154.5	2.63	0.004	0.496	medium
Type:CLRole.two.sided.12	non-gamified.Apprentice	13	1.81	18.88	245.5	154.5	2.63	0.007	0.496	medium
Type:CLRole.two.sided.22	ont-gamified.Master	15	0.43	10.70	160.5	154.5	2.63	0.007	0.496	medium
Type:CLRole.less.13	non-gamified.Master	14	0.62	9.64	135.0	30.0	-3.27	0.000	0.608	large
Type:CLRole.less.23	ont-gamified.Apprentice	15	2.37	20.00	300.0	30.0	-3.27	0.000	0.608	large
Type:CLRole.greater.13	non-gamified.Master	14	0.62	9.64	135.0	30.0	-3.27	1.000	0.608	large
Type:CLRole.greater.23	ont-gamified.Apprentice	15	2.37	20.00	300.0	30.0	-3.27	1.000	0.608	large
Type:CLRole.two.sided.13	non-gamified.Master	14	0.62	9.64	135.0	30.0	-3.27	0.001	0.608	large
Type:CLRole.two.sided.23	ont-gamified.Apprentice	15	2.37	20.00	300.0	30.0	-3.27	0.001	0.608	large
Type:CLRole.less.14	non-gamified.Master	14	0.62	15.64	219.0	114.0	0.39	0.655	0.073	none
Type:CLRole.less.24	ont-gamified.Master	15	0.43	14.40	216.0	114.0	0.39	0.655	0.073	none
Type:CLRole.greater.14	non-gamified.Master	14	0.62	15.64	219.0	114.0	0.39	0.353	0.073	none
Type:CLRole.greater.24	ont-gamified.Master	15	0.43	14.40	216.0	114.0	0.39	0.353	0.073	none
Type:CLRole.two.sided.14	non-gamified.Master	14	0.62	15.64	219.0	114.0	0.39	0.707	0.073	none
Type:CLRole.two.sided.24	ont-gamified.Master	15	0.43	14.40	216.0	114.0	0.39	0.707	0.073	none
Type:CLRole.less.15	ont-gamified.Apprentice	15	2.37	21.47	322.0	202.0	3.71	1.000	0.678	large

Table 3: *(continued)*

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type:CLRole.less.25	ont-gamified.Master	15	0.43	9.53	143.0	202.0	3.71	1.000	0.678	large
Type:CLRole.greater.15	ont-gamified.Apprentice	15	2.37	21.47	322.0	202.0	3.71	0.000	0.678	large
Type:CLRole.greater.25	ont-gamified.Master	15	0.43	9.53	143.0	202.0	3.71	0.000	0.678	large

Table 3: *(continued)*

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type:CLRole.two.sided.15	ont-gamified.Apprentice	15	2.37	21.47	322.0	202.0	3.71	0.000	0.678	large
Type:CLRole.two.sided.25	ont-gamified.Master	15	0.43	9.53	143.0	202.0	3.71	0.000	0.678	large