

Host

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P P Plot Normality Check

P P Plot Normality Check
Import data

Normality plots from SPSS Explore

Normality plots from SPSS Explore
Normal probability plots and descriptives

Explore

[PPPlotNormalityData] D:\DATA ANALYSIS\B Normality and Assumption Tests\PP Plot Normality Check\SPSS_Output\sav\P-P-Plot-Normality-Check-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 | | |

Normality plots from SPSS Explore
Normal probability 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 probability 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 | |

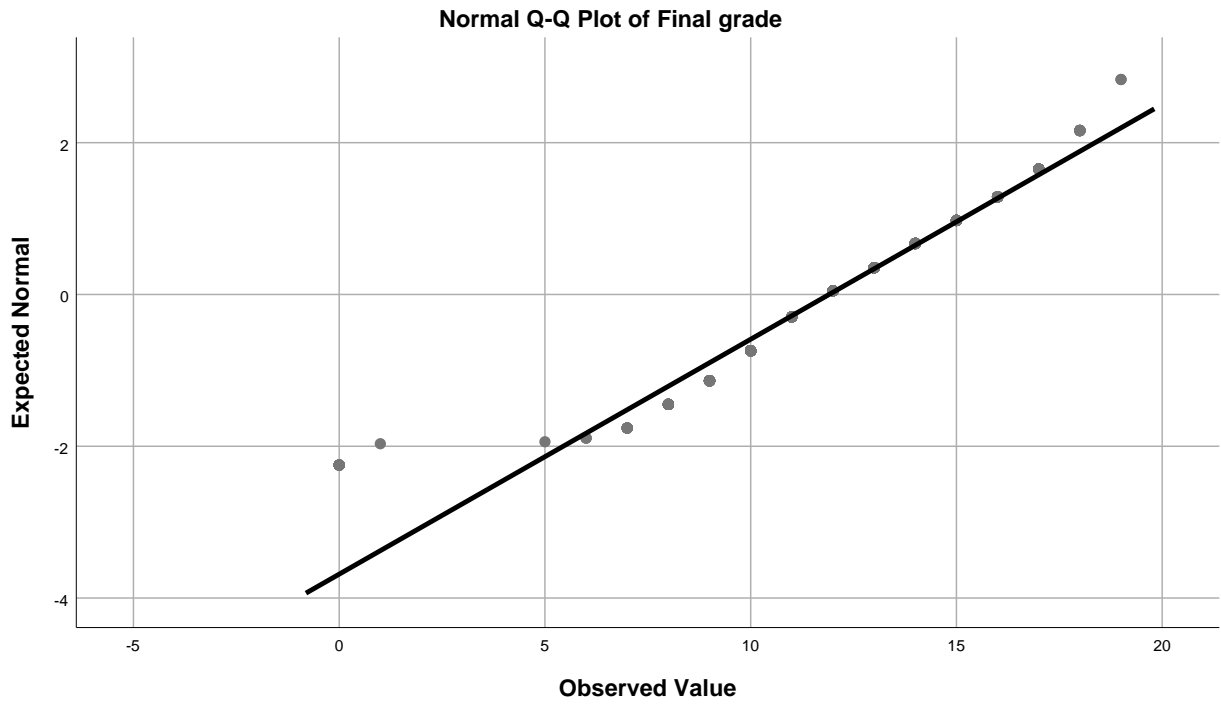
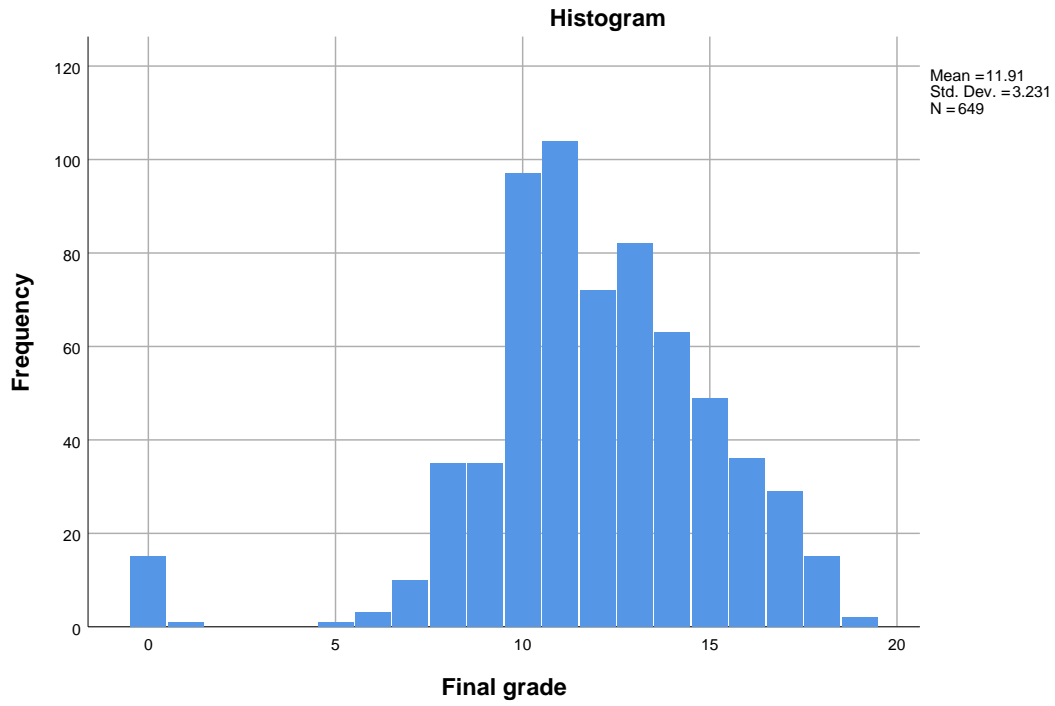
Tests of Normality

| | 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 |

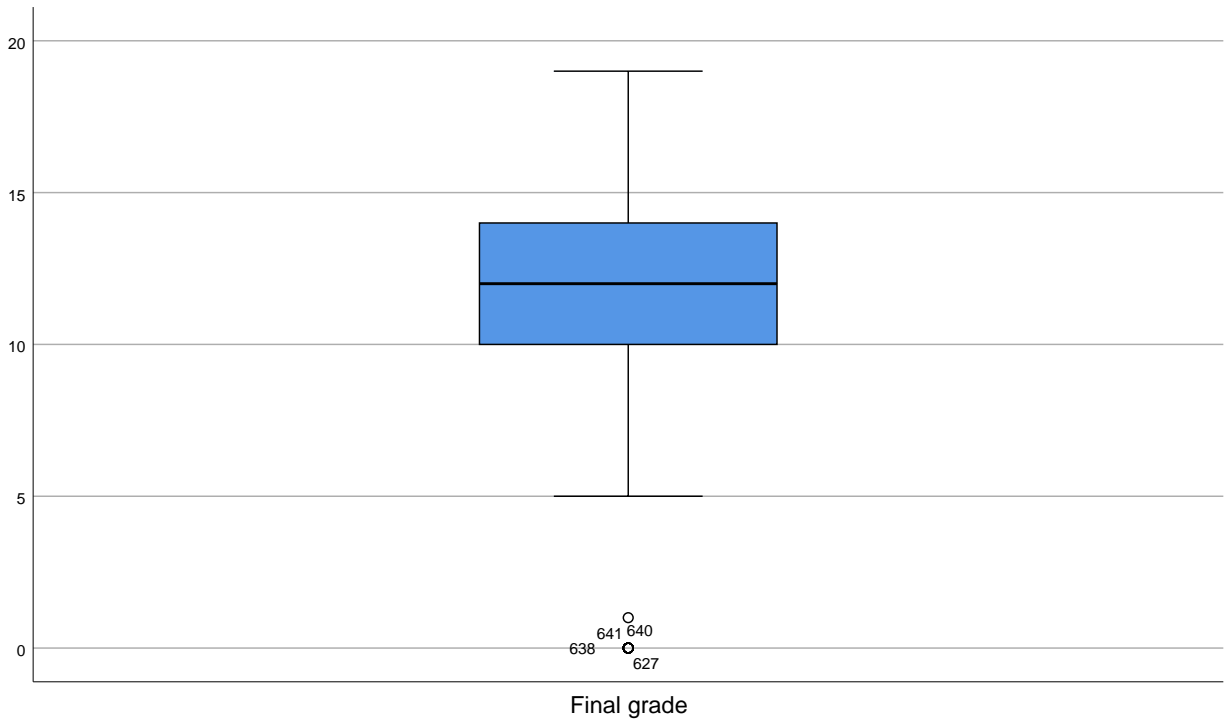
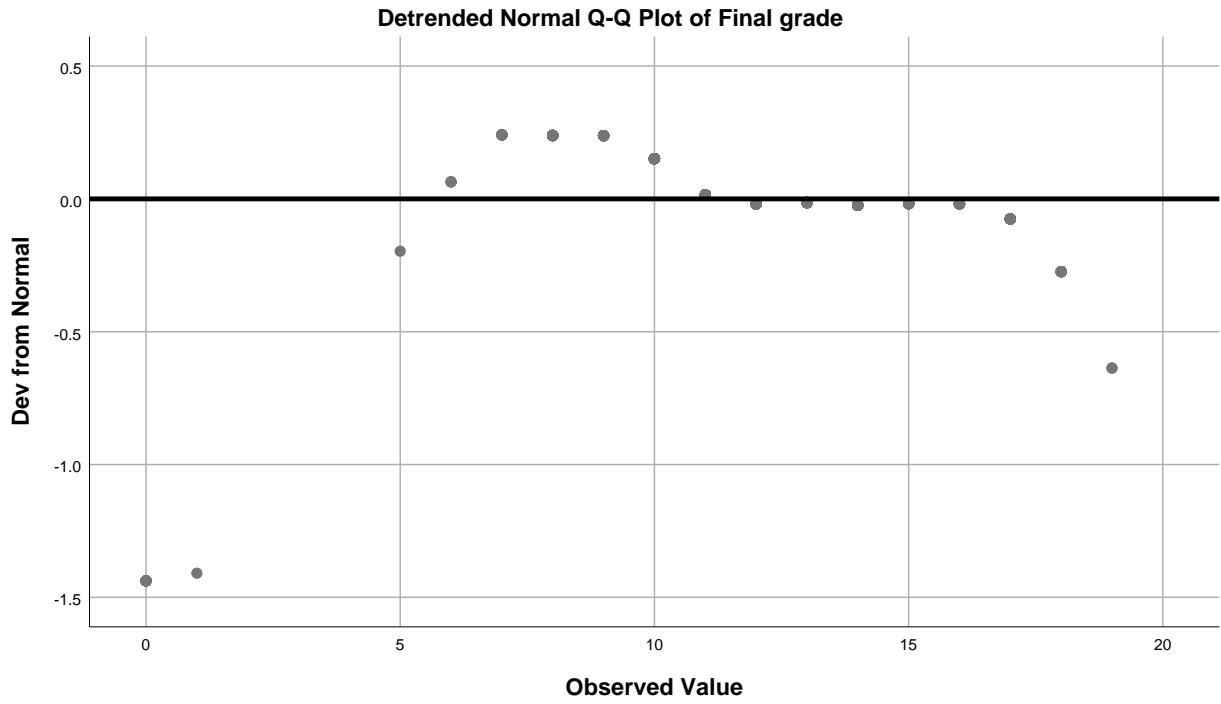
a. Lilliefors Significance Correction

