

Summary of nonparametric statistics analysis for the scores of Interest/Enjoyment in the first study for signed up students

Table 1: Summary of Scheirer-Ray-Hare results for the scores of Interest/Enjoyment in the first study for signed up students

| | Df | Sum Sq | H | p.value | Sig |
|------------------|----|-----------|-------|---------|-----|
| Type | | | | | |
| Type:Type | 1 | 1135.350 | 3.741 | 0.053 | |
| Type:CLRole | 1 | 32.781 | 0.108 | 0.742 | |
| Type:Type:CLRole | 1 | 456.963 | 1.506 | 0.220 | |
| Type:Residuals | 56 | 16281.406 | | | |

Signif. codes: 0 ‘**’ 0.01 ‘*’ 0.05

Table 2: Descriptive statistic of the pair wilcoxon analysis for the scores of Interest/Enjoyment 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 | 30 | 4.00 | 26.15 | 784.5 | 319.5 | -1.93 | 0.027 | 0.250 | small |
| Type.less.2 | ont-gamified | 30 | 4.83 | 34.85 | 1045.5 | 319.5 | -1.93 | 0.027 | 0.250 | small |
| Type:CLRole.less.1 | non-gamified.Master | 16 | 3.83 | 12.53 | 200.5 | 64.5 | -2.20 | 0.013 | 0.395 | medium |
| Type:CLRole.less.2 | ont-gamified.Master | 15 | 5.00 | 19.70 | 295.5 | 64.5 | -2.20 | 0.013 | 0.395 | medium |
| Type:CLRole.two.sided.1 | non-gamified.Master | 16 | 3.83 | 12.53 | 200.5 | 64.5 | -2.20 | 0.027 | 0.395 | medium |
| Type:CLRole.two.sided.2 | ont-gamified.Master | 15 | 5.00 | 19.70 | 295.5 | 64.5 | -2.20 | 0.027 | 0.395 | medium |

