



TEST OF EMPLOYMENT ENTRY MATHEMATICS

**Trades Supplementary
Information**

ACER Test of Employment Entry Mathematics (TEEM)

Trades Supplementary Information

Electrical Trades Apprenticeship and Trainee Applicants Dr Andrew Armstrong

Additional normative data for the ACER *Test of Employment Entry Mathematics (TEEM)*, derived from an Australian reference sample of electrical trades apprenticeship and trainee applicants, is presented in this supplement.

Sample Characteristics

The reference sample comprised 321 persons who applied for apprenticeships or traineeships within a large Australian electricity company in 2007. Apprenticeships applied to the roles of communications technician, electrical meter technician, power systems electrician, and powerline worker. Traineeships applied to the roles of electrical tester and technical officer.

Sex data are provided in Table 1. Age data were not available.

Table 1. Reference Sample by Sex

Gender	Number of participants
Male	303
Female	6
Missing data	12

N = 321.

The data in Table 1 shows that the reference sample were male with very few exceptions.

Performance of Electrical Trades Apprenticeship and Trainee Applicants on the TEEM

Summary performance statistics for the reference sample are presented in Table 2.

Table 2. Summary Performance Statistics for Electrical Trades Apprenticeship and Trainee Applicants on the TEEM.

	Min	Max	Mean	Standard. Deviation	Percentage of Items Correct
TEEM	0	32	23.74	4.94	74%

N = 321.

The data in Table 2 indicate that the average applicant scored quite highly on the ACER *TEEM*. It was common for prospective electrical trades apprentices and trainees to correctly determine 74% of the answers. This is 11% higher than the apprenticeship applicant sample (n = 3,267) from which the original *TEEM* norms were derived, and 14% higher than a further year 10 technical school student sample (n = 96; Australian Council for Educational Research, 1992).

Table 3 below contains the data necessary to convert *TEEM* raw scores into percentage of items correct and percentile ranks. The data allow the performance of test-takers to be ranked in relation to the current reference group.

Table 3. Score Conversion data for the *TEEM*

Raw Score	*Percentage of Items Correct	*Percentile Rank
0	0	0
1	3	<1
2	6	<1
3	9	<1
4	13	<1
5	16	<1
6	19	<1
7	22	1
8	25	1
9	28	1
10	31	1
11	34	1
12	38	1
13	41	3
14	44	4
15	47	6
16	50	8
17	53	9
18	56	11
19	59	13
20	63	18
21	66	23
22	69	29
23	72	37
24	75	43

(Continued on next page.)

4 TEEM Supplement

Raw Score	*Percentage of Items Correct	*Percentile Rank
25	78	50
26	81	58
27	84	67
28	88	77
29	91	84
30	94	91
31	97	96
32	100	98

N = 321. * Rounded to nearest whole figure

Looking at Table 3, it can be seen that a raw score of 16 out of 32 equates to 50% of items answered correctly. 16/32 equates to the 8th percentile rank. This means that only eight percent of the reference sample scored lower than this, while ninety-two percent scored equal to or higher than 16/32.

In terms of basic mathematical ability, an employer wishing to screen out the less-able half of prospective electrical trades apprentices and trainees would use a raw score of 25/32 or 78% of items answered correctly as the cut-off. Fifty percent of the reference group scored lower than this, while fifty percent scored equal to 25/32 or higher.

Score Classification Ranges for the TEEM

Below in Table 4, reference group raw scores and percentile ranks are converted into the classification ranges commonly applied to measures of ability. While less precise than percentile rankings, these ranges allow the performance of any TEEM test-taker to be classified and discussed in common terms, in relation to the reference sample.

Table 4. TEEM raw scores and percentile ranks by classification range

Classification range	Percentile Ranks	Raw scores
Extremely low	1 to 4	1 to 14
Very low	5 to 11	15 to 18
Below average	12 to 23	19 to 21
Slightly below average	24 to 40	22 to 23
Average	41 to 60	24 to 26
Slightly above average	61 to 77	27 to 28
Above average	78 to 89	29
Well above average	90 to 96	30 to 31
Superior	97 to 100	32

Looking at Table 4, it can be seen that a raw score of 29 falls in the 'Above average' range. Persons scoring in this range are likely to very comfortable in performing basic mathematical tasks.

References

Australian Council for Educational Research. (1992). *ACER Test of Employment Entry Mathematics*. Melbourne, Australia: ACER Press.