

## Research Brief: Edmentum Test Packs in Support of ACT Preparation –An Oklahoma School District

*ESSA Level of Research: Promising Evidence*

High school student scores on state tests are an important part of school accountability under the federal and state governments. When schools invest in programs like Edmentum Test Packs in Support of ACT Preparation (referred to as Test Packs in this brief for brevity), they want to know that the programs work. At the request of an Oklahoma school district, we examine its students' use of Test Packs and the relationship between the Test Packs assessment and ACT® scores in this study.

### Key Findings

- While a large concentration of 11th grade students in the district used the assessment portion of Test Packs, a small minority of students used any of the prescription portion, an automatically generated learning path based on the assessment results designed to provide instruction in areas where students have learning gaps based on the ACT College and Career Readiness Standards®.
- Medium to large associations were found between student performance on subject-specific Edmentum Test Packs assessments and the ACT test, providing evidence of predictive validity. These findings cannot be used to predict individual student ACT test scores.
- Low student usage on the prescriptions prevented analysis of how using the prescription portion of Test Packs was related to student performance on the ACT test.

#### *Product Description*

Edmentum Test Packs in Support of ACT Preparation is an assessment and curriculum tool that evaluates students against the ACT College and Career Readiness Standards and then provides an individualized prescription, or learning pathway, based on student assessment results that can be utilized by students in order to gain instruction and practice on standards tested by the ACT test

### Background

An Oklahoma school district requested support from the Edmentum Research team for this Test Packs research study. As part of Oklahoma's accountability system, this district administers the College and Career Readiness Assessment (CCRA), which includes the ACT test, every year to students in grade 11. The district uses Test Packs in Support of ACT Preparation to assess student readiness and guide student preparation for the ACT test.

## Research Questions

We approached this study with the following research questions:

1. What are the trends and patterns in this Oklahoma district's' student usage and performance on Test Packs assessments during the 2017–18 school year?
2. How is performance on Test Packs assessments correlated with performance on the ACT by subject among the district's 11th grade students?
3. What are the trends and patterns in student usage on ACT Test Packs prescriptions during the 2017–18 school year?

## Data

We examined student-level data from the Oklahoma school district, which used Test Packs during the 2017–18 school year. The district provided student-level demographic information and ACT data by subject for its 11th graders for the Oklahoma ACT testing period in April 2018. These data were matched to Edmentum's internal Test Packs data using student IDs.

### Key Term

**Student-Level Data:** Scores and usage information from individual students

Edmentum's focus on student-level data sets our research studies apart from other studies that often rely on data at the school or district level.

## Results

### Question 1: Use of Test Packs Assessments

In general, usage of Test Packs assessments among the district 11th graders is strong. A large proportion of juniors, 84% of students, took an assessment in at least one subject, with the vast majority of those (98%) taking assessments in each of the four ACT subjects. Students tended to take Form 1 during August to October, and Form 2 in January and February. Average assessment raw scores on average were low, ranging from 24% to 43%.

### Question 2: Relationship Between Student Scores on the ACT and Test Packs

#### Assessments

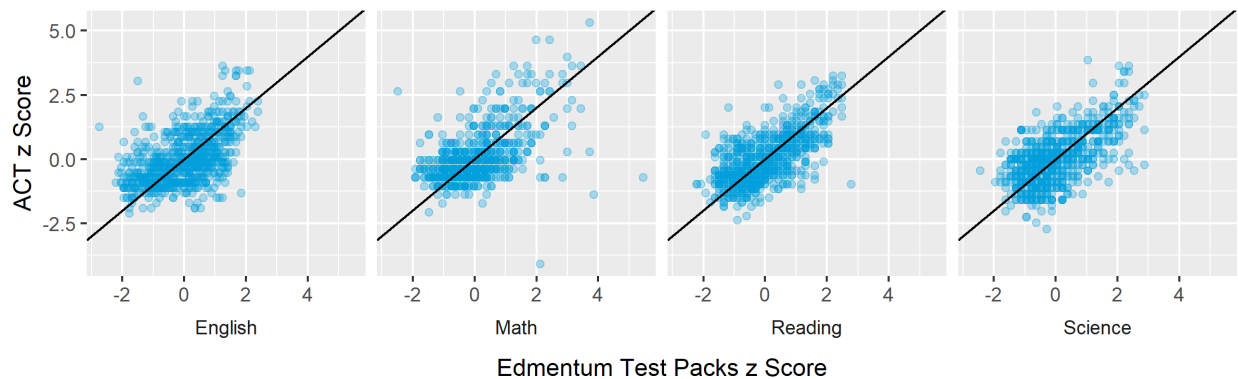
By calculating the correlation between student scores on the ACT and the Test Packs assessments, we can investigate the relationship between the two tests and provide evidence of predictive validity. For this study, we were only able to calculate the correlation between Test Packs Form 2 and ACT scores because students began the school year using an earlier version of Test Packs that was outdated in its alignment to current ACT standards.

