Association of Educational Therapists

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THE EDUCATIONAL THERAPIST

The mission of the Association of Educational Therapists is to define and set standards for the professional practice of educational therapy; to promote professional training, development, and research; and to create public awareness of and access to educational therapy services.

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EXPLORING THE SOCIAL, EMOTIONAL, AND BEHAVIORAL ASPECTS OF LEARNING

44TH Annual National AET Conference

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A Comprehensive Look at Current Research on ADHD"

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The Educational Therapist is a multi-disciplinary publication. It publishes articles and reviews on clinical practice, research, and theory. It also informs the reader of the activities and business of the Association of Educational Therapists and presents issues relevant to the practice of educational therapy. Its contents do not necessarily reflect or imply endorsements by the Association or its members. *The Educational Therapist* accepts articles for publication via email to: journal editor c/o journal_editor@aetonline.org.

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3. Letters sent by parties other than the author(s) will not be considered for publication. Letters sent to the editor for nonpublication purposes should be so marked.
4. Letters that do not meet these guidelines may be edited or will be returned to the author(s) with suggestions for revisions.

Message From the Editor

Sherry L. Cramer, MS, ET/P

Nine years ago, I met with the parents of a fourth grader. They described their son's learning struggles, his health issues, and their own fears about his future. After discussing my initial thoughts on what I might be able to do to assist their son, they indicated they were relieved to have found someone who might be able to help him. Yet when we discussed my fees, they turned to each other with looks of concern. I asked if the fee was manageable for them, and they indicated it was not. I asked what they could afford, and they responded with a figure. We agreed on this amount. I worked with their son through the rest of his elementary, middle school, and high school years.

This spring, I was invited to his high school graduation ceremony, one of just four individuals his family was permitted to invite due to COVID restrictions. When his family arrived, they sought me out so we could sit together. They expressed their gratitude for my part in helping him reach this milestone. After the ceremony, they insisted that I stand alongside them for the family photos commemorating the event. I felt as if I had been "adopted" into his family. It was surprisingly emotional for me.

My experience with this family reinforced my belief that educational therapy should be accessible to a broad range of clients. Though our services can be helpful for individuals with ample means, they can be a lifeline to those in marginalized communities and those with limited resources. That is why I have joined the low cost/no cost initiative group of AET's Social Justice Subcommittee. I urge those of you who have not yet attended an AET social justice event to join us and explore ways you can become involved.

In her president's message, Kaye Ragland discusses AET's Statement of Commitment and Mission Statement and shares some of the valuable data obtained from AET's recent Social Justice Survey. This data will help provide a focus for the association's ongoing efforts toward equity and inclusivity.

Two important topics, one related to social justice, are explored in Psychoeducational Perspectives. In her article, "Beyond Disproportionality: Investigating Hierarchies of Special Education and the Implications for Educational Therapy," Syma Solovitch carefully examines the often contradictory research on disproportionality in order to increase our awareness of the complex issues involved and how it may impact students of color. Craig Elderkin's "Standardized Test Preparation: A Coaching Perspective" presents an overview of college admission exams and describes his successful approach to helping clients improve their standardized test scores as they seek college admission or professional advancement.

Our roster of columnists has changed somewhat. Susan Taber, whose column *Outside the Box* has provided so many creative and effective strategies, has decided to step away from her column and focus on other ed therapy pursuits. Thank you, Susan, you have added so much to our ET tool boxes. *Our Ed Tech for Teachers* columnist Nancy Bley is pausing her column for this issue but will be back for our Spring 2022 issue with part 2 of her discussion "Dysgraphia, Math, and Remote Learning." We will be looking forward to your return, Nancy.

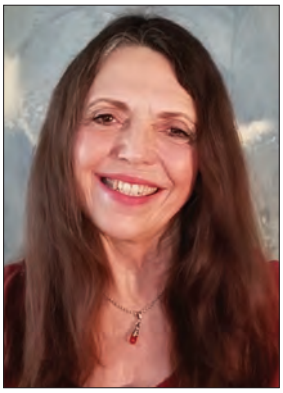
Our other veteran columnists will continue to offer their distinctive viewpoints. Karen Lerner's *In the Trenches* column for this issue gives her a chance to "contemplate" how she has been able to use to use "connections" to build and maintain her professional practice. Susan Micari, in her column *The Unique Learner*, muses "On Mentoring Others" as she remembers her own mentor and considers her relationship to a new ed therapist she has been mentoring.

We are welcoming two new columnists in this issue. Shelley Haven introduces her column *Assistive Technology in Practice: Topics and Issues to Help ETs Fold Assistive Technology Into Their Practices*. Her first installment focuses on "Understanding the Two Primary Alternatives to Print Materials: Audio Files and Electronic Text." Avery Walsh begins her new column, *The Coaching Corner*: *Topics in Executive Function*, by reminding us to "Start Small and Stress Communication" when helping clients develop their EF skills.

An additional feature in this issue is an opinion piece entitled "Of Course, You Hated Word Problems: Current Research in Cognitive Science and Neurobiology Explains Why" submitted by Nancy Fike Knop. In this unique commentary, Nancy describes specialized pathways of the human brain and questions the wisdom of some current instructional methods in math.

Our book reviewers examine texts that address several of the many topics of concern to educational therapists and allied professionals. Laurie Fox offers a review of *Tiny Habits: The Small Changes That Change Everything* by BJ Fogg, a behavioral scientist who proposes that establishing tiny habits are the key to behavior change—something our clients often struggle to achieve. Cindy Hansen reviews *To Be Gifted and Learning Disabled: Strength-Based Strategies for Helping Twice-Exceptional Students with LD, ADHD, ASD, and More* by Susan M. Baum, Robin M. Schader, and Steven V. Owen, a text that presents both theoretical perspectives and practical strategies for parents and professionals.

This year has been one of both hope and disappointment. The dedication of our office staff, authors, and the larger AET community is apparent in publication of this journal despite the difficulties of a world that has not yet rid itself of the Corona virus. I am grateful to all of our contributors and support personnel, and I am pleased to announce that Deborah Crim is joining us as a new member of our editorial board. It is this collegial focus—all of us working together for a common goal—that makes it possible for hope to continue to flourish.



Message From the President

Kaye Ragland,
EdD, LMFT, BCET

AET's Commitment to Social Justice and Equity: Action vs. Talk

As members of an organization dedicated to advocating for those whose needs are not being met, the death of George Floyd on May 25, 2020, precipitated a great deal of serious self-reflection. Soon after, we formulated our statement of commitment, but while important, a statement is a superficial thing, meaningless without action to back it up. The AET Statement of Commitment states, "AET is committed to racial and social equity and justice. As such, we are looking inward and outward at systemic inequities that exist in our profession and in the lives of our students." Our Mission Statement focuses on AETs role in setting standards for the profession, supporting educational therapy professionals, collaborating with allied professionals, and advocating for people with learning differences.[1] In keeping with the Mission Statement, we determined to focus the social justice work outlined in the Statement of Commitment on educational therapy, educational therapists, educational therapy clients, and the educational therapy community.

In June of 2020, AET created a Social Justice Working Group, which eventually became a permanent part of the organizational structure as a subcommittee under the auspices of the Member and Public Information Committee. While the Social Justice Subcommittee is hard at work on multiple project initiatives, such as social justice materials for AET study groups, social justice related content for educational therapy and teacher training programs in colleges and universities, exploration of low cost/no cost service delivery models, and increasing diversity within the profession, we knew that our first action needed to be an objective look inward at the state of the organization. A social justice survey was created by our Social Justice Data initiative group and was sent to our membership. The complete data set can be found on the website.[2] Although the data from that survey has been used and will be continue to be used to inform social justice projects within AET, the details of the incredible work that has been and is being done are too extensive to be reported in an opening message. Thus, the remainder of this message is focused exclusively on the data.

