2020 TELPAS Alternate Score Distributions and Statistics by Content Area

Glossary

This glossary provides definitions for the statistical terms that appear in the tables and graphs in Appendix E ("2020 TELPAS Alternate Score Distributions and Statistics by Content Area"). Definitions of statistical terms and concepts in the other sections are given in Chapter 3 or Chapter 4.

Descriptive Statistics

Mean The mean is a measure of central tendency. It is the average score for the assessment. It is computed by summing the scores of all students and dividing the sum by the total number of students (N).

Median The median is another measure of central tendency. It is the score at the middle of the frequency distribution for the assessment. It is computed by finding the score at which there are the same number of scores above as there are below.

Mode The mode is another measure of central tendency. It is the most frequently obtained score for the assessment. It is determined by computing the frequency distribution and finding the score point with the highest frequency (n-count).

Range The range is a measure of statistical dispersion (variability or spread). It is the difference between the lowest and highest scores obtained by students on the assessment. It is computed by subtracting the lowest score from the highest score.

Interquartile Range The interquartile range is another measure of statistical dispersion (variability or spread). It is the difference between the 1st and 3rd quartiles (or 25th and 75th percentiles) of the score distribution for the assessment. It is computed by subtracting the score at the 1st quartile (the point that splits the lowest 25% of the scores) from the score at the 3rd quartile (the point that splits the highest 25% of the scores).

Standard Deviation (SD) The standard deviation is another measure of statistical dispersion (variability or spread). It is an indicator of the degree of score variation around the mean. It is computed using the following formula.

$$SD = \sqrt{\frac{\sum_{i=1}^{N}(x_i - \bar{x})^2}{N-1}}$$

Where x_i is the score for student i, $\bar{x}$ is the mean score and N is the total number of students that took the assessment.

Variance The variance is another measure of statistical dispersion (variability or spread) around the mean. It is computed as the square of the standard deviation (SD).

Skewness The skewness is an indicator of the shape of the score distribution. It measures the extent to which the score distribution "leans" to one side of the mean. A positive skewness indicates that the score distribution leans below the mean. A negative skewness indicates that the score distribution leans above the mean. A skewness of zero indicates that the score distribution is symmetric around the mean. It is computed using the following formula.

$$Skewness = \frac{N}{(N-1)(N-2)} \sum_{i=1}^{N} \left(\frac{x_i - \bar{x}}{s_x} \right)^3$$

Where x_i is the score for student i, $\bar{x}$ is the mean score, s_x is the standard deviation (SD) and N is the total number of students that took the assessment.

Kurtosis The kurtosis is another indicator of the shape of the score distribution. It measures the "peakedness" of the score distribution. A positive kurtosis is referred to as *leptokurtic*, meaning that the distribution has a more acute peak around the mean and fatter tails. A negative kurtosis is called *platykurtic*, meaning the distribution has a lower, wider peak around the mean and thinner tails. It is computed using the following formula.

$$Kurtosis = \frac{N(N+1)}{(N-1)(N-2)(N-3)} \sum_{i=1}^{N} \left(\frac{x_i - \bar{x}}{s_x} \right)^4 - \frac{3(N-1)^2}{(N-2)(N-3)}$$

Where x_i is the score for student i, $\bar{x}$ is the mean score, s_x is the standard deviation (SD) and N is the total number of students that took the assessment.

Frequency Distributions

Frequency (FREQ) This is the number of students that obtained the particular score point on the assessment.

Cumulative Frequency (CUM FREQ) This is the number of students that obtained a score that is less than or equal to the particular score point on the assessment.

Percentage (PCT) This is the percentage of students that obtained the particular score point on the assessment. It is computed as: PCT = FREQ ÷ N × 100.

Cumulative Percentage (CUM PCT) This is the percentage of students that obtained a score that is less than or equal to the particular score point on the assessment. It is computed as: CUM PCT = CUM FREQ ÷ N × 100.