Final grade

Normality plots from SPSS Explore
Normal probability plots and descriptives

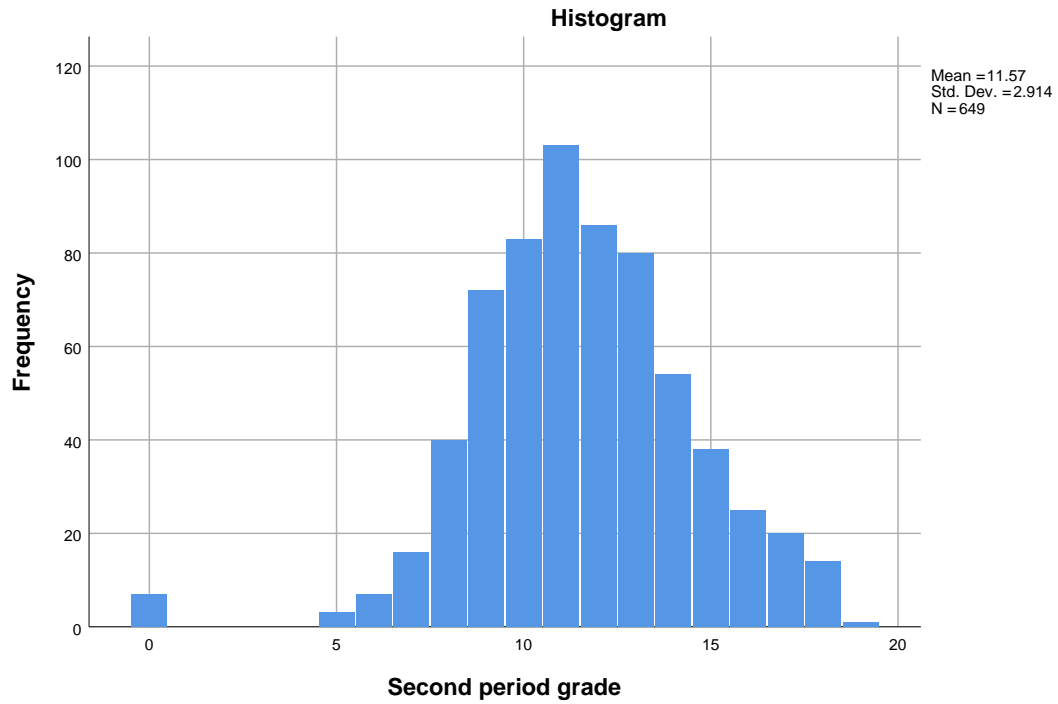


Normality plots from SPSS Explore
Normal probability plots and descriptives

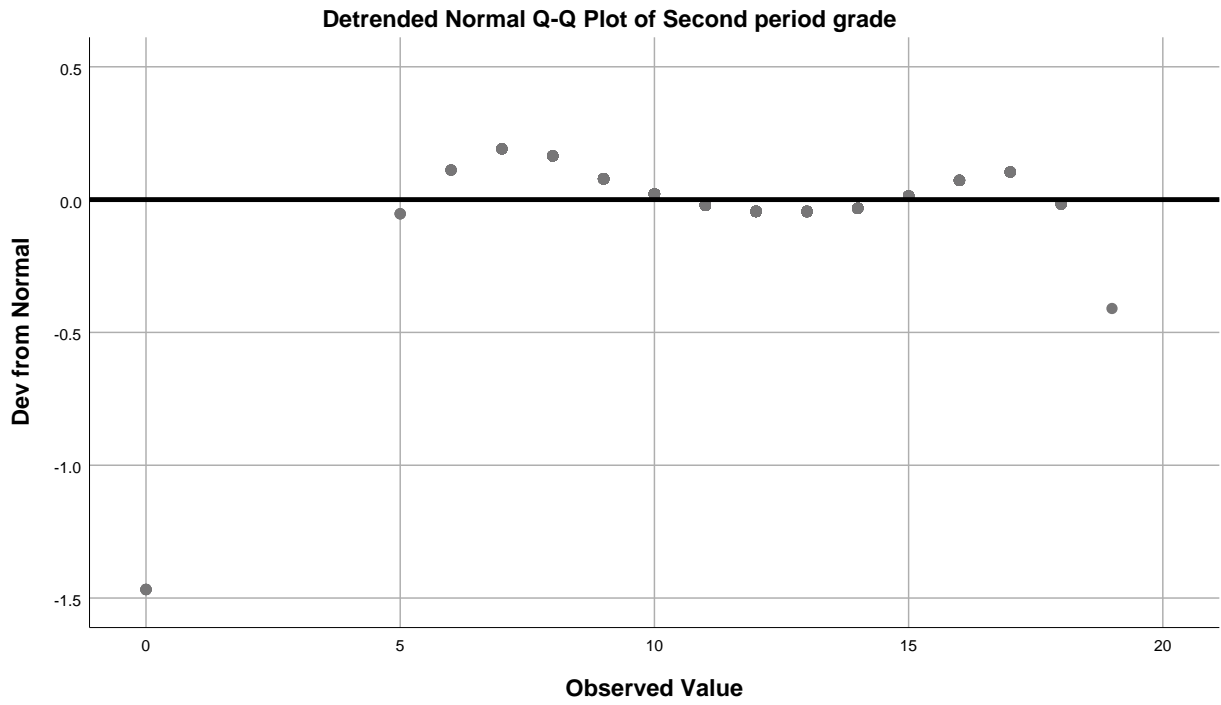
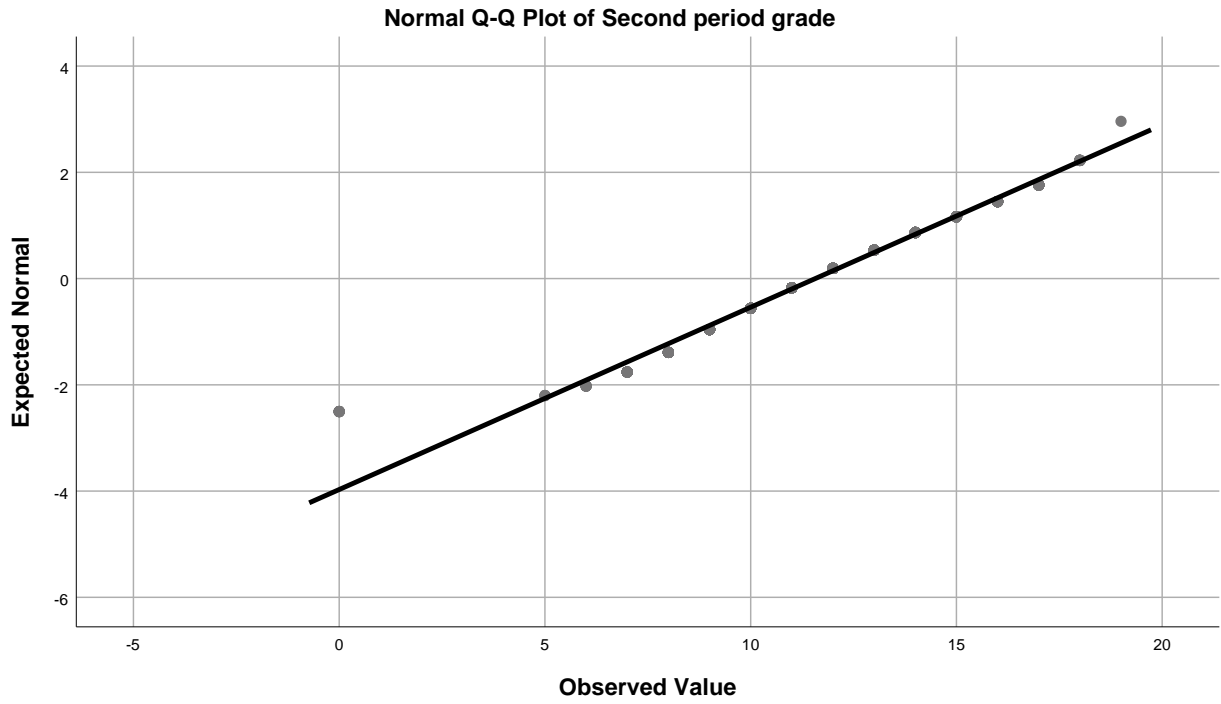