While it is impossible to include all the rich data gleaned from the survey, I will highlight some of the most interesting findings. First, the response from our membership was excellent, with a significantly higher percentage of respondents than is typical for this type of survey. We received responses from educational therapists at all levels of membership, from student members to professionals with over forty years' experience. As predicted, based on the survey, our profession is overwhelmingly white (88%) and female (97%); however, we were pleased by the diverse client base served by our members. Most of our respondents reported serving Caucasian clients, but most also reported having multiple clients who identify as Asian, Black/African American, Latino/Latin X, Native American, Pacific Islander/Native Hawaiian, or mixed race. In general, we are a highly educated group of professionals, with 90% of respondents holding a master's or doctoral degree, and a significant majority reporting additional certifications, including teaching credentials, professional licenses, and extensive trainings, such as Orton Gillingham certifications. Furthermore, our members report speaking twenty-five different languages, with English, Spanish, and French being the most common. Regarding access to educational therapy services, it is significant to note that 49% of the question's respondents currently offer a low cost/no cost or sliding scale option. While it is not reported in the data on the website due to the complexity of the responses, many of these members shared their protocols for offering low cost/no cost services. Of those who do not currently offer this type of option, many indicated that they would be interested in learning more about successful ways this has been accomplished by other educational therapists. In addition, qualitative narrative data were collected on the types of communities served by our members, but like the narrative data on low cost/no cost options, these data are too complex to include in a short article or on the website. All the data from the survey are being utilized by the Social Justice Subcommittee initiative project groups to target their work in the most productive way. We have learned a lot and continue to explore all the ways we can utilize these data in service of increasing social justice in our field.

The data tell us that we have a lot of work to do and many areas of growth to consider, but they also tell us that we are already on the road to meeting the challenges set forth for us in our Statement of Commitment and Mission Statement. While it is not all comfortable, AET is excited about these data and committed to improving diversity, access, and social justice within the educational therapy profession. As we move forward, we will utilize this new data to view our work through a lens of professionalism, high standards and support for educational therapists and clients, as well as through a lens of commitment to diversity, equity, social justice, and the development of a deep and honest understanding of our educational therapy community and the client communities we serve. We have our work cut out for us, and we are eager for the challenge.

[1] These documents can be found on the AET website at Statement of Commitment/Mission Statement - AET: Association of Educational Therapists (aetonline.org).

[2] See Social_Justice_Survey.pdf (aetonline.org)

Beyond Disproportionality:

Investigating Hierarchies of Privilege Within Special Education and the Implications for Educational Therapy

Syma Solovitch, MA

Much of the discussion on disproportionality in special education has centered on the over-identification of students of color. However, recent scholarship suggests that students of color may actually be under-identified for special education. Both claims can be supported, depending on the data that are used and the controls that are set. Furthermore, when identification patterns are unpacked by disability type, we see evidence for both over- and under-identification of students of color. In this paper, I sort through the knotty data on disproportionality and identify the factors that contribute to the disparate identification rates and placement outcomes for students of color, including the teacher referral process and the role of implicit bias, the social stratification of disability categories, the resources and racial makeup of the school, language variance in the misdiagnosis of language and reading disorders, the federal focus on disproportionality, and the exclusionary language of the Individuals with Disabilities Education Act.

The question of disproportionality in special education has long been debated in both the academic and public sphere, with much of the focus on the over-representation of students of color. Claims of disparities have prompted action from the U.S. Department of Education, which in 2016 issued new rules requiring states "to collect and examine data to determine if significant disproportionality based on race and ethnicity is occurring," be it statewide or at the district level (Office of Special Education and Rehabilitative Services, 2016).

Recent studies have challenged the conventional narrative on disproportionality and argue that students of color are in fact less likely than their white peers to be identified for special education services even when they demonstrate comparable performance and behavior (Morgan et al., 2016). Still other scholars contend that a more nuanced picture unfolds when the data are examined by disability type, with students of color less likely to be identified for dyslexia (Odegard et al., 2020), speech or language impairments (Morgan et al., 2017a), autism (Constantino et al., 2020), and ADHD (Bax et al., 2019; Frye, 2021; Mandell et al., 2007; Morgan et al., 2013), and more likely to receive less socially desirable classifications (e.g., emotional disturbance, intellectual disability) that result in a segregated learning setting (Harper, 2017). Further muddying the narrative are the studies on school context, which find that students of color are *less* likely to be identified for a disability when they attend a primarily non-white school (Fish, 2019).

In this report, I summarize the current research—in sociology, psychology, education, and pediatric medicine—on the identification of students of color for special education, with a particular focus on African-American students, and attempt to disentangle the disparate and sometimes competing claims.

Sorting Out the Data: Are Black Students Identified Too Much or Too Little for Special Education?

Statistics on identification patterns by race and ethnicity vary greatly, based on the data sets that are used and the controls that are set. For example, federal data from the National Center for Education Statistics (2020) show a continued pattern of overrepresentation of black students identified for special education: In 2019-20, 16.6 percent of black students, versus 14.7 percent of white students, were identified as disabled. In 2018, the U.S. Department of Education reported that the risk ratios[1] for black students served under the Individuals with Disabilities Education Act (IDEA) were larger than 1 (with 1 denoting that likelihood for identification is equal to that of other racial/ethnic groups) for several disability categories (Office of Special Education Programs, 2018, pp. 30, 47).

A 2020 policy brief from the National Center for Learning Disabilities reported that black students are 40 percent more likely to be identified with a disability compared with all other students. Furthermore, in its more detailed trend analysis for African American students (based on 2013-14 data), the center reported that:

- Black students are twice as likely to be labeled as emotionally disturbed, compared to their white peers.
- Black students are three times as likely to be identified with an intellectual disability, compared to their white peers.
- Black students are disproportionately identified as having a specific learning disability: While they comprise only 16 percent of the student population, they account for 20 percent of students identified with a specific learning disability.

[1] Definition of risk ratio provided in the *40th Annual Report to Congress on the Implementation of IDEA*:

> Risk ratio compares the proportion of a particular racial/ethnic group served under IDEA, Part B, to the proportion served among the other racial/ethnic groups combined. For example, if racial/ethnic group X has a risk ratio of 2 for receipt of special education services, then that group's likelihood of receiving special education services is twice as great as for all of the other racial/ethnic groups combined. (pp. 30, 47)

- Once placed in special education, black students are more likely to be taught in separate classrooms: Only one-third of black students with disabilities, versus 55 percent of white students with disabilities, spend more than 80 percent of their school day in a general education classroom (National Center for Learning Disabilities, 2020).

Meanwhile, education scholars Paul Morgan and George Farkas have drawn on national multiyear longitudinal data from the Early Childhood Longitudinal Study—Kindergarten—to show that, after controlling for family characteristics, prior test scores, and teacher ratings of student behavior, students of color are consistently less likely than otherwise similar white, English-speaking children to be identified as disabled or to receive special education services: "From kindergarten entry to the end of middle school, racial- and ethnic-minority children were less likely to be identified as having (a) learning disabilities, (b) speech or language impairments, (c) intellectual disabilities, (d) health impairments, or (e) emotional disturbances" (Morgan et al., 2015, p. 278). The authors replicated these findings using National Assessment of Educational Progress (NAEP) data from 2003 through 2013 (Morgan et al., 2017b). As an example, the study found that, among fourth-grade children in the lowest decile of the 2013 NAEP reading achievement distribution, 74 percent of white children received special education services, as compared with 44 percent of black children, 43 percent of Hispanic students, and 48 percent of American Indian children.

Their findings have been the subject of considerable controversy. Some scholars have dismissed the work as inherently flawed, based on the authors' assumption that test scores and teacher reports represent accurate and unbiased indicators of a student's true cognitive and behavior capacities (Skiba et al., 2016). Others have warned of its potential to undermine civil rights inroads. Indeed, in 2018, when the U.S. Department of Education moved to delay federal regulations to address disproportionality in special education, it cited the Morgan and Farkas studies to justify its actions (Civil Rights Roundtable, 2018).

