Standardized Test Preparation: A Coaching Perspective

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Standardized tests play significant roles in school admissions, job hiring, and professional certification. In spite of long-running controversies, standardized tests are useful to receiving institutions and to test-takers themselves. The ability to do one's best on standardized tests is a helpful skill for life-long learners. Using ACT and SAT tests as an example, this paper shows that effective test-preparation support can be delivered using a consultative coaching approach informed by a client-centered educational therapy mindset. Practical advice and guidelines are suggested.

Many high school students, along with their parents, begin junior year thinking about the upcoming college search and application process. Standardized tests, of course, are a big part of the process—and a big source of anxiety. In many states, junior year ACT/SAT tests are a component of school districts' "report cards," so students feel additional pressure from teachers and administrators. Families often tell us that in spite of years of test-taking experiences—MAP, TerraNova, PARCC/SBAC, Stanford Achievement—their child "just doesn't do well on standardized tests."

This ordeal does not end junior year—standardized tests are necessary for graduate school admissions; nursing, finance, and accounting licensure; software and hardware expert certification; job promotions; and professional certification in specializations such as sports medicine, therapeutic massage, and recreational therapy. Standardized test-taking competence is an important skill in a life-long learning portfolio.

My thesis: A person's standardized test-taking skills can be developed using a consultative coaching approach informed by educational therapy principles. "Consultative coaching," as the term implies, involves active listening informed by data such as a psychoeducational evaluation, client-focus, and individualized solutions. The "educational therapy principles" I find most relevant include focusing on learning differences, conducting periodic progress assessments, and providing a range of learning strategies.

In my view, grounding in standardized test preparation is another way for the educational therapist to help clients. I think it is safe to assume readers of this journal have personal experience with standardized tests as consumers (and likely scored well). The challenge is how to apply your abilities to help clients with various learning profiles improve their standardized test-taking skills.

I will use ACT and SAT exams as the focus of my analysis and recommendations. By far, the ACT and SAT are the most prevalent standardized tests in the US. Currently, about 4 million US high school-aged students take the ACT and/or the SAT every year, usually as part of the college admissions process ("ACT (test)," 2021; The College Board, 2020). In addition, several states require public school juniors to take one of the exams in order to inform the public about how well the high schools are performing. The data are also collected at the federal level for evaluation and spending decisions (National Center for Education Statistics [NCES], 2021). In spite of test-related controversies, only seven US schools will not even consider either the ACT or SAT as part of their admissions processes ("69 Campuses," 2021). As of the 2019-2020 school year, 4,291 accredited US universities and colleges accept them (NCES, 2021), and contrary to some conventional thinking, all will accept either exam. A brief review of how these exams are designed to produce accurate and helpful information for colleges and universities as well as for students will provide useful context as you assess the applicability of my approach to your practice.

How are Admissions Tests Standardized?

The current versions of both the ACT and SAT focus on reading comprehension and math calculations. Table 1 outlines each test.

The key to understanding how to coach clients is to realize that ACT and SAT tests are truly standardized. Rather than discussing differences, let's review common design elements.

Subtest	ACT	SAT	Comments
Reading Comprehension	4 passages	5 passages	SAT has two complex passages and relies more heavily on advanced vocabulary
English/Writing & Language	5 passages; punctuation, grammar, syntax, editing	4 passages; punctuation, grammar, syntax, editing	Subtests are virtually identical
Math	60 questions, calculator allowed; arithmetic, algebra, geometry, pre-calculus, probability	80 questions; no-calculator section; arithmetic, algebra, geometry	SAT problems usually require more reading than ACT
Science	6 passages, no calculator	No stand-alone subtest, but concepts are included in all 3 subtests	"No science in ACT science;" most answers come from data in tables and graphs
Overall Time	2 hours 55 minutes	3 hours	

Table 1: Overview of ACT and SAT Tests

Most importantly, score results are engineered to follow a normal distribution. As I tell clients, teachers would love every student to get an A; however, the test companies design their exams to yield a wide range of scores. Raw scores are normalized for each test form (i.e., individual test date) across space and time. That is, an ACT score of 29 for a test-taker in Florida in 2020 is the same as a 29 for a test-taker in Idaho in 1998: The same percentage of test takers each year scored above and below them.

