

Host

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Shapiro Wilk Test

Shapiro Wilk Test
Import data

Shapiro Wilk normality test

Shapiro Wilk normality test
SPSS Explore normality output

Explore

[ShapiroWilkData] D:\DATA ANALYSIS\B Normality and Assumption Tests\Shapiro Wilk Test\SPSS_Output\sav\Shapiro-Wilk-Test-data.sav

Case Processing Summary

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
G3	649	100.0%	0	0.0%	649	100.0%
G2	649	100.0%	0	0.0%	649	100.0%
G1	649	100.0%	0	0.0%	649	100.0%
age	649	100.0%	0	0.0%	649	100.0%
absences	649	100.0%	0	0.0%	649	100.0%

Descriptives

		Statistic	Std. Error
G3	Mean	11.91	.127
	95% Confidence Interval for Mean	Lower Bound	11.66
		Upper Bound	12.16
	5% Trimmed Mean	12.06	
	Median	12.00	
	Variance	10.437	
	Std. Deviation	3.231	
	Minimum	0	
	Maximum	19	
	Range	19	
	Interquartile Range	4	
	Skewness	-.913	.096
	Kurtosis	2.712	.192
G2	Mean	11.57	.114
	95% Confidence Interval for Mean	Lower Bound	11.35
		Upper Bound	11.79
	5% Trimmed Mean	11.60	
	Median	11.00	

Shapiro Wilk normality test
SPSS Explore normality output

Descriptives

		Statistic	Std. Error
	Variance	8.489	
	Std. Deviation	2.914	
	Minimum	0	
	Maximum	19	
	Range	19	
	Interquartile Range	3	
	Skewness	-.360	.096
	Kurtosis	1.662	.192
G1	Mean	11.40	.108
	95% Confidence Interval for Mean	Lower Bound	11.19
		Upper Bound	11.61
	5% Trimmed Mean	11.39	
	Median	11.00	
	Variance	7.536	
	Std. Deviation	2.745	
	Minimum	0	
	Maximum	19	
	Range	19	
	Interquartile Range	3	
	Skewness	-.003	.096
	Kurtosis	.037	.192
age	Mean	16.74	.048
	95% Confidence Interval for Mean	Lower Bound	16.65
		Upper Bound	16.84
	5% Trimmed Mean	16.69	
	Median	17.00	
	Variance	1.484	
	Std. Deviation	1.218	
	Minimum	15	
	Maximum	22	
	Range	7	
	Interquartile Range	2	

Shapiro Wilk normality test
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Descriptives

		Statistic	Std. Error
absences	Skewness	.417	.096
	Kurtosis	.072	.192
	Mean	3.66	.182
	95% Confidence Interval for Mean	Lower Bound	3.30
		Upper Bound	4.02
	5% Trimmed Mean	3.09	
	Median	2.00	
	Variance	21.537	
	Std. Deviation	4.641	
	Minimum	0	
	Maximum	32	
	Range	32	
	Interquartile Range	6	
	Skewness	2.021	.096
	Kurtosis	5.781	.192

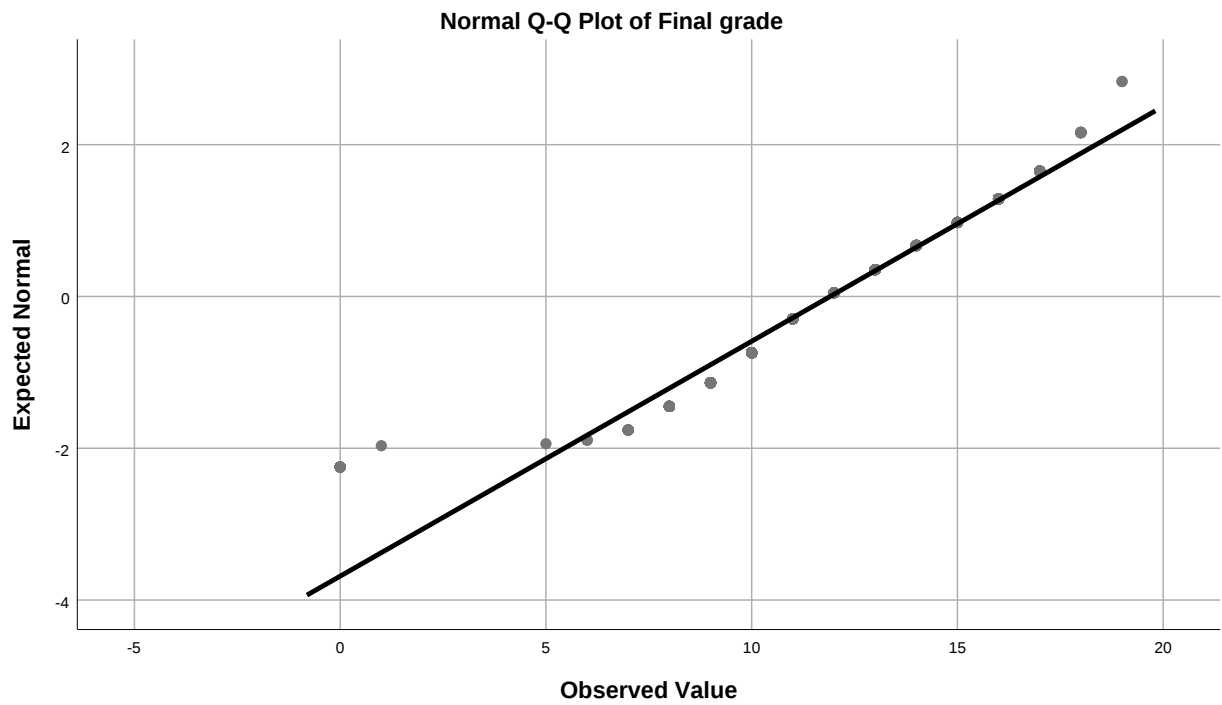
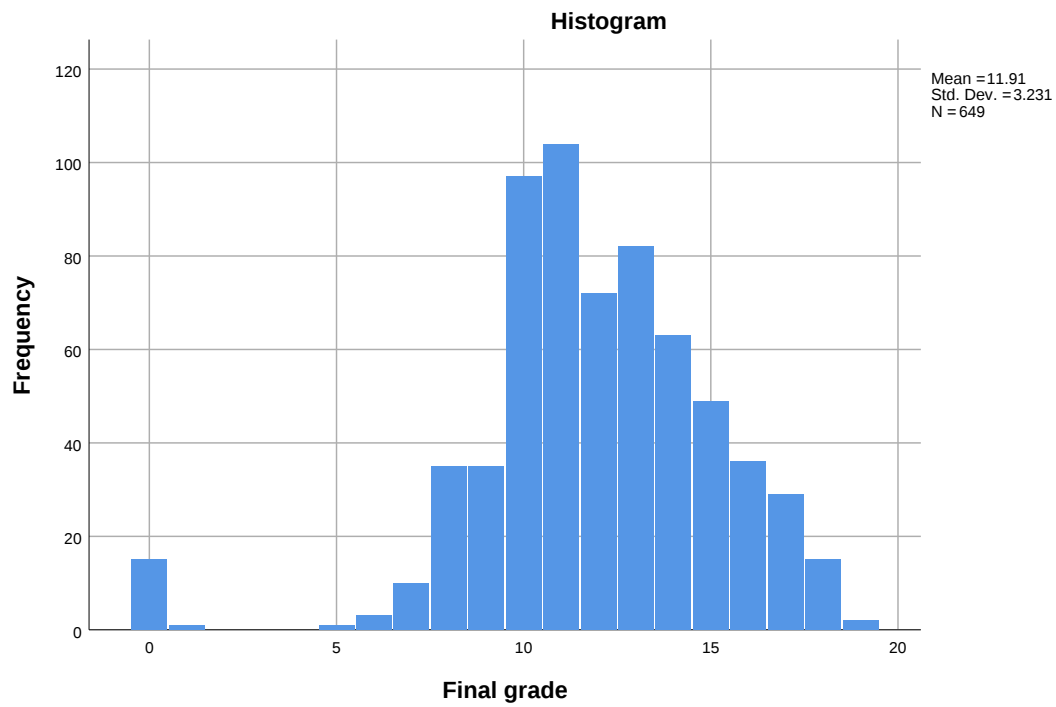
Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
G3	.124	649	.000	.926	649	.000
G2	.088	649	.000	.962	649	.000
G1	.086	649	.000	.986	649	.000
age	.175	649	.000	.916	649	.000
absences	.215	649	.000	.772	649	.000

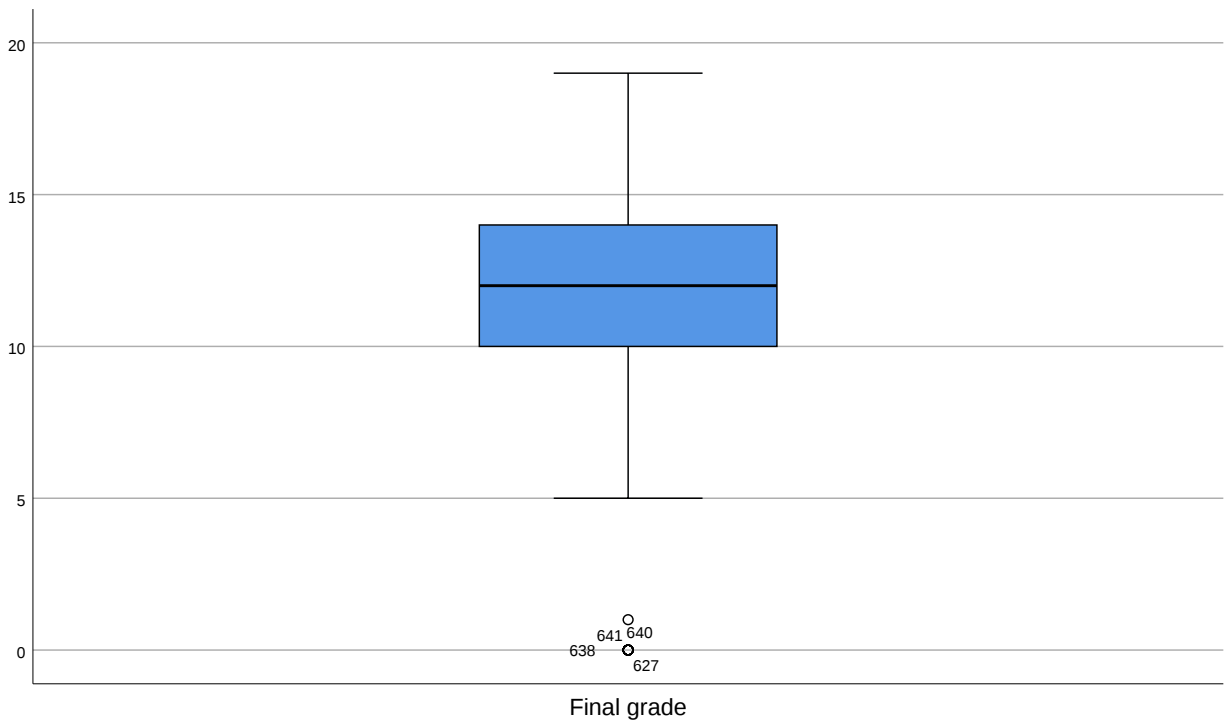
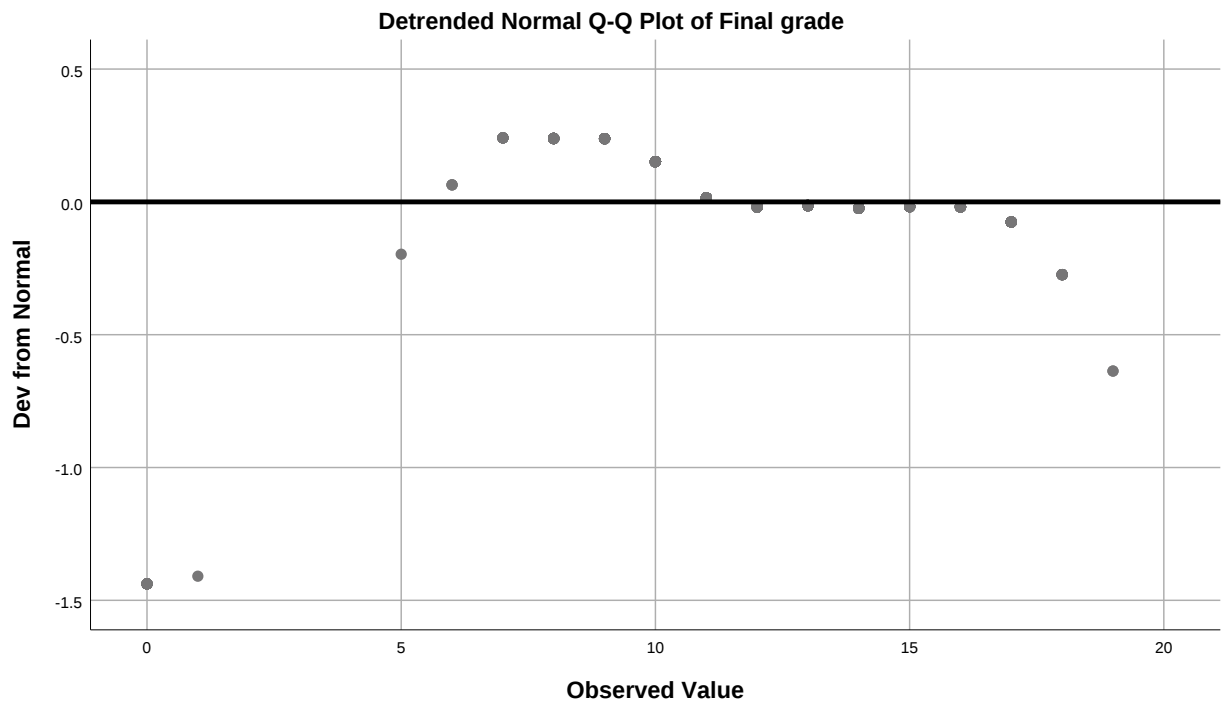
a. Lilliefors Significance Correction

