

Summary of nonparametric statistics analysis for the scores of Effort/Importance in the third study for students with effective participation

Table 1: Summary of Scheirer-Ray-Hare results for the scores of Effort/Importance in the third study for students with effective participation

	Df	Sum Sq	H	p.value	Sig
Type					
Type:Type	1	673.313	4.327	0.038	*
Type:CLRole	1	198.997	1.279	0.258	
Type:Type:CLRole	1	7.613	0.049	0.825	
Type:Residuals	39	5655.578			

Signif. codes: 0 “***” 0.01 “**” 0.05

Table 2: Descriptive statistic of the pair wilcoxon analysis for the scores of Effort/Importance in the third study for students with effective participation

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type.greater.1	ont-gamified	24	5.50	25.52	612.5	312.5	2.08	0.019	0.317	medium
Type.greater.2	w/o-gamified	19	4.33	17.55	333.5	312.5	2.08	0.019	0.317	medium
Type.two.sided.1	ont-gamified	24	5.50	25.52	612.5	312.5	2.08	0.037	0.317	medium
Type.two.sided.2	w/o-gamified	19	4.33	17.55	333.5	312.5	2.08	0.037	0.317	medium
Type:CLRole.greater.1	ont-gamified.Apprentice	15	5.67	12.80	192.0	72.0	2.12	0.017	0.462	medium
Type:CLRole.greater.2	w/o-gamified.Master	6	4.17	6.50	39.0	72.0	2.12	0.017	0.462	medium
Type:CLRole.two.sided.1	ont-gamified.Apprentice	15	5.67	12.80	192.0	72.0	2.12	0.033	0.462	medium
Type:CLRole.two.sided.2	w/o-gamified.Master	6	4.17	6.50	39.0	72.0	2.12	0.033	0.462	medium

Table 3: Full descriptive statistic of the pair wilcoxon analysis for the scores of Effort/Importance in the third study for students with effective participation