### Key Term

**Predictive Validity:** The extent to which a student's score on an assessment is associated with his or her score on another assessment, measured by calculating the correlation between the two assessment scores

Figure 1 shows the relationship between standardized student scores on Test Packs Form 2 and the ACT by subject. The black line represents the line of best fit between student scores, and within all subjects, a clear relationship between Test Packs scores and ACT scores is evident.

Figure 1. Relationship Between Student Scores on Test Packs Assessments and the ACT by Subject



The results of the correlation between student scores by subject on the ACT assessment and Test Packs Form 2 is shown in Table 1. Because the test scores were not normally distributed, Spearman’s *rho* was calculated and reported in Table 1 and is interpreted in the same manner as the Pearson correlation coefficient. The correlations for English, reading, and science, ranging from .54 to .63, are considered large associations, while the correlation for math is considered a medium association because it does not quite meet the .50 threshold for a large association. However, these findings cannot be used to predict individual student ACT test scores. The small sample size that is not representative of either the state of Oklahoma nor the United States precludes a prediction which would require a comprehensive linking study.

Table 1. Correlation Between Scores on ACT Test and Test Packs Form 2 Assessment by Subject

Subject	Spearman's <i>rho</i>	<i>p</i> value
English	0.538***	0.000
Math	0.485***	0.000
Reading	0.634***	0.000
Science	0.564***	0.000

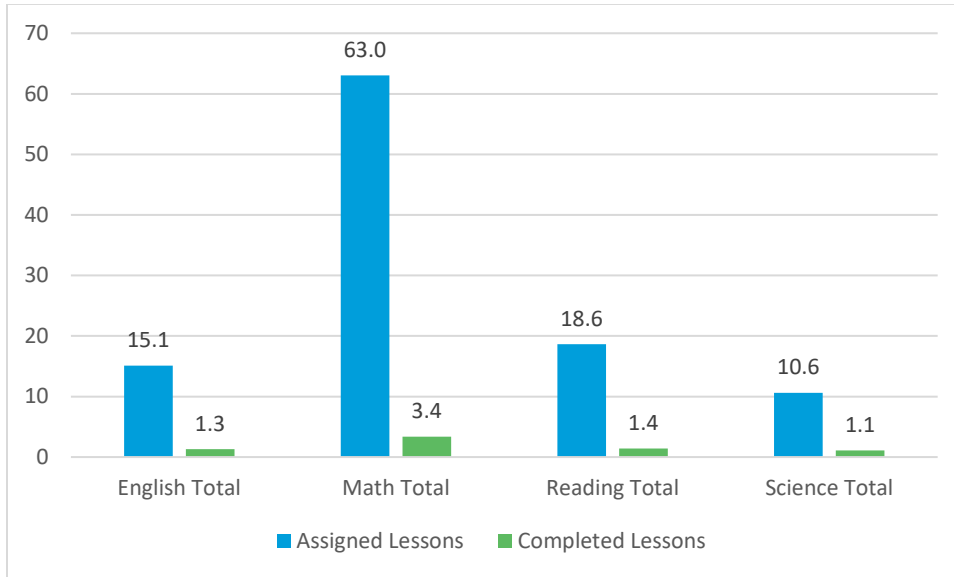
\*\*\*Statistically significant at the .001 level

### Question 3: Use of Test Packs Prescriptions

While most of the district 11th graders completed Test Packs assessments, only 18% to 22% of students completed any of their assigned prescription content depending on subject. Figure 2 shows that the average number of lessons completed by students over the course of the school year is very low

compared to the average number of lessons assigned. Because of the low usage on Test Packs prescriptions, we could not examine the relationship between using prescriptions and ACT scores.

Figure 2. Average Number of Assigned and Completed Test Packs Prescription Lessons by Subject



## Conclusions

We found medium to large associations between student performance on subject-specific Edmentum Test Packs assessments and the ACT test, providing evidence of predictive validity. Edmentum Test Packs in Support of ACT Preparation are designed to assess and support students in preparation for the ACT test. Within the districts, Test Packs assessments were widely used by 11th graders, and given more usage of Test Packs prescriptions in the future, it would be possible to investigate the relationship between working on prescription instructional content and performance on the ACT.

ACT® and ACT College and Career Readiness Standards® are registered trademarks of ACT, Inc.