The challenge of credibly translating raw scores into scaled scores across, say, 140 forms over the prior 20 years, is probably formidable. The test companies, therefore, use multiple choice selection instead of a short-answer format. They also randomize answer patterns so that a test-taker cannot predict an answer choice based on prior answers. These two design decisions eliminate the need to code the answer choices or make

adjustments for question-order bias, which makes it possible to efficiently process millions of tests each year.

The two exams have consistently included a select range of academic topics over time. Reading comprehension is evidence-based. (I tell students, "This is an open book test, and you don't need to interpret the author's intentions.") English/Writing & Language follow conventional standards of American English writing that students likely have been exposed to in high school and which will be expected in college. Math topics include arithmetic, algebra, geometry, and data representation.

Both exams are now consistent on a number of points of concern to the test-taker. There are no deductions for incorrect answers, and the choice to release scores is up to the test-taker. There is no practical limit on the number of retakes.

Since controversies about the susceptibility of IQ tests to gender, ethnic, and cultural biases surfaced in the 1970s (Provenzo, 2009), both the ACT and the College Board have expended considerable effort to minimize test bias. Every test question and every test form go through an external content and fairness review process, carried out by a gender-balanced panel of experts specializing in educating diverse populations (ACT, 2020).

How do Colleges and Universities Benefit from Standardized Tests?

College and University admissions departments rely on high school GPA and standardized test scores to achieve two academic objectives:

- Identify applicants who would be academically successful (accuracy rate of correctly identifying successful first year students).
- Maximize academic success of accepted candidates (success rate of first year students).

The question is whether institutions have a rational basis for using test scores as decision-making criteria. To answer this question, I have relied on policy statements, implementation procedures, and research studies from the ACT organization. Due to the popularity of the ACT in my area, I have developed a deeper understanding of that test. However, I believe that the design and reliability of the SAT are similar to those of the ACT.

The ACT has published an extensive series of analyses which consider the degree to which candidates' test scores and high school GPAs correlate with academic success (ACT, 2020).

College-level academic "success," in this context, is defined as first-year retention (that is, did not drop out) and one of four grade point averages: 2.0 (classified as minimal), 3.0 *(average)*, 3.5 *(high)*, or 3.7 *(very high)*. The ACT concluded the following:

- High school GPA has higher correlations with first year success in college for students with higher ACT scores.
- ACT scores meaningfully differentiate first year success in college among students with higher high school GPAs.
- Measures that combine high school GPA and test scores have the highest correlation with first year success in college.

These effects were found to be strongest at higher percentiles of high school GPA, ACT score, and college GPA (ACT, 2020).

For example, referring to Table 2, students whose high school GPAs were 3.8 (80th percentile) had a 0.70 probability of a college GPA of 3.0 or greater. Considering an ACT score at the same percentile, the probability was 0.62. The pattern is consistent: While both measures are positively correlated with college academic success, high school GPA has somewhat higher correlations with college GPA than ACT score. The pattern reverses only at the very highest percentile levels.

College 1st Year GPA	% at least:	80th Percentile		90th Percentile		95th Percentile	
		ACT	HS GPA	ACT	HS GPA	ACT	HS GPA
Score/ HS GPA		25	3.8	27	3.95	29	4.0
2.0 or greater	84%	0.91	0.92	0.93	0.94	0.95	0.95
3.0 or greater	52%	0.62	0.70	0.88	0.88	0.82	0.89
3.5 or greater	27%	0.33	0.40	0.31	0.54	0.59	0.55
3.7 or greater	16%	0.21	0.27	0.30	0.35	0.45	0.36

ACT technical manual, 2000, pp. 11-45-11.49

Table 2: Comparing Distributions of High School GPA and ACT Scores

	50th	60th	70th	80th	85th	90th	95th	99th	Max
HS GPA	3.3	3.5	3.7	3.8	3.9	3.95	4.0	4.0	4.0
ACT	20.5	22	23	25	26	27	29	31.5	**36**

ACT technical manual, 2020, p. 11.49

Table 3: Relative Precision of High School GPA and ACT Score

A practical issue with high school GPA, at least from the institutions' perspectives, is the lack of precision at the higher percentiles. As can be seen in Table 3, the difference between the 85th and 99th percentiles for high school GPA is 0.10 while the difference between test scores is 5 points, with another 4 points to the top score. Test scores provide much more granularity to the admissions office.

More powerful evidence, at least from the perspective of the ACT, is shown in Figure 1 on the next page, which essentially combines high school GPA with test score level. For any given high school GPA, the higher the test score, the higher the likelihood of success. This relationship is especially pronounced at the higher percentiles.