Factors Accounting for Disparate Outcomes for Children with Learning Disabilities

A multitude of factors contribute to the disparate identification rates and placement outcomes for black children:

- the teacher referral process and the role of implicit bias
- the social stratification of disability categories
- the resources and racial makeup of the school
- language variance (i.e., African-American English [AAE]) and its role in the misdiagnosis of language and reading disorders.
- federal focus on disproportionality
- the exclusionary language of the federal IDEA

The Teacher Referral Process and the Role of Implicit Bias

Not all labels are equal or lead to equal outcomes. Identification for a specific learning disability can generally be addressed in the regular classroom and carries relatively low stigma. The reverse is true when a student is identified for an emotional or behavioral disorder, which usually results in his removal from the general student population. Black children are overrepresented in the second category and underrepresented in the first (Skiba et al., 2008). One potential explanation for this disparity lies in the identification process, which usually begins with a teacher referral. If the referrals are anchored in disparate expectations for black and white children, the outcomes for the children will likely be disparate as well.

The sociologist Rachel Fish has looked at the role that race and ethnicity play in teacher referrals for exceptionalities. In one study (Fish, 2017), she presented third- and fourth-grade teachers with vignettes of fictional male students who fell into one of three categories: academic challenges, behavioral challenges, and academic strengths combined with emotional sensitivity. The vignettes were meant to represent borderline cases—suggesting a learning disability, an emotional disorder, or giftedness—but they left room for judgment. Fish was interested in learning how differently framed vignettes would affect teachers' recommendations for testing. The vignettes in each category presented the same details about the academic performance and emotional proclivities of the student, but she manipulated the background characteristics (race, ethnicity, English learner status, socioeconomic status). After reading each vignette, teachers were asked how likely they would be to refer the child for an evaluation. She found that teachers were more likely to refer a white boy for a learning disability and a black or Latino boy for a behavioral disorder. In the vignettes that suggested giftedness, teachers were likely to judge the white boys as exceptional.

Other research has shown that if teachers have lower academic expectations for black students, they will likely interpret their low performance as normal and expected (Gershenson et. al., 2016). A low performing white child would more likely be seen as underperforming and in need of resources that bring him into the norm. Misbehavior among black students (particularly black boys) may be seen as more menacing and trigger swifter and more serious responses from teachers. A well-behaved black child who is struggling with reading and writing may likely remain invisible in the classroom.

One sweeping study, which used individual-level data on all K-12 public school students across three states, found that race, not socioeconomic status, is a salient factor in the identification process: Non-low-income black students were roughly two times more likely to identified with an emotional or intellectual disability as otherwise similar non-low-income white students (Grindal et al., 2019). Significant disparities in placements were also found, and the magnitude of the disparity was even higher within the non-low-income group. These findings undermine the

claims that disproportionality can be fully explained by blacks' overall lower socioeconomic status.

The Stratification of Disability Categories

Education scholar Wanda Blanchett has examined the intersection of race, class, and disability in the U.S. and found that middle- and upper-class white students with an LD receive accommodations and modifications within the general education classroom setting, while students of color with the same labels are educated in restricted settings. In "Telling It Like It Is: The Role of Race, Class, & Culture in the Perpetuation of Learning Disability as a Privileged Category for the White Middle Class," she argues:

> Students labeled as having a learning disability are by the codified federal definition of a learning disability deemed intellectually superior or privileged compared to their peers because they are reported to have average or above intelligence, which sets them aside from students identified with developmental disabilities, who are reported to have significantly lower levels of intellectual ability . . . When the privilege conferred by the LD label is compounded by the privilege of whiteness and social class privilege, it greatly advantages those students. However, when LD intersects with lower socio-economic status or class and with being African American or of color, the privileges described above that are often associated with LD are denied these students. (Blanchett, 2010, pp. 6-7)

The sociologist Rachel Fish has examined the varying social statuses of individual disability categories. "Higher status" disabilities include autism, speech and language impairment, or "other health impairment," which is a category often used for children with ADHD. These categories are often linked with higher inclusion rates and less stigma. At the other extreme are intellectual disabilities and emotional/behavioral disabilities, which she calls "low status" disabilities. In one study on special education enrollment in Wisconsin, she found significant stratification of status categories along racial lines (Fish, 2019). Like Morgan and Farkas, she found that, overall, black and Hispanic students were identified with disabilities at lower rates than their similar white peers (based on poverty rates and test scores). However, when examining the data at the school level, she found a disturbing pattern: Not only were white students more likely to be diagnosed with a disability when they attended schools with non-white students; they were also more likely to be diagnosed with a "high status" disability. In contrast, black and Hispanic students who attended predominantly white schools were more likely to be diagnosed with "low status" disability categories.

School Resources and Racial Makeup

Research shows that the racial makeup of the school plays a significant role in the identification and placement process. Special education is expensive—up to more than double that of regular education—and the federal government funds only a small part of the cost. Racially isolated schools, where more than 90 percent of the students are non-white, are often strapped to provide for the basic needs of their students, much less the intensive level of services typically prescribed under an IEP. In addition, parents may be unfamiliar with their federal rights or feel disempowered to advocate for their children. Another factor is the relative low achievement within the school, which may lead to many learning-disabled students going unnoticed. Past scholars have attributed this to the "frog pond effect" (Hibbel et al., 2010), where children with similar achievement levels may only be perceived as low achieving if they attend a school with peers who are relatively higher achieving. In disadvantaged schools, however, only those children with the most acute academic or behavior challenges—relative to other low-performing children in the school—are referred for special education. Studies on other states have confirmed this pattern. One study on a large urban school district in the southwest found that students were more likely to be designated with a cognitive health condition (e.g., autism, learning disability) in schools with greater resources: higher teacher to student ratio, wealthier student body, magnet and charter programs (Shifrer & Fish, 2019).

Language Variance and the Misdiagnosis of African-American Students

In "Teaching Reading to African-American Children: When Home and School Language Differ," scholars Julie Washington and Mark Seidenberg examine the particularities of African American English (AAE) and the ways in which language variance increases the cognitive load in learning to reading. Using two language varieties (AAE and General American English, or GAE) can complicate the learning of reading and writing as much, *if not more than*, using two languages since "the subtle transformations between the cultural and the general varieties of a single language may be even more difficult for young children to detect and resolve than the more obvious differences between two languages" (Washington & Seidenberg, 2021, para. 6).

The risk of misidentification for AAE speakers is high since most standardized instruments were developed and normed using GAE-speaking children and lack sensitivity when used with children with language variance. Not only are the strengths of AAE-speaking children more likely to go unnoted, but their language variants may more often be scored as errors. Research from the field of speech and language confirms these assessment biases. In "Difference or Deficit in Speakers of African American English," speech and language pathologist Linda M. Bland-Stewart writes that "AAE speakers are frequently classified as language delayed or disordered when really they are language different" (Bland-Stewart, 2005, par. 5).

Federal Focus on Disproportionality

According to a 2017 Brookings Institution report, adverse out-of-school factors—poor nutrition, stress, and exposure to environmental toxins—unduly affect poor children and children of color (Gordon, 2017). Based on these harsh realities, the report argues, we would expect to see greater numbers of black and Hispanic students with disabilities. The authors warn, however, that a focus on disproportionality, along with federal requirements that states establish a uniform threshold for all

students, could incentivize districts to "under-identify—that is, to withhold services from—children who already face a broad array of systemic disadvantages" (para. 16).

Special Education Law and Eligibility Criteria

A final factor is the exclusionary language of the federal IDEA. The eligibility criteria for the provision of special education services for a specific learning disability explicitly restricts the identification for children whose learning problems are thought to be due to inadequate learning opportunities, environmental factors, cultural differences, or economic disadvantage (Whittaker & Ortiz, 2019). These broad categories of exclusion leave plenty of room for subjectivity when judging whether a student is working to their intellectual potential. If teachers view low achievement among poor black children as a natural outcome of their socioeconomic status or culturally impoverished home environment, they may more likely to ignore the neurological basis of a child's low achievement or behavior challenges.

