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Q Q Plot Normality Check

Q Q Plot Normality Check
Import data

Normality plots from SPSS Explore

Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

Explore

[QQPlotNormalityData] D:\DATA ANALYSIS\B Normality and Assumption Tests\Q Q Plot Normality Check\SPSS_Output\sav\Q-Q-Plot-Normality-Check-data.sav

Case Processing Summary

	Cases					
	Valid		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		

Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

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	

Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

Descriptives

		Statistic	Std. Error	
	Skewness	.417	.096	
	Kurtosis	.072	.192	
absences	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	

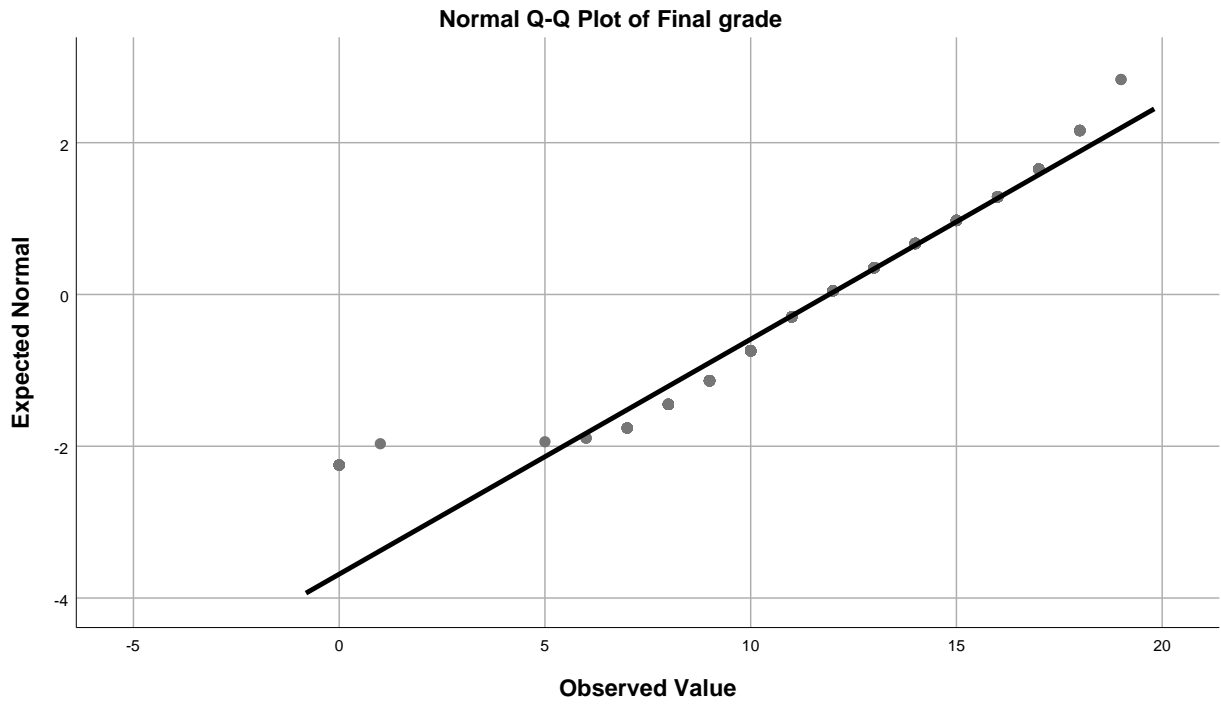
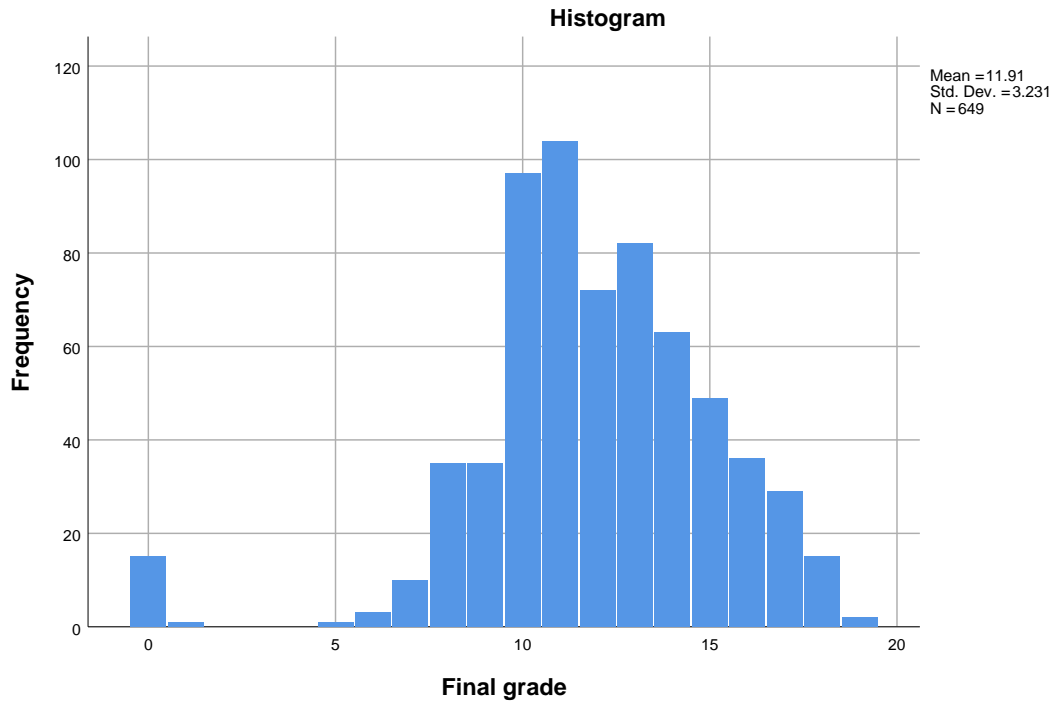
Tests of Normality

	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

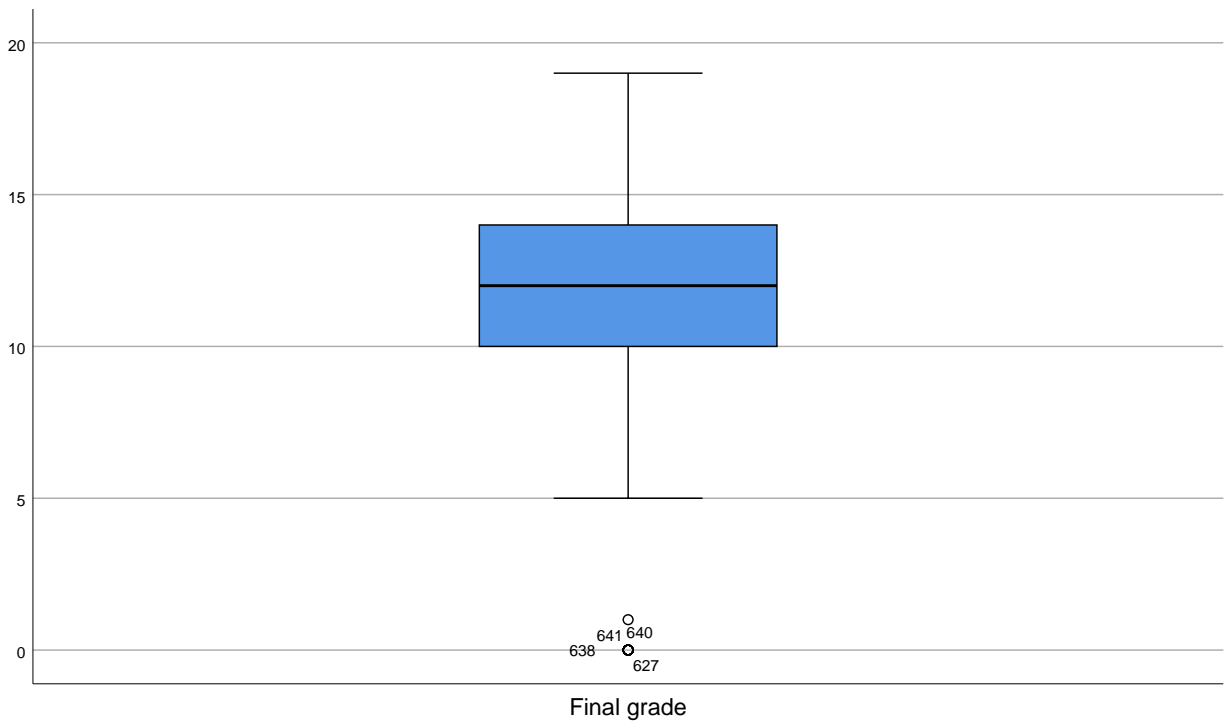
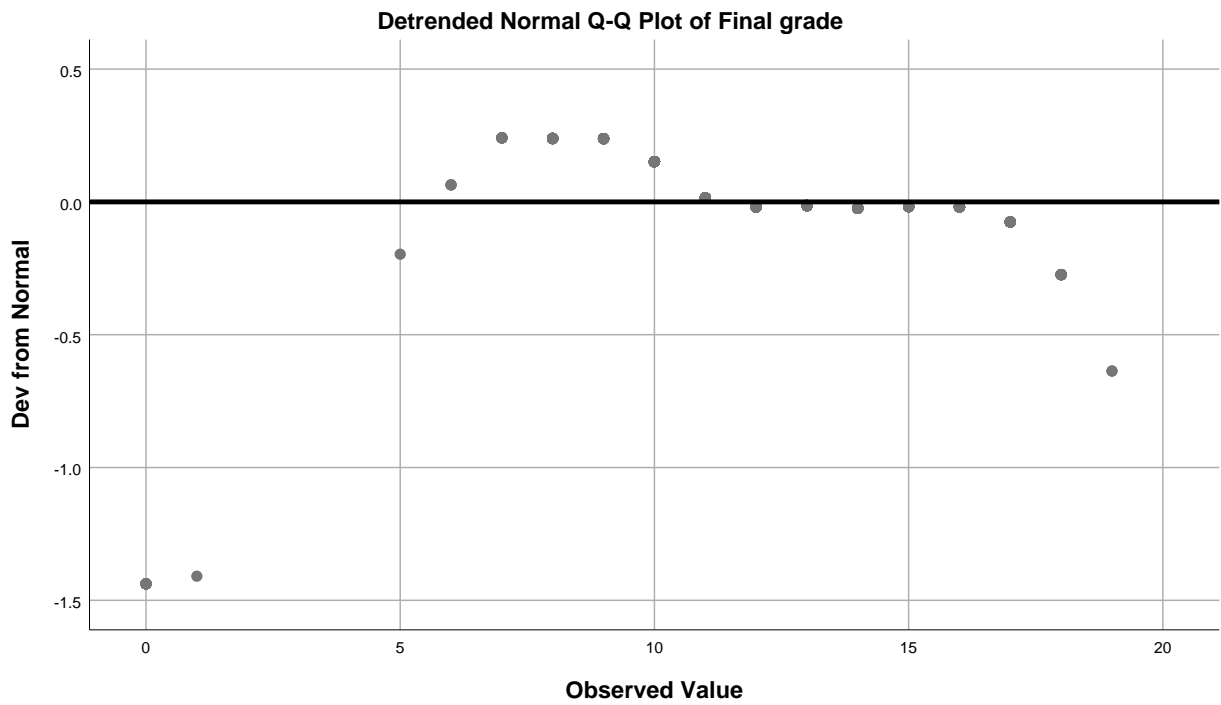
a. Lilliefors Significance Correction