Final grade

Shapiro Wilk normality test
SPSS Explore normality output

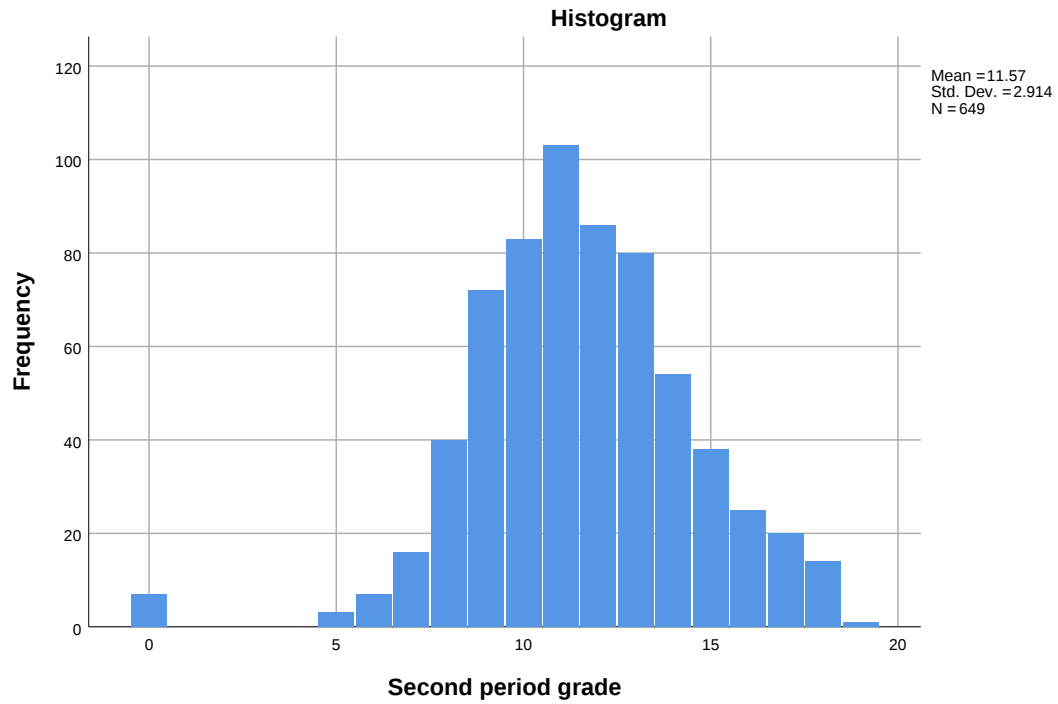


Shapiro Wilk normality test
SPSS Explore normality output

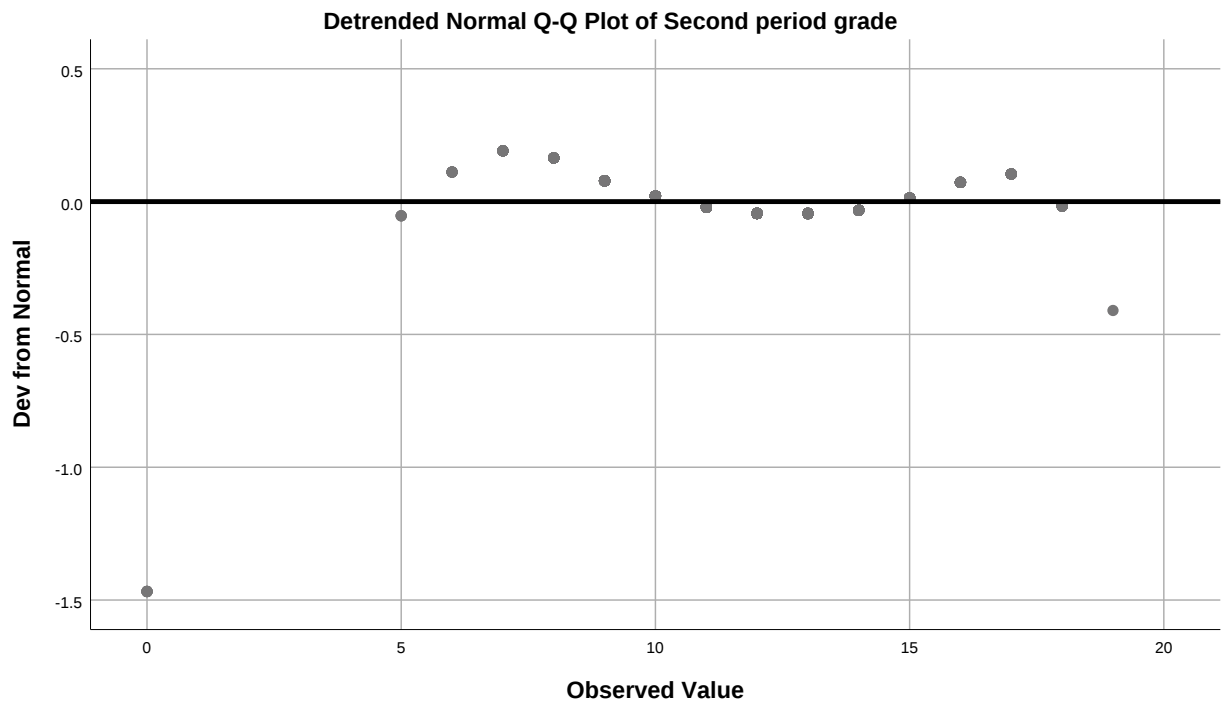
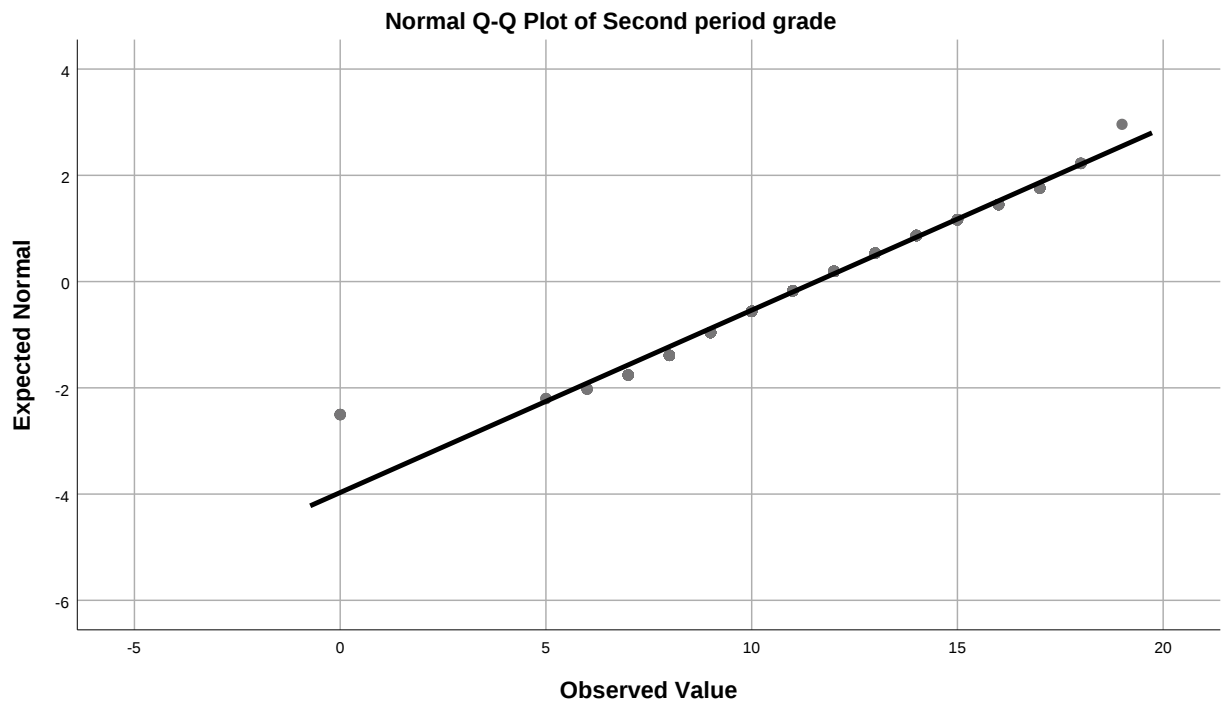