Implications for Educational Therapy

There is a new push within the field of educational therapy to reach out to more underserved communities and find creative ways to offer our services pro-bono or on a sliding scale. A recent survey conducted by the Social Justice Subcommittee of the Association of Educational Therapists (2021) found that "slightly more than half of educational therapists who responded to the survey provide low cost/no cost options within their practices."[2] The commitment of our profession is clear. Yet our ability to expand our reach to poor and minority children with learning disabilities is strongly linked to our schools' effectiveness in identifying them. The research highlighted in this paper shows that children of color, particularly black children, are much less likely to be identified with the "high status" disabilities that educational therapists most frequently address: dyslexia, dyscalculia, ADHD, and autism.

There are a few hopeful signs that the tide is turning. Over thirty states have adopted laws mandating universal dyslexia screening in the early grades.[3] In California, Governor Gavin Newsom announced plans to set aside $4 million for dyslexia screening and training in his 2020-21 budget proposal (Jones, 2020). Still, given the difficulties in distinguishing between difference and deficit in AAE-speaking children, we will need to ensure that the screening instruments are sensitive to language variance. As a national association, we can collaborate with regional dyslexia associations to advocate for inclusion of a screening instrument that is designed for AAE speakers.

[2] Survey results reported at https://www.aetonline.org/index.php/public-policy/social-justice-survey

[3] Map of states with universal screening laws is shown at https://improvingliteracy.org/state-of-dyslexia.

Summary

Although much of the discussion on disproportionality over the past decade has focused on the over-identification and over-labeling of students of color, there is no clear or single set of data to support such claims. Federal data from the National Center for Education Statistics (2020) show a continued pattern of overrepresentation of black students identified for special education, while longitudinal data from the Early Childhood Longitudinal Study produce contrary findings. Furthermore, analyses of NAEP data reveal that black students scoring within the lowest decile are less likely than white students scoring within the same decile to be identified for special education. When identification patterns are unpacked by disability type, we see evidence for both over- and under-identification of students of color. Not all labels are equal or lead to equal outcomes. Identification for a specific learning disability (a "high status" disability category) can generally be addressed in the regular classroom and carries relatively low stigma. The reverse is true when a student is identified for an intellectual impairment or behavioral disorder, which usually results in his removal from the general student population. Blacks are overrepresented in the second category and underrepresented in the first (Skiba et al., 2008). While teacher bias may weigh heavily in the initial referral process, there are a host of factors that account for the disparities, including the resources of the school (which are often tied to its racial makeup), the federal focus on disproportionality, which may disincentivize districts to identify student of color, and the exclusionary language of the federal IDEA, which invites judgments on the cause of low achievement among poor children of color. Until we can apply a common set of data and control variables to our analyses and disaggregate our data by individual disability category, we cannot begin to grasp the racial disparities that beset schools' delivery of special education services.

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Standardized Test Preparation: A Coaching Perspective

Craig Elderkin, MBA

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.

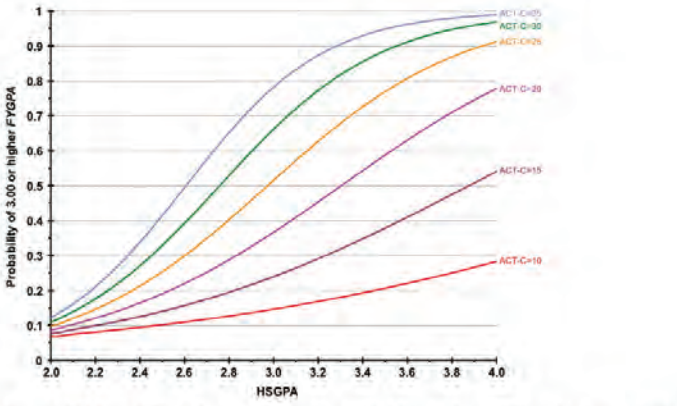

Figure 11.13 Probabilities of success associated with 3.0 or higher FYGPA and being retained through the first year, based on HSGPA and ACT Composite score.

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.

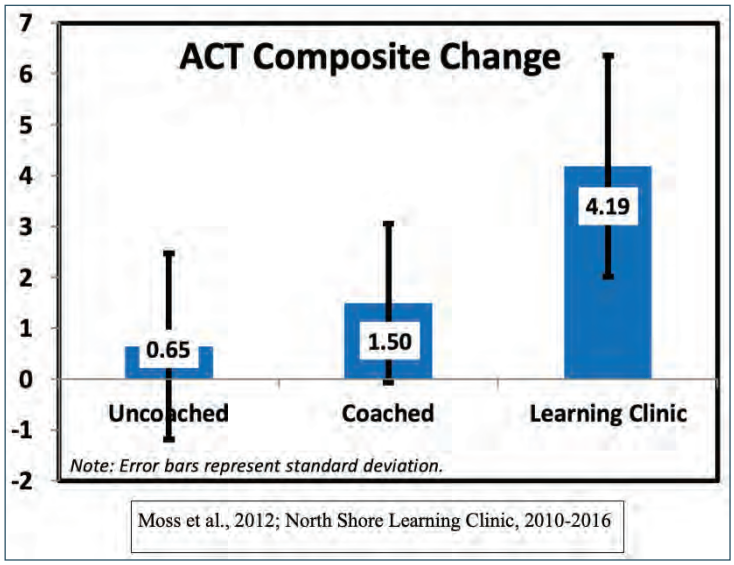

Figure 2: The Benefits of Coaching

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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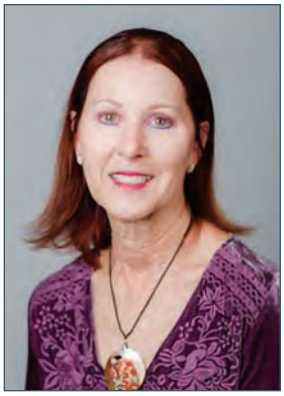

Notes From the Trenches

Karen Lerner, MA, ET/P

Contemplating Connections

"A Hidden Connection is Stronger Than an Obvious One"
-Heraclitus of Ephesus

I am digging my trench extra deep right now to have enough room for all my professional activities. When I look over what is currently in this trench, I see that my fear of finding myself alone with a lot of empty space around me was unfounded. This thought causes me to smile when I think of all the anxiety associated with filling-up a schedule when I changed careers to become an educational therapist. In fact, I wasn't sure what working in this profession would entail until I began the process. Now when I meet new educational therapists in my study group, online in a chat, at a workshop, or a conference, one topic that is always discussed is how to build a practice, and I have an answer: CONNECTIONS.

Connection can be defined as a relationship in which people are "linked or associated" by a concept (Lexico, n.d.). This is slightly different from the idea of networking, which is the word often bandied around when discussing the development of an educational therapy practice. Networking can be defined as "the action or process of interacting with others to exchange information and develop professional or social contacts" (Lexico, n.d.). I have a problem with this word since I am often concerned when another professional is focused more on the business side of the practice than the professional side—which probably says more about my discomfort with being in business!

So, let me talk instead about how I have used connections to fill a practice, work with a college coaching organization, and as of a few weeks ago, become a school principal (part-time) for a new non-public school.

Connections in 3 Easy Steps:

1. I offer initial consults to anyone for free. Either in my office or on Zoom, I meet lots of people referred to me by lots of other people. My specialty is my "rolodex"—I know allied professionals, educational lawyers, private schools, special needs programs in colleges, and can usually send someone on their way to find a better school placement, get more specific therapy for their child, or get someone to help them learn better parenting strategies. I probably keep a fraction of the people I see in my practice, but they are always grateful and years later I might be working with that student in another capacity.