The implication: The more selective the college, the greater the predictive value of standardized tests combined with high school GPAs. It is reasonable to conclude that selective institutions will continue to rely on standardized tests to make admissions decisions and therefore most, if not all, US colleges and universities will follow suit.

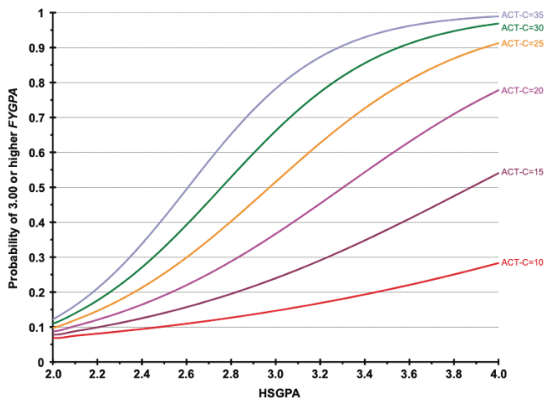

Figure 11.13 Probabilities of success associated with 3.0 or higher FYGPA and being retained through the first year, based on HSGPA and ACT Composite score.

Note: From "Validity evidence for the ACT tests." *ACT technical manual, version 2020.1* (p 11.47), August 2020, ACT. Copyright 2020 by ACT, Inc.

Figure 1: Combining Test Scores with High School GPAs

Which Students Benefit From Standardized Tests?

So far, we have discussed the benefits to colleges and universities. How do student applicants benefit?

It is helpful to place the tests in the larger context of the college application process. Admissions committees typically consider a wide range of variables when deciding about individual applicants. Several factors—reputation of the high school, zip code (for geographic diversity), gender, race, and economic status—are outside the control of applicants. However, the educational therapist can help clients and their families with factors students can control:

- **Courses**–the more academically challenging, within a student's capabilities, the better
- **Grades**–especially if a student shows consistently good grades or improvements over time
- **Standardized test scores**–which can be increased with self-study, coaching, and practice
- **Extracurricular involvement and leadership**–to demonstrate that the student is well-rounded and could contribute to the college or university
- **Application essay**s–authentic expressions showing how the student's attendance will benefit the school
- **Recommendations**–allows the applicant to show his/her strong points through the perspective of respected adults
- **Demonstrated level of interest**–visiting the campus and taking the tour; engaging in communications with admissions and academic departments

As you can see, standardized tests are just part of the equation—and not necessarily the most important. So, how can applicants use standardized tests to their advantage?

First, test scores can help applicants select schools that are the best fit for them. Here is how: Schools typically report the middle 50% of applicants' test results. For example, Northwestern University in Illinois reports SAT scores of 1430 for the 25th percentile and 1540 for the 75th percentile. (Of course, that means that one-quarter of students scored less than 1430 and one-quarter scored more than 1540.) We point out that a score within the middle 50% is probably a good proxy for an applicant's academic comfort zone. By the same token, the middle 50% range for Xavier in Ohio is 1070-1280. A student who scores 1500—in the zone for Northwestern—may not be the right fit for Xavier (Sawyer, 2021). Applicants can use their scores to categorize their target schools as "fit/reach/safety."

In addition, I have observed that different groups of students look to the test as a source of competitive distinction. One group includes "highly-qualified applicants." They have great GPAs with tough courses and are well-rounded athletes, club members, and community volunteers. In short, they are wonderful candidates. Their reasons for seeking help with test prep range from overcoming the impact on the test of their learning disabilities, attention deficits, or anxiety disorders to ensuring that their standardized test performance is on par with their other qualifications. They wish to attend highly-competitive universities and want another dimension to differentiate themselves from peers.

On the flip side are those applicants who see standardized tests as a way to compensate for self-perceived deficits in grades or other liabilities in their application. These students seek to upgrade their application portfolio with strong test scores.

Another category is "natural test takers." These are students who understand how standardized tests work and have figured out how to do well. Similar to coaching "natural athletes," test preparation helps accentuate strengths with advice, feedback, and practice.