Normality plots from SPSS Explore
Normal probability plots and descriptives

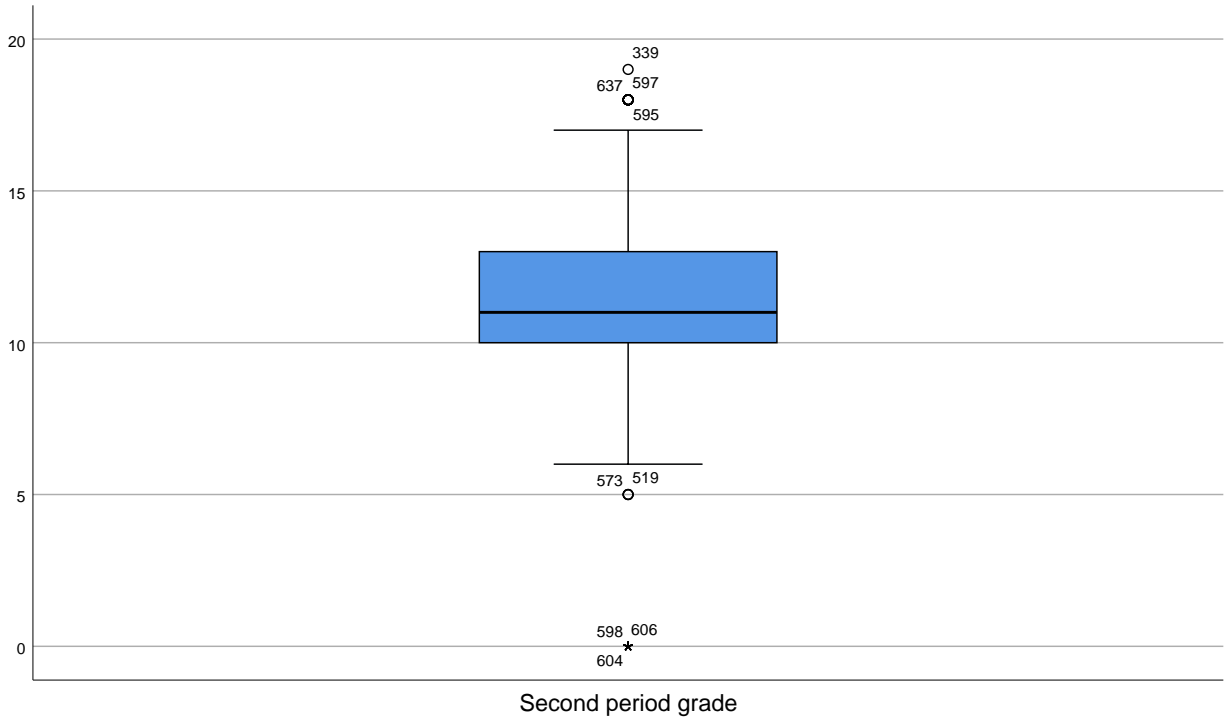
Second period grade



Normality plots from SPSS Explore
Normal probability plots and descriptives

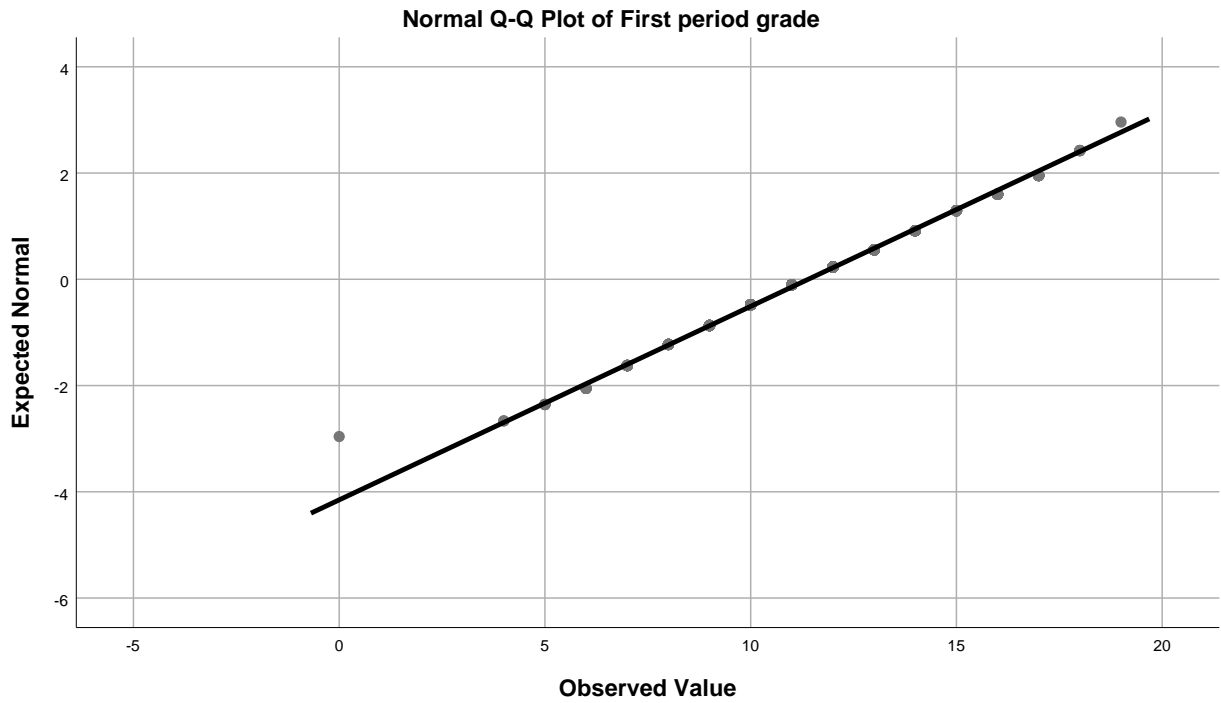
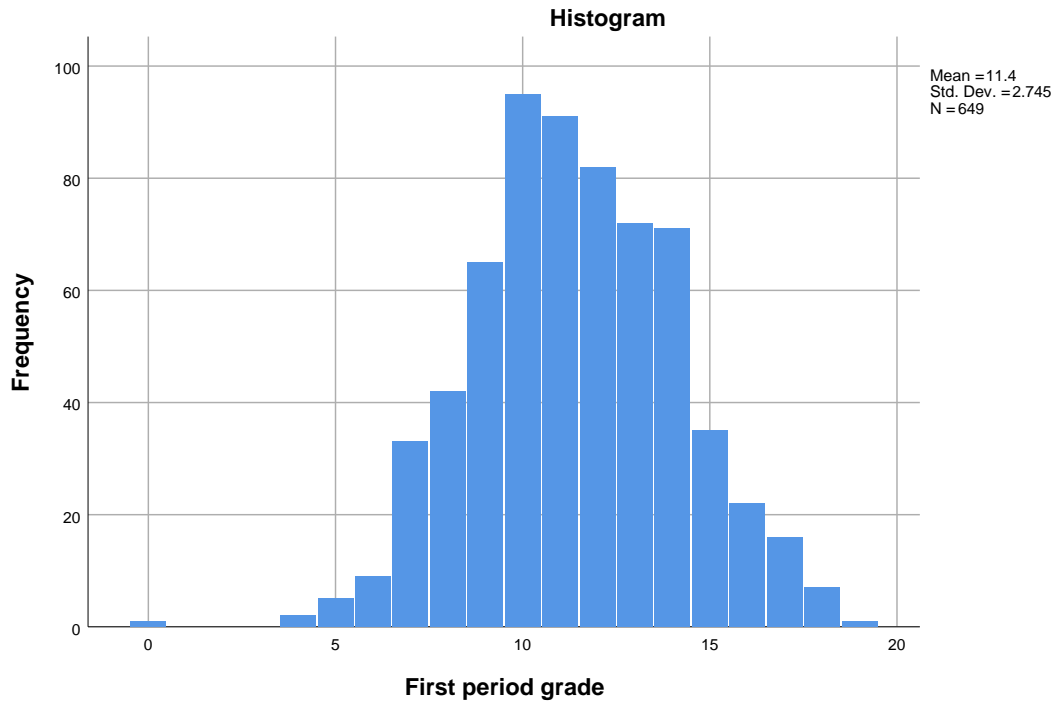