2. Seven years ago, I began a Special Needs Private Schools/ Programs Consortium. This yearly Consortium involves teachers invited to a luncheon for the purpose of meeting each other while hearing about the mission of the different private schools in our county. There is also a keynote speaker, partly to justify the change in the academic schedule and partly because it offers a chance at continuing education that can be difficult to receive in a private school environment. After a few years, the heads of the schools wanted to meet about other subjects, and that has become a quarterly meeting in addition to the Consortium. (Which became a monthly meeting where everyone was practicing deep breathing during the pandemic.) After a few more years, the natural extension of the Consortium was to host a parent fair, and last year we hosted it on Zoom and had a record number participating. Consequently, these personal connections have turned into institutional connections and elevated the concept of educational therapy in private schools along the way.

3. My final effort to connect is through organizations like the AET. Joining committees or working on projects, you meet ETs from all over the country and get to know some quite well. I have been given referrals from other ETs who would never know me if I did not involve myself in this association. I have also created conferences for our local branch of the International Dyslexia Association, taught a student and parent program for the local Asperger's Support Group, and worked on a special education conference for our local pediatricians using a CATCH Grant. You really get to know people and the scope of their work when you inhabit their trenches, too.

So, my advice is to get connected in as many ways as you can manage. However, for my colleagues who have already discovered this secret, I hope you join me this year in finding some specific behaviors allowing for disconnection when needed.

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Assistive Technology in Practice:

Topics and Issues to Help ETs Fold Assistive Technology Into Their Practices

Shelley Haven,
BSME, ATP, RET

Understanding the Two Primary Alternatives to Print Materials: Audio Files and Electronic Text

Assistive technology can help struggling learners leverage their abilities to bypass or reduce the impact of learning weaknesses—a valuable addition to an educational therapist's array of interventions. While knowledge of specific tools is important, that's only part of the story: Education professionals must also make informed decisions about tool selection, implementation, and advocacy. "Assistive Technology in Practice" will provide insights on topics and issues that are key to creating effective AT solutions. Anticipated future articles will address topics such as how to make assistive technology recommendations in reports and at school meetings, helping students manage digital distractions when they use technology, and features to consider when choosing task-management apps. This inaugural article will familiarize readers with important distinctions between the two primary alternatives to print: audio files and electronic text.

What Is—and Isn't—Assistive Technology

As this is a new column, let's start at the beginning: What do we mean by "assistive technology"?

To paraphrase the official definitions in the IDEA and other federal legislation, assistive technology comprises two integral parts:

> An **AT device** is "any item, piece of equipment, or product system...used to increase, maintain, or improve functional capabilities" of a child or individual with disabilities. Devices are the tangible "things" we typically think of when we use the term technology or tool (Individuals with Disabilities Education Act, 2004, Sec. 300.5).
>
> An **AT service** is "any service that directly assists a (child or individual) with a disability in the selection, acquisition, or use of an assistive technology device." This includes assessment of AT needs, funding, training, coordination with education and therapies, etc.

(Individuals with Disabilities Education Act, 2004, Sec. 300.6). Key point: Without the requisite AT services, AT devices often don't "work"—that is, they may not provide the desired outcomes.

The defining characteristic that makes a device "assistive technology" rather than merely "technology" is its ability to help someone perform a task that might otherwise be difficult or impossible because of a disability. This critical distinction of assistive technology was summed up by Mary Pat Radabaugh, then-director of IBM's National Support Center for Persons with Disabilities, who in 1988 wrote: "For most people, technology makes things easier. For people with disabilities, however, technology makes things possible" (as cited in "Technology," n.d.).

Assistive technology can help individuals with physical, sensory, and cognitive needs in all aspects of their lives—mobility, communication, environmental control, computer access, recreation, daily living tasks, and more. This column, though, will focus solely on AT for individuals with learning differences—brain-based disorders that affect the cognitive processes needed to learn effectively.

AT devices aren't necessarily high tech or digital. For a student with illegible handwriting due to difficulty grasping a thin writing utensil, an appropriate rubberized pencil grip might make a significant difference, and is thus "assistive technology"—that is, a tool that assists them and without which they are unable to satisfactorily complete the task. Of course, that same student might also benefit from a high-tech AT solution like speech recognition (speech-to-text).

In the context of learning, AT is also different from educational technology (aka "ed tech"), which refers to using technology to facilitate teaching and learning, including delivery of educational content and instructional remediation. In contrast, AT helps a student *bypass* a personal learning obstacle so they can learn on a level academic playing field with their peers. For example, listening to an audiobook leverages a student's auditory skills to bypass possible decoding and visual tracking issues.

Formats for Print Alternatives

Students with dyslexia, or those with certain language or visual processing challenges, typically struggle with reading print materials as well as digital text—a major learning obstacle given how much instruction is provided via the written word (books, handouts, exams, webpages, text projected on the classroom screen, etc.). The need to mentally pause and decode words requires great cognitive effort, reduces reading speed, hampers comprehension, and often evokes frustration and anxiety.

A common and effective workaround for reading fluency problems is to "offload" some of that decoding and comprehension to the student's auditory channel by allowing them to listen to the text read aloud. Additionally, some students who have below average visual reading skills may have superior verbal comprehension skills, allowing them to listen to text-based materials several times faster than they can read and comprehend visually.

The two primary "print alternative" formats used for individuals with literacy challenges are audio files (typically audiobooks) and electronic text (e-text). Understanding the capabilities and limitations of these two formats can help you better equip clients with the proper reading materials, tools, and associated strategies to reach their reading potential.

Audio Files

Audio files are simply recordings of a person reading aloud the text-based material. This includes professionally-narrated audiobooks like actress Anne Hathaway reading *The Wizard of Oz* (complete with different character voices) as well as digital voice notes of a teacher reading worksheet instructions, recorded on the spot and attached to the PDF worksheet.

The primary advantage of a human-read audiobook or other audio file is that the narrator can convey additional meaning through inflection, prosody, pauses, and emphasis that is not necessarily evident through text alone. For students who struggle with decoding and slow reading, the vocal variations provided by a human reader can significantly aid comprehension, especially for dialogue in novels, poetry, and Shakespeare.

However, pure audiobooks (such as those available through Audible.com) are audio only. With the exception of chapter titles and other navigation information, the user sees no associated text (but see below about hybrid formats). A student can follow along in a print book, perhaps using a manual reading guide, while listening to the audiobook.

Since narrated audio requires recording a human reader and editing the files, most publicly available audio reading materials are audiobooks created and distributed by vendors and non-profit organizations. Purchased audiobooks typically must be played on dedicated apps to protect the work's digital rights and prevent illicit sharing. However, audio recordings of public domain works created by volunteer readers, notably those available through LibriVox.org, may be played on standard digital media devices and apps such as iTunes.

Electronic Text (E-Text)

Electronic text, or e-text, is accessible digital text which can be accessed by text-to-speech (TTS) software, and thus spoken aloud. E-text can be accessed by other reading supports such as comprehension tools (dictionary, translator) and annotation, and e-text in editable documents (such as word processors) can be manipulated to adjust the font, size, colors, and spacing to increase visual readability.

Basic text-to-speech software is built into most digital device operating systems and thus free. In addition, virtually all literacy software for students with learning differences include text-to-speech.[1] For a list of options, see the tables for "Simple text-to-speech" and "Read, Write & Study Suites" toward the top of the AT Toolbox webpage.

[1] Windows, macOS, Chrome, iOS, iPadOS, Android

"Digital Text" Does not Necessarily Mean "Accessible Text"

Text-to-speech and other reading supports only work with accessible text. A common misconception is that all digital text (that is, text that appears on a digital device) is accessible, and thus can be read aloud by text-to-speech software. What's the difference?