Individualizing Test Prep Support to Meet Client Needs

Stanley Kaplan first helped immigrant children to "do well on the test" in 1948 (Arenson, 2009). In 1981, Princeton Review reframed that message to "how to beat the test" (Katzman, 2014). Fast forward: Last year, about 3,200 test prep firms billed over $1 billion helping people prepare for standardized tests ("Tutoring & Test Preparation," 2021). These figures do not include individual tutors, such as educational therapists, teachers, and small firms, or "low cost/no cost" channels, such as Excel programs at high schools or Kahn Academy. Clearly, professional standardized test preparation is considered to be a valuable service.

I have observed several typical approaches to test preparation currently in practice in 2021:

- high school-sponsored courses, offered in group settings, meeting once or twice a week for a few months: cost under $100

- private company tutoring, offered in group or individual format, with about 40 hours of instruction and practice: cost ranging from $3,000 to $10,000

- individual tutors, charging $75 to $250 per hour for ACT and SAT, up to $500 per hour for Law School Admission Test (LSAT) and Medical College Admission Test (MCAT)

The usual features of these approaches include a pretest, lectures and handouts, and practice and feedback. Note that individual sessions do not necessarily result in *individualized instruction*.

My approach is different: I use a consultative coaching approach informed by an educational therapist mindset, which I developed as a clinician for over ten years at the North Shore Learning Clinic in the Chicagoland area. The learning clinic, led by and staffed with accredited educational therapists, was designed to utilize psychoeducational and neuropsychological evaluations to inform treatment and support, including tailored standardized test preparation.

The philosophical elements of my approach are individualization, demystification, familiarization, and quantitative targets– "There is a number inside you, and we have to find it." Our joint assignment, I tell my clients, is for us to figure out the right set of test-taking strategies and tactics—both general and unique to them—so that when they walk into the test room, they understand what to do to achieve their goals.

Consultation Process

The intake process for high school or middle school students begins with a phone conversation between one or two parents and me (and another clinician if other services are sought). For graduate school or professional certification, I usually speak directly with the client. I am interested in learning about the test-taker's learning style, strengths, experiences, and opportunities. During the intake conversation, which usually takes about 30 minutes, I outline my approach and answer questions about the test, the test prep process, and professional fees.

During my first session with the client, I review what I learned during the intake, review evaluation reports, and more deeply investigate college or professional aspirations and exam-related goals and objectives. Then we dive into the work. At the beginning of the second session with the client, I present, review, and adjust the test prep objectives, quantitative goals, sequence, and schedule.

The client's test-prep plan is designed to take advantage of strengths and realize opportunities for improvement. The plan is frequently modified based on client progress and needs. We both refer to the quantitative goals set by the test-taker as we advance through the process.

Session Agenda

Our session agendas have four significant topics:

- Develop an understanding of the "rhythm" of each subtest (see Table 4) and hone strategies and tactics best suited to the client.

	Low Content →			*High Content*
Subtest	Reading	Science	English/Writing & Language	Math
Content Knowledge	None	Scientific Method 2 page list of facts	Limited number of punctuation, grammar, syntax rules	More that 17 pages of facts and calculations
Strategy and Tactics Examples	Comprehension "Open book" Entire answer choice must be true	Use pencil to mark data on charts and tables Many questions have similar rhythm	Read passage as an editor Rereading is OK! Evaluate all four choices	Use calculator when allowed Make drawings, take notes
Personal Potential Pitfall Examples	Beware of the switch—answer choices that are half right	Watch details like y-axis label	Detail punctuation marks Match correct subject to the verb	Reread the "what" to make sure you are answering the question

Table 4: Each Subtest has its Own Logic

- Reinforce analysis skills: Evidence-based reading (which even applies to math problems), understanding the question, and evaluating answer choices.

- Practice using accommodations (see Table 5), if any; practice time management.

The same sets of disabilities that interfere with learning affect standardized test performance • Neurological, cognitive, developmental, language, and emotional issues
Testing companies will provide accommodations consistent with ADA requirements, such as: • Extended time • Multiple days • Small group individual setting • No Scantron • Human reader
Parents and the high school have critical roles • Professional psychoeducational or neuropsychological evaluation • IEP/504 Plans • Offered accommodations must be used • Counselor actively engaged in securing accommodations
ACT at https://act.org/content/dam/act/unsecured/documents/Accommodations-National-Special.pdf College Board at https://accommodations.collegeboard.org/

Table 5: Disabilities and Student Accommodations

- Identify and reinforce strategies and tactics around anxiety, number sense, impulse control, working memory offloading, and other test-taking obstacles.