Normality plots from SPSS Explore
Normal probability plots and descriptives

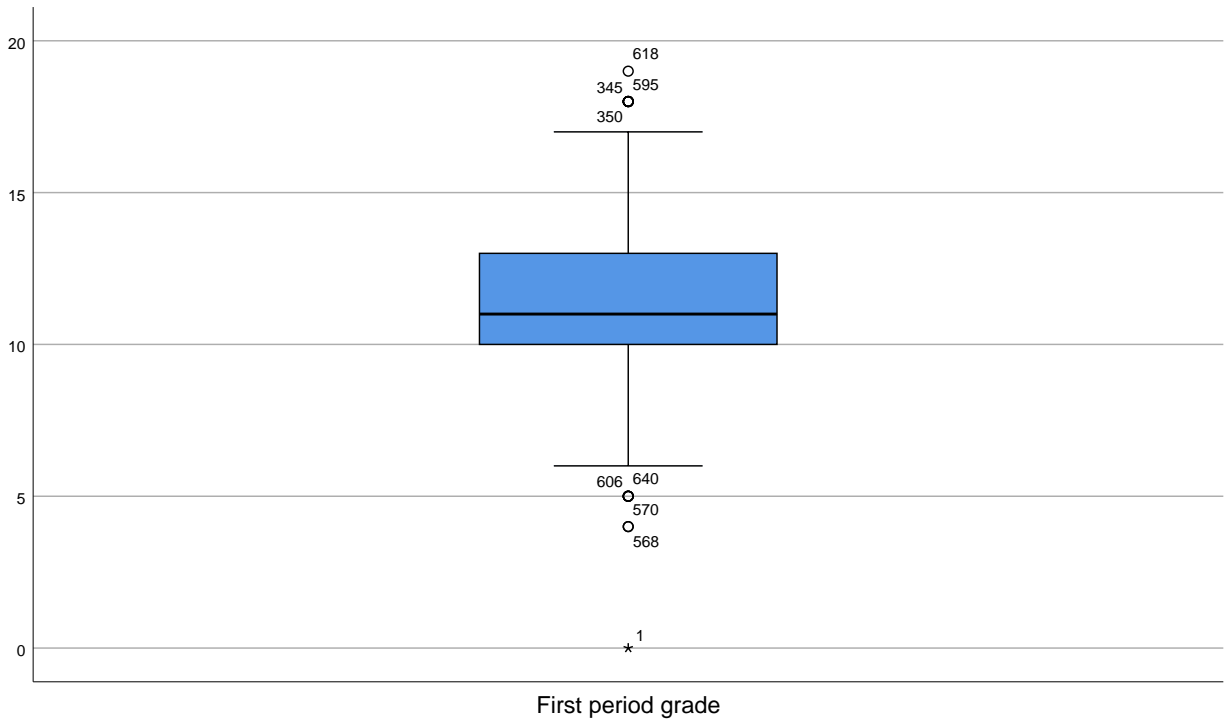
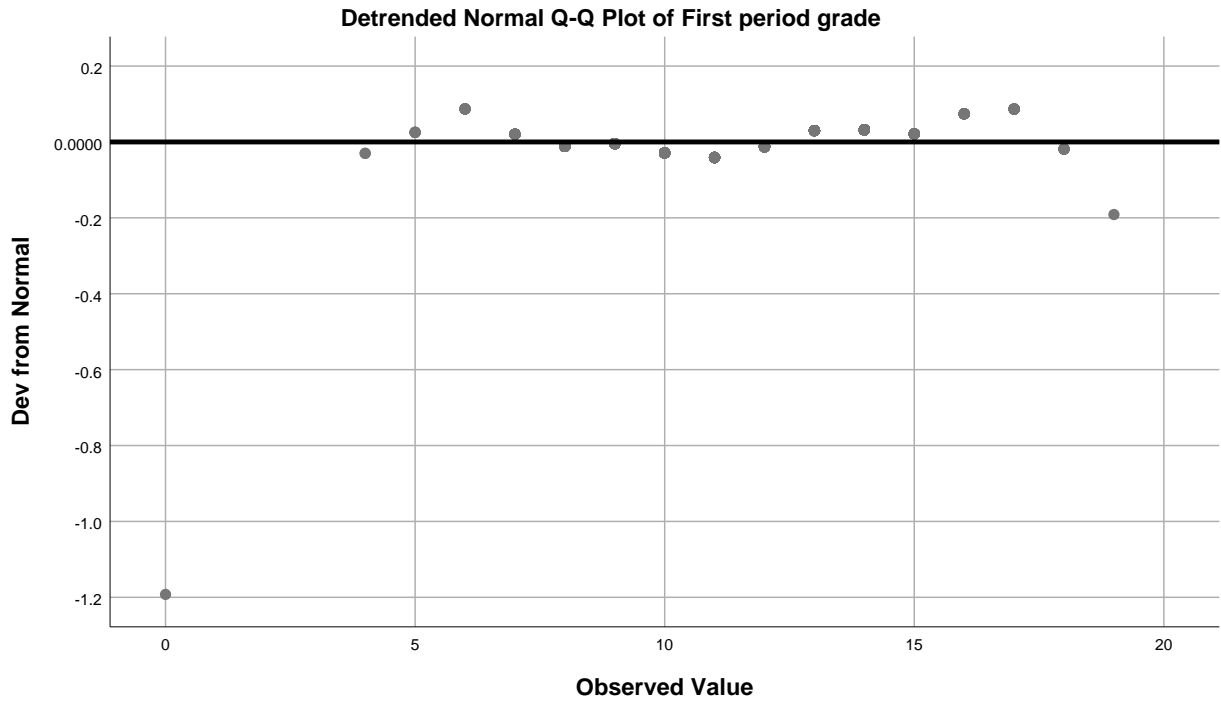


