

# A Compendium of ACT Test Preparation Research 2014–2021

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ACT research has explored test preparation effectiveness from several different perspectives including what works and for whom it works. People can think of test preparation in different ways including practices such as getting a good night's rest and eating a good meal before the test. However, I think of test preparation as activities such as content reinforcement, test familiarization, and testing strategies. In the last decade ACT has studied the efficacy of test preparation many times. From this research we can learn about the results of student preparation. Here are seven key takeaways from our currently published research.

1. Students who perform test preparation activities before taking the ACT® test tend to see about a 1-point gain in their Composite score. This is an estimate across many types of test preparation tools that can vary by delivery, implementation, and quality.
2. Repeat test takers may see a smaller score gain than first-time tested students.
3. Students who used formerly available ACT test preparation products such as ACT® Online Prep and ACT Academy® also saw a gain of about 1 point in their Composite score. Greater usage of these products was also associated with higher ACT Composite scores.<sup>1</sup>
4. The benefit of test preparation for students will differ depending on students' motivation, effort, and the context in which they use test preparation tools.
5. Students from traditionally underserved populations, including those with lower incomes and traditionally underserved students, tend to benefit most from test preparation. This was true for ACT Online Prep and *The Official ACT® Prep Guide* as well as The Official ACT® Live Online Classes, Powered by Kaplan®.<sup>2</sup>
6. Students' perceived levels of support from their families increase as family income increases, and students of color from traditionally underserved backgrounds (i.e., Black and Hispanic students) perceive less familial support than White students.
7. Students' test anxiety decreases when they engage in test preparation.

In this document I review the ACT test, the research on the effect of test preparation on ACT scores, and how students can best use test preparation resources.

## The ACT Standardized Assessment Overview

The ACT test is constructed to measure what students know and can do as they reach the end of high school. The national scope of ACT testing promotes access to higher education and workplace success for students (ACT, 2022).

The ACT focuses on core content areas pertinent to college and high school instruction. Answering the test questions requires students to integrate their knowledge and skills in core

curriculum areas. Thus, scores on the test are directly related to the students' educational progress in core curriculum areas, and the meaning of the scores is readily grasped by students, parents, and educators (ACT, 2022).

The ACT test emphasizes students' academic preparedness by assessing content domains that students must master to achieve college and career readiness. The main component of the ACT is a standardized battery of four tests of educational achievement—English, mathematics, reading, and science—along with an optional writing test. Through MyACT, ACT's online registration and data collection system, ACT also collects information about students' high school courses and grades, educational and career aspirations, extracurricular activities, and educational needs.

The ACT provides information about how well a student performs compared to other students. It also provides standards-based interpretations through the ACT<sup>®</sup> College and Career Readiness Standards (CCRS)—empirically derived descriptions of the essential skills and knowledge that students need to be ready for college and career success (ACT, 2023). Using the CCRS, secondary educators can identify the skills students have and those that they are ready to learn next. The CCRS also clarify college expectations in terms that high school teachers can understand. The CCRS additionally offer teachers guidance for improving instruction to help address student deficiencies in specific areas. ACT College Readiness Benchmarks are the minimum scores associated with a specific likelihood of postsecondary success in specific first-year postsecondary courses. Together, the ACT CCRS and Benchmarks provide students insights to support their success in college and career.

## An Overview of Test Preparation

We can think of test preparation activities as broadly encompassing three goals: content reinforcement, test familiarization, and testing strategies. ACT offers several test preparation products—some of these cost money, whereas others are free. The free resources are available through MyACT. Within MyACT, students have access to a practice test, ACT question of the day, and practice items. Additionally, any student who registers for the ACT with a fee waiver receives complimentary access to The Official ACT<sup>®</sup> Self-Paced Course, Powered by Kaplan<sup>®</sup>, which consists of on-demand online lessons.<sup>3</sup> There is a common belief that test prep is expensive and thus out of the reach of students from low-income households (National Association for College Admission Counseling [NACAC], 2008). There are, however, many free, high-quality resources for students. Students who have fee waivers for the ACT test also have the fees waived for some test preparation services.