Table 3: Full descriptive statistic of the pair wilcoxon analysis for the scores of Interest/Enjoyment 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 | 30 | 4.00 | 26.15 | 784.5 | 319.5 | -1.93 | 0.027 | 0.250 | small |
| Type.less.2 | ont-gamified | 30 | 4.83 | 34.85 | 1045.5 | 319.5 | -1.93 | 0.027 | 0.250 | small |
| Type.greater.1 | non-gamified | 30 | 4.00 | 26.15 | 784.5 | 319.5 | -1.93 | 0.974 | 0.250 | small |
| Type.greater.2 | ont-gamified | 30 | 4.83 | 34.85 | 1045.5 | 319.5 | -1.93 | 0.974 | 0.250 | small |
| Type.two.sided.1 | non-gamified | 30 | 4.00 | 26.15 | 784.5 | 319.5 | -1.93 | 0.053 | 0.250 | small |
| Type.two.sided.2 | ont-gamified | 30 | 4.83 | 34.85 | 1045.5 | 319.5 | -1.93 | 0.053 | 0.250 | small |
| Type:CLRole.less.1 | non-gamified.Apprentice | 14 | 4.00 | 17.39 | 243.5 | 138.5 | 1.11 | 0.866 | 0.202 | small |
| Type:CLRole.less.2 | non-gamified.Master | 16 | 3.83 | 13.84 | 221.5 | 138.5 | 1.11 | 0.866 | 0.202 | small |
| Type:CLRole.greater.1 | non-gamified.Apprentice | 14 | 4.00 | 17.39 | 243.5 | 138.5 | 1.11 | 0.139 | 0.202 | small |
| Type:CLRole.greater.2 | non-gamified.Master | 16 | 3.83 | 13.84 | 221.5 | 138.5 | 1.11 | 0.139 | 0.202 | small |
| Type:CLRole.two.sided.1 | non-gamified.Apprentice | 14 | 4.00 | 17.39 | 243.5 | 138.5 | 1.11 | 0.278 | 0.202 | small |
| Type:CLRole.two.sided.2 | non-gamified.Master | 16 | 3.83 | 13.84 | 221.5 | 138.5 | 1.11 | 0.278 | 0.202 | small |
| Type:CLRole.less.11 | non-gamified.Apprentice | 14 | 4.00 | 14.00 | 196.0 | 91.0 | -0.61 | 0.276 | 0.114 | small |
| Type:CLRole.less.21 | ont-gamified.Apprentice | 15 | 4.67 | 15.93 | 239.0 | 91.0 | -0.61 | 0.276 | 0.114 | small |
| Type:CLRole.greater.11 | non-gamified.Apprentice | 14 | 4.00 | 14.00 | 196.0 | 91.0 | -0.61 | 0.731 | 0.114 | small |
| Type:CLRole.greater.21 | ont-gamified.Apprentice | 15 | 4.67 | 15.93 | 239.0 | 91.0 | -0.61 | 0.731 | 0.114 | small |
| Type:CLRole.two.sided.11 | non-gamified.Apprentice | 14 | 4.00 | 14.00 | 196.0 | 91.0 | -0.61 | 0.552 | 0.114 | small |
| Type:CLRole.two.sided.21 | ont-gamified.Apprentice | 15 | 4.67 | 15.93 | 239.0 | 91.0 | -0.61 | 0.552 | 0.114 | small |
| Type:CLRole.less.12 | non-gamified.Apprentice | 14 | 4.00 | 13.50 | 189.0 | 84.0 | -0.92 | 0.184 | 0.171 | small |
| Type:CLRole.less.22 | ont-gamified.Master | 15 | 5.00 | 16.40 | 246.0 | 84.0 | -0.92 | 0.184 | 0.171 | small |
| Type:CLRole.greater.12 | non-gamified.Apprentice | 14 | 4.00 | 13.50 | 189.0 | 84.0 | -0.92 | 0.822 | 0.171 | small |
| Type:CLRole.greater.22 | ont-gamified.Master | 15 | 5.00 | 16.40 | 246.0 | 84.0 | -0.92 | 0.822 | 0.171 | small |
| Type:CLRole.two.sided.12 | non-gamified.Apprentice | 14 | 4.00 | 13.50 | 189.0 | 84.0 | -0.92 | 0.368 | 0.171 | small |
| Type:CLRole.two.sided.22 | ont-gamified.Master | 15 | 5.00 | 16.40 | 246.0 | 84.0 | -0.92 | 0.368 | 0.171 | small |
| Type:CLRole.less.13 | non-gamified.Master | 16 | 3.83 | 13.50 | 216.0 | 80.0 | -1.58 | 0.058 | 0.285 | small |
| Type:CLRole.less.23 | ont-gamified.Apprentice | 15 | 4.67 | 18.67 | 280.0 | 80.0 | -1.58 | 0.058 | 0.285 | small |
| Type:CLRole.greater.13 | non-gamified.Master | 16 | 3.83 | 13.50 | 216.0 | 80.0 | -1.58 | 0.944 | 0.285 | small |
| Type:CLRole.greater.23 | ont-gamified.Apprentice | 15 | 4.67 | 18.67 | 280.0 | 80.0 | -1.58 | 0.944 | 0.285 | small |
| Type:CLRole.two.sided.13 | non-gamified.Master | 16 | 3.83 | 13.50 | 216.0 | 80.0 | -1.58 | 0.116 | 0.285 | small |
| Type:CLRole.two.sided.23 | ont-gamified.Apprentice | 15 | 4.67 | 18.67 | 280.0 | 80.0 | -1.58 | 0.116 | 0.285 | small |
| Type:CLRole.less.14 | non-gamified.Master | 16 | 3.83 | 12.53 | 200.5 | 64.5 | -2.20 | 0.013 | 0.395 | medium |
| Type:CLRole.less.24 | ont-gamified.Master | 15 | 5.00 | 19.70 | 295.5 | 64.5 | -2.20 | 0.013 | 0.395 | medium |
| Type:CLRole.greater.14 | non-gamified.Master | 16 | 3.83 | 12.53 | 200.5 | 64.5 | -2.20 | 0.987 | 0.395 | medium |
| Type:CLRole.greater.24 | ont-gamified.Master | 15 | 5.00 | 19.70 | 295.5 | 64.5 | -2.20 | 0.987 | 0.395 | medium |
| Type:CLRole.two.sided.14 | non-gamified.Master | 16 | 3.83 | 12.53 | 200.5 | 64.5 | -2.20 | 0.027 | 0.395 | medium |
| Type:CLRole.two.sided.24 | ont-gamified.Master | 15 | 5.00 | 19.70 | 295.5 | 64.5 | -2.20 | 0.027 | 0.395 | medium |
| Type:CLRole.less.15 | ont-gamified.Apprentice | 15 | 4.67 | 14.23 | 213.5 | 93.5 | -0.79 | 0.221 | 0.144 | small |
| Type:CLRole.less.25 | ont-gamified.Master | 15 | 5.00 | 16.77 | 251.5 | 93.5 | -0.79 | 0.221 | 0.144 | small |
| Type:CLRole.greater.15 | ont-gamified.Apprentice | 15 | 4.67 | 14.23 | 213.5 | 93.5 | -0.79 | 0.786 | 0.144 | small |
| Type:CLRole.greater.25 | ont-gamified.Master | 15 | 5.00 | 16.77 | 251.5 | 93.5 | -0.79 | 0.786 | 0.144 | small |

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 | 4.67 | 14.23 | 213.5 | 93.5 | -0.79 | 0.441 | 0.144 | small |
| Type:CLRole.two.sided.25 | ont-gamified.Master | 15 | 5.00 | 16.77 | 251.5 | 93.5 | -0.79 | 0.441 | 0.144 | small |