Only English and Math require content review. The other subtests are primarily about strategy and technique. I have created proprietary content materials, but the leading education companies publish good workbooks (*e.g.,* Princeton Review).

We also practice three basic skills that apply to all standardized tests:

- POE (process of elimination) to both improve the odds of selecting the correct response and help the brain "turn off" some answer choices to more carefully analyze the remaining choices.
- LOD (letter of the day)—decide before the test starts on the one letter to use in case time runs out or when guessing. Statistically, using LOD on 10 questions yields two or three correct answers, which could improve a subscore by one point and in turn improve the ACT composite by one point.
- Write on the test booklet—the client annotates, makes notes, marks charts and tables; in short, use the pencil to alleviate working memory demands onto the booklet.

To help establish rapport and prove my approach, I usually begin the sequence with ACT Science or ACT/SAT Reading unless presenting learning needs signal otherwise. Those are the subtests requiring minimal content knowledge and often allow the client to establish some "quick wins" as he or she tries various strategies and tactics. For example, many clients are initially daunted by the jargon and complexity of the ACT Science passages. After about a half-hour of coaching and practice, they learn that many questions can be answered in as little as 10 seconds. Client trust and confidence definitely help as we move to the more content-oriented subtests and work on time management.

Some further remarks:

I do not require or administer a pre-test although I will use one if the client has already done so. It does not take long in a session for me to identify a test-taker's strengths and opportunities for each subtest. Pre-tests, in my opinion, sap energy, reduce enthusiasm, and reinforce maladaptive test-taking practices.

For supported practice in-session and as independent homework, I use retired ACT and SAT exams.[1] Both test companies publish a number of retired tests. The educational publishers create their own test versions for practice, but they are not as good as the actual exams.

Is the Consultative Coaching Approach Effective?

Several years ago, I reviewed clients' standardized test results to verify that my test prep approach significantly improved their composite scores.

While the test companies have historically claimed coaching does not make a significant difference, they acknowledge a practice effect from taking the exams more than once. For example, the ACT estimated the test-retest effect to be 0.6 to 0.7 points (Andrews & Ziomek, 1998).

A study reported in the *Journal of College Admission* showed that students who participated in a coaching program increased their composite ACT score by a mean of 1.5 points (SD 1.56). A comparable group at the same high school who did not participate in the coaching program achieved an increase of 0.65 points (SD 1.83) (Moss et al., 2012). This uncoached finding is consistent with the practice effect identified by the ACT. This also suggests the coaching effect adds 0.85 points above and beyond practice effects.

Our results, however, were more pronounced. I evaluated the change in composite test scores for 108 clients who received meaningful ACT test preparation support (12 sessions or more). The improvement in best test score compared to first test score was 4.2 points (SD 2.6). I conducted a similar analysis incorporating pre-ACT (10th grade), PLAN (also 10th grade but retired several years ago), and practice tests (usually a retired test administered by a test prep company). The improvements over that base was 6.2 points (SD 2.2). Both statistics were significant at the p<.05 level.

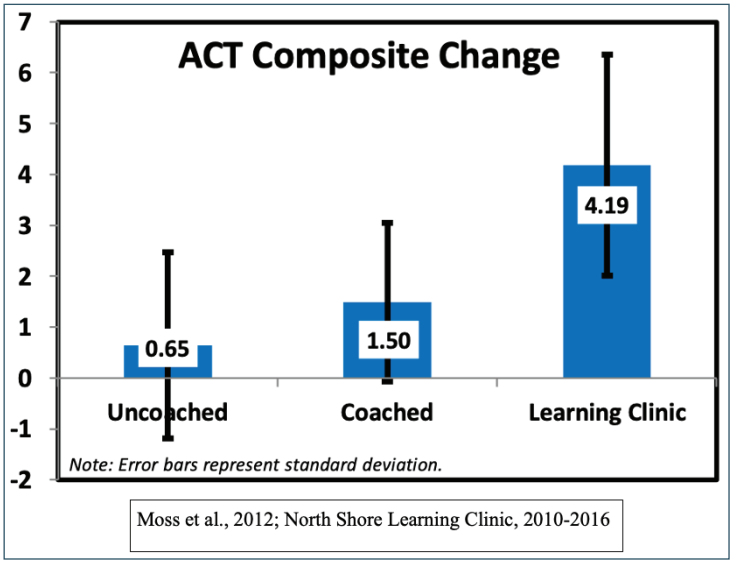

Figure 2: The Benefits of Coaching

Conclusion: General coaching programs can help test-takers improve their results compared to merely retaking the test. Our approach had an even greater impact on clients' test performance

Can the Coaching Approach be Applied to Other Standardized Tests?