First period grade

Normality plots from SPSS Explore
Normal probability plots and descriptives

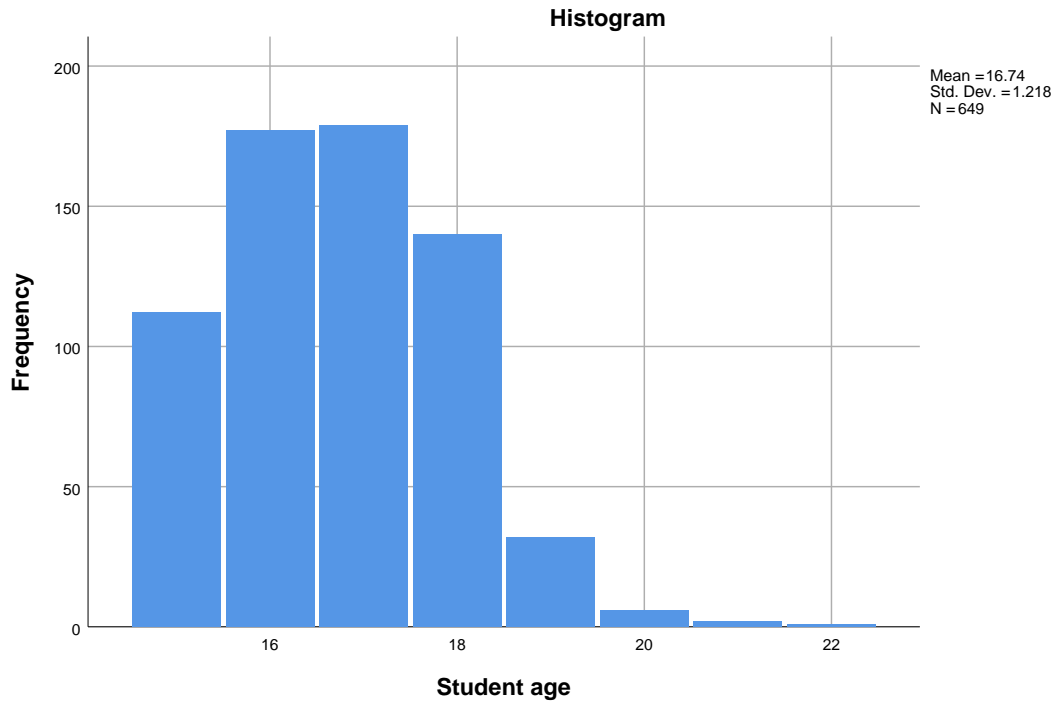


Normality plots from SPSS Explore
Normal probability plots and descriptives

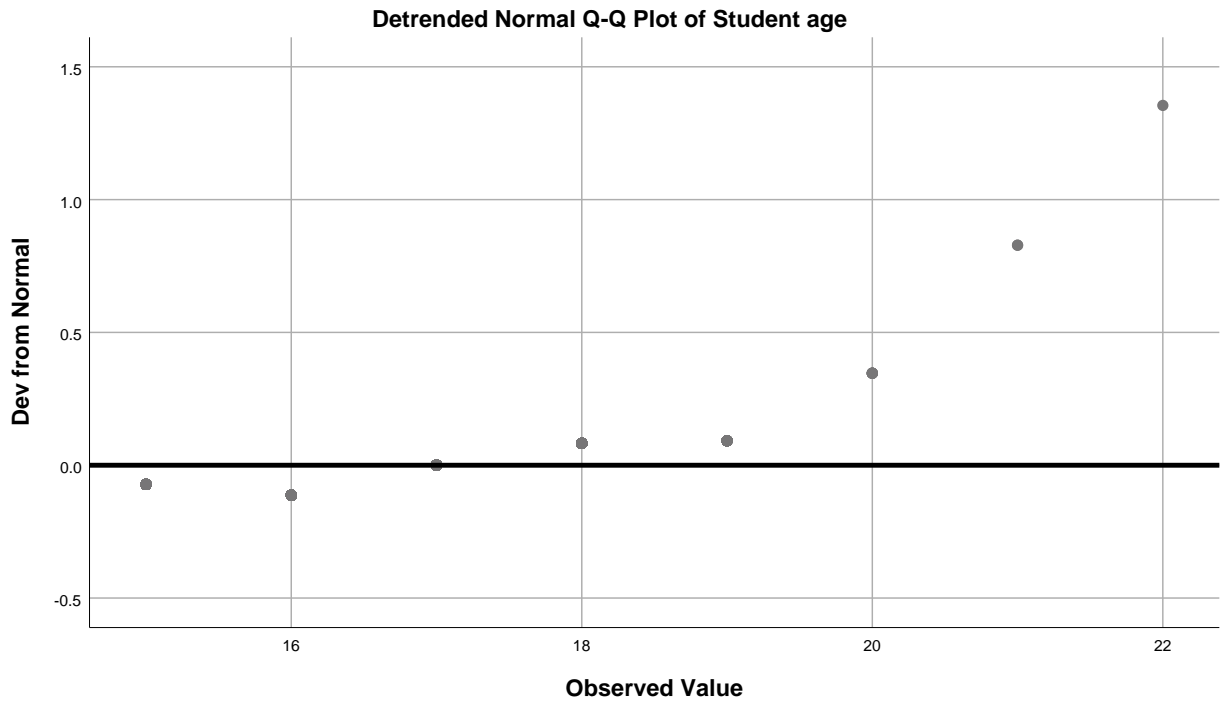
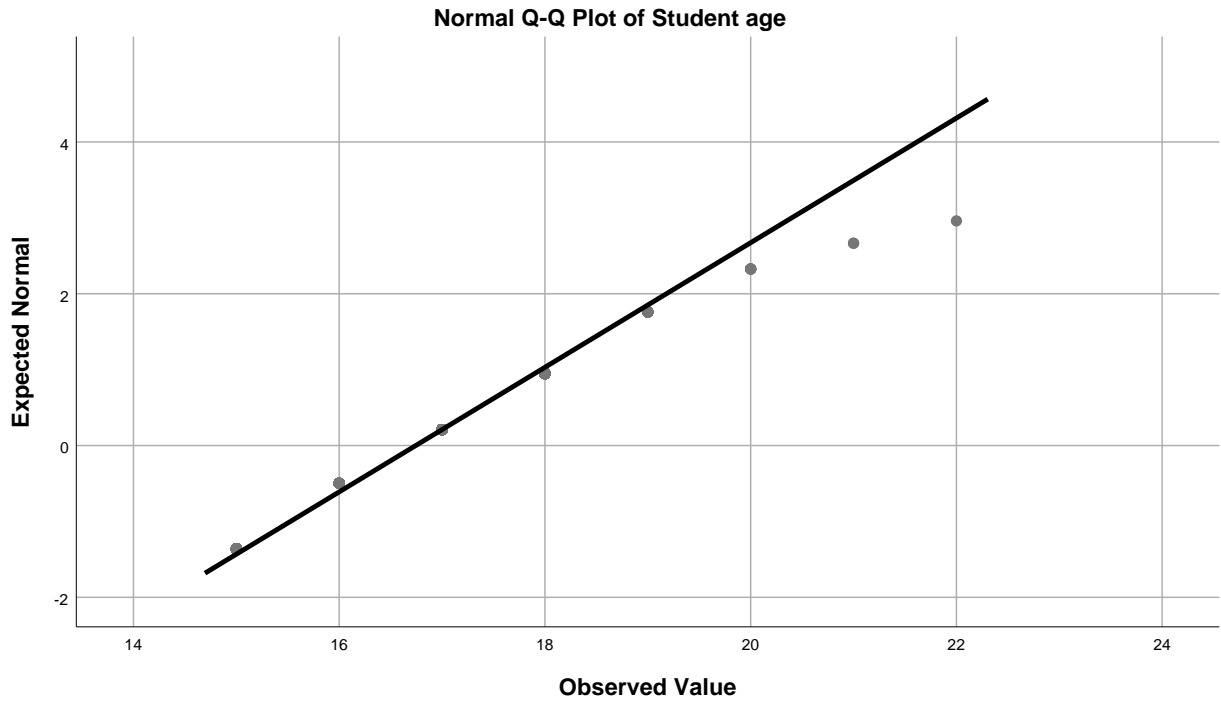


