Predicting MTLE Scores from ACT Indicators

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Report and Recommendations
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Performance on MTLE Reading

1. The best predictor of MTLE Reading is ACT English (r_{xy} = ..67, p < .001, Composite = .66)

2. Please find the performance on the pertinent ACT scores below for reading (MTLE) passers and "failers."

Table 1. ACT English and composite scores as a function of MTTLE pass and fail scores (Reading).

	ACT English		ACT Composite	
Group	Mean	SD	Mean	SD
Passed MTLE Reading	22.04	4.13	22.41	3.24
Failed MTLE Reading	16.56	31.3	18.30	2.61

3. Recommendation: Students scoring below 21 on either ACT-E or ACT-C should be contacted with a warning that they are unlikely to pass MTLE Reading. In the latter case (ACT-E, the prediction equation accurately predicted 41 of 46 MTLE failures (89% accuracy) and 46 of 64 MTLE passes (72% accuracy).

Performance on MTLE Writing

1. The best predictor of MTLE Writing was ACT English (r_{xy} = .67, p < .001). Note that ACT Composite also significantly predicted MTLE Writing (r_{xy} = .63, p < .001).

2. Please find the performance (on pertinent ACT scores) of candidates who passed and failed the MTLE Writing test.

Table 2. ACT English and composite scores as a function of MTTLE pass and fail scores (Writing).

	ACT English		ACT Composite	
Group	Mean	SD	Mean	SD
Passed MTLE Writing	22.6	3.91	23.15	3.07
Failed MTLE Writing	17.2	3.56	18.93	2.58

3. Recommendation: Students scoring below 21 on either ACT-E or ACT-C should be contacted with a warning that they are unlikely to pass MTLE Writing. In the latter case (ACT-E), the prediction equation accurately predicted 48 of 54 MTLE failures (89% accuracy) but only 25 of 45 MTLE passes (56% accuracy).

Performance on MTLE Mathematics

1. The best predictor of MTLE Mathematics was ACT Mathematics (r_{xy} = .79, p < .001). The ACT-C score also significantly predicted MTLE-M (r_{xy} = .68, p < .001).

2. Please find the performance (on pertinent ACT scores) of candidates who passed and failed the MTLE Mathematics test.

Table 3. ACT Mathematics and composite scores as a function of MTTLE pass and fail scores (Mathematics).

	ACT Mathematics		ACT Composite	
Group	Mean	SD	Mean	SD
Passed MTLE Mathematics	23.51	3.80	22.84	2.86
Failed MTLE Mathematics	17.62	2.10	18.59	2.47

3. Recommendation: Students scoring below 21 on either ACT-M or ACT-C should be contacted with a warning that they are unlikely to pass MTLE Writing. In the latter case (ACT-M, the prediction equation accurately predicted 26 of 44 MTLE failures (59% accuracy) and 41 of 42 MTLE passes (98% accuracy).

Overall Observation and Recommendations

1. We chose the score of 21 because it simplified interpretation—though for MTLE writing, 22 might have been a slightly more defensible choice. This would make for ease of administration. In other words, we would construct a letter suggesting that passing the MTLE might prove difficult if either the Mathematics, English, or Composite scores for the ACT fell at 21 or below (e.g., below 22). If we wanted to be conservative, we could go to 20 or even 19; however, we noted that these scores would produce an excessive number of false positives (e.g., predict passing of the MTLE when this eventuality is empirically unlikely).

2. Note that in all cases, we used logistic regression to predict passing the MTLE subtests (coded as pass = 1 and fail = 0). In the case of reading, the prediction equation for ACT-English produced a significant model (effect) with a chi-square value (1 df) of 48.9, p < .001. For predicting MTLE Writing, the ACT-E also generated a highly significant prediction model (χ^2, 1 df = 48.22, p < .001). Likewise, ACT-M significantly predicted "pass-fail" on the MTLE Mathematics (χ^2, 1 df = 31.71, p < .001).

3. This analysis is based on approximately the first 300 MTLE cases and should be honed as more data are collected. We recommend that the data be recalculated and the report (and parameter estimates) be recalculated yearly.

4. The results of the logistical analyses constitute sufficient evidence for the reliability of the ACT-MTLE predictions to warrant the warnings proposed here.

5. Because of the relatively large N, all of the mean differences between ACT scores for those passing versus those failing MTLE tests are statistically significant, even controlling for the family-wide error rate problem via Bonferroni's method. This finding also provides evidence for utilization of ACT scores for generating warnings about MTLE performance expectations.