Here's a general rule of thumb: If the text is selectable—that is, you can highlight individual letters and words, then copy and paste these into another text document—it is accessible and can thus be spoken aloud using TTS. Text-based PDFs and HTML (the text on most webpages) are accessible, as is text entered into word processor apps and other software. This journal article is distributed as a text PDF and thus can be used with TTS and other reading supports.

However, words in digital photos, most digital maps, decorative headers, and images created by scanning a document (e.g., image PDFs, print books) are not accessible text—they are merely pictures of text. For example, the words "Association of Educational Therapists" in the logo on the cover of this journal are actually images of those words, not accessible e-text.

This distinction is important because some digital e-books are merely images of the print pages, not e-text. Accessible e-books are typically distributed in formats such as plain text (.txt files), text PDFs, ePub (used by most digital publishers), and AZW (used by Amazon Kindle).

Although inaccessible text can be converted to e-text with optical character recognition (OCR) software, the accuracy of that conversion depends on the quality and the complexity of the original document. OCR errors can confuse the listener, while finding and correcting errors can be time consuming.

Text highlighting - In many text-to-speech tools, words and sentences are highlighted in different colors to aid visual tracking. Such dynamic highlighting of words as they are spoken can help students make an association between the word they see and what they hear.

Figure 1: Visual Tracking Aids

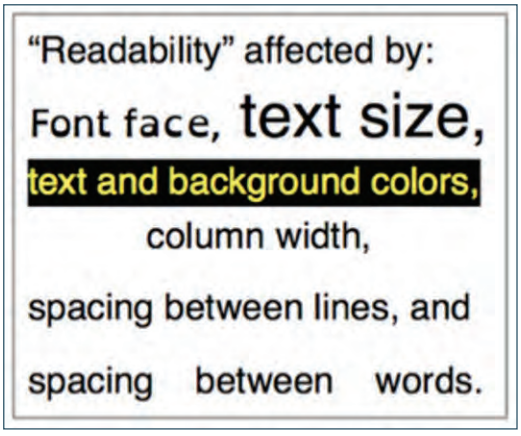

Figure 2: Visual Aspects Affecting Readability

E-Text Can Leverage Other Reading Supports

In addition to listening to reading materials with TTS, accessible e-text allows users to employ other reading supports. Depending on the tool used, they can:

- Use visual tracking aids such as dynamic highlighting (see Figure 1).
- Adjust the visual aspects of the text such as font, size, colors, spacing, and format to increase readability (see Figure 2).
- Click on unfamiliar or unknown words to look up or hear the definition (improves vocabulary and comprehension in the moment).
- Translate an unfamiliar word to their first language (aids English language learners, students learning a foreign language).
- Search the document for keywords or recurring themes (aids note-taking, critical thinking).
- Employ annotation strategies to improve critical thinking and retention (e.g., highlight text with colors, add text comments and voice notes, extract passages to separate study outline).

Table 1 summarizes important aspects of the reading experience for these two print alternative options.

	Recorded Audiobooks	Electronic Text plus Text-to-Speech
What is it?	Audio recording of person reading aloud text	Text-to-speech (TTS) software reads aloud electronic text (e-text)
Voice	• Voice of human reader (typical inflection, intonation, and prosody)	• Synthesized voice (some newer TTS voices are nearly human quality)
Typical Adjustments Available	• Reading speed	• Reading speed • Reading voice (including different accents and languages) • Pitch of reading voice • Visual appearance of e-text (font, size, colors, spacing)
Typical Noteworthy Features	• Bookmark pages, add bookmark notes • In some audiobooks, reader describes non-text items (images, graphs, equations) • Audio only—no synchronized text (user can follow along in print book)	• Reader both sees and hears text • Words/sentences visually highlighted as spoken • Access to comprehension tools (e.g., dictionary, translator) • Access to other reading supports (e.g., annotation, search)

Table 1: Comparison of Recorded Audiobooks and Electronic Text plus Text-to-Speech

Choice of Reading Modality Depends on the Student, the Task, and the Context

It may be tempting to pit these two auditory reading modalities against each other and conclude that one is "better" than the other, but that would not tell the whole story. Better for whom? For what types of learning needs? For what kinds of reading content (fiction, nonfiction) or reading tasks (read for pleasure, take notes and study)? The pros and cons of audio files and e-text

vary for different tasks, different contexts, and different kinds of learners. Consider:

- Human narration, with its nuances of intonation and rhythm to convey added meaning, may be preferred for dialogue-heavy fiction, poetry, Shakespeare, and text with lots of dialect.
  - Imagine listening to Mark Twain's Huckleberry Finn with text-to-speech: *"Well, it's a blame ridicklous way, en I doan' want to hear no mo' 'bout it. Dey ain' no sense in it."*

- Text-to-speech voices, especially monotone voices, are typically more "understandable" at higher reading speeds and thus useful for skimming material or reviewing materials previously read.
  - Students with exceptional auditory skills may be able to read/listen to text-to-speech at speeds exceeding 300-400 words per minute.

- Listening to an audiobook with earbuds while following in the print version (along with their classroom peers) is preferred by some students because it's less conspicuous.

- E-text coupled with TTS affords additional reading supports like visual tracking aids, adjusting the text display, comprehension aids, and annotation.
  - The ability to annotate e-text while listening makes e-text and TTS a good choice for reading textbooks and creating study guides.

- Some students may actually comprehend and absorb content better by listening to audiobooks *without* the distraction of visual reading.

- TTS allows listening to text for which there is no recorded audio—for example: webpages, email, PDF files, and many books.

As with all assistive technology, choice of the "right" tool will depend on the goal of the reading task, the user's needs and preferences, and the context for performing the task (in class, at home, while bicycling). Most students will benefit from access to a variety of auditory supports and reading tools so that they have options available when needed.

Where to Get Print Alternatives

Accessible audiobooks and e-text are available from several sources and may be free, purchased, or borrowed. For a table of sources most likely to have print alternatives of books used in education (textbooks, fiction, nonfiction), see "Resources for Alternatives to Printed Text - Electronic Text (E-text) and Narrated Audiobooks" on the AT Toolbox webpage. Armed with the book's title, edition, translation (if any), author, publisher, copyright date, and/or ISBN, one can determine if an e-text or audiobook version of the material is available.

Under the 1996 Chafee Amendment, which amends U.S. Copyright Law, certain authorized entities are allowed to produce and distribute copyrighted works in accessible formats for persons with verifiable print disabilities. These Accessible Media Producers (AMPs) include organizations like Bookshare, Learning Ally, and the National Library Service. The following page on the Bookshare website explains more about eligibility: https://www.bookshare.org/cms/bookshare-me/who-qualifies

For qualified individuals, both Learning Ally (audiobooks) and Bookshare (e-text) are good sources for accessible textbooks.

What About Combinations of E-Text and Human Narration?

Some creators and distributors of digital books offer titles that combine e-text with human narration. The following are noteworthy examples.

Most audiobooks offered by Learning Ally are in "Classic Audio" format (audio only). However, nearly 9000 of their 80,000+ books are available in what they call VOICEtext format, where e-text is displayed in the Learning Ally app as the narrator reads. Depending on the book, either the sentence or paragraph being read is visually highlighted. In VOICEtext books, students can also access some tools specific to e-text (dictionary, highlight and add notes to selected sentences).

Amazon sells Kindle e-books that can be read on their Kindle E-Readers (physical devices) or on the Kindle reading app (free for PC, Mac, iOS/iPadOS, and Android devices). Since Amazon also owns Audible, which sells professionally-narrated audiobooks, they offer the ability to sync selected audiobooks and e-books through a feature called Whispersync for Voice. Users must have both the Kindle and Audible apps, and purchase the Kindle e-book, then the Audible audiobook (usually discounted for those who have the Kindle version). Going to a page in one app immediately goes to that same page in the other. Some Kindle devices and apps go a step further and offer Immersion Reading: Not only are the e-book and audiobook synched, but individual words are visually highlighted as they are spoken by the human reader.

