

Summary of nonparametric statistics analysis for Differences of Scores in the second study for students with effective participation

Table 1: Summary of Scheirer-Ray-Hare results for Differences of Scores in the second study for students with effective participation

	Df	Sum Sq	H	p.value	Sig
difScore					
difScore:Type	1	1.970	0.012	0.911	
difScore:CLRole	1	1252.252	7.943	0.005	**
difScore:Type:CLRole	1	27.508	0.174	0.676	
difScore:Residuals	39	5339.769			

Signif. codes: 0 ‘***’ 0.01 ‘**’ 0.05

Table 2: Descriptive statistic of the pair wilcoxon analysis for Differences of Scores in the second study for students with effective participation

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type:CLRole.greater.1	non-gamified.Apprentice	18	2.09	15.33	276.0	105.0	1.83	0.035	0.360	medium
Type:CLRole.greater.2	non-gamified.Master	8	0.96	9.38	75.0	105.0	1.83	0.035	0.360	medium
Type:CLRole.greater.11	non-gamified.Apprentice	18	2.09	13.42	241.5	70.5	1.90	0.029	0.396	medium
Type:CLRole.greater.21	ont-gamified.Master	5	-0.21	6.90	34.5	70.5	1.90	0.029	0.396	medium
Type:CLRole.less.1	non-gamified.Master	8	0.96	7.00	56.0	20.0	-2.16	0.016	0.483	medium
Type:CLRole.less.2	ont-gamified.Apprentice	12	2.55	12.83	154.0	20.0	-2.16	0.016	0.483	medium
Type:CLRole.two.sided.1	non-gamified.Master	8	0.96	7.00	56.0	20.0	-2.16	0.031	0.483	medium
Type:CLRole.two.sided.2	ont-gamified.Apprentice	12	2.55	12.83	154.0	20.0	-2.16	0.031	0.483	medium
Type:CLRole.greater.12	ont-gamified.Apprentice	12	2.55	10.67	128.0	50.0	2.11	0.018	0.511	large
Type:CLRole.greater.22	ont-gamified.Master	5	-0.21	5.00	25.0	50.0	2.11	0.018	0.511	large
Type:CLRole.two.sided.11	ont-gamified.Apprentice	12	2.55	10.67	128.0	50.0	2.11	0.037	0.511	large
Type:CLRole.two.sided.21	ont-gamified.Master	5	-0.21	5.00	25.0	50.0	2.11	0.037	0.511	large

Table 3: Full descriptive statistic of the pair wilcoxon analysis for Differences of Scores in the second study for students with effective participation