Final grade

Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

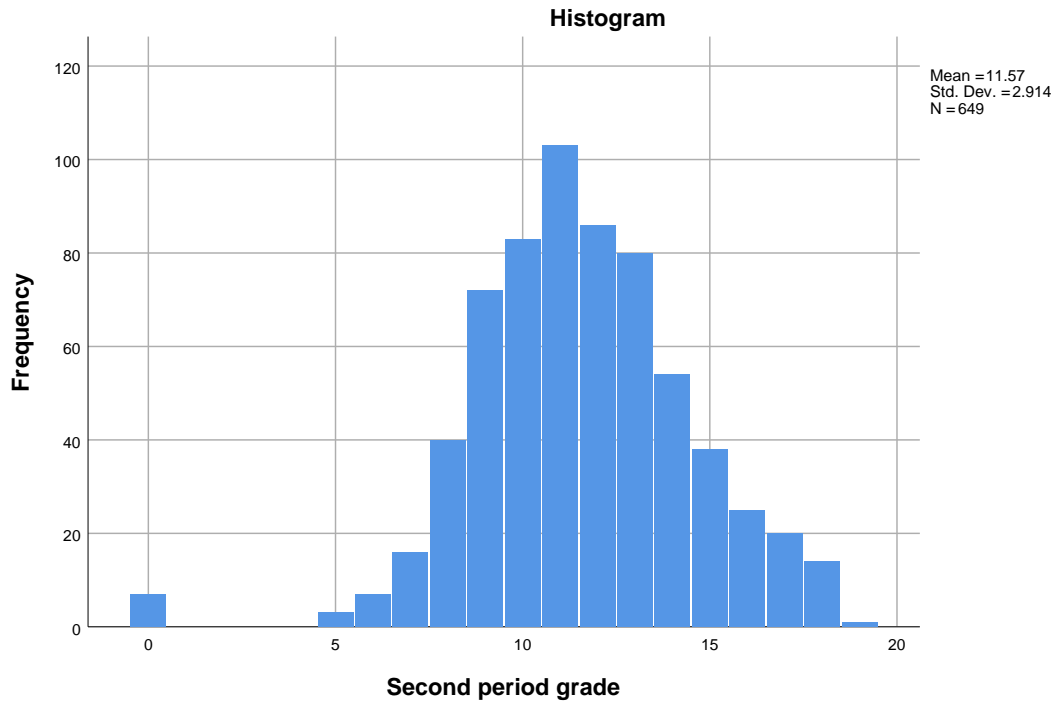


Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

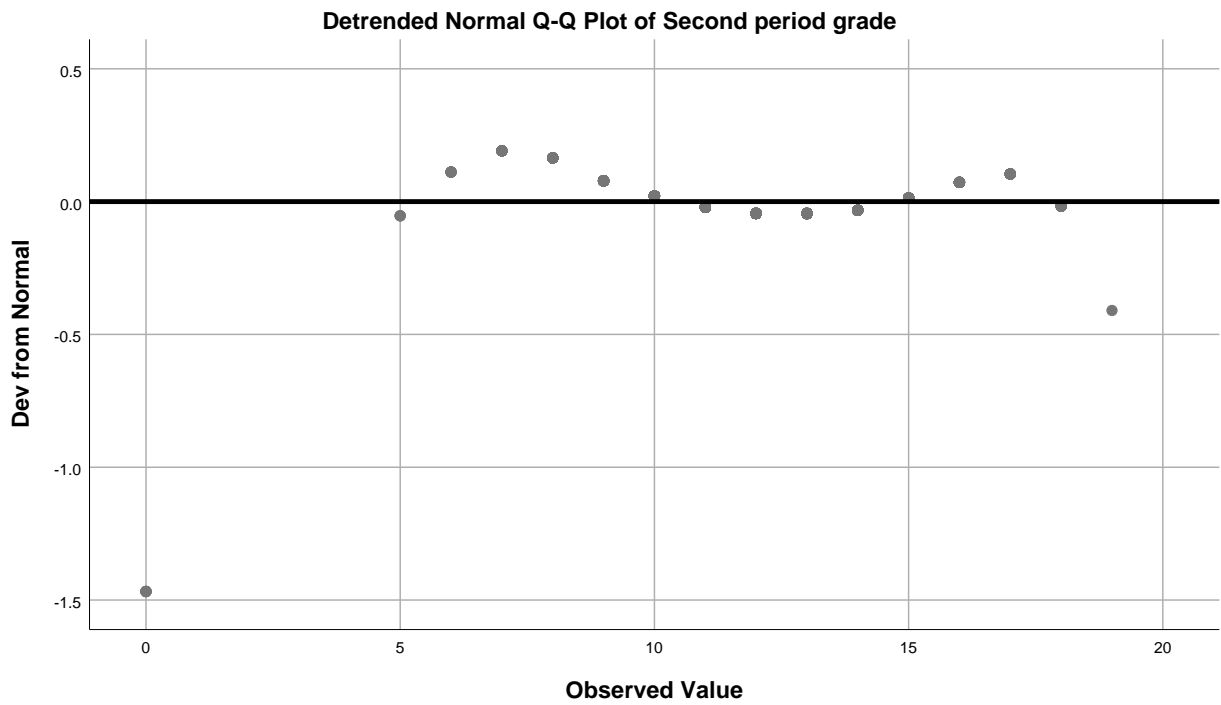
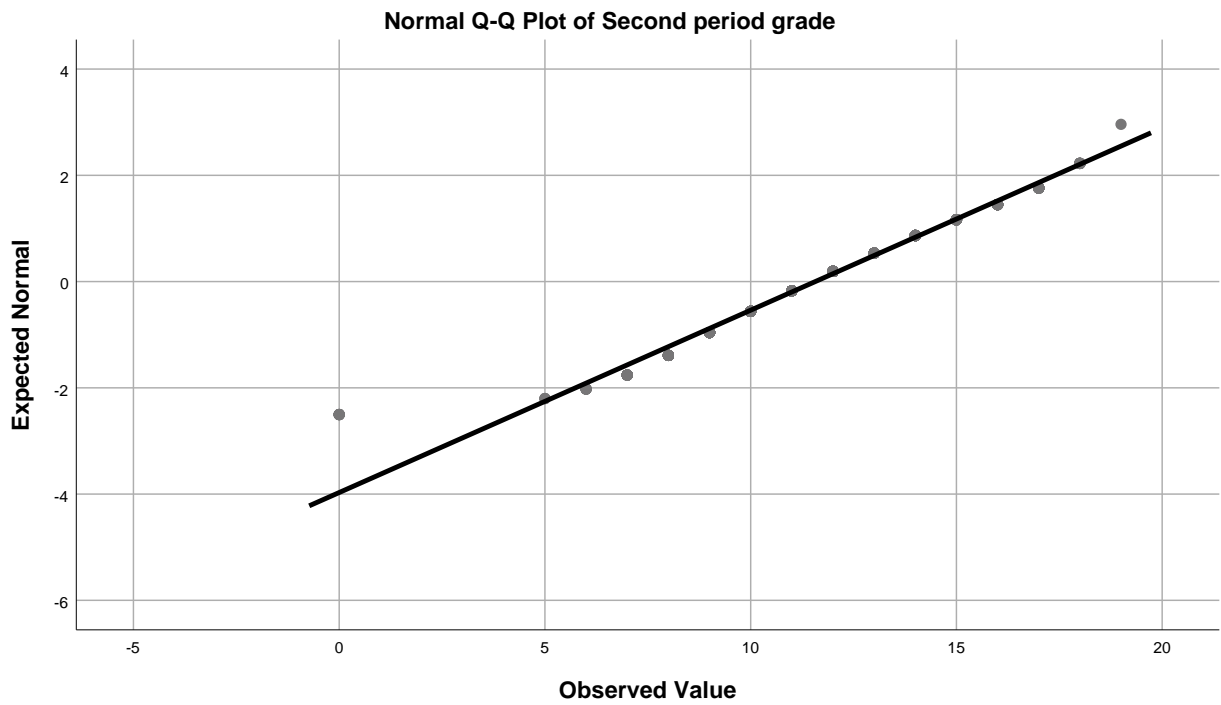


Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

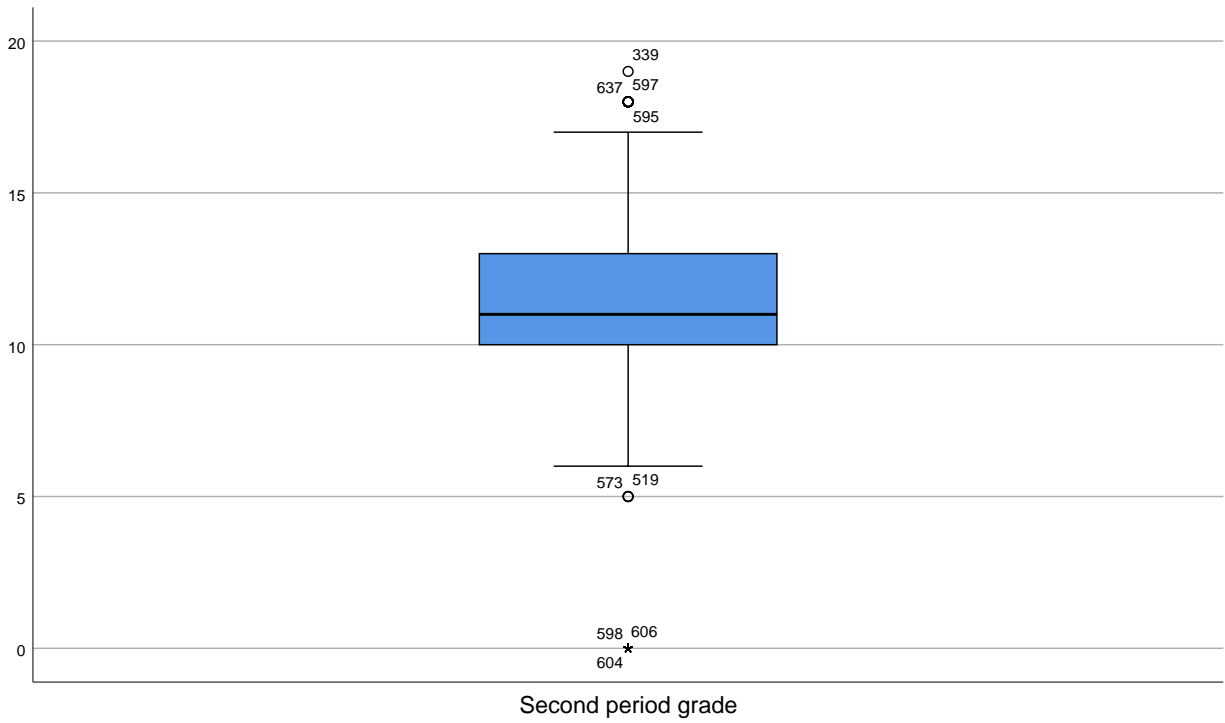
Second period grade



Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

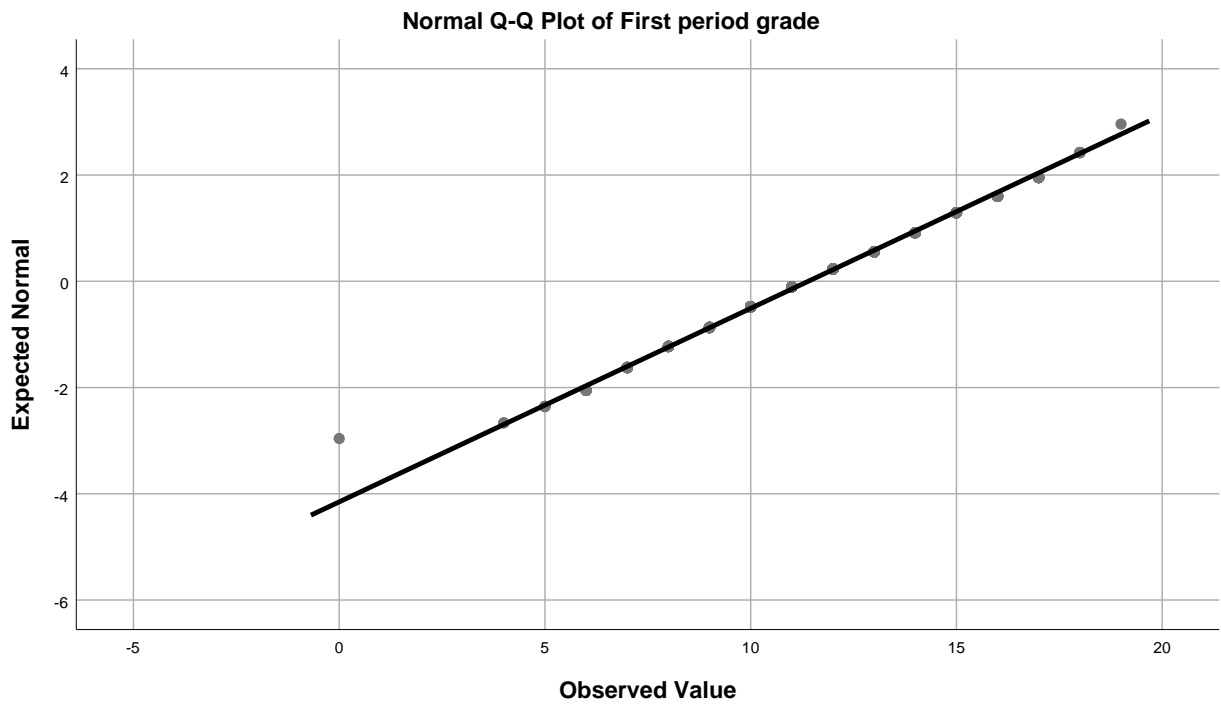
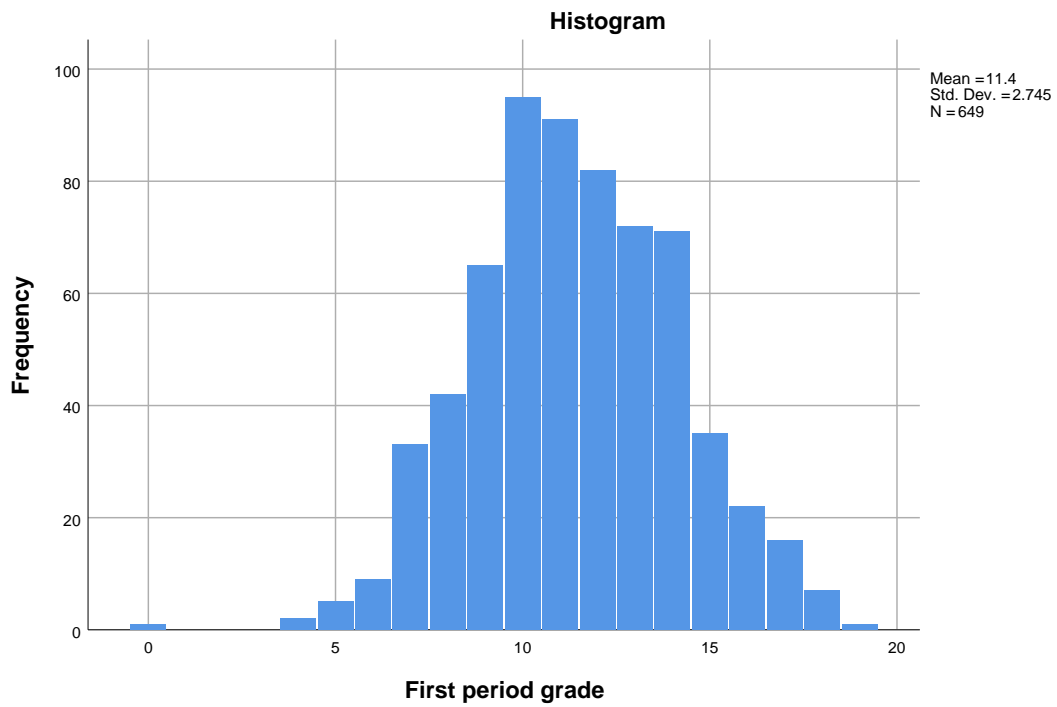


Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

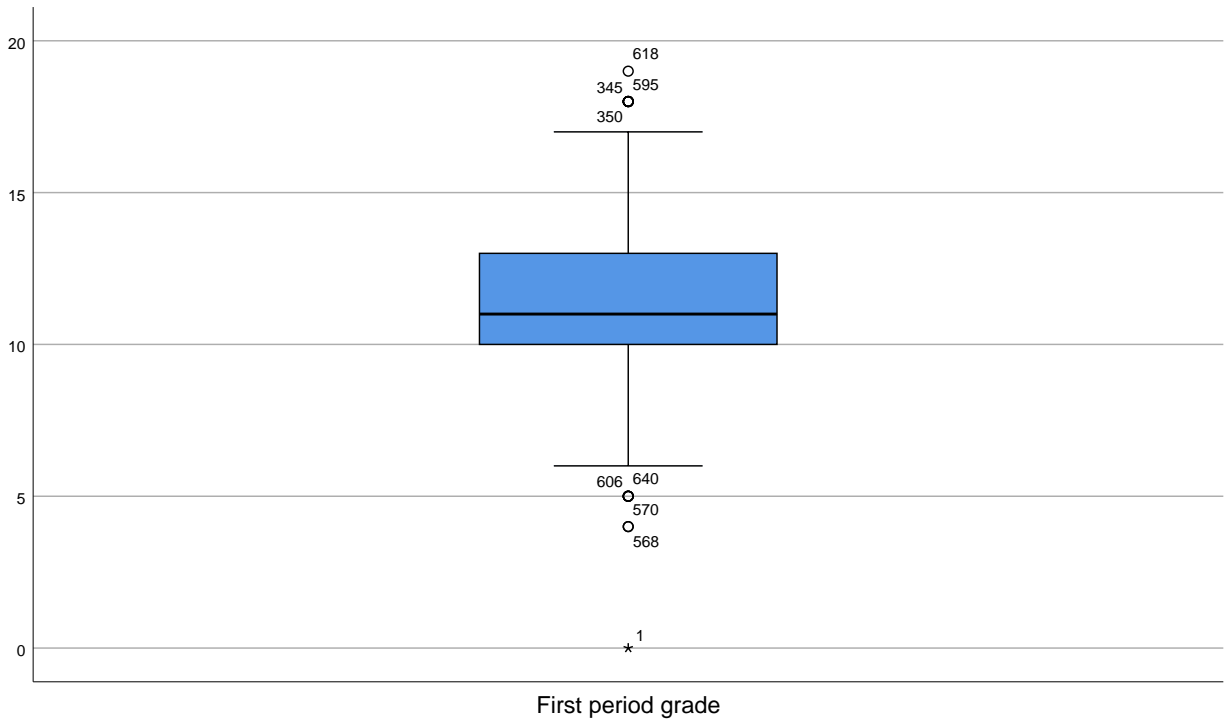
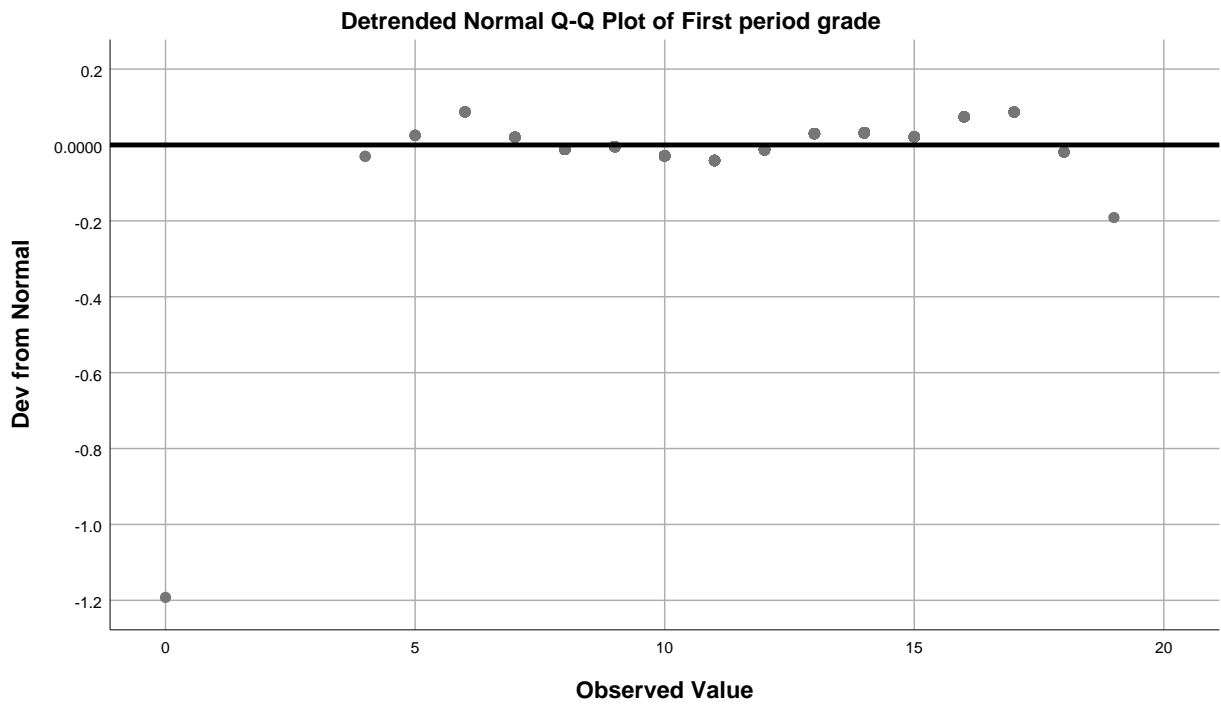