"Acclimating" to Text-to-Speech (TTS) Voices

The listening options for reading with TTS are so much broader because there is no recorded audio for most text-based materials and accessible print alternatives for later grades are predominantly e-text (e.g., textbooks, teacher-created materials, print that is scanned and converted with OCR software). Also, e-text allows the students to read aloud text in different languages.

While students may prefer listening to human-read audio vs. synthesized text-to-speech voices for the reasons mentioned earlier, most are nevertheless able to use and benefit from TTS when a human reader is not available (e.g., listening to webpages). Thanks to recent technology advances, some of the newer TTS voices are incredibly natural-sounding in terms of pronunciation, fluidity, and inflection. These so-called "neural text-to-speech" voices are available in iOS/iPadOS 13+, macOS 15+, and Microsoft Immersive Reader.

A small number of students, however, may actively resist using e-text and TTS or refuse it. It is important to first determine if the student is actually unable to understand the text-to-speech, perhaps due to an auditory processing issue, or if the student understands it but either dislikes the voice or finds it distracting. In either case, explore how different voices and different reading speeds impact both understandability of the spoken text and the student's acceptance of it.

Virtually all text-to-speech tools permit changing the reading speed and the reading voice. Here are suggestions for helping students acclimate to reading with text-to-speech:

- Start by trying different voices, including those with different accents.
  - For example, most apps and devices with US English text-to-speech also offer variations with British, Irish, Australian, Indian, and South African accents.
- Allow the student to adjust the reading speed to their "Goldilocks range"—not too fast, not too slow (this may vary for type of reading material).
- Determine if the student's understanding and acceptability of text-to-speech voices depends on the material being read—e.g., a novel vs. a science textbook.
- Practice listening to and understanding text-to-speech with non-critical reading (personal email, non-school webpages).
- Use Kindle Immersion Reading or Learning Ally VOICEtext (human reader + highlighted e-text) as a stepping stone to TTS.

Summary

In general, students will benefit from access to a variety of auditory supports and reading tools so that they can select the tools and methods that best fit their needs. Providing options and allowing them to explore what works will help them to become more self-confident and independent, and to develop lifespan technology skills that will serve them well beyond school.

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The Unique Learner: Case Studies of Clients With Complex Learning Profiles

Susan Micari, MSEd, BCET

On Mentoring Others

I love to remember my mentor, Dina Birnbach, one of the founders of The Churchill School, a special school for dyslexic children in Manhattan; when I remember her interest in my work, my heart fills with gratitude and pride. The terrors of my early practice with very entitled clients, who often had emotional issues to sort out regarding money and my work, faded under Dina's guidance as she taught me how to listen to them. My new full-time private practice centered around helping students with issues of dyslexia, attention, non-verbal learning disabilities, and complicated family dynamics made more fraught by divorce or death. I was often called on to stand up to clients who tended to bully their children, and by extension, me.

Having Dina in my corner meant that I had someone to talk to about cases, and I developed confidence that I could meet the challenges my clients and their parents presented to me because there was no issue I could not speak to Dina about. Dina claimed that I could do what other educational therapists could do, though we all called ourselves learning specialists then, but that I would do it with love, and that this love, well channeled, would make my work stronger.

Rather than crowd me with prescriptions on how I should do my work, she led me into thinking through my strategies and plans with her warm but sharp questioning and by opening her personal library to me. Dina didn't suffer fools at all, and her attention to the *why* of my therapeutic plans made me a better educational therapist.

Three years ago, I began mentoring a young educational therapist, and I like to think that Dina would approve of my attempt to pay forward all that she taught me. When I helped my protégé to read psychoeducational evaluations, when I helped her learn to use her curriculum-design expertise in the realm of one-on-one remediation, I felt satisfied that I was helping someone extraordinarily talented to develop into an educational therapist. I modeled patience and listening skills as I listened to her concerns about her students every week. I knew many of the issues of some cases because I had referred the client to her. My mentee wanted to be successful quickly, but I was sure that teaching her to slow down to listen well would make her a better educational therapist and that staying connected to her client *was* doing the work even if the client rejected the exercise that my protégé had worked so hard to create. I could help her relax while she built relationships with her families, as each client struggled to pick up new skills or showed resistance to learning new ways of working.

Our time together made us friends, business partners, and admirers of each other. Were there challenges? Yes, of course, but each of us is the kind of person who likes to talk about a problem and do so straight away. We are now on a path to creating an online class for people interested in becoming educational therapists, through which we will soon mentor other teachers and specialists who wish to become educational therapists.

The process of mentorship is different from the contract we sign when we agree to supervise an ET in the attainment of her professional credentials. That relationship has a beginning, middle and end, and it has good boundaries that are set at the beginning of the twelve or so weeks provided for supervision. A mentoring relationship can continue until it comes to a natural end. It may even last a lifetime, as my relationship with Dina did. Dina taught me life-long methods of being empathetic, curious, and generous. My worldview changed for the better and forever because she mentored me, and all that she taught me is mine to keep. Though Dina has now died, she is part of who I am as an educational therapist and as a person.

A mentorship is something you do from the heart so that the soft skills of educational therapy that hinge on building relationships can be passed forward. You may find that mentoring changes your practice in ways you could not have anticipated as you work to teach your mentee strategies for teaching and organizing a successful remediation. I know about those challenges to development that my mentee chose to share with me. In passing knowledge forward, I feel connected to my mentee and to Dina, and through Dina, to all the famous women of our field who once taught her. What we educational therapists know is transmitted through close relationships, great questions, and patient work with those young educational therapists whom we agree to help.

I wish you the pleasure and privilege of mentorship.

Susan Micari, MSEd, BCET, is the founder, along with Dr. Annalisa Perfetto, of EdTherapyNYC, a practice that serves adults with NVLD, dyslexia, executive function difficulties, and ADHD. Susan serves clients whose profiles are complicated by trauma, and she has designed courses in LD for parents in the UK, Australia, and the United States. Susan now lives in Richmond, VA, and continues her practice there both online and in person with middle, high school, and college students as well as executives who seek help for executive functions or dyslexia.

ERRATUM:

The Unique Learner **column "On Collaboration With Mental Health Professionals With Expertise Treating NVLD" was published in the Fall 2020 issue of** ***The Educational Therapist.*** **We regret that the name of one of the authors, Benjamin Meyer, LCSW, was inadvertently omitted.** ***Please click here for the revised column.***

The Coaching Corner

Topics in Executive Function

Avery Walsh, MA, ET/P

EF Skills Training—Start Small and Stress Communication

As educational therapists, we are very familiar with students who have been labeled "bright but lazy" or "not working to their potential." These young people often score well on standardized tests and have above average IQs. Teachers and parents commonly complain, "If they would only (fill in the blank!), they could be a straight A student, get into X college, etc." These are some of our most frustrating clients. They have the smarts, often don't exhibit a specific learning disability, struggle in school, and are barely scraping by academically. More often than not, this is executive function disorder at work.

The *Merriam Webster* (2021) definition of executive function (EF) spells it out neatly, as a "group of complex mental processes and cognitive abilities (such as working memory, impulse inhibition, and reasoning) that control the skills (such as organizing tasks, remembering details, managing time, and solving problems) required for goal-directed behavior." EF skill building has always been an important part of the educational therapy process, but the practice and teaching of it in our day-to-day work with students can often get lost amongst more academic goals of reading and math remediation. This column will work to bridge the gap between the academic face of educational therapy and the EF side—organization, planning, and time management as well as the more emotional components of cognitive flexibility, impulse control, and emotional self-regulation.

While the majority of students with EF challenges have an ADHD diagnosis, not all these clients fit into an attention related category. In my experience, anxiety has become a major EF impairment for students. An overactive amygdala in an anxious individual virtually shuts down the prefrontal cortex resulting in weaknesses in concentration and retention of information as well as poor emotional regulation (Goleman, 1995). Clients with EF weaknesses may also suffer from other diagnoses, such as brain injury or PTSD.