Shapiro Wilk normality test
SPSS Explore normality output

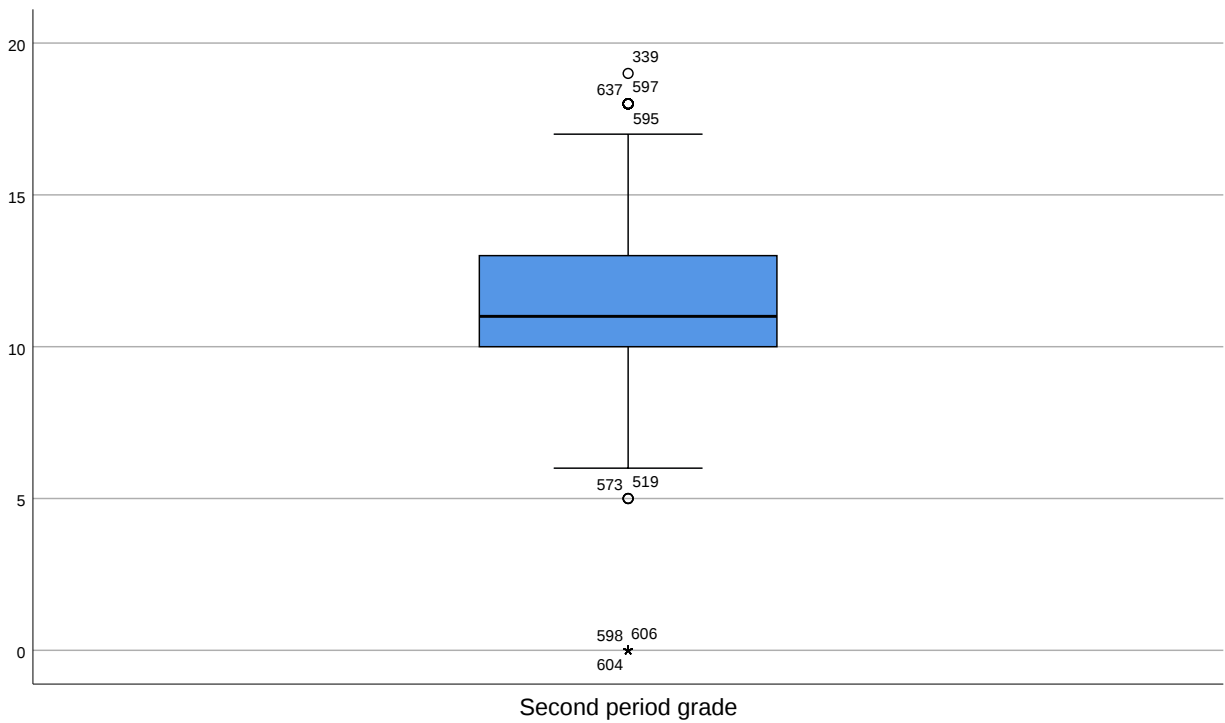
Second period grade



Shapiro Wilk normality test
SPSS Explore normality output

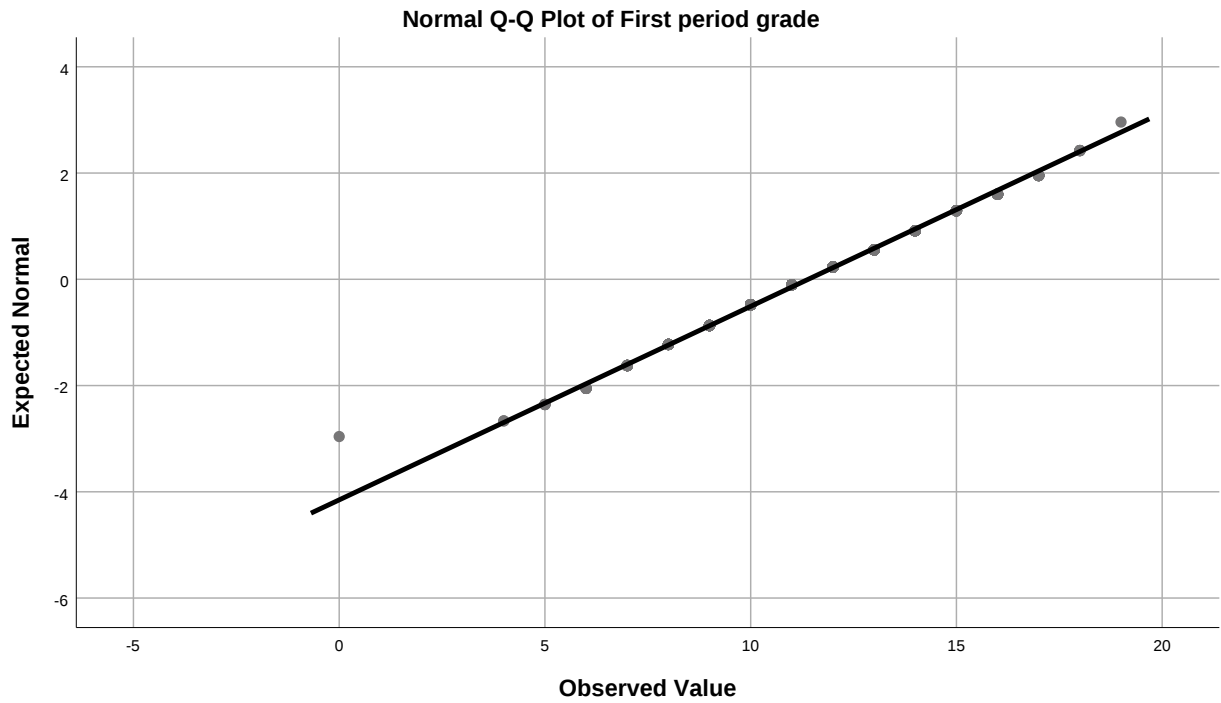
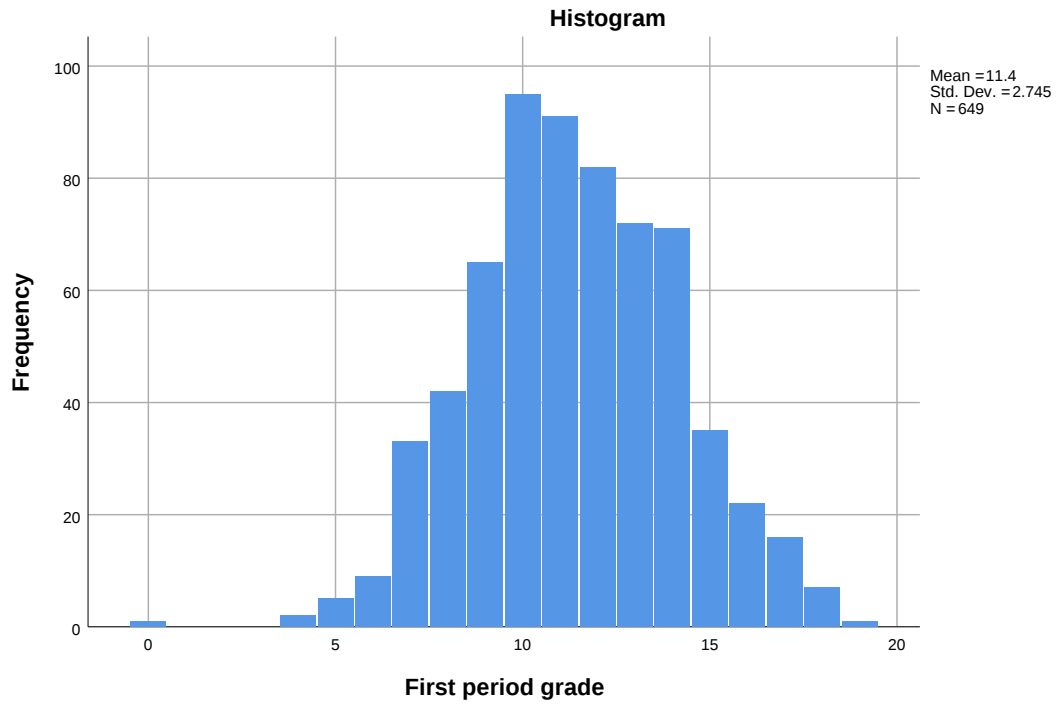


Shapiro Wilk normality test
SPSS Explore normality output

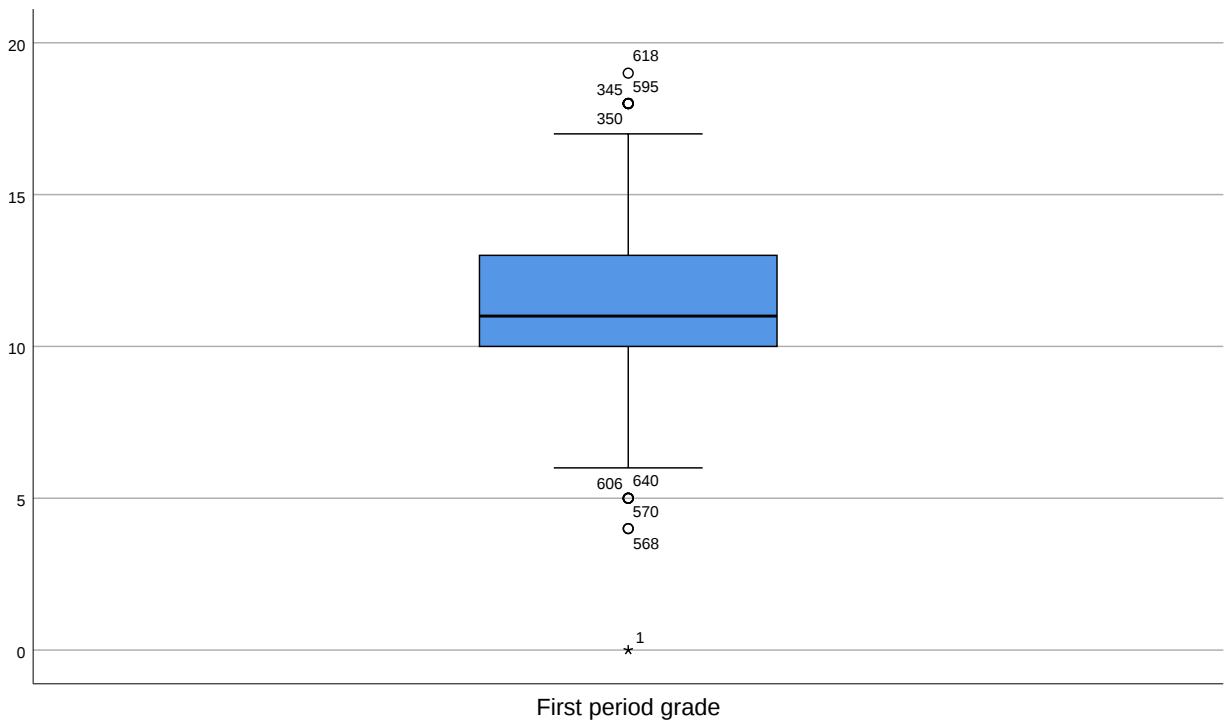
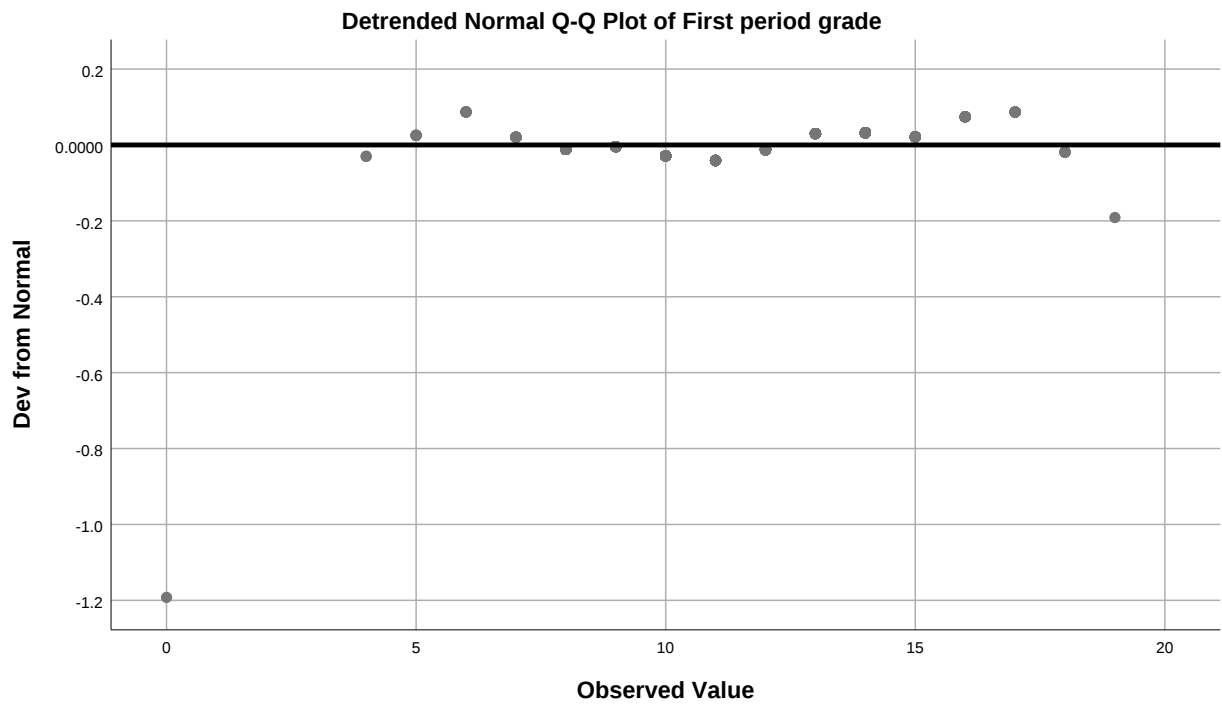