First period grade

Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

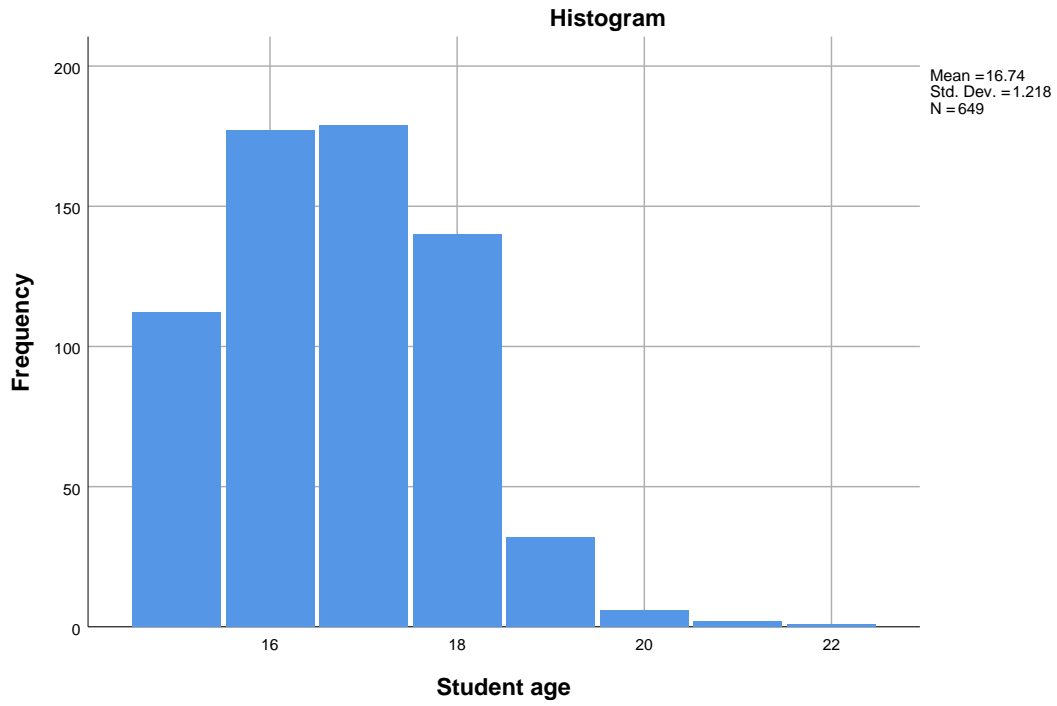


Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

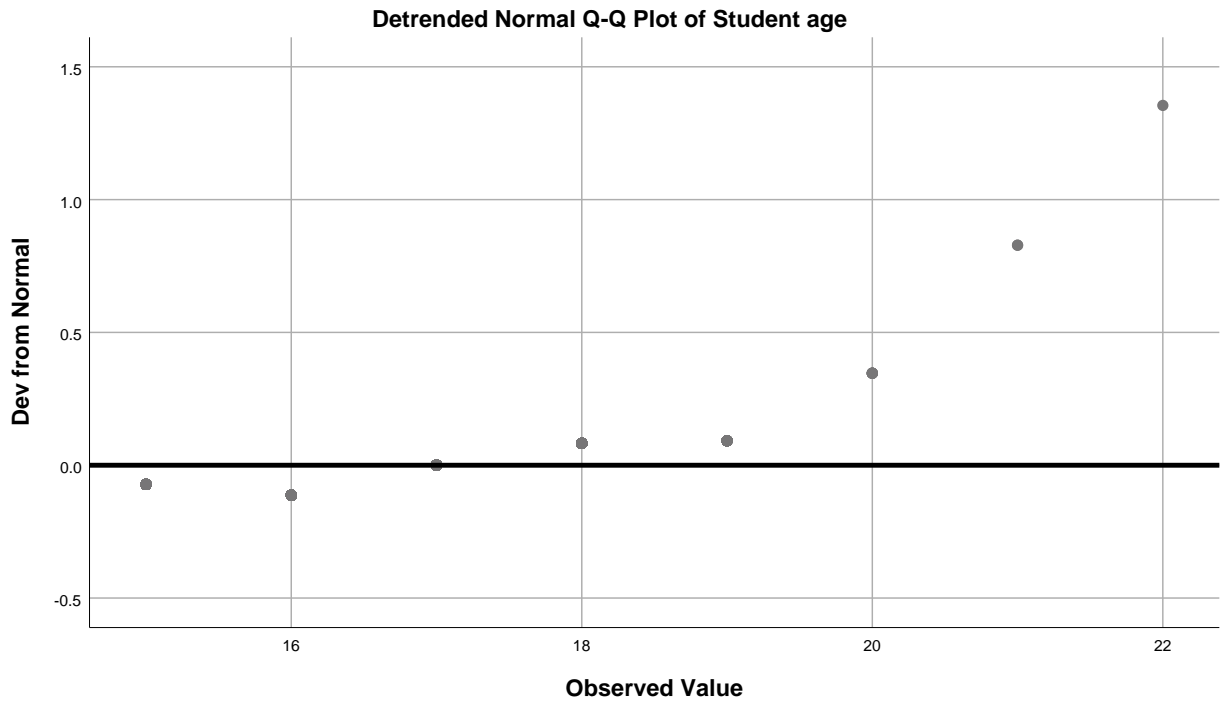
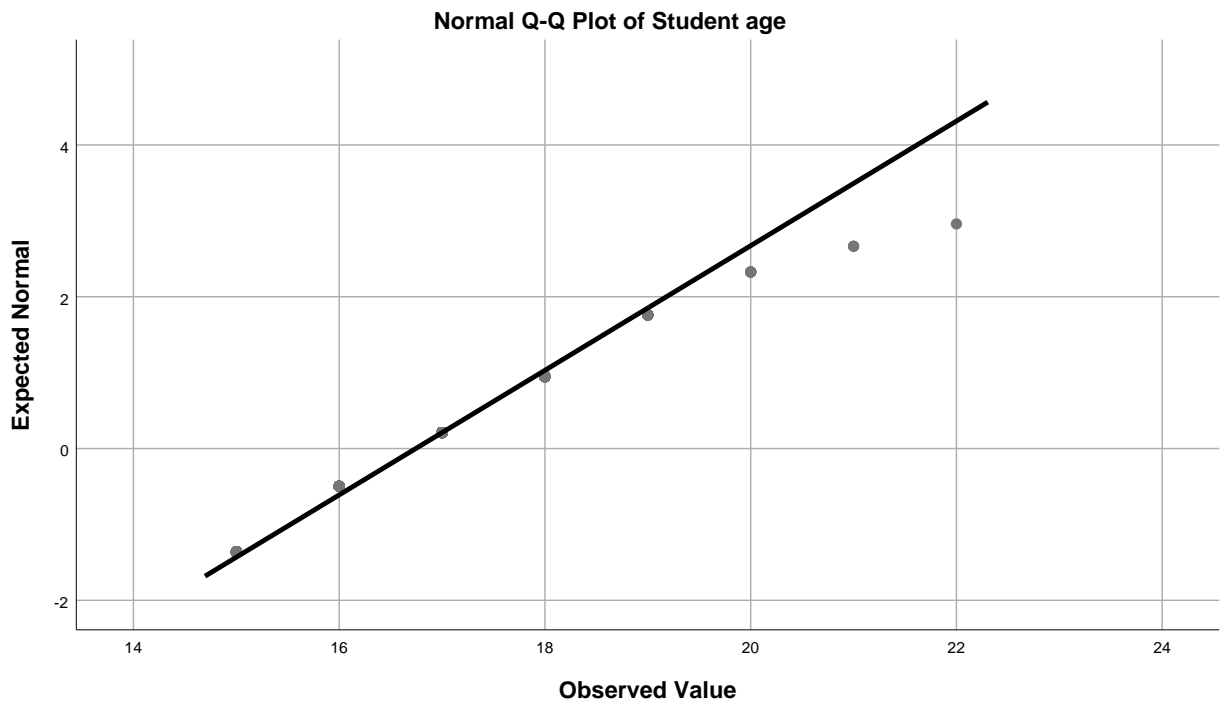


Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

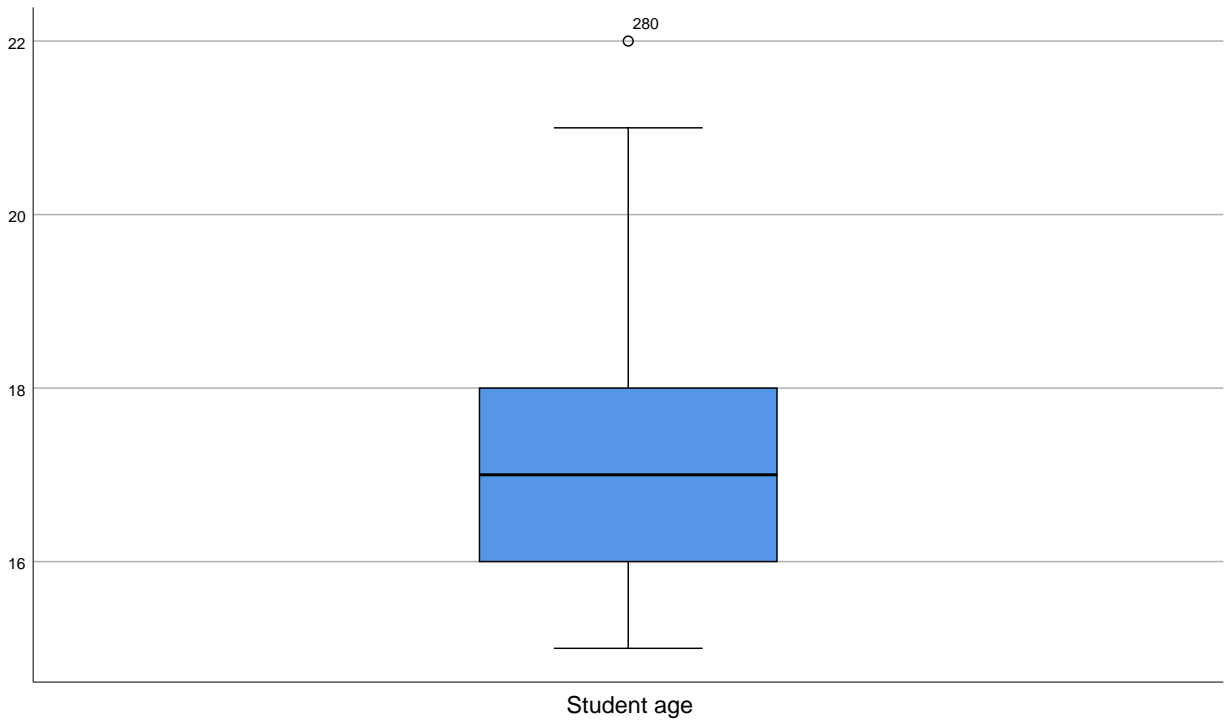
Student age



Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

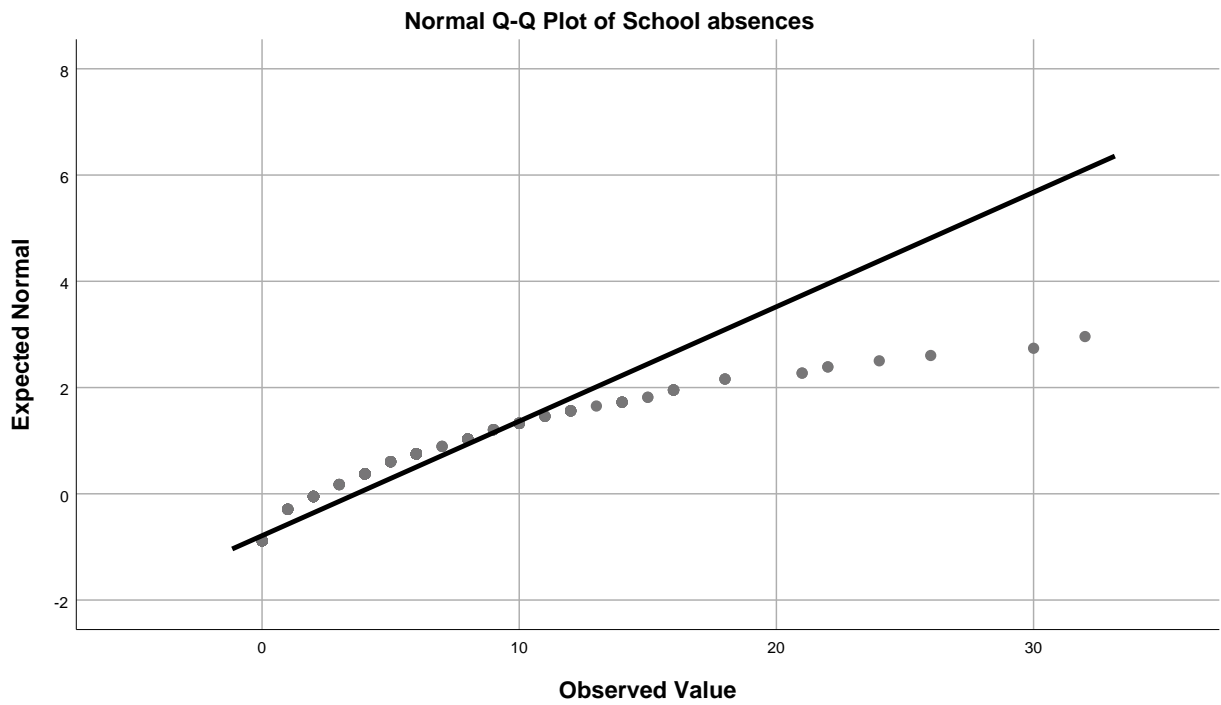
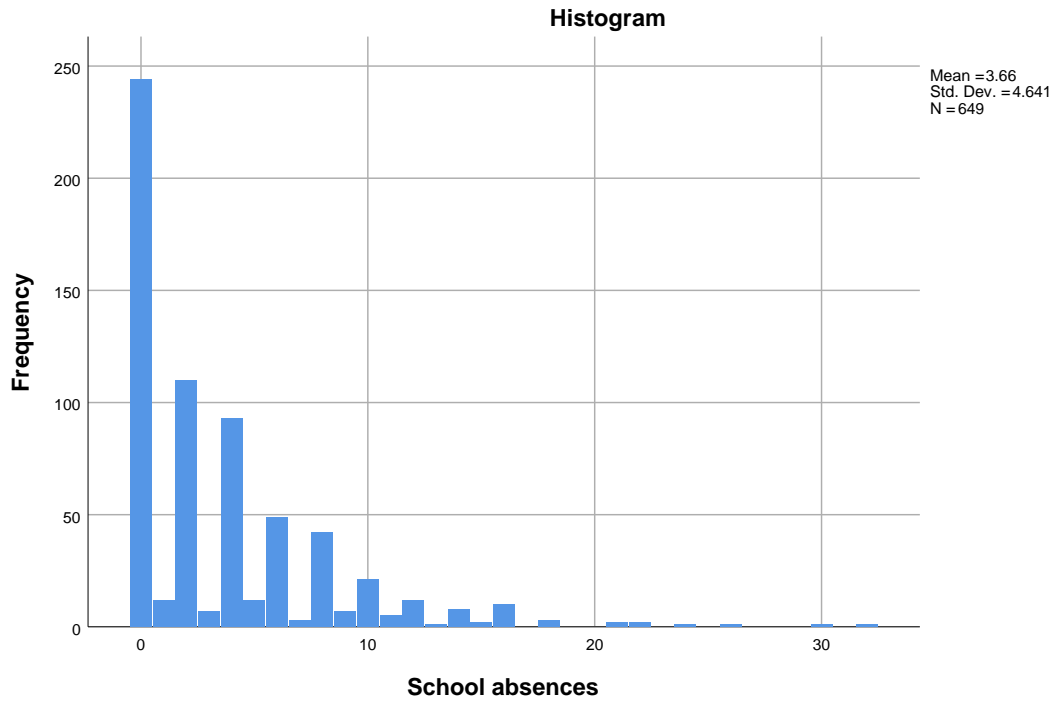


Normality plots from SPSS Explore
Normal Q-Q plots and descriptives

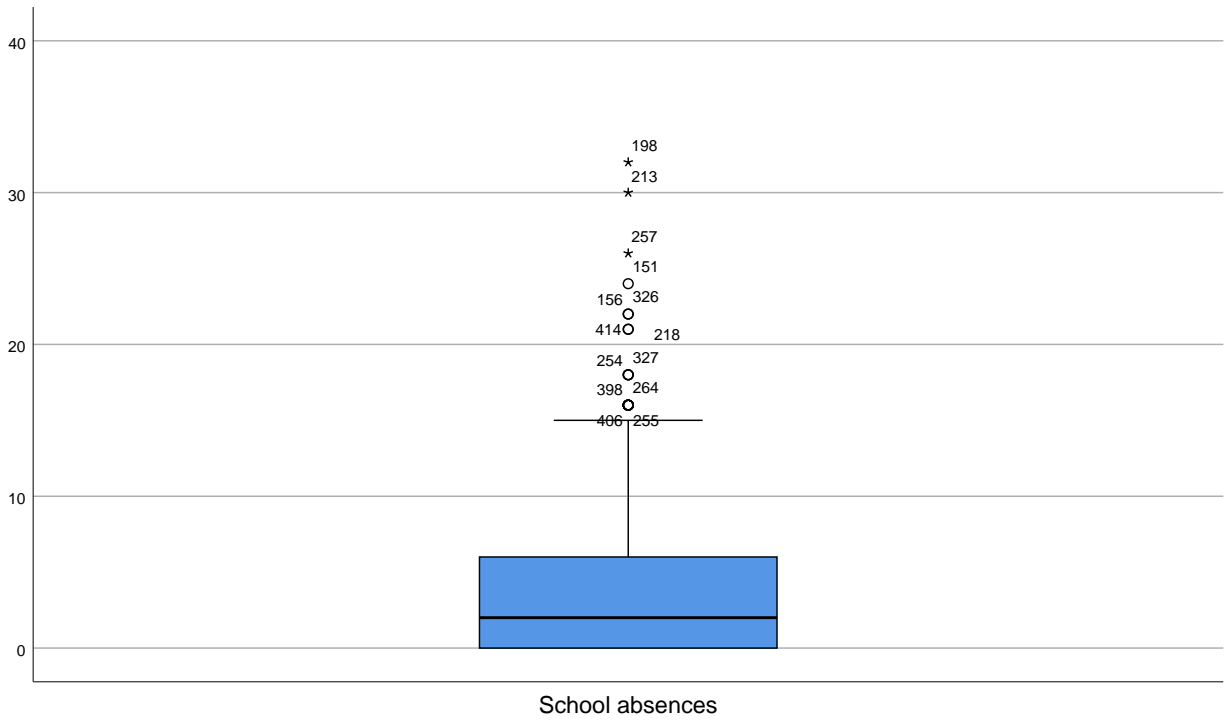
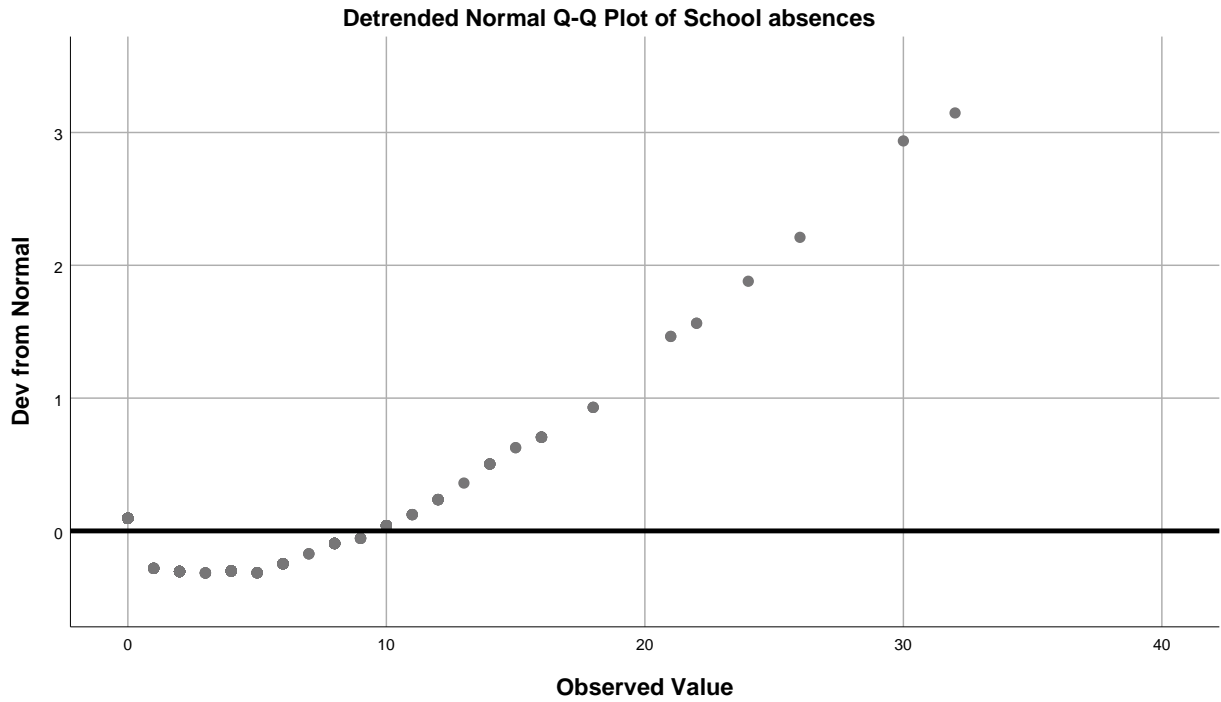