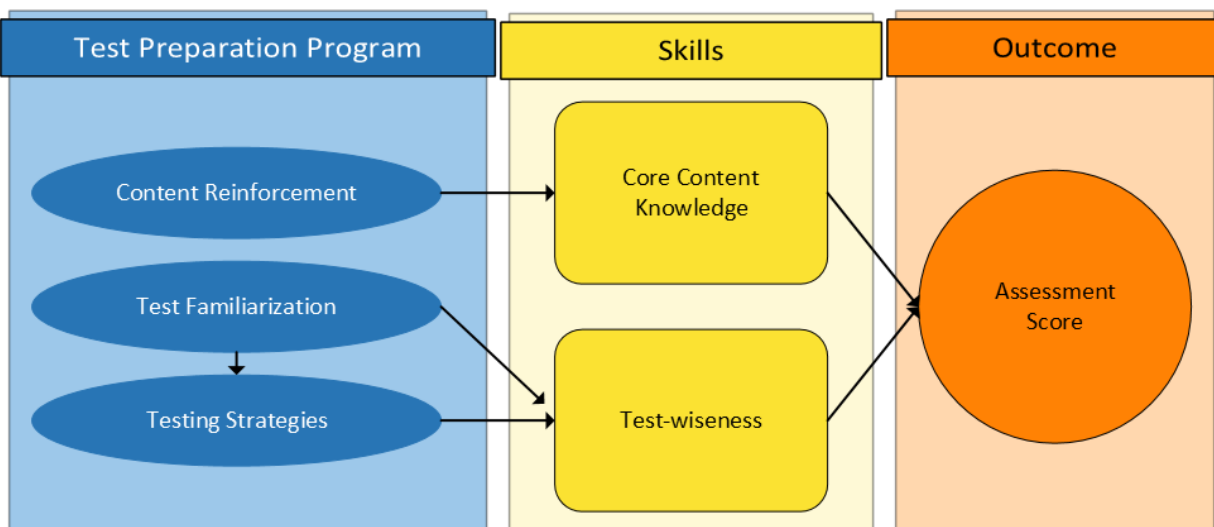
## Components of Test Preparation

As previously described, we can identify three areas of emphasis for test preparation: content reinforcement, test familiarization, and testing strategies (see Figure 1).

1. **Content reinforcement:** Reviewing the core content typically taught in U.S. high schools and assessed by the ACT test offers students opportunities to improve their skills to prepare for the exam.
2. **Test familiarization:** For students unfamiliar with the test, becoming familiar with it can serve to prepare them for the format of the test as well as provide them an opportunity to practice taking it. Because familiarity with the test is not related to the assessed content, test familiarization would thereby reduce the possibility that being unfamiliar with the test might lower students' scores.
3. **Testing strategies:** These include strategies such as eliminating wrong answers and managing time better.

The joint goals of test familiarization and testing strategies are to improve test-wisness, which is “a subject’s capacity to utilize the characteristics and formats of the test and/or the test taking situation to receive a high score”; this skill “is logically independent of the examinee’s knowledge of the subject matter” (Millman et al., 1965, p. 707).

**Figure 1.** Test Preparation Conceptual Model



## Current ACT Test Preparation Materials

Before I discuss the test preparation research conducted by ACT, I will review the test preparation resources offered by ACT.

### ACT Test Prep, Powered by Kaplan

Three online courses—The Official ACT Self-Paced Course, Powered by Kaplan; The Official ACT Live Online Classes, Powered by Kaplan; and The Official ACT® Tutoring, Powered by Kaplan®—are designed to help students prepare for the ACT exam. ACT created these courses from the test content. They include instructional videos, interactive quizzes, practice tests, and other resources to help students master the skills needed to succeed on the ACT. These courses can be accessed from any device with an internet connection.

