Statistical Analysis in the pilot study for students with effective participation

Table 1: Two-way ANOVA and Scheirer-Ray-Hare in the pilot study for students with effective participation

	Sum Sq	Df	F value	Pr(>F)	Sig	Df	Sum Sq	H	p.value	Sig
difScore.(Intercept)	73.103	1	5.346	0.034						
difScore.Type	2.866	1	0.210	0.653		1	0.454	0.012	0.913	
difScore.CLRole	92.564	1	6.769	0.019	*	1	141.968	3.709	0.054	
difScore.Type:CLRole	26.880	1	1.966	0.179		1	11.136	0.291	0.590	
difScore.Residuals	232.454	17				17	611.942			

Signif. codes: 0 “**” 0.01 “*” 0.05

Table 2: Summary of Pair wilcoxon in the pilot study for students with effective participation

1 Descriptive Statistics and Assumptions for Parametric Tests

Table 3: Descriptive statistics in the pilot study for students with effective participation

	n	Mean	Std.Dev	Median	Min	Max	25th	75th	Skew	Kurtosis
variable	21	2.475	4.39	3	−5.896	11	−0.43	5.586	−0.231	−0.67

Table 4: Univariate normality test in the pilot study for students with effective participation

	Test	Variable	Statistic	p value	Normality
W	Shapiro-Wilk	variable	0.973	0.79	YES

Table 5: Notes to be taken into account about sample size in the pilot study for students with effective participation

	code	description
difScore.Type.1	WARN: sample.size	current size is 5 and recommended size is 15 for the group: 'non-gamified:Apprentice'.
difScore.Type.2	WARN: sample.size	current size is 8 and recommended size is 15 for the group: 'ont-gamified:Apprentice'.
difScore.Type.3	FAIL: min.size	current size is 3 but the minimal recomended size is 5 for the group: 'non-gamified:Master'.
difScore.Type.4	WARN: sample.size	current size is 5 and recommended size is 15 for the group: 'ont-gamified:Master'.

Recent studies carried out through simulations have indicated that ANOVA is reliable even when the data are non-normally distributed and the sample size is greater thatn 15 observations for each group. This size value is based on the Reference: Rana, R. K., Singhal, R., & Dua, P. (2016). Deciphering the dilemma of parametric and nonparametric tests. Journal of the Practice of Cardiovascular Sciences, 2(2), 95.

The sample size to carried out any parametric and non-parametric analysis is 5, and it was established using common sense. The warning and fails indicated in this section should be taking into account when a paper or report will be elaborated.