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type.less.1	ont-gamified	24	5.50	25.52	612.5	312.5	2.08	0.982	0.317	medium
Type.less.2	w/o-gamified	19	4.33	17.55	333.5	312.5	2.08	0.982	0.317	medium
Type.greater.1	ont-gamified	24	5.50	25.52	612.5	312.5	2.08	0.019	0.317	medium
Type.greater.2	w/o-gamified	19	4.33	17.55	333.5	312.5	2.08	0.019	0.317	medium
Type.two.sided.1	ont-gamified	24	5.50	25.52	612.5	312.5	2.08	0.037	0.317	medium
Type.two.sided.2	w/o-gamified	19	4.33	17.55	333.5	312.5	2.08	0.037	0.317	medium
Type:CLRole.less.1	ont-gamified.Apprentice	15	5.67	13.33	200.0	80.0	0.75	0.776	0.154	small
Type:CLRole.less.2	ont-gamified.Master	9	5.00	11.11	100.0	80.0	0.75	0.776	0.154	small
Type:CLRole.greater.1	ont-gamified.Apprentice	15	5.67	13.33	200.0	80.0	0.75	0.233	0.154	small
Type:CLRole.greater.2	ont-gamified.Master	9	5.00	11.11	100.0	80.0	0.75	0.233	0.154	small
Type:CLRole.two.sided.1	ont-gamified.Apprentice	15	5.67	13.33	200.0	80.0	0.75	0.467	0.154	small
Type:CLRole.two.sided.2	ont-gamified.Master	9	5.00	11.11	100.0	80.0	0.75	0.467	0.154	small
Type:CLRole.less.11	ont-gamified.Apprentice	15	5.67	16.80	252.0	132.0	1.60	0.946	0.303	medium
Type:CLRole.less.21	w/o-gamified.Apprentice	13	4.67	11.85	154.0	132.0	1.60	0.946	0.303	medium
Type:CLRole.greater.11	ont-gamified.Apprentice	15	5.67	16.80	252.0	132.0	1.60	0.056	0.303	medium
Type:CLRole.greater.21	w/o-gamified.Apprentice	13	4.67	11.85	154.0	132.0	1.60	0.056	0.303	medium
Type:CLRole.two.sided.11	ont-gamified.Apprentice	15	5.67	16.80	252.0	132.0	1.60	0.112	0.303	medium
Type:CLRole.two.sided.21	w/o-gamified.Apprentice	13	4.67	11.85	154.0	132.0	1.60	0.112	0.303	medium
Type:CLRole.less.12	ont-gamified.Apprentice	15	5.67	12.80	192.0	72.0	2.12	0.985	0.462	medium
Type:CLRole.less.22	w/o-gamified.Master	6	4.17	6.50	39.0	72.0	2.12	0.985	0.462	medium
Type:CLRole.greater.12	ont-gamified.Apprentice	15	5.67	12.80	192.0	72.0	2.12	0.017	0.462	medium
Type:CLRole.greater.22	w/o-gamified.Master	6	4.17	6.50	39.0	72.0	2.12	0.017	0.462	medium
Type:CLRole.two.sided.12	ont-gamified.Apprentice	15	5.67	12.80	192.0	72.0	2.12	0.033	0.462	medium
Type:CLRole.two.sided.22	w/o-gamified.Master	6	4.17	6.50	39.0	72.0	2.12	0.033	0.462	medium
Type:CLRole.less.13	ont-gamified.Master	9	5.00	12.72	114.5	69.5	0.74	0.770	0.158	small
Type:CLRole.less.23	w/o-gamified.Apprentice	13	4.67	10.65	138.5	69.5	0.74	0.770	0.158	small
Type:CLRole.greater.13	ont-gamified.Master	9	5.00	12.72	114.5	69.5	0.74	0.241	0.158	small
Type:CLRole.greater.23	w/o-gamified.Apprentice	13	4.67	10.65	138.5	69.5	0.74	0.241	0.158	small
Type:CLRole.two.sided.13	ont-gamified.Master	9	5.00	12.72	114.5	69.5	0.74	0.481	0.158	small
Type:CLRole.two.sided.23	w/o-gamified.Apprentice	13	4.67	10.65	138.5	69.5	0.74	0.481	0.158	small
Type:CLRole.less.14	ont-gamified.Master	9	5.00	9.33	84.0	39.0	1.42	0.923	0.367	medium
Type:CLRole.less.24	w/o-gamified.Master	6	4.17	6.00	36.0	39.0	1.42	0.923	0.367	medium
Type:CLRole.greater.14	ont-gamified.Master	9	5.00	9.33	84.0	39.0	1.42	0.084	0.367	medium
Type:CLRole.greater.24	w/o-gamified.Master	6	4.17	6.00	36.0	39.0	1.42	0.084	0.367	medium
Type:CLRole.two.sided.14	ont-gamified.Master	9	5.00	9.33	84.0	39.0	1.42	0.169	0.367	medium
Type:CLRole.two.sided.24	w/o-gamified.Master	6	4.17	6.00	36.0	39.0	1.42	0.169	0.367	medium
Type:CLRole.less.15	w/o-gamified.Apprentice	13	4.67	10.81	140.5	49.5	0.93	0.827	0.213	small
Type:CLRole.less.25	w/o-gamified.Master	6	4.17	8.25	49.5	49.5	0.93	0.827	0.213	small
Type:CLRole.greater.15	w/o-gamified.Apprentice	13	4.67	10.81	140.5	49.5	0.93	0.190	0.213	small
Type:CLRole.greater.25	w/o-gamified.Master	6	4.17	8.25	49.5	49.5	0.93	0.190	0.213	small

Table 3: *(continued)*

	Group	N	Median	Mean.Ranks	Sum.Ranks	U	Z	p.value	r	magnitude
Type:CLRole.two.sided.15	w/o-gamified.Apprentice	13	4.67	10.81	140.5	49.5	0.93	0.376	0.213	small
Type:CLRole.two.sided.25	w/o-gamified.Master	6	4.17	8.25	49.5	49.5	0.93	0.376	0.213	small