School absences

Normality plots from SPSS Explore
Normal Q-Q plots and descriptives



Normality plots from SPSS Explore
Normal Q-Q plots and descriptives



Manual Q Q plot calculation

Manual Q Q plot calculation
G3 quantile comparison

List

[QQPlotNormalityData] D:\DATA ANALYSIS\B Normality and Assumption Tests\Q Q Plot Normality Check\SPSS_Output\sav\Q-Q-Plot-Normality-Check-with-qq-values.sav

Manual Q Q plot calculation
G3 quantile comparison

qq_n	qq_mean	qq_sd	qq_max_abs_residual	qq_mean_abs_residual
649	11.91	3.23	5.42009	.51630

Number of cases read: 1 Number of cases listed: 1

Manual Q Q plot detail

Manual Q Q plot detail
First 20 sorted cases

List

Manual Q Q plot detail
 First 20 sorted cases

qq_rank	G3	qq_probability	qq_theoretical_z	qq_theoretical_value	qq_resi
dual	qq_abs_residual				
1.00	0	.00077	-3.16688	1.67490	-1.6
7490	1.67490				
2.00	0	.00231	-2.83223	2.75606	-2.7
5606	2.75606				
3.00	0	.00385	-2.66477	3.29706	-3.2
9706	3.29706				
4.00	0	.00539	-2.54956	3.66925	-3.6
6925	3.66925				
5.00	0	.00693	-2.46068	3.95641	-3.9
5641	3.95641				
6.00	0	.00847	-2.38781	4.19182	-4.1
9182	4.19182				
7.00	0	.01002	-2.32577	4.39225	-4.3
9225	4.39225				
8.00	0	.01156	-2.27157	4.56735	-4.5
6735	4.56735				
9.00	0	.01310	-2.22332	4.72322	-4.7
2322	4.72322				
10.00	0	.01464	-2.17975	4.86398	-4.8
6398	4.86398				
11.00	0	.01618	-2.13997	4.99251	-4.9
9251	4.99251				
12.00	0	.01772	-2.10330	5.11095	-5.1
1095	5.11095				
13.00	0	.01926	-2.06927	5.22091	-5.2
2091	5.22091				
14.00	0	.02080	-2.03747	5.32363	-5.3
2363	5.32363				
15.00	0	.02234	-2.00762	5.42009	-5.4
2009	5.42009				
16.00	1	.02388	-1.97945	5.51110	-4.5
1110	4.51110				

Manual Q Q plot detail
First 20 sorted cases

17.00	5	.02542	-1.95276	5.59730	-.5
9730	.59730				
18.00	6	.02696	-1.92741	5.67922	.3
2078	.32078				
19.00	6	.02851	-1.90323	5.75733	.2
4267	.24267				
20.00	6	.03005	-1.88011	5.83201	.1
6799	.16799				

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

Group normality context

Group normality context
G3 by sex

Explore

sex

Case Processing Summary

	sex	Valid		Cases Missing		Total	
		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				