The comprehensive Official ACT Self-Paced Course, Powered by Kaplan, provides students with all the tools they need to prepare for the ACT exam. Here are some key features of the course:

- **Access to a personal study plan:** When students sign up for the course, they take a diagnostic test that helps identify their strengths and weaknesses. Based on the results, the course creates a personal study plan that focuses on the areas where the student needs the most improvement.
- **Video lessons:** The course includes video lessons that cover all the content areas tested on the ACT—English, math, reading, science, and writing. The expert Kaplan instructors who teach the videos provide students with detailed explanations of key concepts.
- **Practice tests:** The course includes five full-length practice tests. Students can take these tests under timed conditions to get a sense of what it will be like to take the ACT.
- **Interactive quizzes:** The course includes interactive quizzes to help students reinforce their content knowledge and identify areas where they need more practice.
- **Online resources available 24/7:** Students can access course materials anytime if they can access Wi-Fi and a computer, laptop, tablet, or cell phone.

The Official ACT Live Online Classes, Powered by Kaplan, deliver a comprehensive test prep course that provides students with a virtual classroom experience. These classes include live online instruction taught by expert Kaplan instructors who have extensive experience preparing students to do their best on the ACT.

The Official ACT Tutoring, Powered by Kaplan, is a personalized one-on-one online tutoring service designed for the highest level of individual test preparation for the ACT exam. Expert Kaplan tutors provide personal instruction and custom guidance based on each student's specific strengths and weaknesses. In addition to the previously listed features of the Self-Paced Course and Live Online Classes, other key features of the Tutoring program include the following:

- **Personal instruction:** The program provides personal one-on-one instruction from expert Kaplan tutors who create custom study plans. Based on the results of practice tests, tutors create a study plan that focuses on the areas where the student needs the most help.
- **Flexible scheduling:** Tutoring sessions are conducted online and scheduled to fit the student's availability.
- **Targeted practice:** The tutor provides targeted practice and feedback on specific areas where the student needs the most help.

## ACT Online Prep

In the state and district contract program, specific states or districts pay for most students to take the ACT during the school day at no cost to them. ACT offers its official test prep resource ACT Online Prep as an optional tool to state and district contract holders. It is a comprehensive platform designed to help students prepare for the ACT exam. ACT Online Prep includes lessons, flash cards, game center, full-length practice tests, discussion forum, and other study materials and personal features to help students improve their scores. It covers all sections of the ACT, including the optional writing section.

One of the key features of ACT Online Prep is its personal study plan. Upon signing up, students are asked to enter their target score and desired test date. Based on this information, the program generates a custom study plan that outlines a recommended study guide. This personal approach helps students focus their efforts on specific areas, thereby optimizing their study time.

The program also offers progress tracking tools that allow students to monitor their performance and identify areas of strength and weakness. They can view detailed reports that provide insights about question types, time management, and their scores. This feedback helps students gauge their progress and adjust their study strategies accordingly.

Moreover, ACT Online Prep provides students with many opportunities for practice. It offers a large pool of practice questions of varying difficulty levels, allowing students to build familiarity with the test format and content. Additionally, the program provides explanations for correct answers, enabling students to understand the reasoning behind each answer.

Because it is online, the program offers flexibility and convenience to students. They can access the study materials and practice tests from any device with an internet connection, enabling them to study at their own pace and schedule. The program also allows students to revisit and review specific topics as needed, reinforcing their understanding and allowing them to focus on areas of concern.

ACT Online Prep is a self-study resource—it does not involve live instruction or tutoring. While it provides comprehensive study materials, it may be best suited for students who are looking for a self-guided preparation resource.