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Table E.5.1. 2020 TELPAS Alternate Scale Score Descriptive Statistics

Subject	N	Mean	Median	Mode	Range	Interquartile Range	SD	Variance	Skewness	Kurtosis
TELPAS Alternate Listening	4,886	791.38	795	938	329	97	75.67	5726.54	-0.20	-0.10
TELPAS Alternate Speaking	4,886	788.73	794	952	352	131	94.29	8890.02	-0.21	-0.59
TELPAS Alternate Reading	4,886	770.31	773	601	347	112	85.35	7284.99	-0.15	-0.41
TELPAS Alternate Writing	4,886	751.95	750	612	343	105	81.63	6663.77	0.05	-0.42

Figure E.5.1 2020 TELPAS Alternate Listening
Frequency Distribution of Scale Scores
All Students

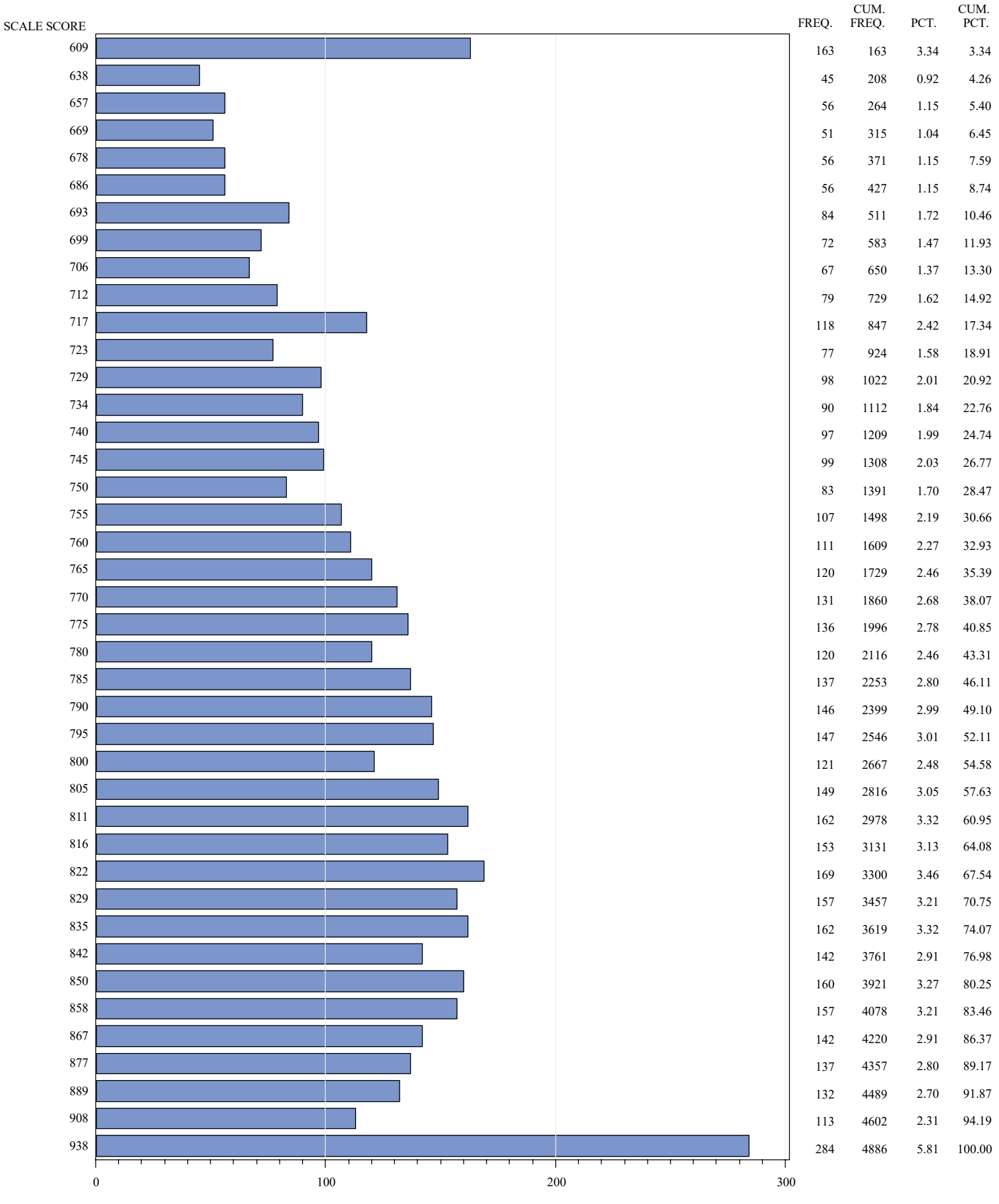


Figure E.5.2 2020 TELPAS Alternate Speaking
Frequency Distribution of Scale Scores
All Students