First period grade

Shapiro Wilk normality test
SPSS Explore normality output

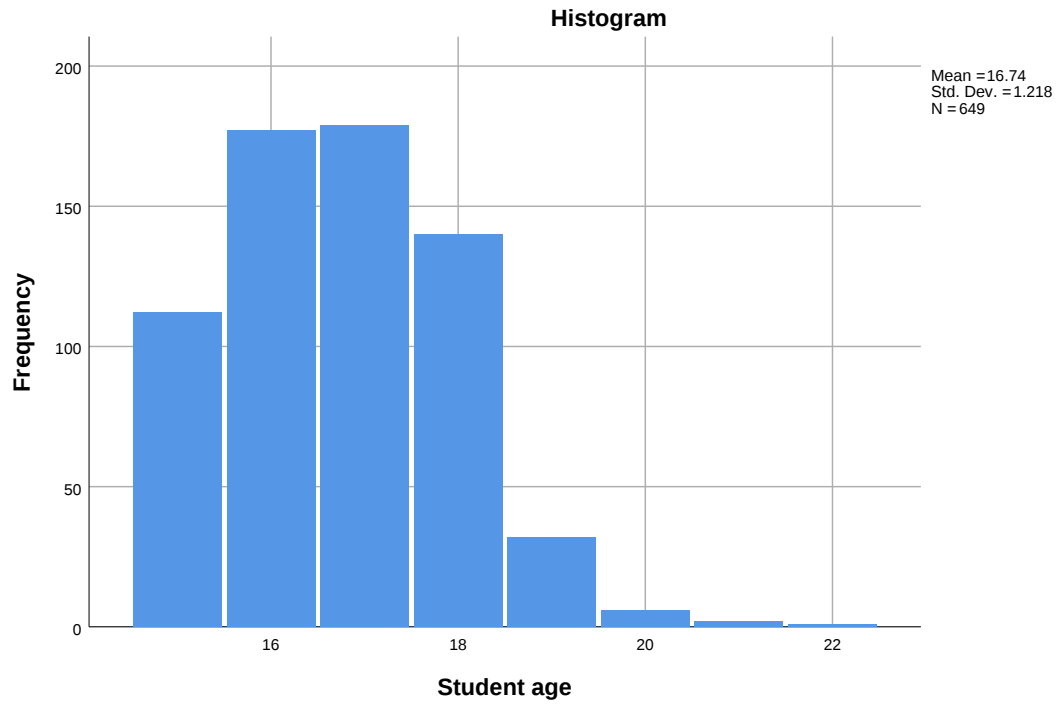


Shapiro Wilk normality test
SPSS Explore normality output

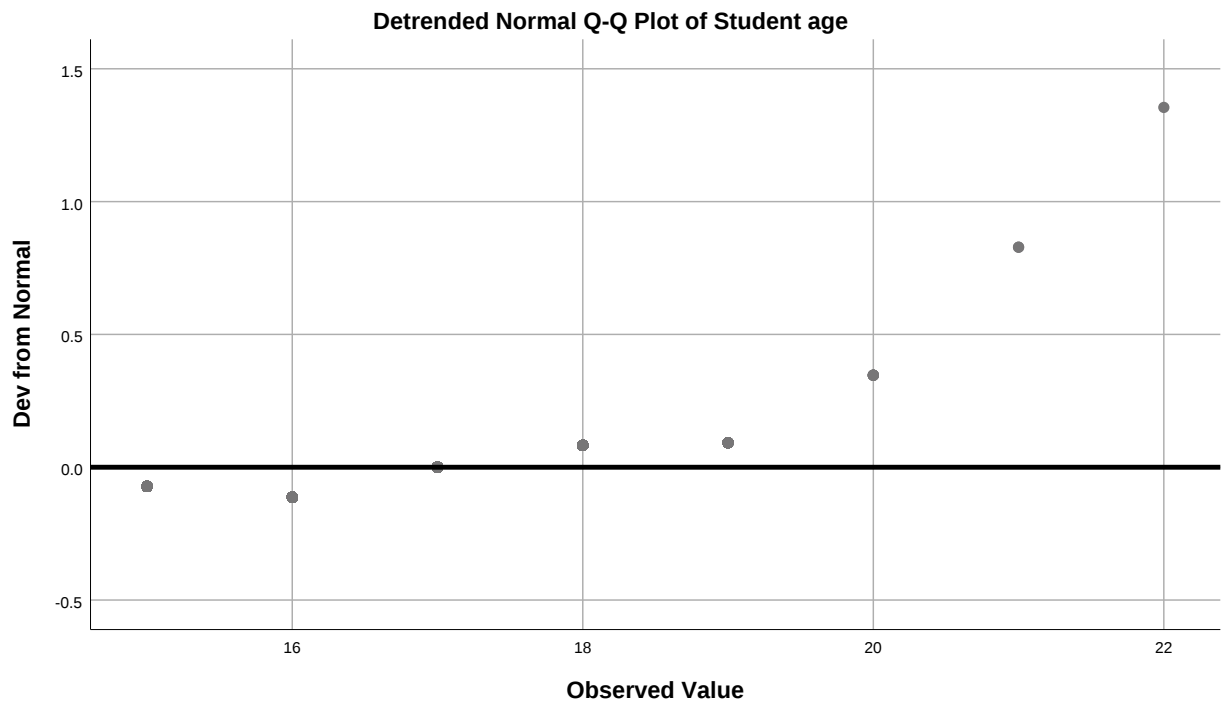
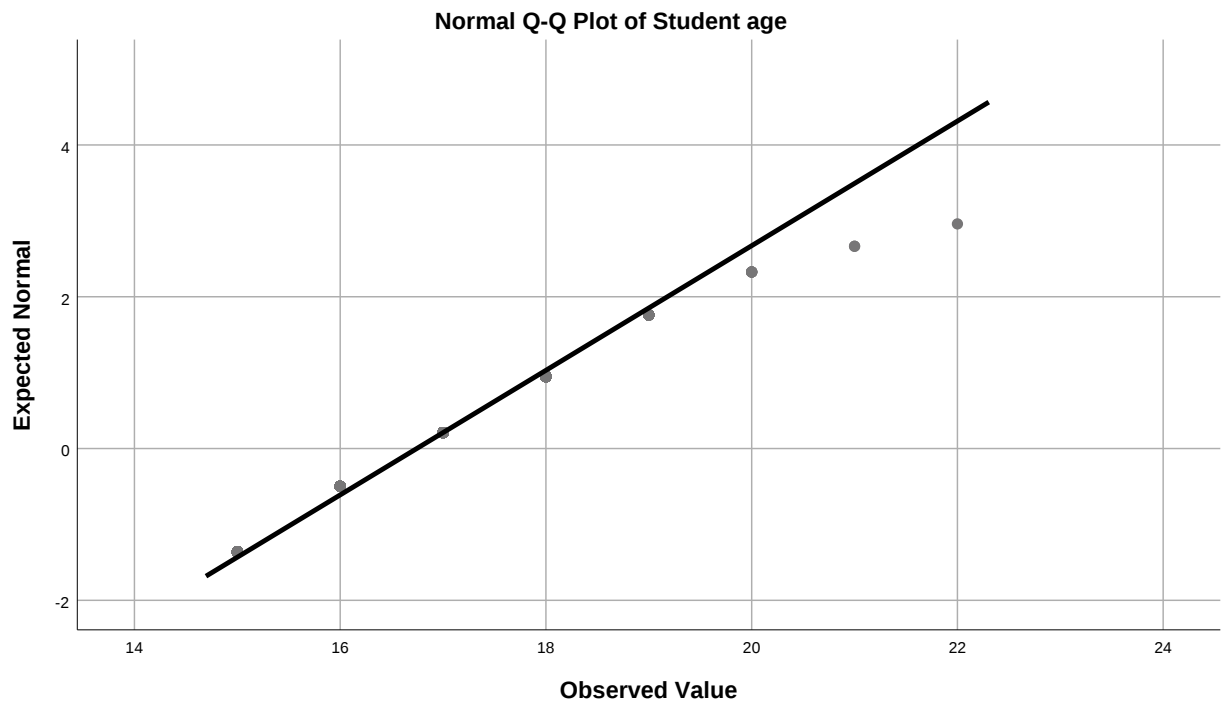


Shapiro Wilk normality test
SPSS Explore normality output

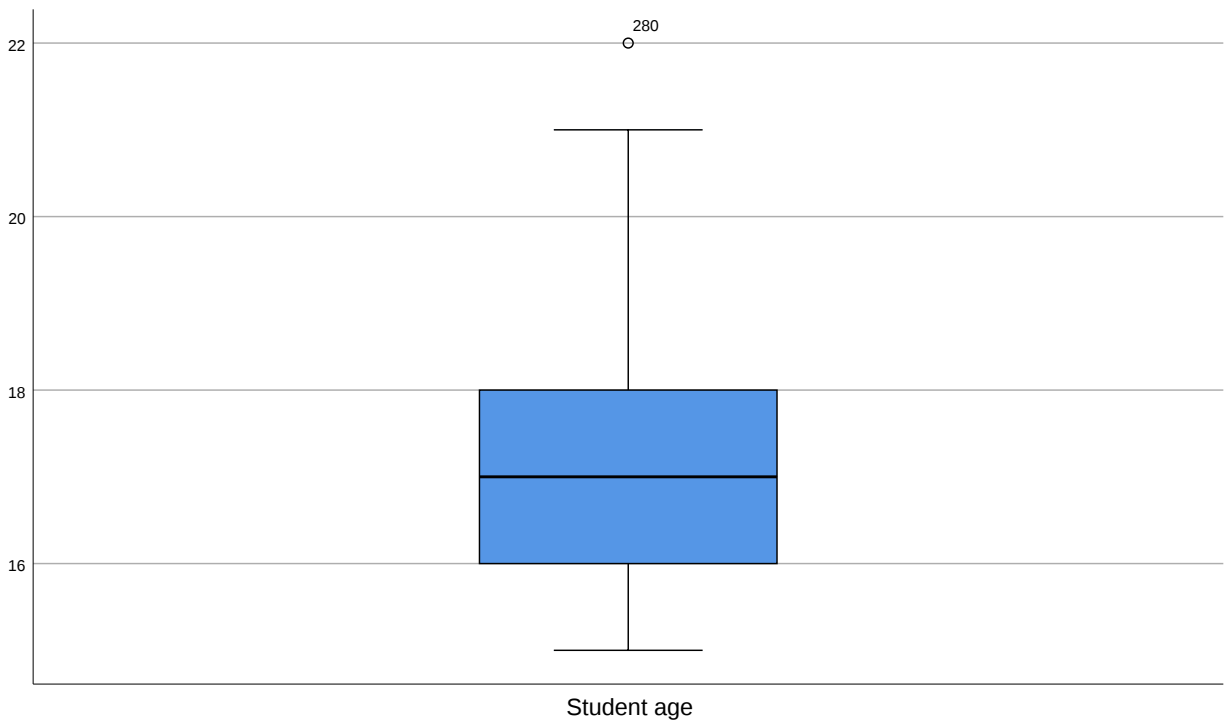
Student age



Shapiro Wilk normality test
SPSS Explore normality output

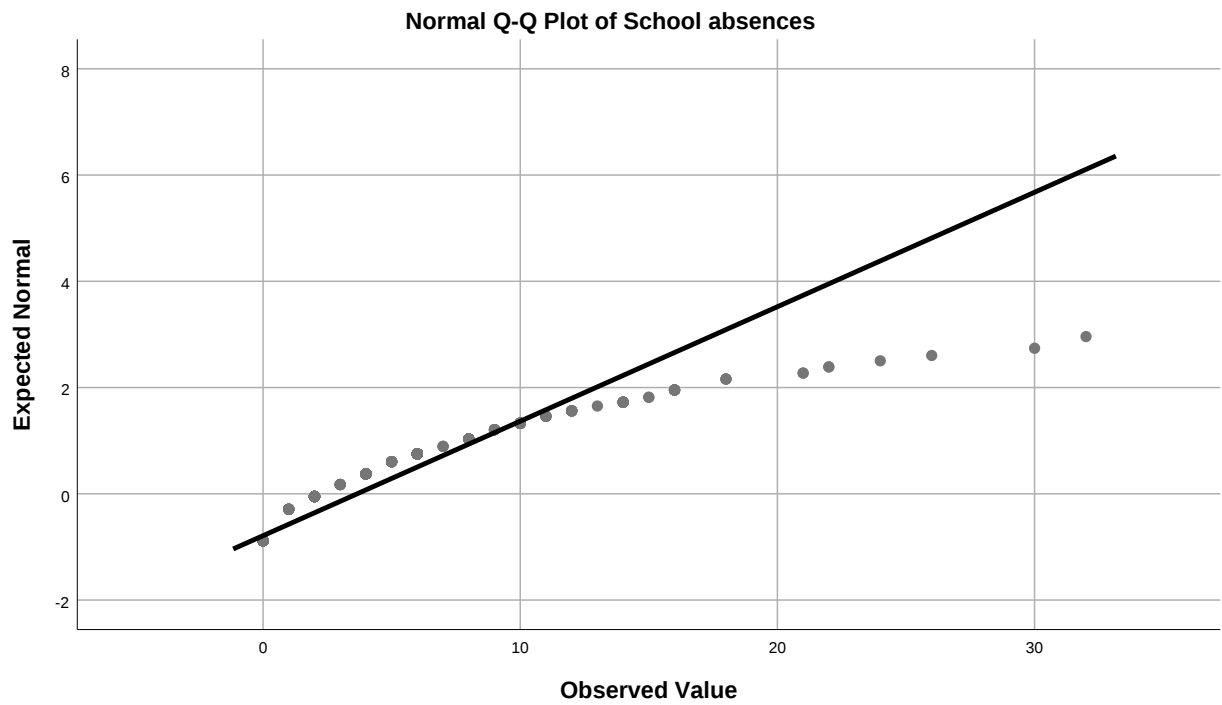
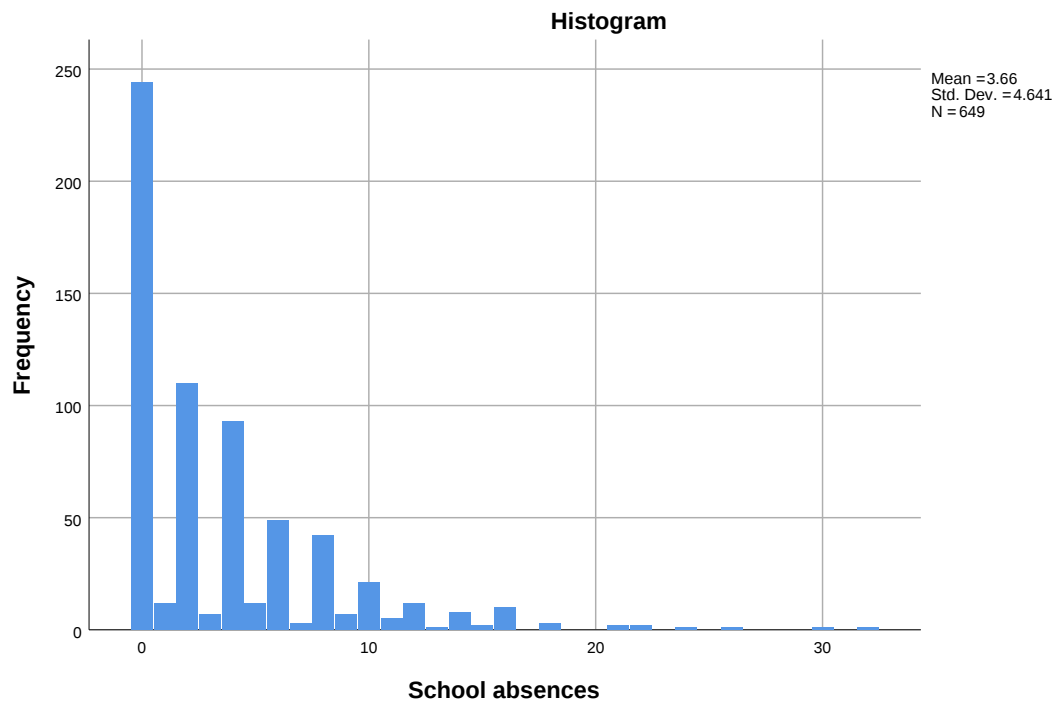