## The Official ACT Prep Guide Series

ACT publishes a series of workbooks that serve as valuable resources for test preparation. These guides are designed to help students enhance their skills and knowledge across the different core content subjects of the ACT exam:

1. **The Official ACT Prep Guide:** This comprehensive workbook is considered the flagship resource for printed ACT test preparation. It includes a variety of practice questions, full-length practice tests, and detailed answer explanations. The workbook covers all four sections of the ACT—English, math, reading, and science—as well as the optional writing section. It provides valuable insights into the test content and testing experience.
2. **The Official ACT® Mathematics Guide:** Focusing specifically on the math section of the ACT, this workbook offers extensive practice opportunities to strengthen mathematical skills. It covers various math topics tested on the ACT, ranging from algebra and geometry to trigonometry and precalculus. The workbook includes practice questions, sample problems, and strategies for tackling math-related items.
3. **The Official ACT® English Guide:** This workbook concentrates on the English section of the ACT and provides targeted practice in grammar, punctuation, usage, and rhetorical skills. It features exercises that assess students' understanding of English language conventions as well as their ability to analyze and revise written passages. The workbook also offers detailed explanations for correct answers to help students improve their language skills.
4. **The Official ACT® Reading Guide:** Specifically developed for the reading section of the ACT, this workbook focuses on enhancing reading comprehension. It includes practice passages from various genres, allowing students to practice their skills in critical reading, inferencing, and analysis. The workbook offers strategies for efficient reading and provides detailed explanations for answer choices.
5. **The Official ACT® Science Guide:** Geared toward the science section of the ACT, this workbook aims to improve students' reasoning and data interpretation skills in scientific contexts. It covers the different types of passages found in the science section, including data representation, research summaries, and conflicting viewpoints. The workbook provides practice questions, data analysis exercises, and strategies for approaching scientific information effectively.

These guides are official resources, aligning closely with the content, format, and expectations of the actual test. This ensures that students are preparing with reliable and relevant materials directly linked to the ACT.

In addition to practice questions and exercises, the workbooks often include detailed answer explanations. These explanations help students understand the reasoning behind correct answers, allowing for deeper comprehension and learning from their mistakes.

These guides are designed to be self-study resources, allowing students to work at their own pace and focus on areas where they need the most improvement. They can be used independently or in conjunction with other test prep materials such as online resources or tutoring programs.

## ACT Research on Test Preparation Efficacy

ACT has conducted numerous studies on the efficacy of its test preparation programs. Because in all the following studies, students from other income groups and other racial/ethnic groups tend to score higher than students from lower-income households and students of color, bear in mind that these latter groups of students therefore have more opportunity to improve their scores when retesting.

### Research on the Efficacy of the ACT Kaplan Test Preparation Courses

In the development and evolution of the current partnership between ACT and Kaplan, we conducted a study on the efficacy of ACT® Kaplan® Online Prep Live in 2018 (Sanchez & Harnisher, 2018). This program was the first incarnation of the set of three test preparation courses that ACT now offers with Kaplan. This study explored whether enrollment in Online Prep Live affected ACT score gains for Online Prep Live registrants relative to students who did not register for the program. The study found that Online Prep Live registrants had a higher retest gain score on the English, math, and science subject tests as well as the Composite score relative to nonparticipants. Online Prep Live enrollment improved the ACT Composite score even more for students from low-income households who, if they participated in Online Prep Live, had a gain score that was almost 1 scale score point higher than that of nonparticipants from low-income households.

### Research on the Efficacy of ACT Online Prep

The first study I will review examined the efficacy of ACT Online Prep (Sanchez, 2020a). Although it is currently offered only to state and district contract holders, when this study was conducted, ACT Online Prep was offered nationally. This study documented the positive association between using ACT Online Prep for greater numbers of hours and ACT Composite score increases. The more that students used ACT Online Prep, the greater their ACT score gains—up to a point. Students who used ACT Online Prep for fewer than 7 hours saw greater score gains, on average, than students who did not use any test preparation programs (1.06 vs. 0.67 points). Students who used ACT Online Prep for 7 or more hours saw an average gain score over double that of students who did not use test preparation programs (about 1.3 points). Using ACT Online Prep for more than 7 hours resulted in a similar ACT Composite score gain, suggesting a plateau effect.