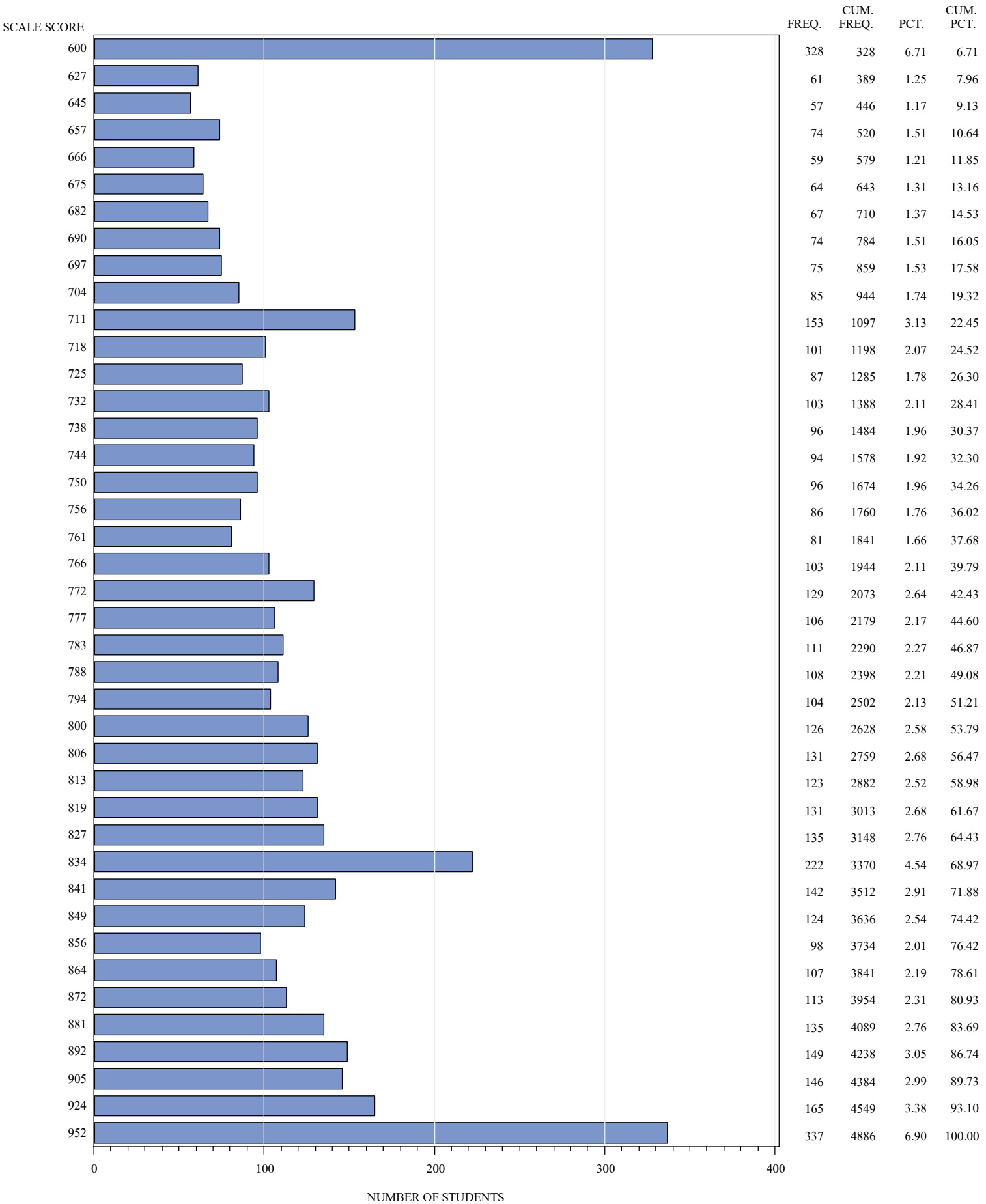
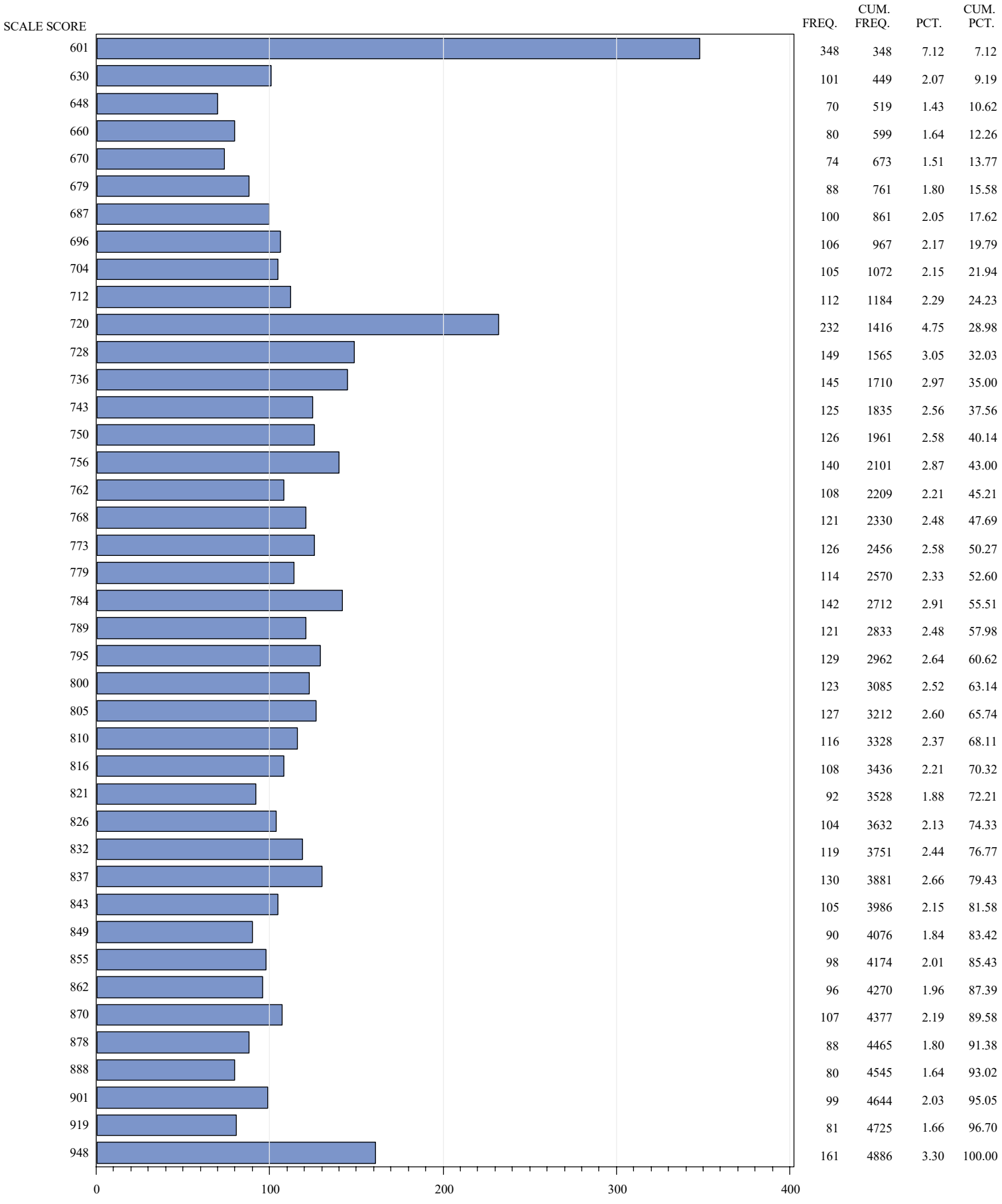