Group normality context
G3 by sex

Descriptives

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

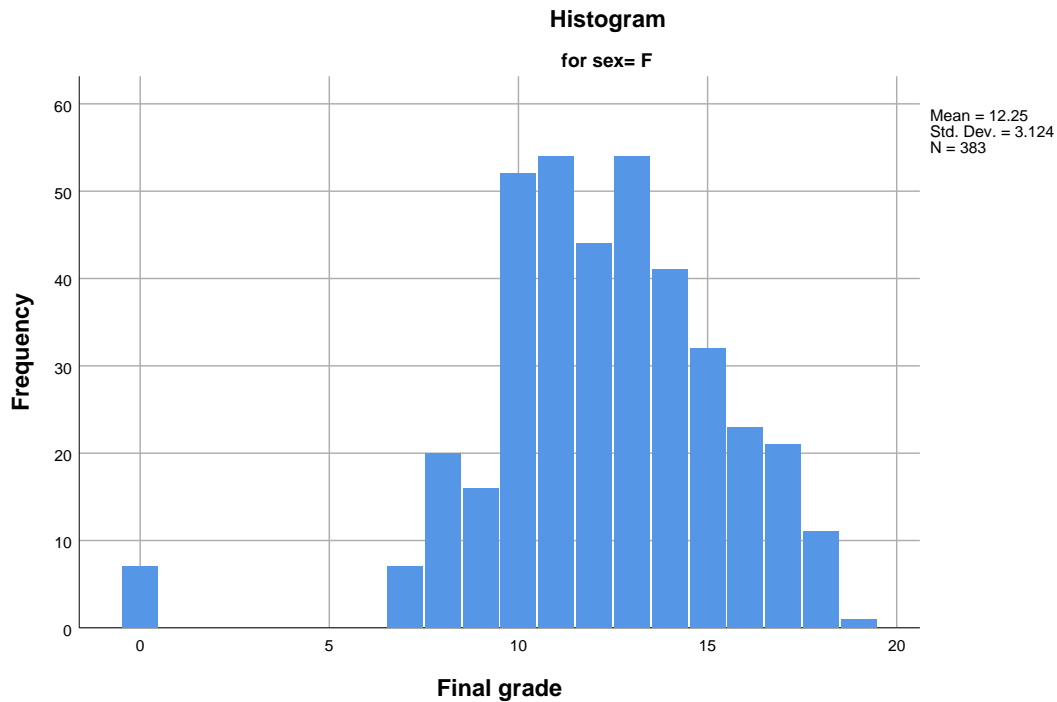
Tests of Normality

		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

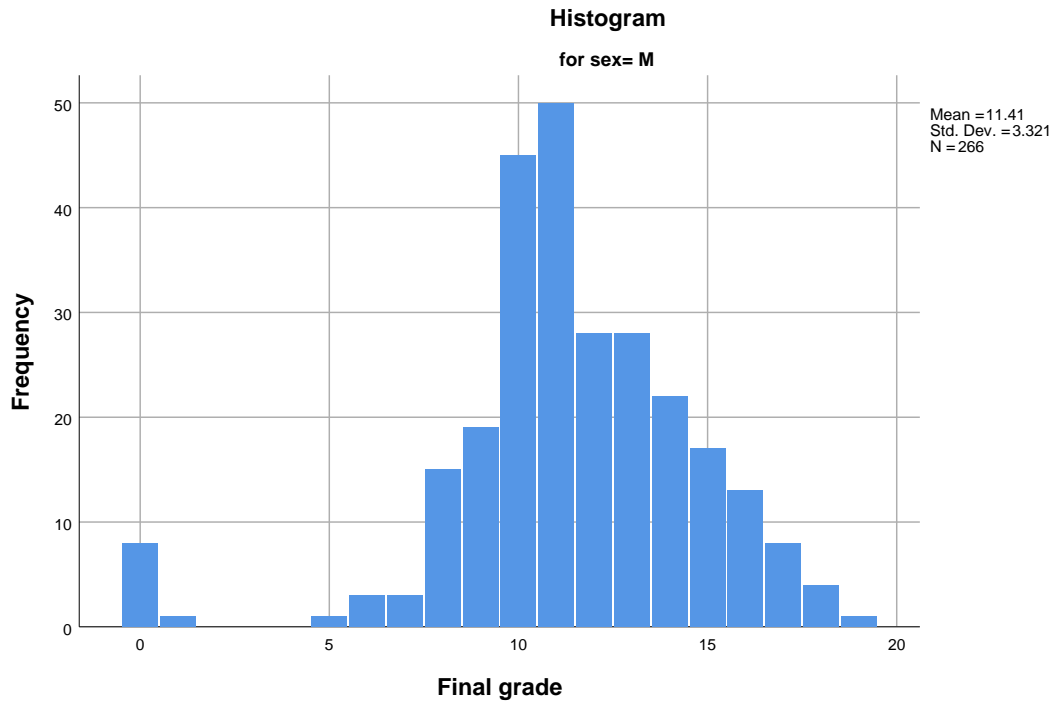
a. Lilliefors Significance Correction

Final grade

Histograms



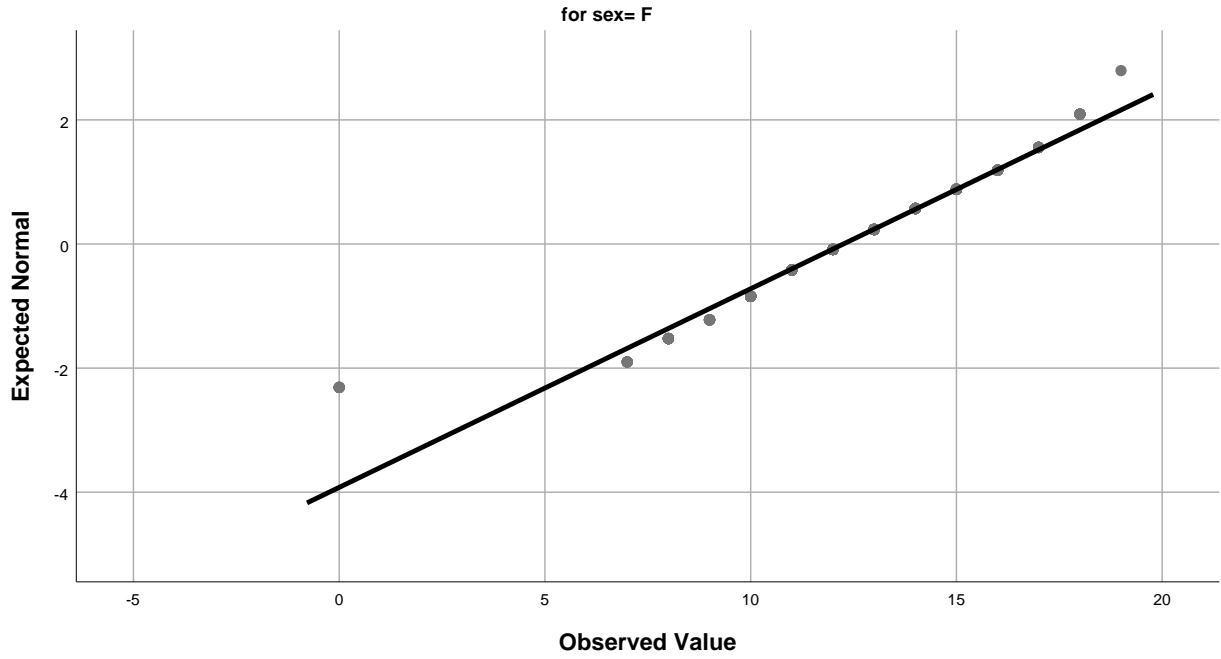
Group normality context
G3 by sex



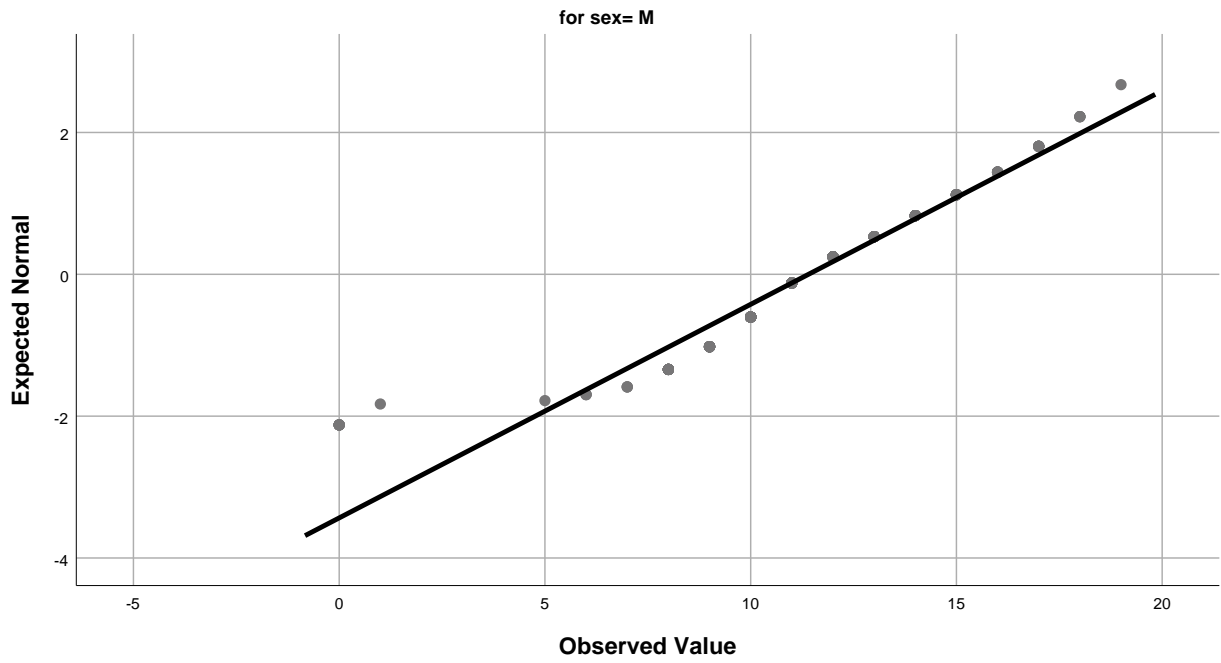
Normal Q-Q Plots

Group normality context
G3 by sex

Normal Q-Q Plot of Final grade

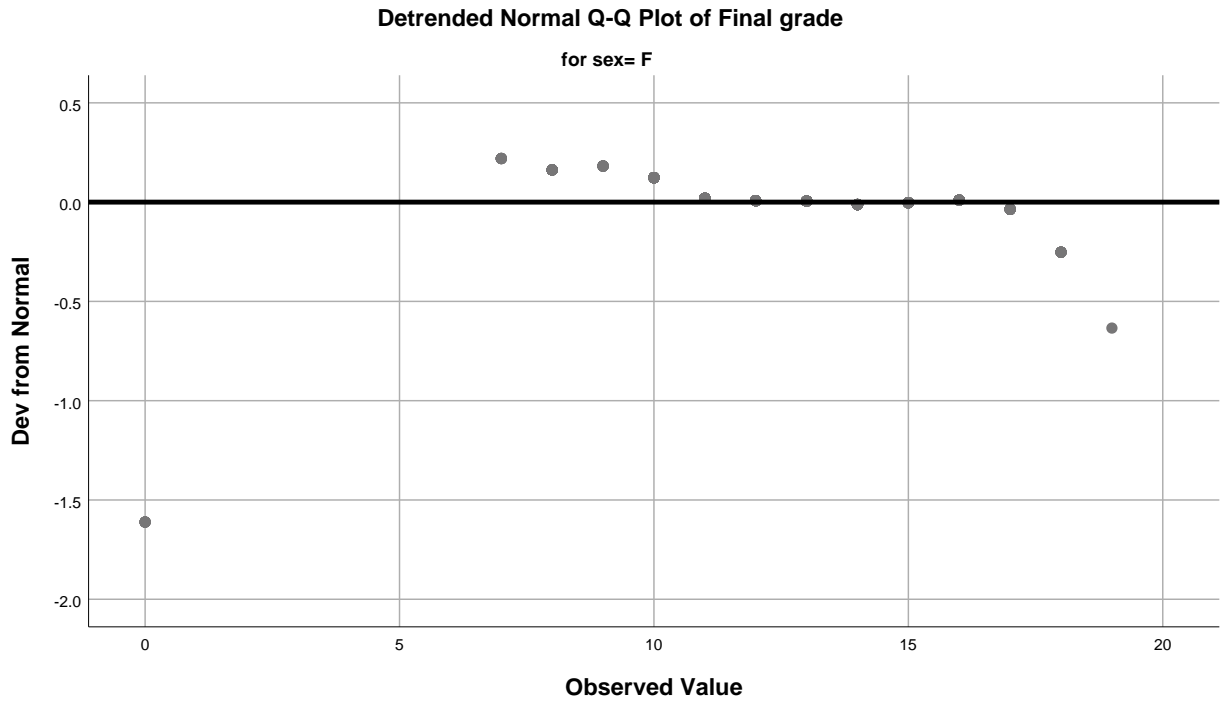


Normal Q-Q Plot of Final grade



Group normality context
G3 by sex

Detrended Normal Q-Q Plots



Group normality context
G3 by sex

Detrended Normal Q-Q Plot of Final grade