Normality plots from SPSS Explore
Normal probability plots and descriptives

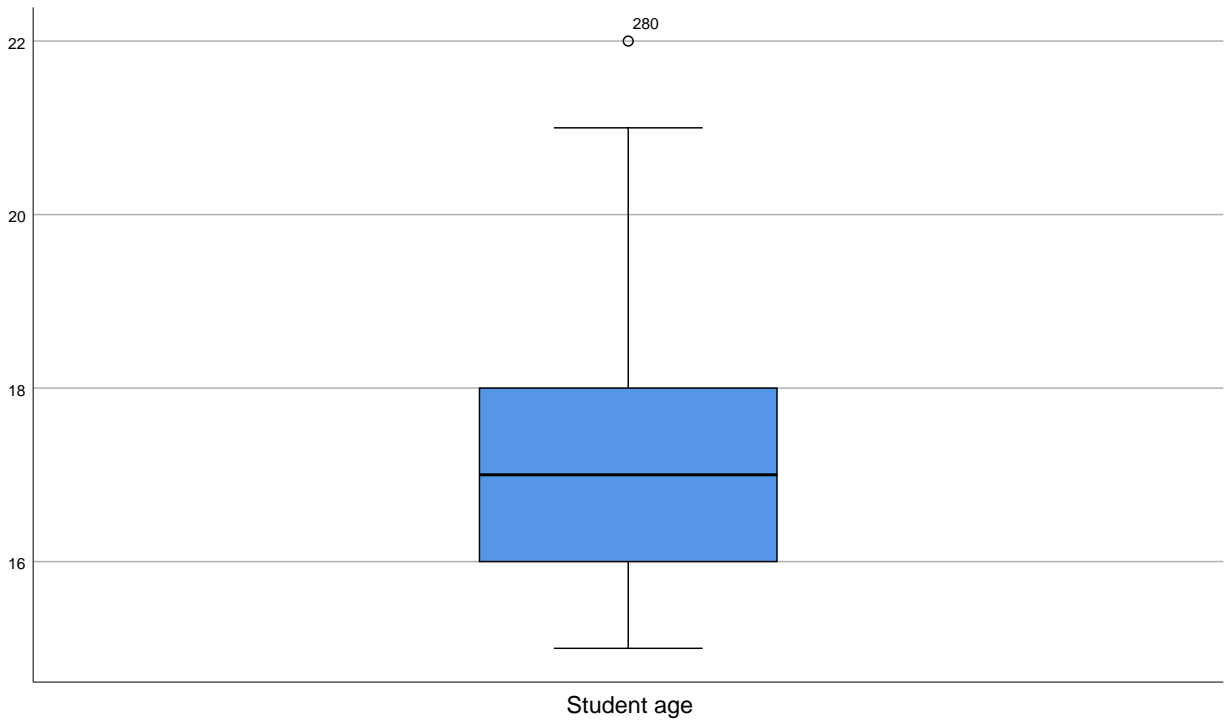
Student age



Normality plots from SPSS Explore
Normal probability plots and descriptives

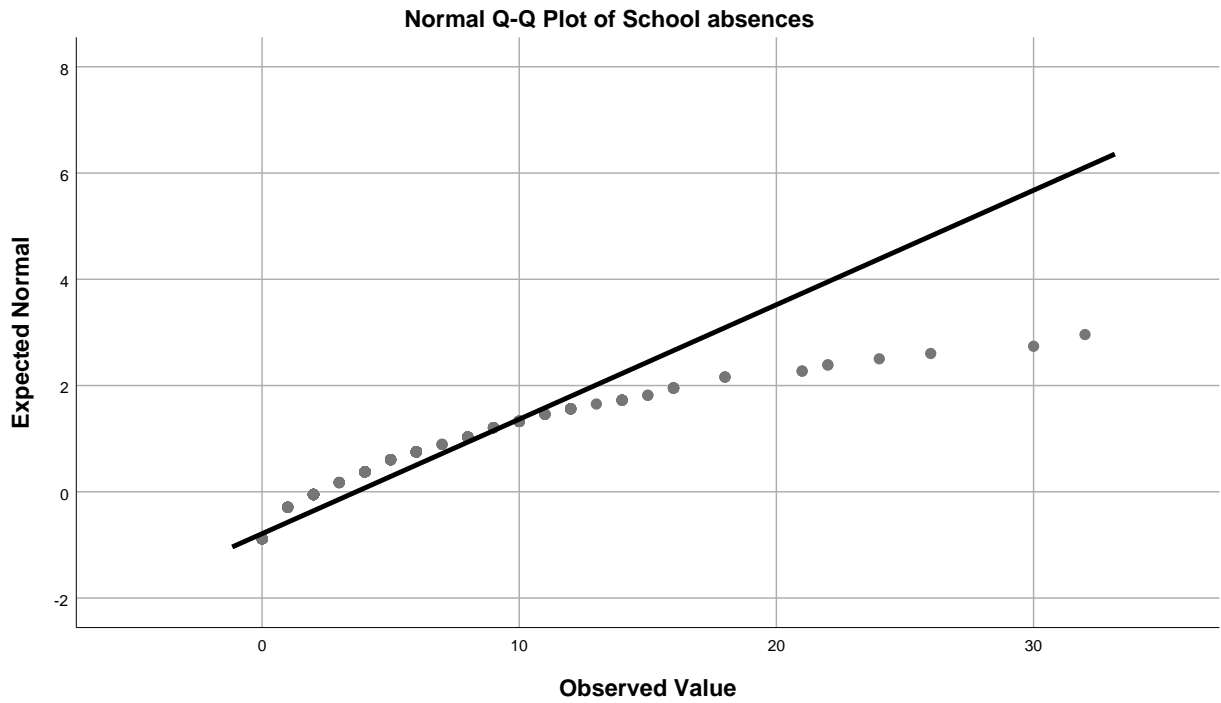
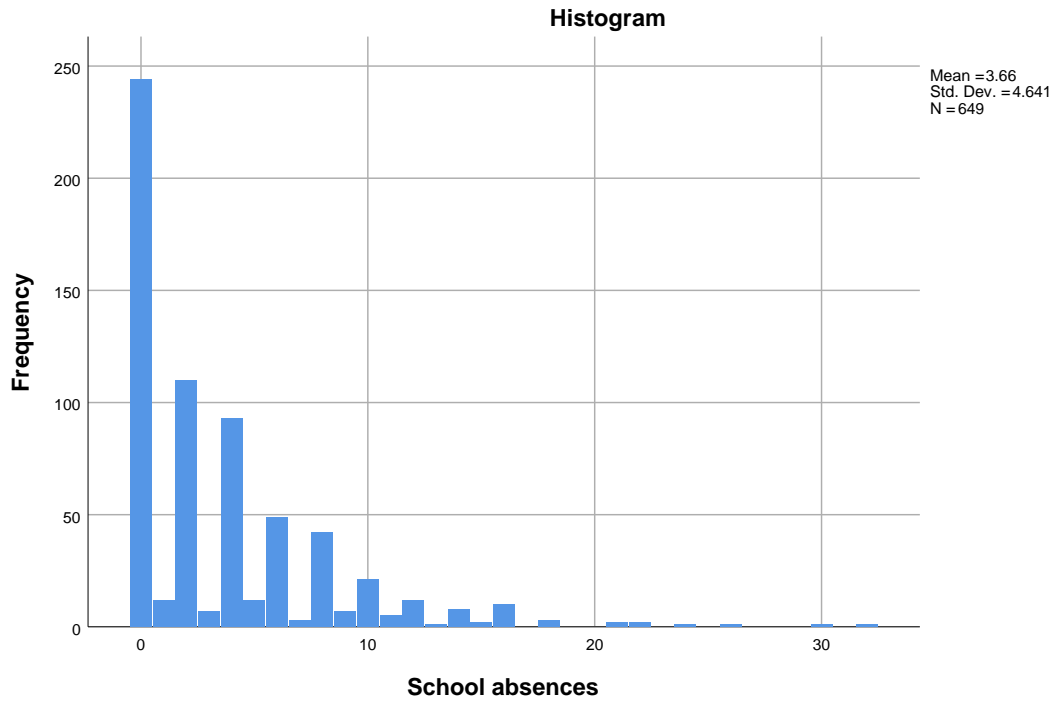


Normality plots from SPSS Explore
Normal probability plots and descriptives

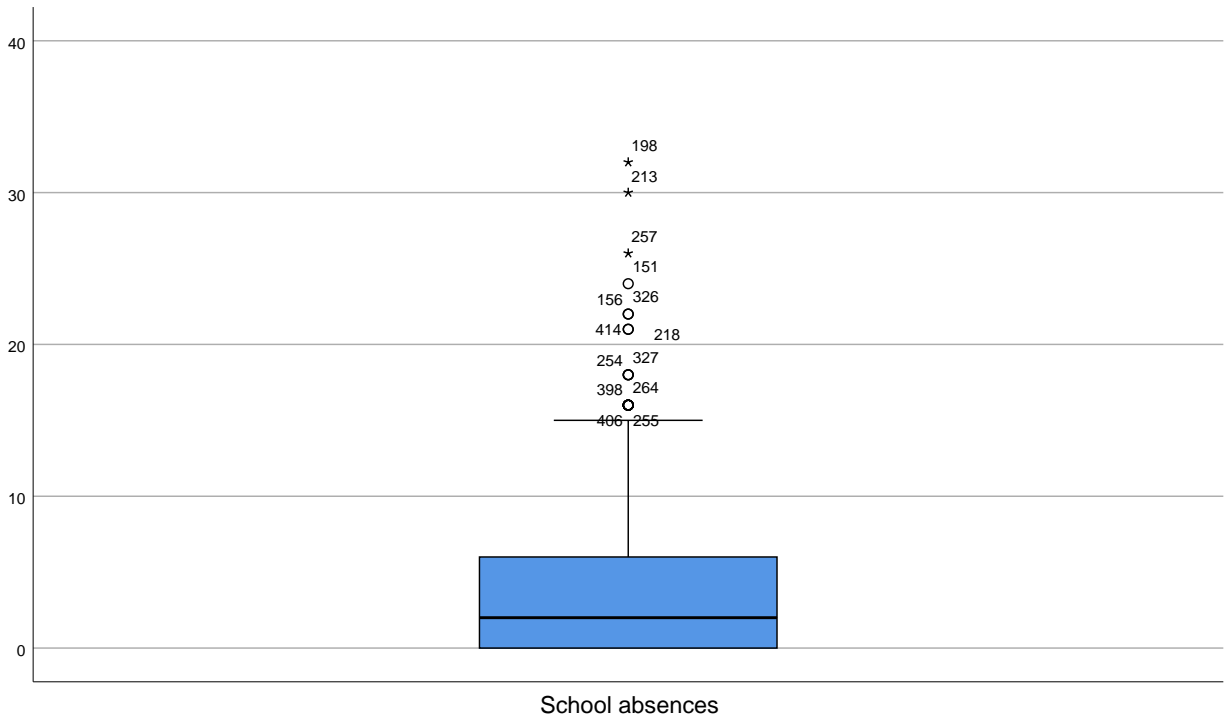
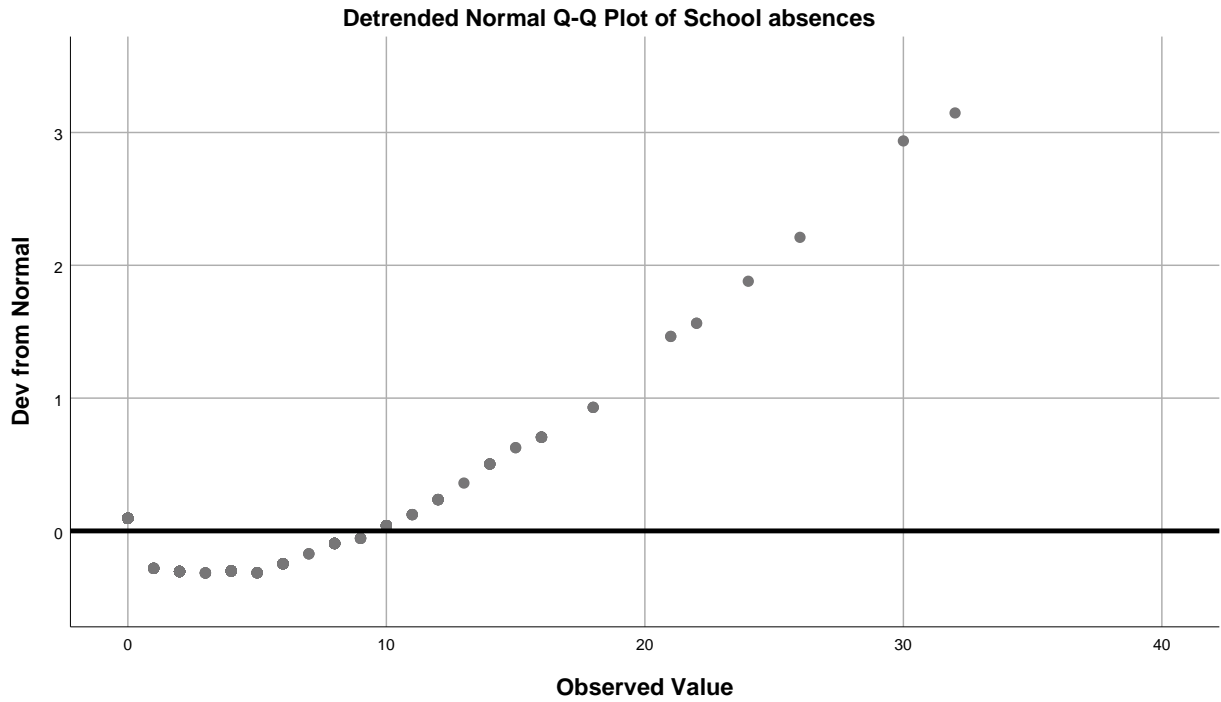