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type.less.1	non-gamified	26	1.75	22.17	576.5	225.5	0.11	0.547	0.017	none
Type.less.2	ont-gamified	17	2.18	21.74	369.5	225.5	0.11	0.547	0.017	none
Type.greater.1	non-gamified	26	1.75	22.17	576.5	225.5	0.11	0.459	0.017	none
Type.greater.2	ont-gamified	17	2.18	21.74	369.5	225.5	0.11	0.459	0.017	none
Type.two.sided.1	non-gamified	26	1.75	22.17	576.5	225.5	0.11	0.917	0.017	none
Type.two.sided.2	ont-gamified	17	2.18	21.74	369.5	225.5	0.11	0.917	0.017	none
Type:CLRole.less.1	non-gamified.Apprentice	18	2.09	15.33	276.0	105.0	1.83	0.969	0.360	medium
Type:CLRole.less.2	non-gamified.Master	8	0.96	9.38	75.0	105.0	1.83	0.969	0.360	medium
Type:CLRole.greater.1	non-gamified.Apprentice	18	2.09	15.33	276.0	105.0	1.83	0.035	0.360	medium
Type:CLRole.greater.2	non-gamified.Master	8	0.96	9.38	75.0	105.0	1.83	0.035	0.360	medium
Type:CLRole.two.sided.1	non-gamified.Apprentice	18	2.09	15.33	276.0	105.0	1.83	0.070	0.360	medium
Type:CLRole.two.sided.2	non-gamified.Master	8	0.96	9.38	75.0	105.0	1.83	0.070	0.360	medium
Type:CLRole.less.11	non-gamified.Apprentice	18	2.09	15.61	281.0	110.0	0.08	0.541	0.015	none
Type:CLRole.less.21	ont-gamified.Apprentice	12	2.55	15.33	184.0	110.0	0.08	0.541	0.015	none
Type:CLRole.greater.11	non-gamified.Apprentice	18	2.09	15.61	281.0	110.0	0.08	0.475	0.015	none
Type:CLRole.greater.21	ont-gamified.Apprentice	12	2.55	15.33	184.0	110.0	0.08	0.475	0.015	none
Type:CLRole.two.sided.11	non-gamified.Apprentice	18	2.09	15.61	281.0	110.0	0.08	0.950	0.015	none
Type:CLRole.two.sided.21	ont-gamified.Apprentice	12	2.55	15.33	184.0	110.0	0.08	0.950	0.015	none
Type:CLRole.less.12	non-gamified.Apprentice	18	2.09	13.42	241.5	70.5	1.90	0.974	0.396	medium
Type:CLRole.less.22	ont-gamified.Master	5	-0.21	6.90	34.5	70.5	1.90	0.974	0.396	medium
Type:CLRole.greater.12	non-gamified.Apprentice	18	2.09	13.42	241.5	70.5	1.90	0.029	0.396	medium
Type:CLRole.greater.22	ont-gamified.Master	5	-0.21	6.90	34.5	70.5	1.90	0.029	0.396	medium
Type:CLRole.two.sided.12	non-gamified.Apprentice	18	2.09	13.42	241.5	70.5	1.90	0.057	0.396	medium
Type:CLRole.two.sided.22	ont-gamified.Master	5	-0.21	6.90	34.5	70.5	1.90	0.057	0.396	medium
Type:CLRole.less.13	non-gamified.Master	8	0.96	7.00	56.0	20.0	-2.16	0.016	0.483	medium
Type:CLRole.less.23	ont-gamified.Apprentice	12	2.55	12.83	154.0	20.0	-2.16	0.016	0.483	medium
Type:CLRole.greater.13	non-gamified.Master	8	0.96	7.00	56.0	20.0	-2.16	0.987	0.483	medium
Type:CLRole.greater.23	ont-gamified.Apprentice	12	2.55	12.83	154.0	20.0	-2.16	0.987	0.483	medium
Type:CLRole.two.sided.13	non-gamified.Master	8	0.96	7.00	56.0	20.0	-2.16	0.031	0.483	medium
Type:CLRole.two.sided.23	ont-gamified.Apprentice	12	2.55	12.83	154.0	20.0	-2.16	0.031	0.483	medium
Type:CLRole.less.14	non-gamified.Master	8	0.96	7.62	61.0	25.0	0.73	0.782	0.203	small
Type:CLRole.less.24	ont-gamified.Master	5	-0.21	6.00	30.0	25.0	0.73	0.782	0.203	small
Type:CLRole.greater.14	non-gamified.Master	8	0.96	7.62	61.0	25.0	0.73	0.262	0.203	small
Type:CLRole.greater.24	ont-gamified.Master	5	-0.21	6.00	30.0	25.0	0.73	0.262	0.203	small
Type:CLRole.two.sided.14	non-gamified.Master	8	0.96	7.62	61.0	25.0	0.73	0.524	0.203	small
Type:CLRole.two.sided.24	ont-gamified.Master	5	-0.21	6.00	30.0	25.0	0.73	0.524	0.203	small
Type:CLRole.less.15	ont-gamified.Apprentice	12	2.55	10.67	128.0	50.0	2.11	0.987	0.511	large
Type:CLRole.less.25	ont-gamified.Master	5	-0.21	5.00	25.0	50.0	2.11	0.987	0.511	large
Type:CLRole.greater.15	ont-gamified.Apprentice	12	2.55	10.67	128.0	50.0	2.11	0.018	0.511	large
Type:CLRole.greater.25	ont-gamified.Master	5	-0.21	5.00	25.0	50.0	2.11	0.018	0.511	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	12	2.55	10.67	128.0	50.0	2.11	0.037	0.511	large
Type:CLRole.two.sided.25	ont-gamified.Master	5	-0.21	5.00	25.0	50.0	2.11	0.037	0.511	large