Shapiro Wilk normality test
SPSS Explore normality output

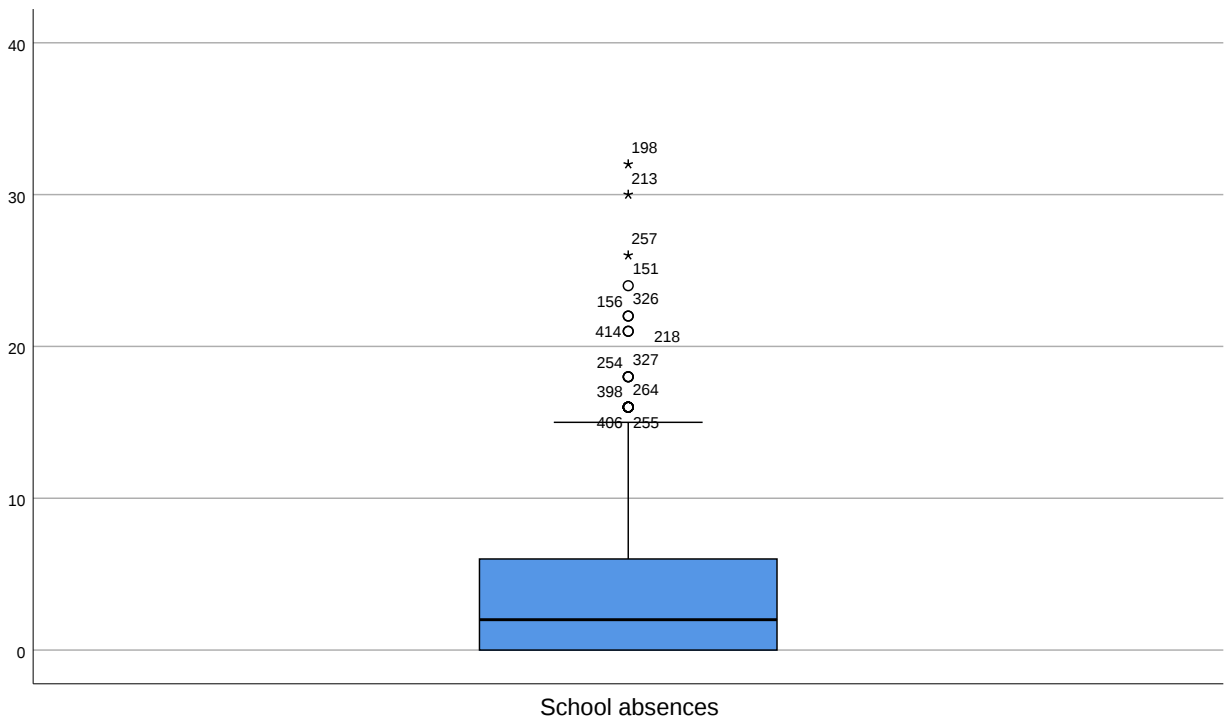
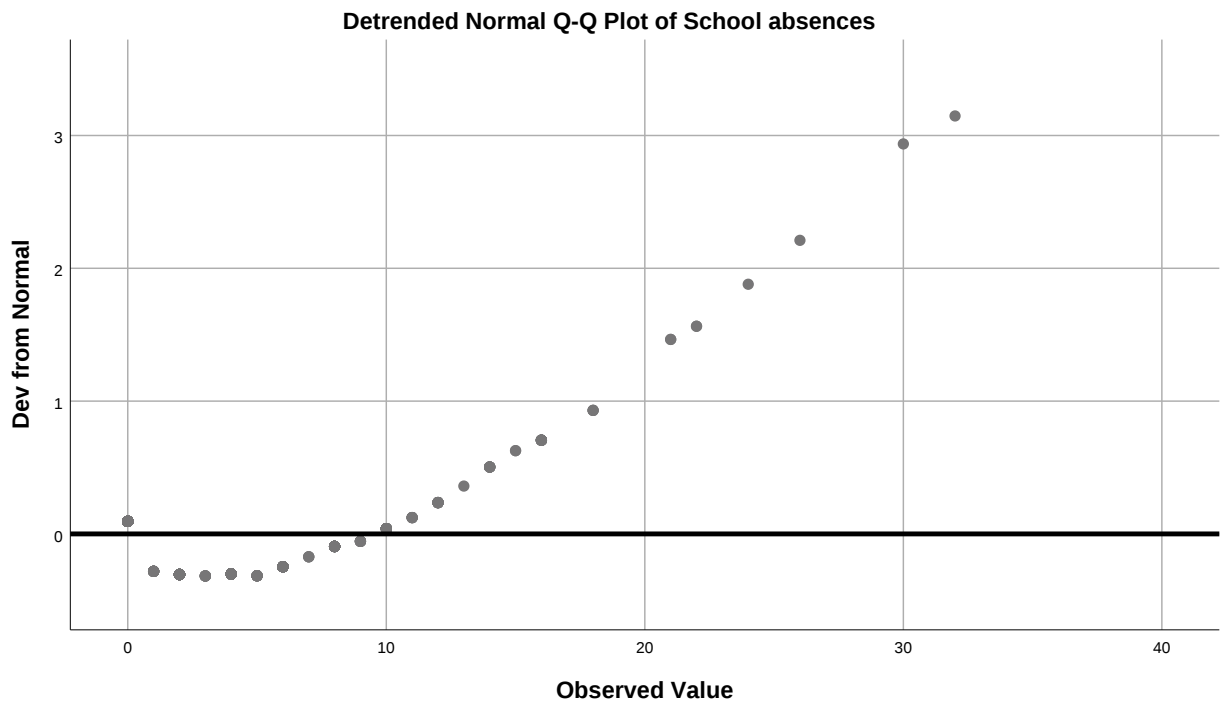


School absences

Shapiro Wilk normality test
SPSS Explore normality output



Shapiro Wilk normality test
SPSS Explore normality output



Shapiro Wilk by group

Shapiro Wilk by group
G3 normality by sex

Explore

sex

Case Processing Summary

		Valid		Cases Missing		Total	
sex		N	Percent	N	Percent	N	Percent
G3	F	383	100.0%	0	0.0%	383	100.0%
	M	266	100.0%	0	0.0%	266	100.0%

Descriptives

sex		Statistic		Std. Error
G3	F	Mean	12.25	.160
		95% Confidence Interval for Mean	Lower Bound	11.94
			Upper Bound	12.57
		5% Trimmed Mean	12.37	
		Median	12.00	
		Variance	9.760	
		Std. Deviation	3.124	
		Minimum	0	
		Maximum	19	
		Range	19	
		Interquartile Range	4	
		Skewness	-.857	.125
		Kurtosis	2.683	.249
	M	Mean	11.41	.204
		95% Confidence Interval for Mean	Lower Bound	11.01
			Upper Bound	11.81
		5% Trimmed Mean	11.60	
		Median	11.00	
		Variance	11.027	
		Std. Deviation	3.321	
		Minimum	0	
		Maximum	19	

Shapiro Wilk by group
G3 normality by sex

Descriptives

sex		Statistic	Std. Error
	Range	19	
	Interquartile Range	3	
	Skewness	-.980	.149
	Kurtosis	2.803	.298

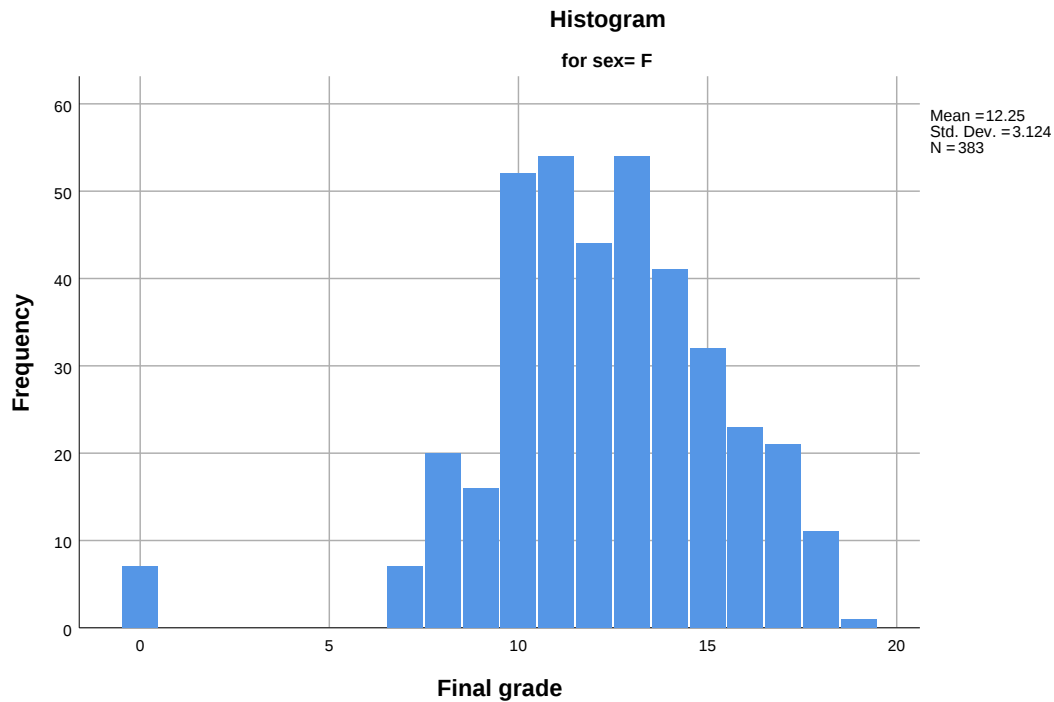
Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	sex	Statistic	df	Sig.	Statistic	df	Sig.
G3	F	.105	383	.000	.934	383	.000
	M	.148	266	.000	.913	266	.000