School absences

Normality plots from SPSS Explore
Normal probability plots and descriptives



Normality plots from SPSS Explore
Normal probability plots and descriptives



Manual P P plot calculation

Manual P P plot calculation
G3 probability comparison

List

[PPPlotNormalityData] D:\DATA ANALYSIS\B Normality and Assumption Tests\P P Plot Normality Check\SPSS_Output\sav\P-P-Plot-Normality-Check-with-pp-values.sav

Manual P P plot calculation
G3 probability comparison

| pp_n | pp_mean | pp_sd | pp_max_abs_difference | pp_mean_abs_difference |
|------|---------|-------|-----------------------|------------------------|
| 649 | 11.91 | 3.23 | .12275 | .03317 |

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

Manual P P plot detail

Manual P P plot detail
First 20 sorted cases

List

Manual P P plot detail
 First 20 sorted cases

| pp_rank erence | G3 | pp_expected | pp_z | pp_observed | pp_difference | pp_abs_diff |
|-------------------|----|-------------|----------|-------------|---------------|-------------|
| 1.00 066 | 0 | .00077 | -3.68532 | .00011 | -.00066 | .00 |
| 2.00 220 | 0 | .00231 | -3.68532 | .00011 | -.00220 | .00 |
| 3.00 374 | 0 | .00385 | -3.68532 | .00011 | -.00374 | .00 |
| 4.00 528 | 0 | .00539 | -3.68532 | .00011 | -.00528 | .00 |
| 5.00 682 | 0 | .00693 | -3.68532 | .00011 | -.00682 | .00 |
| 6.00 836 | 0 | .00847 | -3.68532 | .00011 | -.00836 | .00 |
| 7.00 990 | 0 | .01002 | -3.68532 | .00011 | -.00990 | .00 |
| 8.00 144 | 0 | .01156 | -3.68532 | .00011 | -.01144 | .01 |
| 9.00 298 | 0 | .01310 | -3.68532 | .00011 | -.01298 | .01 |
| 10.00 452 | 0 | .01464 | -3.68532 | .00011 | -.01452 | .01 |
| 11.00 606 | 0 | .01618 | -3.68532 | .00011 | -.01606 | .01 |
| 12.00 761 | 0 | .01772 | -3.68532 | .00011 | -.01761 | .01 |
| 13.00 915 | 0 | .01926 | -3.68532 | .00011 | -.01915 | .01 |
| 14.00 069 | 0 | .02080 | -3.68532 | .00011 | -.02069 | .02 |
| 15.00 223 | 0 | .02234 | -3.68532 | .00011 | -.02223 | .02 |
| 16.00 351 | 1 | .02388 | -3.37579 | .00037 | -.02351 | .02 |

Manual P P plot detail
First 20 sorted cases

| | | | | | | |
|-------|---|--------|----------|--------|---------|-----|
| 17.00 | 5 | .02542 | -2.13765 | .01627 | -.00915 | .00 |
| 915 | | | | | | |
| 18.00 | 6 | .02696 | -1.82811 | .03377 | .00680 | .00 |
| 680 | | | | | | |
| 19.00 | 6 | .02851 | -1.82811 | .03377 | .00526 | .00 |
| 526 | | | | | | |
| 20.00 | 6 | .03005 | -1.82811 | .03377 | .00372 | .00 |
| 372 | | | | | | |

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 | | 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 |