Another study employed a quasi-experimental design to explore the efficacy of purchasing ACT Online Prep to prepare for the ACT (Sanchez, 2020b). The results of this study highlighted the positive effect of purchasing it for repeat test takers, though the effect tended to be smaller than what had been reported in prior studies, particularly in comparison to first-time testers (less than 0.5 points). The purchase effect among repeat test takers varied slightly across income groups, with students from low- and middle-income households benefitting slightly more than those from high-income households. The effect of ACT Online Prep purchase decreased slightly as prior ACT Composite score increased, meaning that the higher a student's original Composite score, the less that the ACT Online Prep purchase affected the student's subsequent score. The

effects of purchasing ACT Online Prep tended to be smaller than the effects of using ACT Online Prep found in other studies, but it was larger than the effect of simply being granted access to ACT Online Prep.

A 2019 study highlighted the positive association between using ACT Online Prep and achieving ACT score gains over time (Sanchez, 2019). This study demonstrated the positive association with a greater number of active days in ACT Online Prep, the number of practice sessions performed, the number of full-length practice tests completed, and the number of times students reset the system and erased their previous scores on the system. The results provide an estimate of the difference in ACT score gain between not using ACT Online Prep and using it extensively. For example, we can estimate that if students used ACT Online Prep for over 21 days, reviewed over 55 lessons, took at least 16 practice sessions and at least two practice tests, and reset the system between 6 and 10 times, they would have an average gain score that would be 1.51 points higher than if they did not use the system. Students who reported feeling inadequately prepared for the second test had ACT Composite scores that were lower than the scores of students who felt adequately prepared.

An earlier study found that enrollment in ACT Online Prep was associated with nearly a 1-point increase in students' average ACT Composite score (Sanchez, 2018). Although students from all racial/ethnic groups benefitted from ACT Online Prep, the benefit to Black and Hispanic students (about 1 point or more) was greater than the benefit to White students (under 0.5 points). This analysis considered students' characteristics such as gender and income.

A final study regarding ACT Online Prep found that motivation plays a key role in the success of test preparation resources (Sanchez & Cruce, 2019). This study highlighted that simply granting a population of students access to a self-directed test preparation product, regardless of its efficacy, was not sufficient to improve the college readiness of this population because many of these students would not adequately use the product.

## Research on the Efficacy of *The Official ACT Prep Guide*

In 2020 I found that the average ACT Composite score for students who purchased *The Official ACT Prep Guide* was higher than for students who did not purchase it (Sanchez, 2020b). The average Composite score difference between students who purchased this guide and those who did not was 0.19 points for first-time-tested students and 0.31 points for repeat-tested students. This analysis further showed that purchasing this guide resulted in an increase of almost 0.5 points for first-time testers not in the 12th grade. Similar gains were seen for students from lower-income households who were testing for the first time. Black and Hispanic students testing for the first time also saw a much larger effect of purchasing this guide than White students. For a first-time tester, a White student could see an increase in the ACT Composite score of 0.52 with purchasing the guide, while Black and Hispanic students who purchased it could see increases of 0.91 and 0.95 points, respectively. When retesting, White students could see an increase in their ACT Composite score of 0.39 points, whereas Black and Hispanic students could see increases of 0.78 and 0.64 points, respectively.



## Program Agnostic Test Preparation Research

ACT has also conducted several studies examining the efficacy and use of test preparation programs offered by sources other than ACT. Schiel (2020) found that students who engaged in the following test-related behaviors had somewhat larger adjusted ACT Composite score gains, on average, than did students who did not engage in these behaviors:

- preparing for the ACT test (via practice tests, web-based test prep programs, commercial test prep courses, etc.)
- minimizing stress and anxiety while taking the ACT
- having a snack during the ACT test's break time
- using a calculator while taking the ACT

These findings held true irrespective of students' race/ethnicity, gender, family income, grade level, parental education, ACT Composite score earned on the first test, high school GPA, and having taken high school math courses beyond geometry.