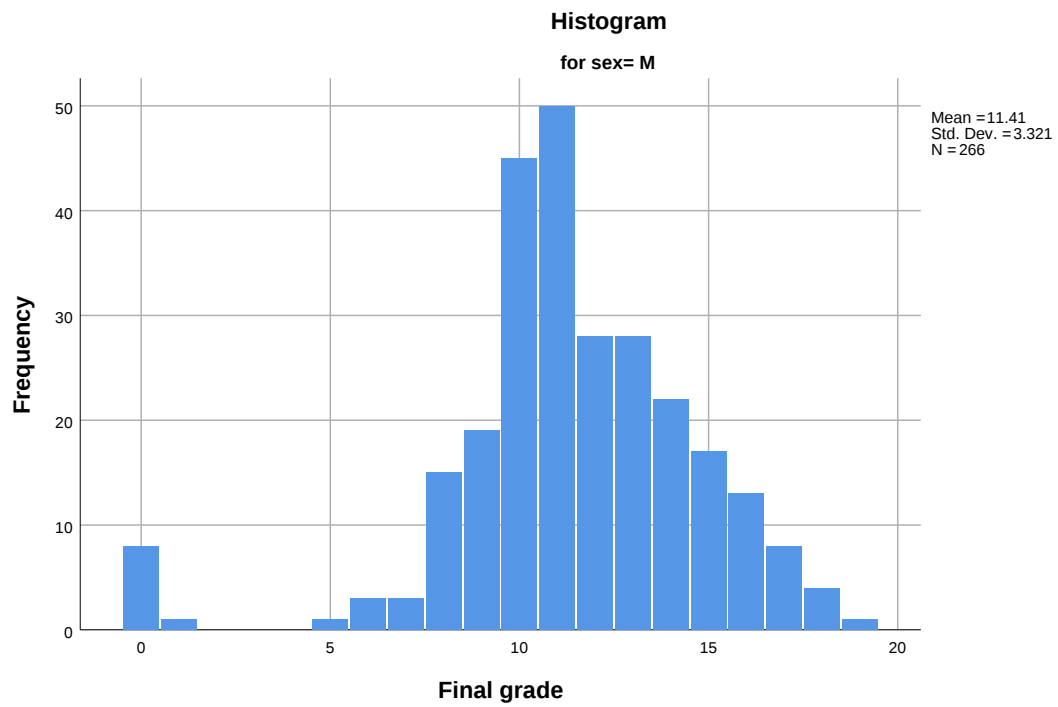
a. Lilliefors Significance Correction

Final grade

Histograms

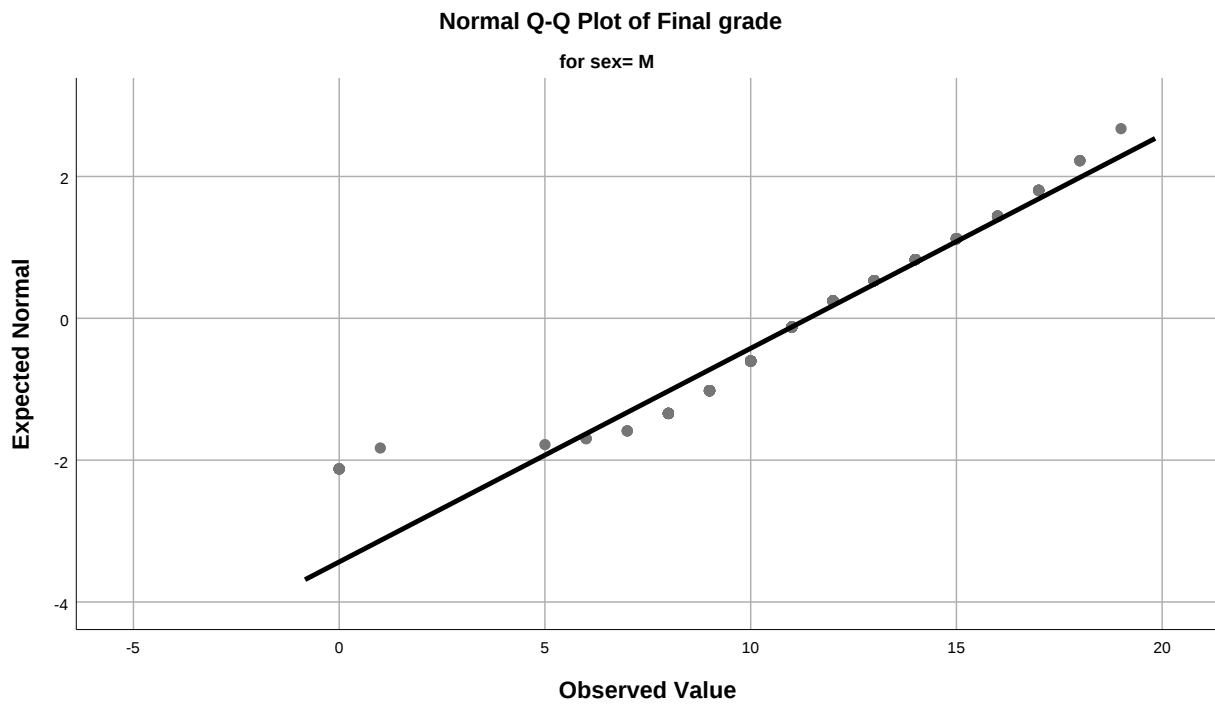
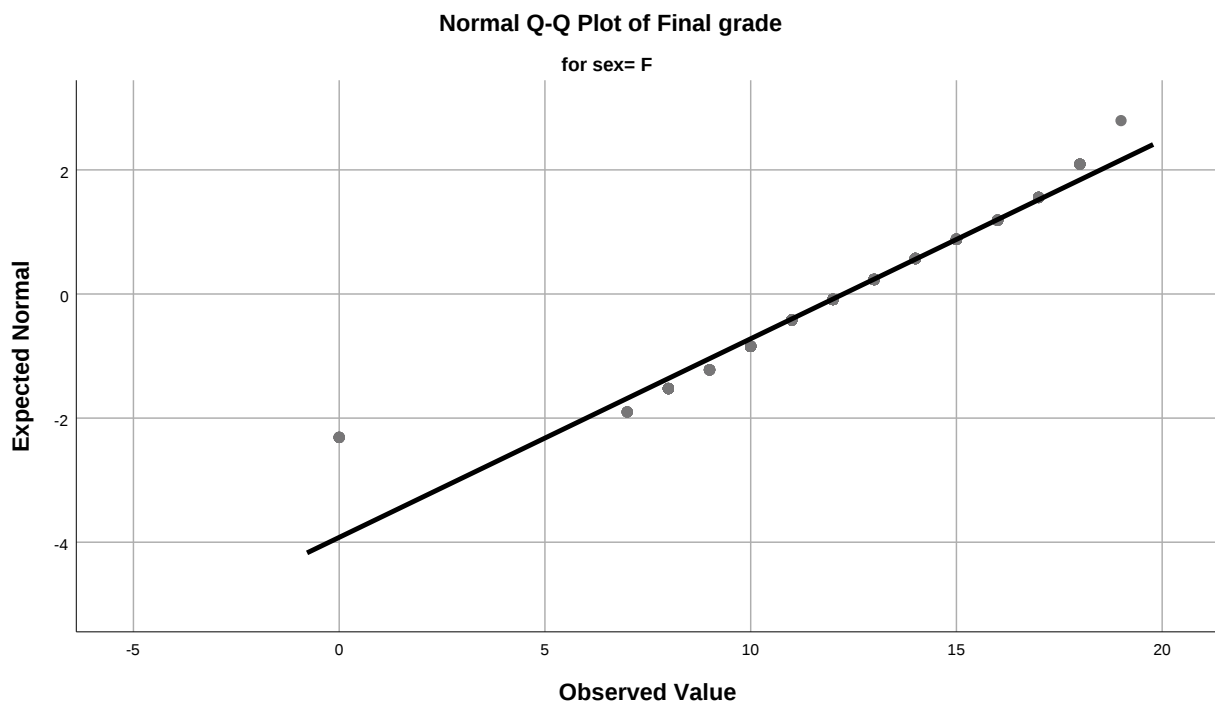


Shapiro Wilk by group
G3 normality by sex



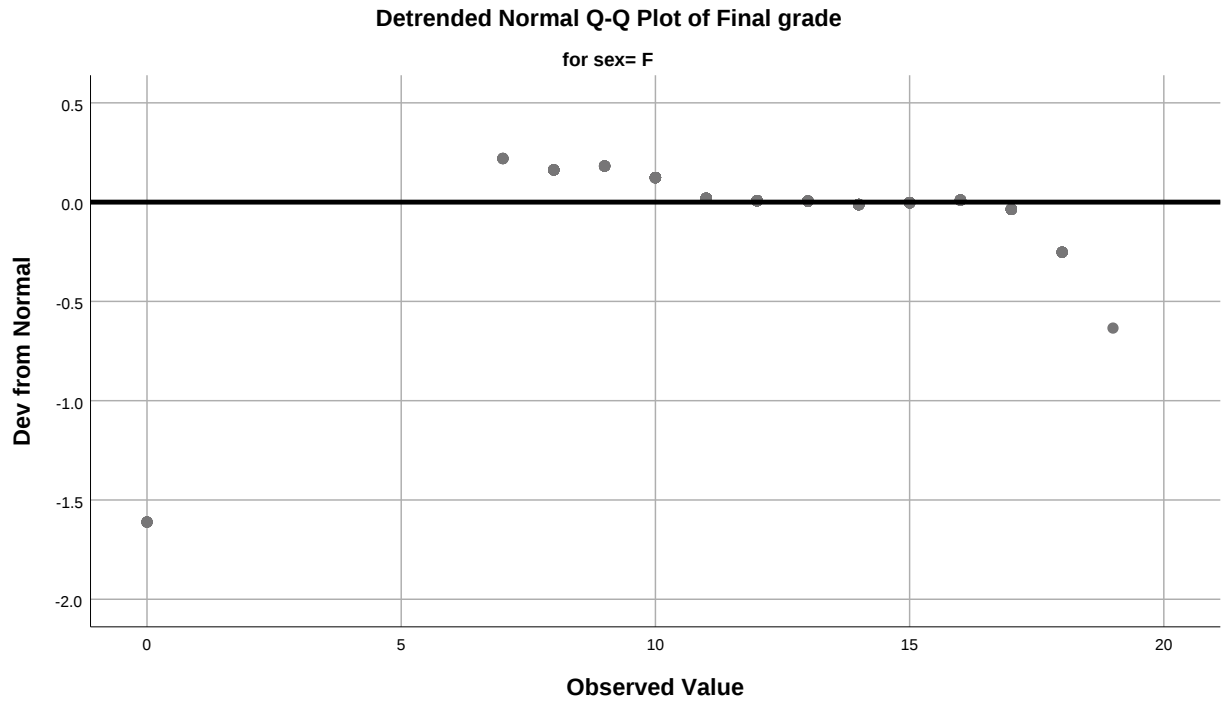
Normal Q-Q Plots

Shapiro Wilk by group
G3 normality by sex

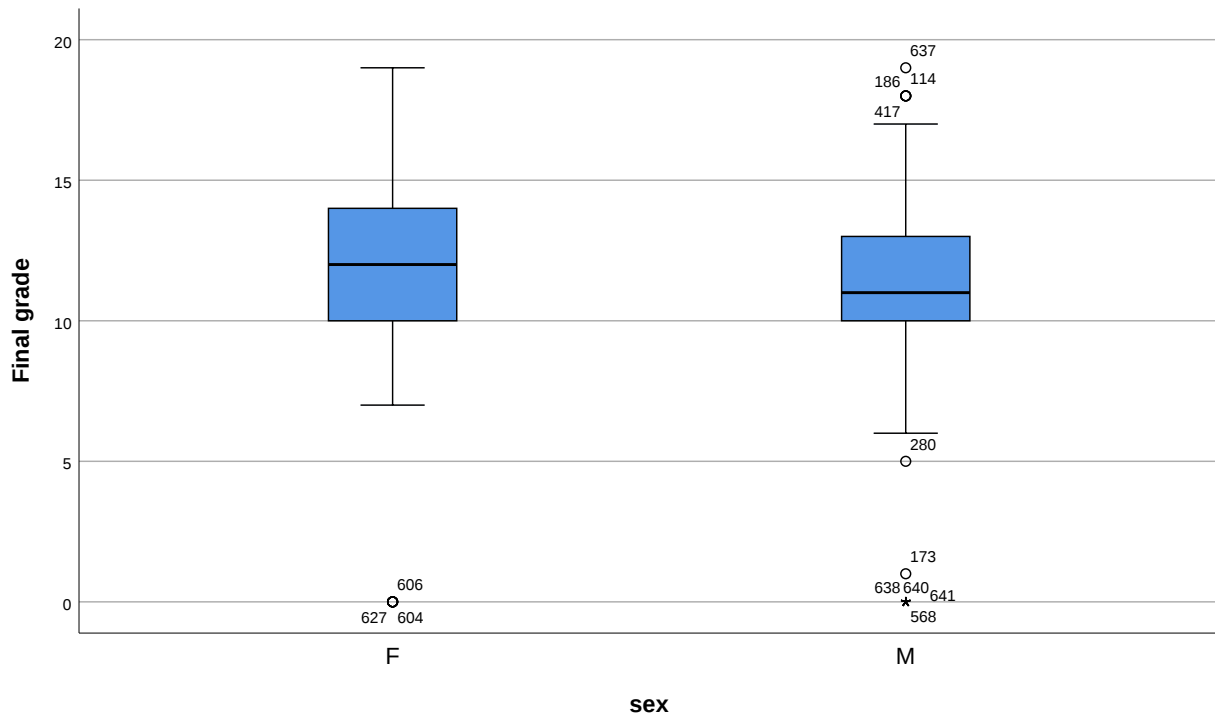
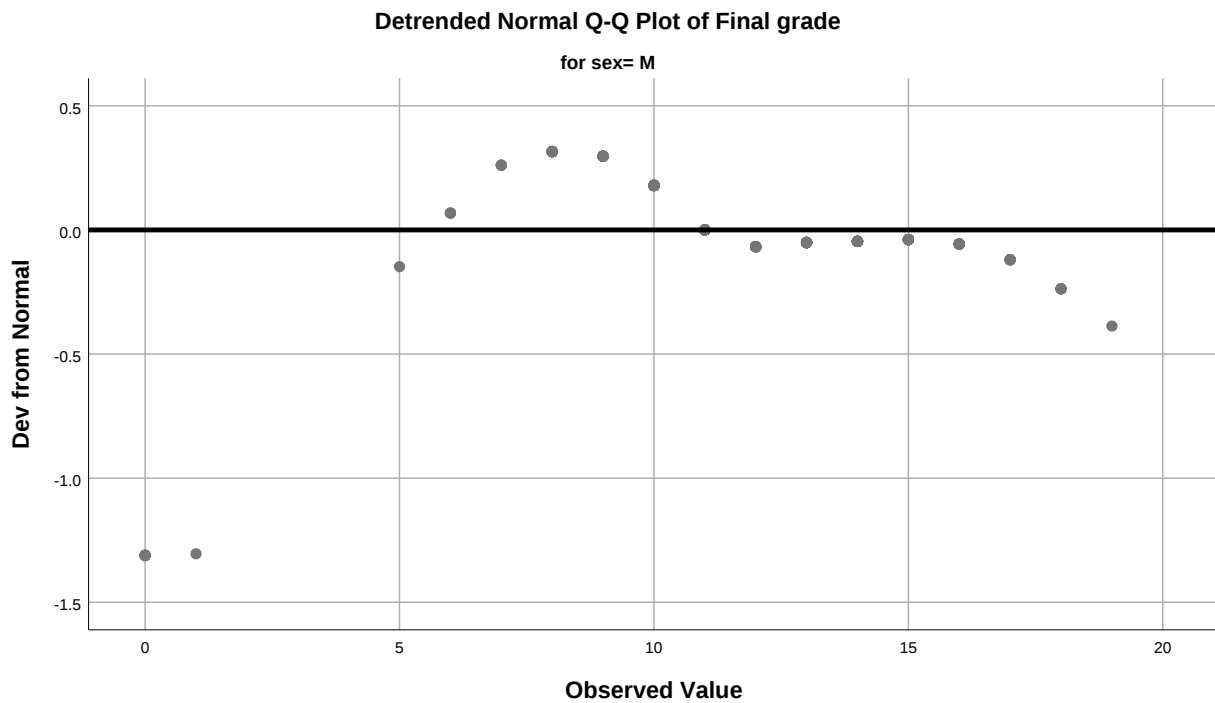