Lessons from ACT and SAT prep can be extended to other standardized tests. Over the past decade, I have applied my consultative coaching approach to a variety of tests including secondary school placement, graduate school admission, and professional certification and licensure. Some of these exams have extensive third-party resources, such as the MCAT, while others do not.

Regardless of content specialization, educational therapists can play an active role in test prep support. Adult clients seeking

[1] These two workbooks contain retired tests: *Official SAT Study Guide* by the College Board and T*he Official ACT Prep Guide* by the ACT. These are updated every one or two years and can be found at Amazon.com and bookstores like Barnes and Noble.

professional degrees and certifications can acquire and develop valuable life skills working with educational therapists in the following ways:

- Identify exam requirements by reviewing websites and other published materials from both the testing body and the institution requiring the standardized test. For example, carefully review the ETS website and the target university's graduate program requirements about the Graduate Records Exam (GRE).
- Identify test prep resources. Sometimes workbooks have been published. The testing body may also provide—for free or at a nominal cost—review materials and practice tests.
- Ensure appropriate accommodations are in place. This often requires an updated evaluation (within the last three or five years, depending on the test) or statements from prior private providers and institutions. This often involves multiple rounds of petitions with the test provider, requiring significant time and persistence. Clients who are strong self-advocates may require less support from the educational therapist but may need help with phrasing, coordinating with other professionals, and managing frustration.
- Set objectives and goals based on the first three steps.
- Develop a preparation plan, sequence, and schedule. The challenge is to make the test prep plan realistic. Ongoing educational, occupational, and family obligations need to be taken into account.
- For subject-oriented exams, help organize college or graduate school materials—the equivalent of "backpack clean up" for adults.
- Provide check-in and problem-solving support during the process. The educational therapist may be unfamiliar with, say, Lagrange Hamiltonian Transformations but is certainly able to coach the test-taker on how to practice effective review techniques for the Physics GRE.

What Does the Future Hold for Standardized Tests?

The COVID-19 pandemic was enormously disruptive to the entire college and graduate school admissions process. The 2020 ACT and SAT spring and summer seasons were essentially canceled. Fall and winter saw a slow rollout because of building restrictions, CDC's 25% capacity rules, and teacher union resistance. By the middle of 2021, the pattern of numerous test-date cancellations finally abated.

Graduate and professional certification exam schedules recovered more quickly. Private test centers opened sooner than public school facilities. There was also a large uptick in remote testing, along with expensive and intrusive security procedures.

More than 1,250 colleges and universities, out of about 4,300, implemented temporary test-optional policies for 2021 and 2022 admissions. Nineteen university systems, particularly in California, became test-free, at least as pilot experiments ("1,585 + Accredited," 2021).

Is this a harbinger or a blip? Here is my view:

- Standardized tests will continue to be an important part of the undergraduate and graduate admissions process, particularly for highly-selective institutions. Therefore, test preparation support will be important to highly-qualified applicants. The number of pure test-free schools will remain small (only seven before the pandemic). While admissions departments may quietly reduce test weighting in favor of "equity" considerations, they still need a reliable quantitative screening tool.
- Standardized tests will become more important to professionals who want or need certification or licensure. "Credential inflation" will continue to increase professional requirements. The number and complexity of standardized tests will increase.
- There will be some changes in administration due to technology—the desire of test publishers and administrators to reduce "paper and pencil" will persist. Exams with relatively small numbers of test-takers (graduate and professional exams) will continue to rely on test centers with computerized testing for cost and security reasons. Secure remote testing is expensive, so administration will be at test centers rather than at home or office. I expect the ACT and the College Board to help selected school districts with some sort of online exam, including short answer prompts. However, the cost of security will be prohibitive for most school districts and the costs of validating short answer exams will be expensive for test companies. Therefore, centrally-administered multiple choice test forms will continue.

The implication for test takers: Standardized test-taking skills will remain important for college admissions and will become a key life-skill for professional and knowledge workers.

The implication for educational therapists: Client-centered, consultative, goal-focus, and analysis skills will be critical as you help clients acquire standardized test-taking skills and capabilities.

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