Steedle (2018) examined the statistical evidence that test anxiety possibly biases observed performance on the ACT. Results indicated a negative association between hours of preparation and anxiety, a negative association between first ACT Composite score and hours of preparation, and a small (though positive) association between hours of preparation and achievement. Thus, examinees who performed worse the first time they took the ACT spent more time preparing for the second time, and those who had spent more hours preparing reported less anxiety.

Schiel and Valiga (2014b) found that students who took the ACT twice had greater score changes from their first to second test when they reported that test preparation had the following benefits:

- increased their confidence
- increased their familiarity with test content
- refreshed their memory of content
- improved their understanding of the subject matter

Moreover, among students who took the ACT twice, those who reported more than 20 hours of test preparation for their second test earned ACT Composite scores about 0.7 points higher on average than students who reported 3–6 hours of preparation (Schiel & Valiga, 2014c).

Additionally, among students who took the ACT twice, those who reported preparing for their second test earned on average ACT Composite scores about 1.4 points higher than their scores on the first test (Schiel & Valiga, 2014a). These scores were about 0.5 points higher than the scores for students who reported not preparing for it.

Moore, Sanchez, and San Pedro (2019) found about a 1-point effect (0.70) for repeat test takers using any type of test preparation. This effect is notable, especially given that it represents an average across test prep experiences that vary in content, quality, and intensity. This study also

sought to determine whether the identified test preparation effect varied by the number of hours of participation in various activities. Among specific test prep activities, only the number of hours using a private tutor resulted in increased score gains above the overall effect of test preparation. This study found that about 63% of students reported using one to three types of test preparation with an additional 27% using four to seven.

Payne, San Pedro, Moore, and Sanchez (2020) studied educator strategies, practices, and perspectives in the hope that their insights may prove beneficial to others. Increasing students' awareness of the capabilities of ACT Online Prep and other test preparation tools was noted by educators as one factor that improved students' ACT scores. Evaluating test preparation initiatives' effectiveness was another factor noted by educators. Other factors not directly related to test preparation included the following:

- Use student data for instructional decision-making.
- Balance timing of instruction to optimize engagement and learning.
- Tailor instruction to students' needs.
- Focus on content and test-taking strategies.
- Integrate methods to improve student engagement.

Sanchez and Moore (2020) focused on how three different test preparation formats—in-person instruction, self-paced tools, and other types—related to students' ACT Composite scores. We found no significant effects of test preparation on ACT Composite score. We also found that the effects of the different preparation formats did not vary by family income. This study does not align with other research that shows a small effect of test preparation on ACT scores. This study might not have detected an effect because of the research design or the sample of students who participated in the survey. Heterogeneity in the quality, methodology, and modes of delivery within each test preparation format may have blurred any effects.

In another report, I examined several ecological factors influencing when students make use of test preparation (Sanchez, 2021). These factors included students' use of test preparation tools and the relationship between family income and students who engage in test preparation. Additionally, we explored familial support in preparing for admissions exams. Many students use test preparation methods to increase their chances of getting admitted to colleges and being eligible for scholarships. Compared to students from higher-income families, students from lower-income families were more likely to disagree that their parents or guardians had the financial means to purchase test preparation tools. This manifested in the rates of studying with private tutors, where those from higher-income families reported having private tutors more than other students.

This study also showed that students' perceived levels of support from their families increased as family income increases and that students from traditionally underserved backgrounds perceived less support from their families than White students did. As family income increased, greater numbers of students reported that their parents made them prepare for standardized tests. Additionally, non-White students reported lower rates of being made to prepare than White students. Parental education was positively related to both the percentage of students

reporting that their parents provided the support they needed to prepare for standardized admissions tests as well as reporting that their parents made them prepare for them.