Shapiro Wilk by group
G3 normality by sex

Detrended Normal Q-Q Plots



Shapiro Wilk by group
G3 normality by sex



Shapiro Wilk by school

Shapiro Wilk by school
G3 normality by school

Explore school

Case Processing Summary

		Valid		Cases Missing		Total	
school		N	Percent	N	Percent	N	Percent
G3	GP	423	100.0%	0	0.0%	423	100.0%
	MS	226	100.0%	0	0.0%	226	100.0%

Descriptives

school			Statistic	Std. Error
G3	GP	Mean	12.58	.128
		95% Confidence Interval for Mean	Lower Bound	12.33
			Upper Bound	12.83
		5% Trimmed Mean	12.62	
		Median	13.00	
		Variance	6.894	
		Std. Deviation	2.626	
		Minimum	0	
		Maximum	19	
		Range	19	
		Interquartile Range	3	
		Skewness	-.336	.119
		Kurtosis	1.388	.237
	MS	Mean	10.65	.255
		95% Confidence Interval for Mean	Lower Bound	10.15
			Upper Bound	11.15
		5% Trimmed Mean	10.85	
		Median	11.00	
		Variance	14.699	
		Std. Deviation	3.834	
		Minimum	0	
		Maximum	19	

Shapiro Wilk by school
G3 normality by school

Descriptives

school		Statistic	Std. Error
	Range	19	
	Interquartile Range	4	
	Skewness	-.828	.162
	Kurtosis	1.778	.322

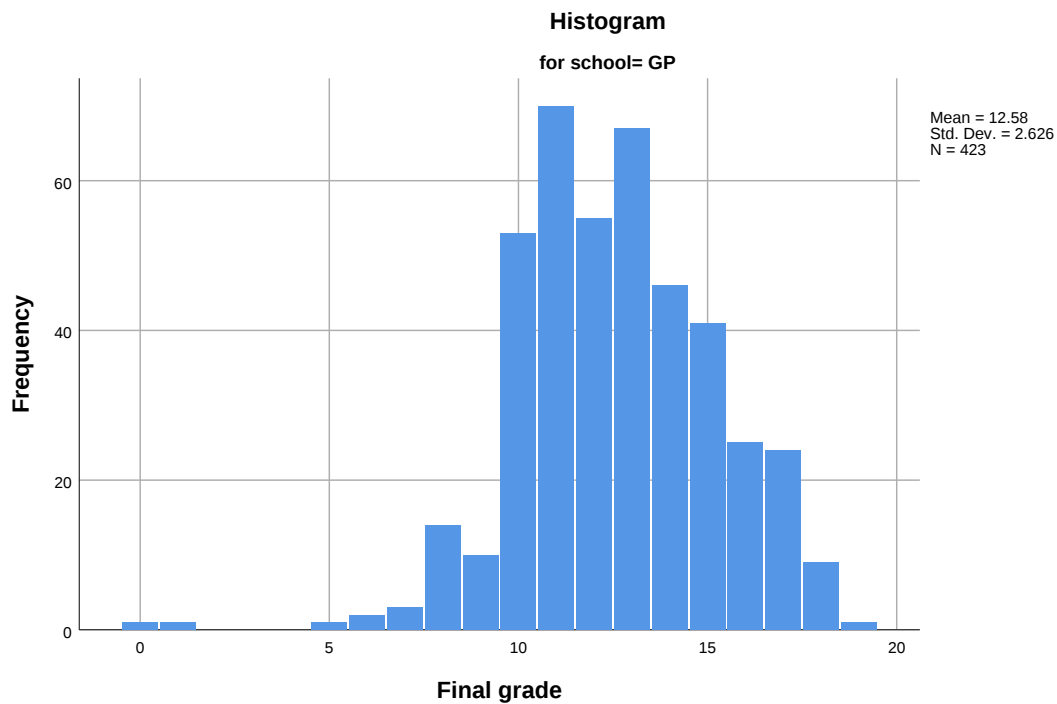
Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	school	Statistic	df	Sig.	Statistic	df	Sig.
G3	GP	.092	423	.000	.965	423	.000
	MS	.147	226	.000	.905	226	.000

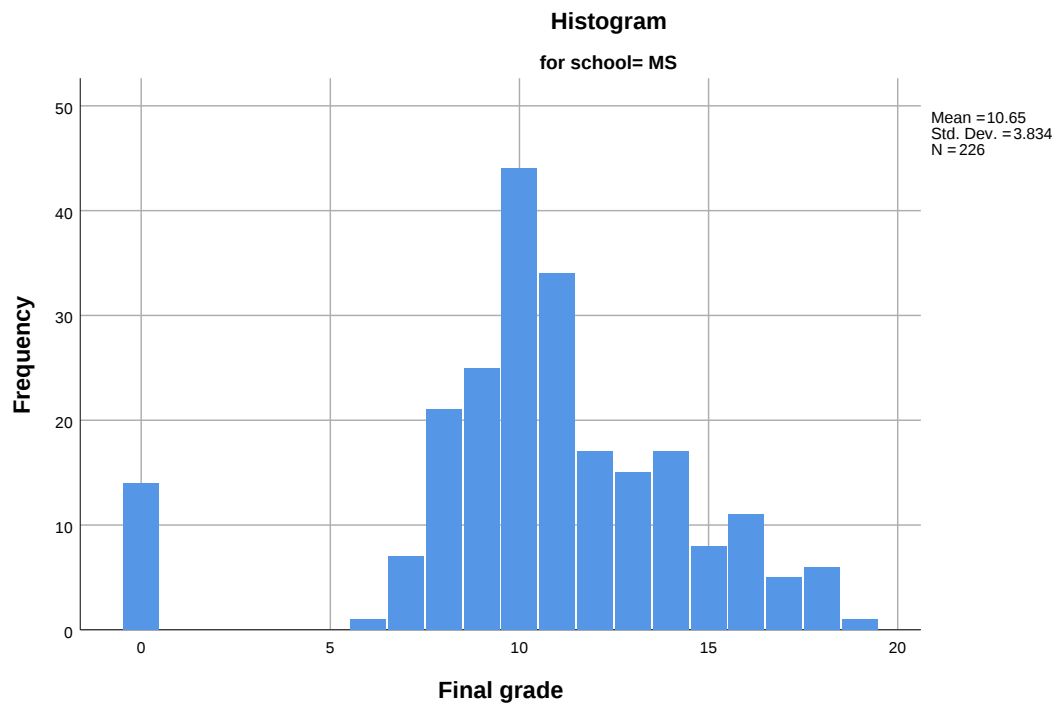
a. Lilliefors Significance Correction

Final grade

Histograms

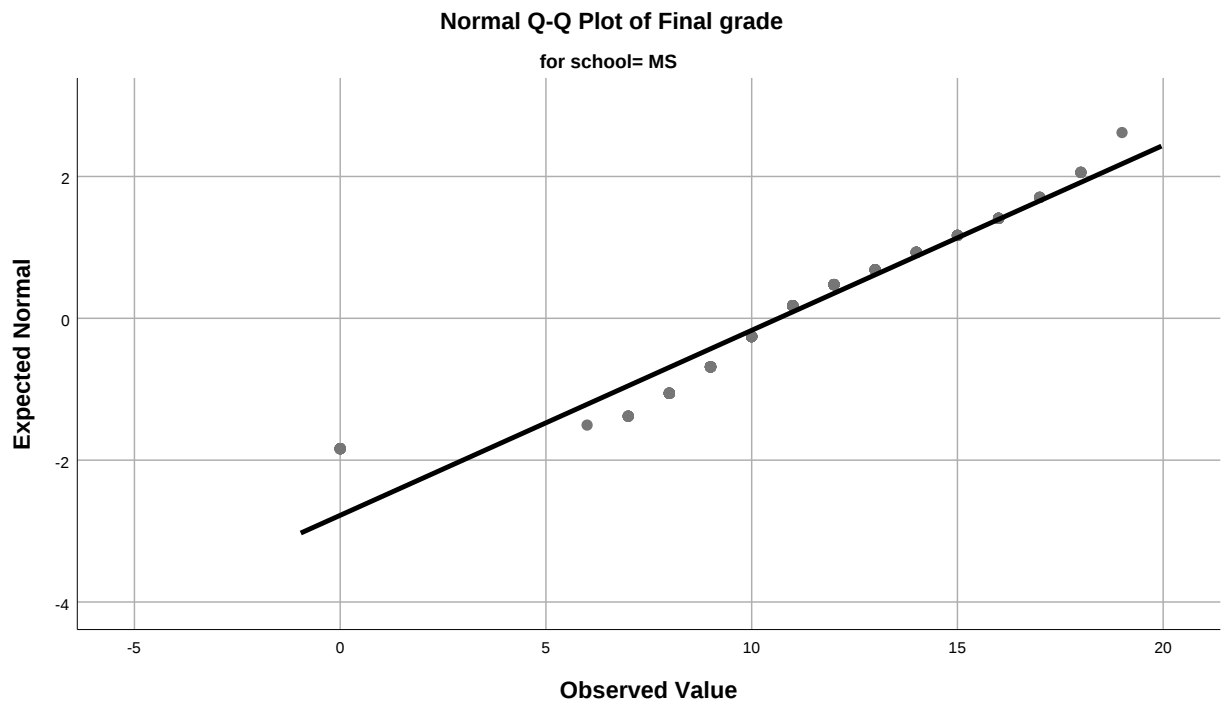
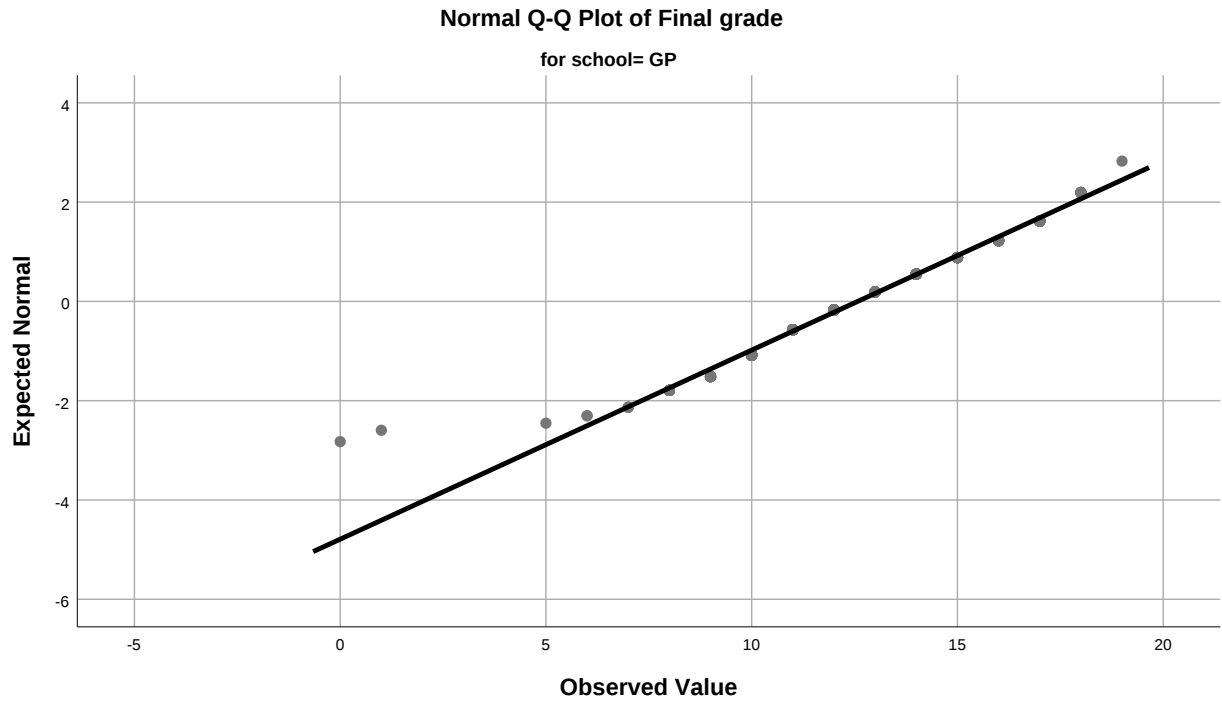