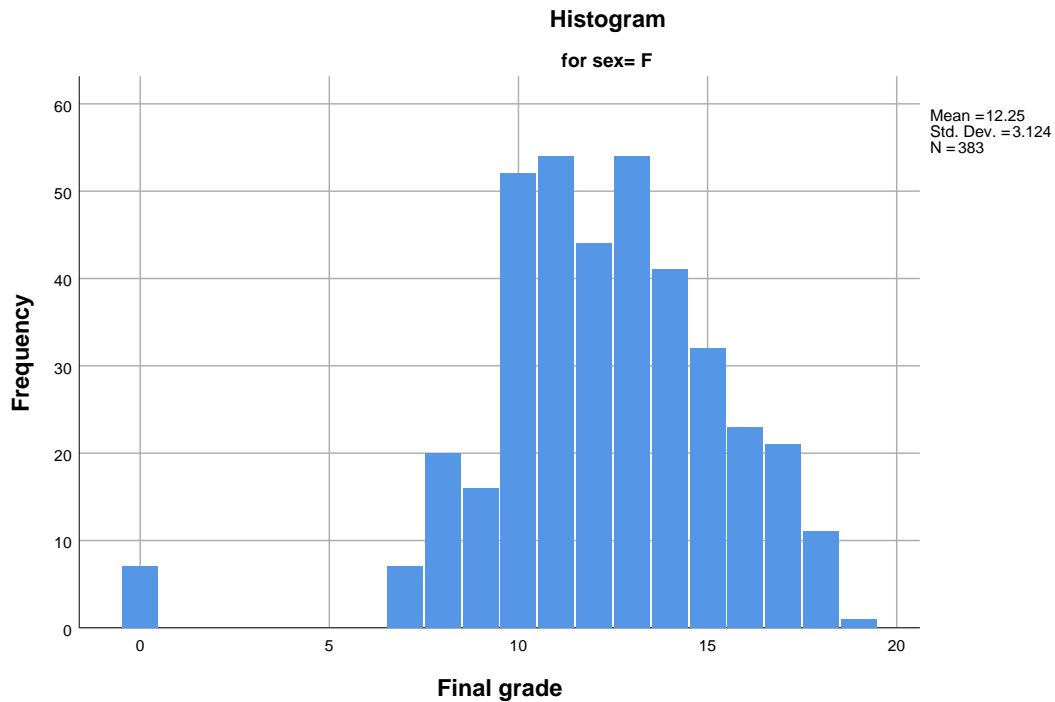
Tests of Normality

| | | 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 |

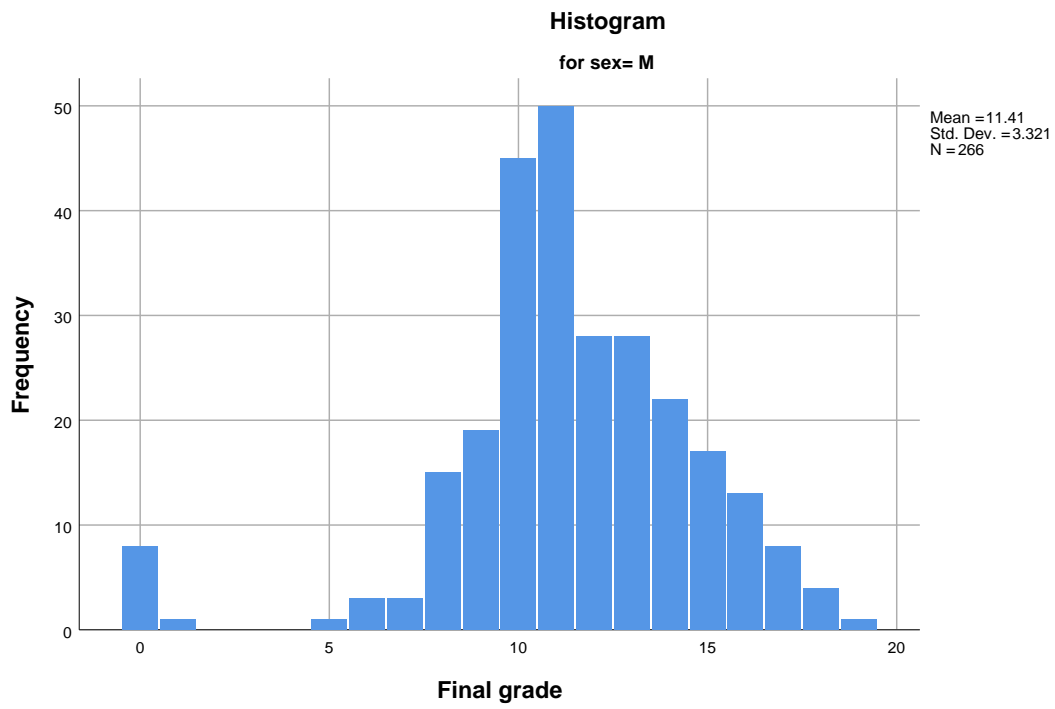
a. Lilliefors Significance Correction

Final grade

Histograms



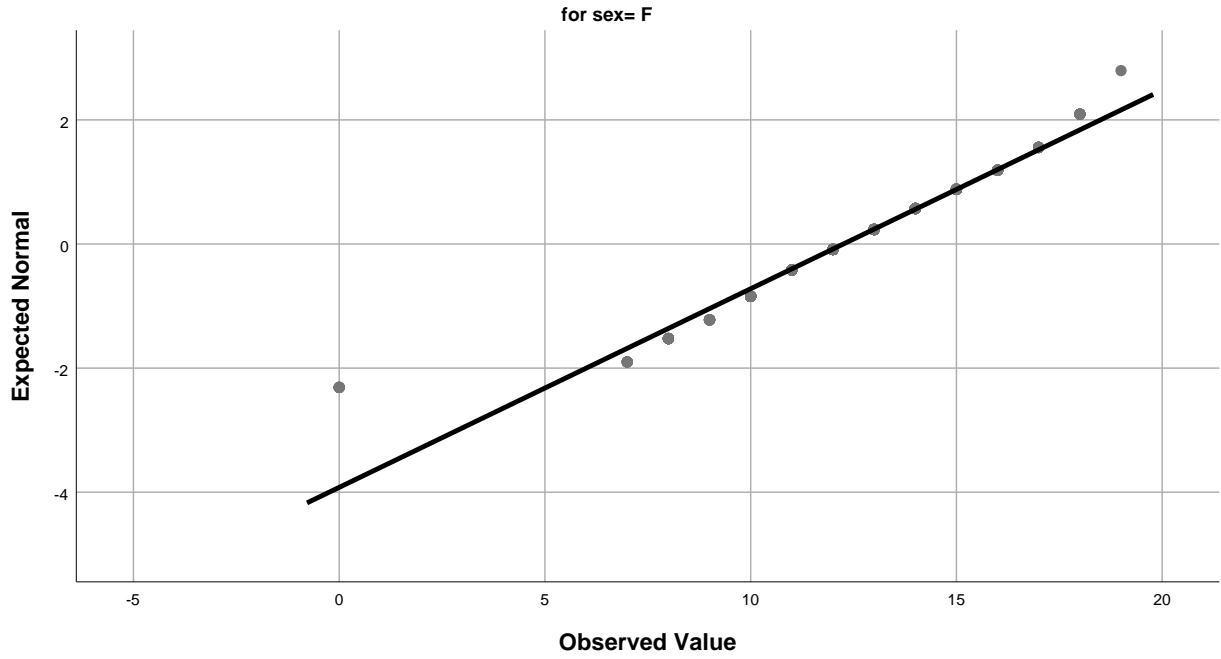
Group normality context
G3 by sex



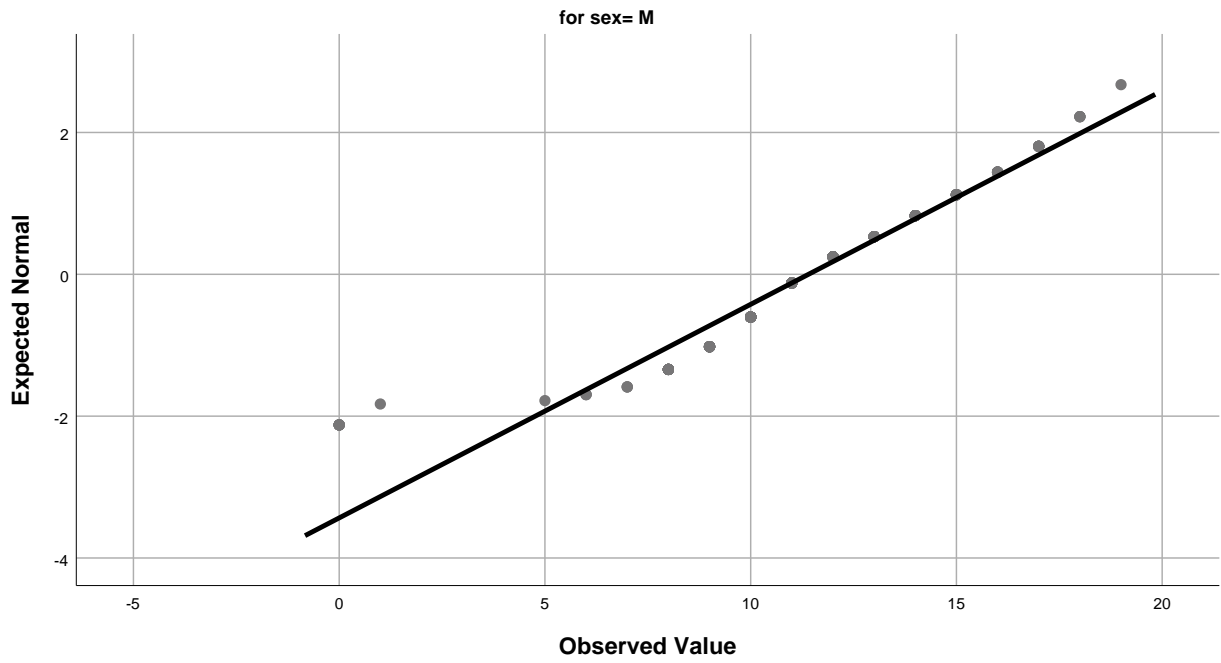
Normal Q-Q Plots

Group normality context
G3 by sex

Normal Q-Q Plot of Final grade

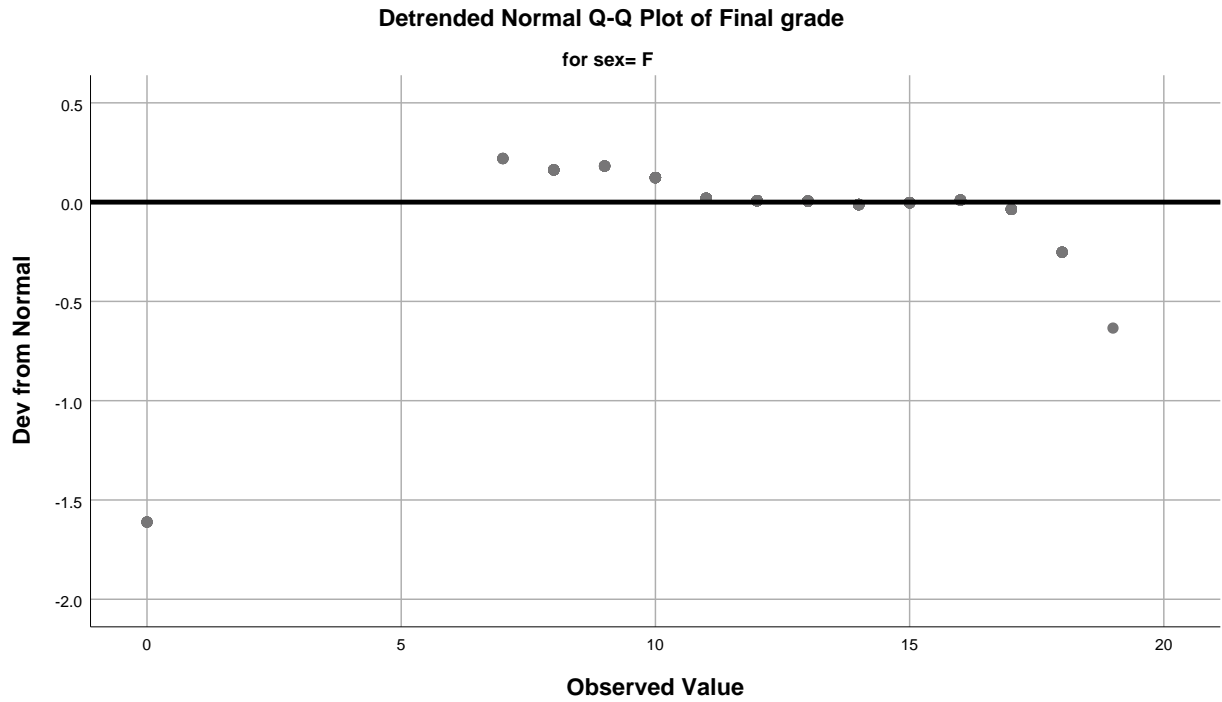


Normal Q-Q Plot of Final grade



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