## The Concern of Inequity in Test Preparation

When educators and the general public think about the high-stakes nature of standardized tests such as the ACT, they are also concerned about equal access to high-quality test preparation materials for all learners. There is a concurrent concern that access to high-quality test preparation tools will result in perpetuating existing disparities (NACAC, 2008).

ACT has attempted to disseminate information about official test preparation resources in a fair and open manner. While its public webpage describes the test preparation resources available (<https://www.act.org/content/act/en/products-and-services/the-act/test-preparation.html>), ACT also embeds exposure to available resources in the ACT registration system itself. Students are able to review and utilize free resources through easily accessed links in the MyACT registration portal. ACT takes seriously the value of rigorous, high-quality, and relevant test preparation tools and provides many test preparation resources designed to meet the needs of all learners regardless of their financial resources.

Additionally, students who qualify to take the ACT with a fee waiver are granted 6 months of free access to The Official ACT Self-Paced Course, Powered by Kaplan. This access is in addition to other free test preparation materials provided such as sample tests and sample items.

There is a misconception that expensive test prep must be good test prep. ACT strives to provide high-quality test prep either for free or at all levels of affordability. ACT offers a range of resources from self-directed test prep to the most intensive tutoring. In this way, all learners have access to good-quality test prep materials.

## Final Thoughts

It is clear that test preparation—whether at a basic level, such as getting adequate sleep the night before the test, or an advanced level, such as receiving private tutoring—is an important part of the process of taking any standardized test. ACT strives to equitably provide test preparation tools for all learners. ACT's research clearly demonstrates that test preparation does have a modest effect on students' ACT scores (typically a gain of about 1 Composite score point). To the extent that test preparation provides opportunities for students to improve their skills and reduce test anxiety while building test-wiseness, test preparation can also be an effective part of a student's educational journey. Furthermore, test preparation can be an important opportunity to reinforce the core concepts taught in high school.

There are many avenues for potential future studies to examine the efficacy of test preparation for tests such as the ACT. In some of the studies mentioned here, ACT began to explore the perspective of educators about the test preparation tools they have used. It would be beneficial for future studies to incorporate school characteristics such as teacher experience, school

resources (e.g., funding for preparation programs, capacity to conduct in-house vs. external test prep), and school demographic composition. While challenging to construct, a randomized control trial of test prep use would help clarify efficacy.<sup>4</sup> Finally, as the body of research on test preparation has grown, it would be useful to conduct a meta-analysis of results to obtain a more comprehensive look at the effects of test preparation.

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## Notes

1. ACT Academy was originally developed as a test preparation program but is now offered as a free online instructional content platform for students and K–12 educators.
2. Kaplan® is a registered trademark of Kaplan, Inc.
3. The ACT fee waiver program is available to students who meet specific eligibility requirements, and it (a) covers ACT test fees; (b) provides free learning resources, a free Test Information Release form, and free additional score reports; and (c) allows students to send their scores to colleges for free (<https://www.act.org/content/act/en/products-and-services/the-act/registration/fees/fee-waivers.html>).
4. In a randomized control study, some students are provided the test preparation tool, while others are not. This means that some students are not offered the opportunity to receive the benefits of using the test prep tool. These types of studies are, however, an important method of isolating the effect of the test prep tool.



## ABOUT ACT

ACT is a mission-driven, nonprofit organization dedicated to helping people achieve education and workplace success. Grounded in more than 60 years of research, ACT is a trusted leader in college and career readiness solutions. Each year, ACT serves millions of students, job seekers, schools, government agencies, and employers in the U.S. and around the world with learning resources, assessments, research, and credentials designed to help them succeed from elementary school through career.

For more information, visit [act.org](https://act.org)