Shapiro Wilk by school
G3 normality by school



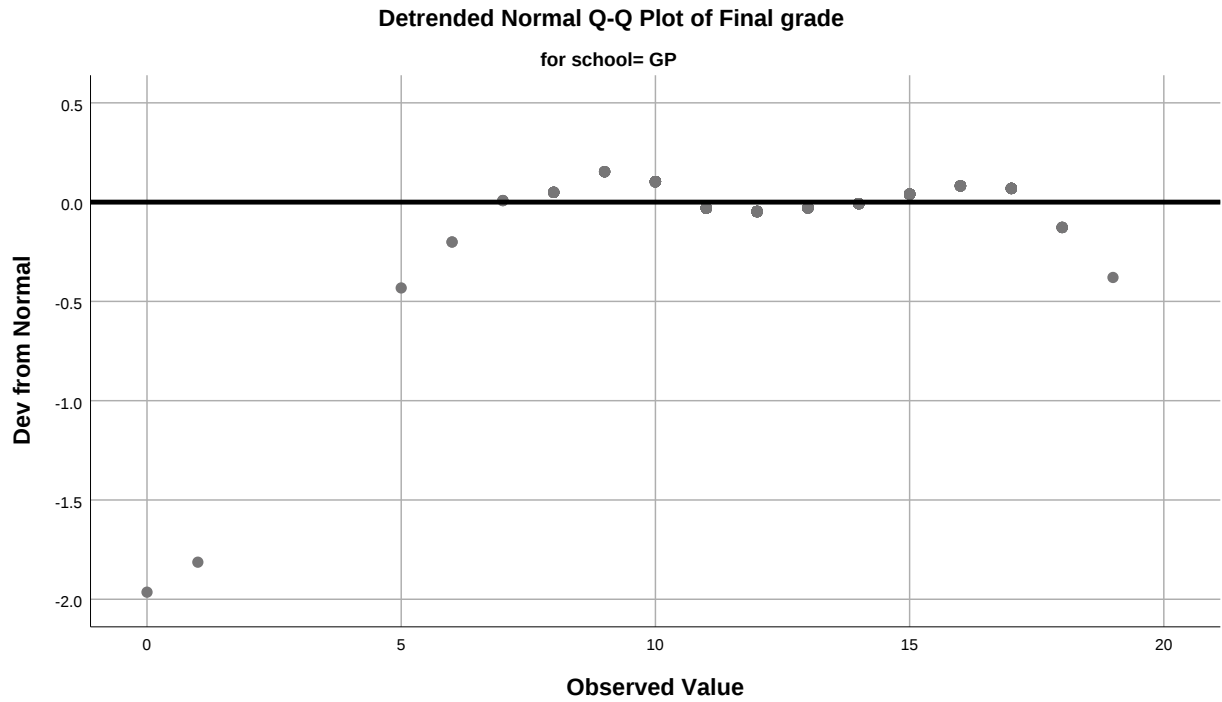
Normal Q-Q Plots

Shapiro Wilk by school
G3 normality by school



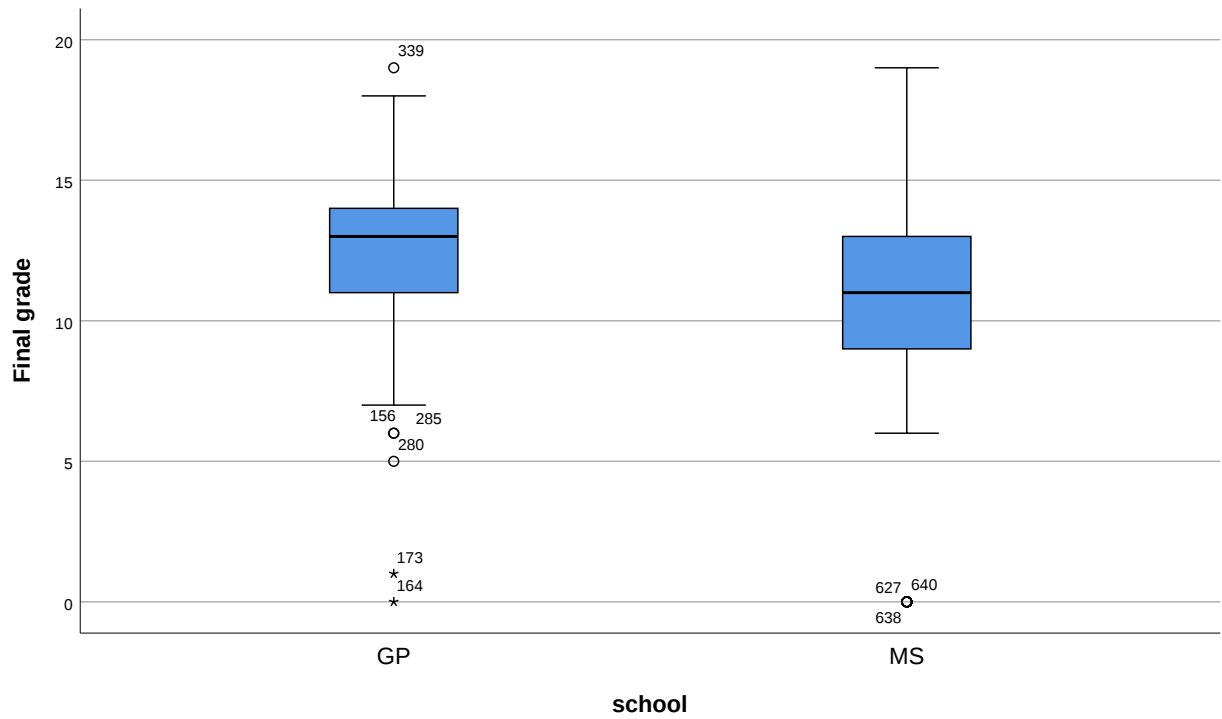
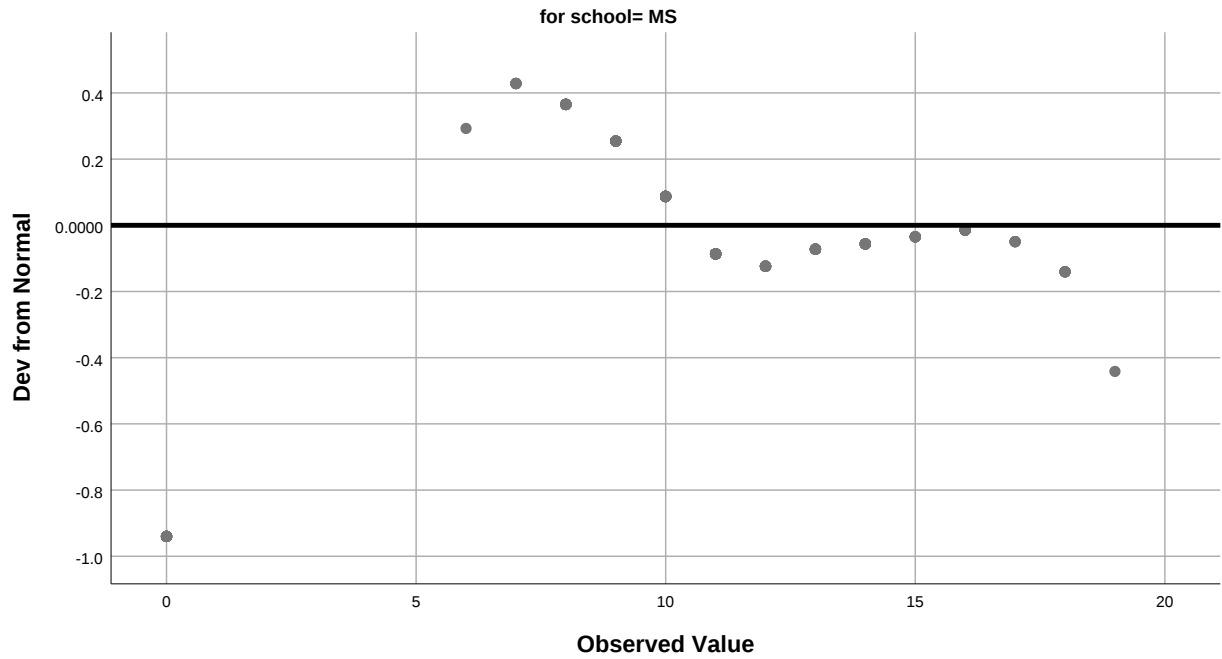
Shapiro Wilk by school
G3 normality by school

Detrended Normal Q-Q Plots



Shapiro Wilk by school
G3 normality by school

Detrended Normal Q-Q Plot of Final grade



Shape descriptors for Shapiro Wilk interpretation

Shape descriptors for Shapiro Wilk interpretation
Skewness and kurtosis context

Descriptives

Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness	
						Statistic	Std. Error
G3	649	0	19	11.91	3.231	-.913	.096
G2	649	0	19	11.57	2.914	-.360	.096
G1	649	0	19	11.40	2.745	-.003	.096
age	649	15	22	16.74	1.218	.417	.096
absences	649	0	32	3.66	4.641	2.021	.096
Valid N (listwise)	649						

Descriptive Statistics

	Kurtosis	
	Statistic	Std. Error
G3	2.712	.192
G2	1.662	.192
G1	.037	.192
age	.072	.192
absences	5.781	.192
Valid N (listwise)		

Q-Q support table for Shapiro Wilk interpretation

Q-Q support table for Shapiro Wilk interpretation
First 20 sorted cases

List

Q-Q support table for Shapiro Wilk interpretation
First 20 sorted cases

sw_rank	G3	sw_probability	sw_theoretical_z	sw_theoretical_value	sw_qq_r
esidual	sw_abs_qq_residual				
1.00	0	.00077	-3.16688	1.67490	-1.
67490	1.67490				
2.00	0	.00231	-2.83223	2.75606	-2.
75606	2.75606				
3.00	0	.00385	-2.66477	3.29706	-3.
29706	3.29706				
4.00	0	.00539	-2.54956	3.66925	-3.
66925	3.66925				
5.00	0	.00693	-2.46068	3.95641	-3.
95641	3.95641				
6.00	0	.00847	-2.38781	4.19182	-4.
19182	4.19182				
7.00	0	.01002	-2.32577	4.39225	-4.
39225	4.39225				
8.00	0	.01156	-2.27157	4.56735	-4.
56735	4.56735				
9.00	0	.01310	-2.22332	4.72322	-4.
72322	4.72322				
10.00	0	.01464	-2.17975	4.86398	-4.
86398	4.86398				
11.00	0	.01618	-2.13997	4.99251	-4.
99251	4.99251				
12.00	0	.01772	-2.10330	5.11095	-5.
11095	5.11095				
13.00	0	.01926	-2.06927	5.22091	-5.
22091	5.22091				
14.00	0	.02080	-2.03747	5.32363	-5.
32363	5.32363				
15.00	0	.02234	-2.00762	5.42009	-5.
42009	5.42009				
16.00	1	.02388	-1.97945	5.51110	-4.
51110	4.51110				

Q-Q support table for Shapiro Wilk interpretation
First 20 sorted cases

17.00	5	.02542	-1.95276	5.59730	-.
59730	.59730				
18.00	6	.02696	-1.92741	5.67922	.
32078	.32078				
19.00	6	.02851	-1.90323	5.75733	.
24267	.24267				
20.00	6	.03005	-1.88011	5.83201	.
16799	.16799				

Number of cases read: 20 Number of cases listed: 20