Figure E.5.3 2020 TELPAS Alternate Reading
Frequency Distribution of Scale Scores
All Students



SCALE SCORE	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
601	348	348	7.12	7.12
630	101	449	2.07	9.19
648	70	519	1.43	10.62
660	80	599	1.64	12.26
670	74	673	1.51	13.77
679	88	761	1.80	15.58
687	100	861	2.05	17.62
696	106	967	2.17	19.79
704	105	1072	2.15	21.94
712	112	1184	2.29	24.23
720	232	1416	4.75	28.98
728	149	1565	3.05	32.03
736	145	1710	2.97	35.00
743	125	1835	2.56	37.56
750	126	1961	2.58	40.14
756	140	2101	2.87	43.00
762	108	2209	2.21	45.21
768	121	2330	2.48	47.69
773	126	2456	2.58	50.27
779	114	2570	2.33	52.60
784	142	2712	2.91	55.51
789	121	2833	2.48	57.98
795	129	2962	2.64	60.62
800	123	3085	2.52	63.14
805	127	3212	2.60	65.74
810	116	3328	2.37	68.11
816	108	3436	2.21	70.32
821	92	3528	1.88	72.21
826	104	3632	2.13	74.33
832	119	3751	2.44	76.77
837	130	3881	2.66	79.43
843	105	3986	2.15	81.58
849	90	4076	1.84	83.42
855	98	4174	2.01	85.43
862	96	4270	1.96	87.39
870	107	4377	2.19	89.58
878	88	4465	1.80	91.38
888	80	4545	1.64	93.02
901	99	4644	2.03	95.05
919	81	4725	1.66	96.70
948	161	4886	3.30	100.00

Figure E.5.4 2020 TELPAS Alternate Writing
Frequency Distribution of Scale Scores
All Students