In essence, EF is the glue that holds students' academic lives together. If a student can't manage a calendar, maintain a homework and study routine, and keep their work organized, all else is lost. Furthermore, as students age, the demands on their EF skills multiply. Middle school…high school…college. At each of these stages, the organizational, planning, and study demands increase exponentially and new strategies and skills are needed. On top of this, the demands on students' EF systems are compounded by technology, such as the now ubiquitous use of school online grading portals and homework hubs.

While instruction in executive function skills is essential for many of our clients, teaching these skills can be extremely challenging. Unlike teaching academic tasks, the results of teaching EFs can be slow to emerge and small in scope. Students are often resistant to the difficult work of changing the well-worn patterns in their routines, regardless of how maladaptive they are. It may take months—even years—for a student to make noticeable gains. Maturity, both physical, in the case of the maturation of the prefrontal cortex, and emotional, is an integral part of executive function growth. And all the while, parents are wanting visible results, often a quick fix. Teachers and school districts want measurable outcomes.

So how do we balance the academic needs of our clients along with strengthening their executive function weaknesses? And how can we integrate EF skills into our work with students in a way that is meaningful and will lead to positive lifelong habits?

Establish good communication with both parents and students:

- Be honest and up front with parents and students from the start; EF skills training is a lifelong process and will take time, patience, and sustained effort.
- Stress the collaborative nature of EF skill building with students and parents—success can only happen together.
- Enlist parents as EF skills training partners whenever possible.
- Establish clear expectations of behavior and responsibility with clients—honesty is key.
- Use MI (Motivational Interviewing) strategies with teens to facilitate good communication.
- Offer compassion and empathy to your students—this work is really tough!

Start small and manageable:

- Work on one goal at a time—write it out, make it visible.
- Start with the easy stuff to ensure success early on.
- Teach, model, then practice, practice, practice before expecting independence.
- Break each task down piece by piece. Too challenging? Break it down further.

Make it rewarding:

- Whenever possible, make skill acquisition fun and enjoyable.

- External incentives (a.k.a. "rewards") are essential; work with students and families to come up with a client's "currency." What incentive will motivate them forward until the learned strategy is a habit and routine?
- Internal motivation comes with maturity, and these kids don't have it yet!

Embrace mistakes:

- No shame, no blame. Kids with EF challenges have often spent years being shamed and punished for making mistakes.
- Every mistake is a valuable learning experience and can be a great tool for problem solving.
- Always look ahead, not back—instead of *why* did you make that mistake, ask *what* can you do differently next time.

Working with students who have executive function deficits can often feel like Sisyphus pushing the rock, an endless uphill battle. But if we can reset and reframe our goals, take one step at a time, and bring patience, compassion, and humor into our work with clients, the rewards will often out-weigh the struggle.

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In my Opinion...

Nancy Fike Knop, PhD, ET/P

Of Course, You Hated Word Problems: Current Research in Cognitive Science and Neurobiology Explains Why

Brain pathways for processing words and processing numbers do not completely overlap. Mathematical thinking has its own set of brain pathways. As a result, solving word problems requires translation between these symbolic languages, making the math more difficult, leading to anxiety and avoidance. Math learning requires systematic, incremental development from concrete to abstract understanding using numbers, not words. Learning to solve word problems is a separate, though important, process.

It's perfectly natural to hate word problems. You couldn't help it. Our brains are wired one way for quantity/number symbols and a different way for language/letter-word symbols (Almaric & Dehaene, 2018; Fuchs et al., 2016a). Having to dip in and out of language areas of your brain to use separate quantity areas makes math more difficult. It's like feeling your way through a room with your eyes closed. You can use hearing and touch to figure out where things are, but sight is easier—different areas of the brain are involved. Why make it more difficult?

Specialists in the brain and learning talk about domain-general and domain-specific brain functions. The hippocampus (memory formation), deep in the middle of your brain, and the frontal lobes (planning and inhibition of irrelevant information) are domain-general: You use them for all kinds of learning and thinking. Areas on the top toward the back, the parietal lobes (quantity), and the temporal lobes, on the left side inside your temple (language) are more domain-specific. In other words, these areas are wired into pathways you developed for specific kinds of thinking and communicating (Battista et al., 2018). Seeing, hearing, and touch all have their own specialized brain areas, too.

You were born with a brain area and pathways already specialized for recognizing, estimating, and comparing quantity (amount, loudness, brightness) and a separate area and pathway for recognizing spoken language. Your senses send information to those specific areas for interpretation. As you learned to count and read, letter and number combinations were stored in your memory and new connections were formed, but they developed in different places, with different pathways. Both domain-specific areas and domain-general pathways are involved (Qin et al., 2014; Vogel & De Smedt, 2021; Wu et al., 2017).

For reading, your knowledge grew from hearing and understanding language into decoding written words, then

combinations of words, then sentences, then chapter books. You combined that with encoding: writing words, sentences, paragraphs. If you were fortunate, you learned to do creative and expository writing. The left temporal and frontal lobes developed important pathways for this.

For math, you learned to use ideas about quantity and the symbols that represented quantity to carry out arithmetic operations: addition, subtraction, multiplication, and division. You used your visual-spatial memory and your hands to move things around that represented quantities. You actually understood concepts. For instance, you laid colored counters on a number line, different colors for each addend, and built a picture of addition in your mind that easily translated to number symbol addition. You saw that multiplication is just a shortcut for repeated addition. You valued all the math facts and operation ideas stored in your memory because it made solving arithmetic problems fluent and successful (Price et al., 2013). Transferring your direct understanding from concrete manipulatives to abstract symbols in a specific, systematic progression allowed you to be able to use the symbols fluently and accurately. You built an automatic recall of the information you needed. Or you could do all this if you had a chance to learn these things in a direct and explicit way, incrementally, using all your senses, with creative practice in clearly recording or expressing your computations and solutions. You developed the ability to do proportional reasoning (fractions, decimals, and percents). You developed working memory and executive function (domain-general attributes) in algebra. You activated big picture understanding and deductive conclusions from partially given information in geometry. Your frontal and parietal lobes developed important wiring for this.

What happened when word problems entered the picture? At first, maybe not so much. Perhaps you could translate adding apples and oranges to figure out the total quantity of fruit in the basket. But if that problem was a written problem, it was more difficult than one spoken to you, because you had to decode the letter/word symbols and translate into number and operation symbols: different languages. Any language-based learning issue just added to the difficulty (Fuchs & Fuchs 2002; Geary, 2011; Kennedy, 2020). As the information included got more and more complicated, it could become too difficult. Too many brain areas were involved in sorting it out and translating it. If you didn't have automatic understanding of the math, understanding literally *in your body*, involving, seeing, touching, and hearing, or enough practice doing problems like this one, the word problem was a serious challenge. Written words put you back at square one, trying to translate.

Increasingly, students are asked to solve math problems and then to "explain your thinking" using words or written language. Solutions to math problems that show all the steps using numbers DO completely show thinking, in mathematical language. Restating solutions in words requires another translation step. Solutions to word problems should be expressed numerically, with terms labeled as necessary, e.g. "15 pieces of fruit total." That is enough. Once solutions are shown mathematically, it is not necessary, and you should not be required, to write sentences explaining again everything you just explained mathematically.

The demands of solving word problems are very similar to the demands of expository writing. Both require major translation tasks. For word problems: (1) translate the language of the word problem into a big picture of understanding, (2) translate that big picture into its equivalent as an equation, (3) solve the equation. For expository writing: (1) translate the big picture of an idea into an organized sequence (outline), (2) translate the organized sequence into expository language (expository language is different than spoken language), (3) write the essay. It takes many years of laying groundwork and developing the concepts and skills involved (Berg, n.d.). You are fortunate if you are comfortable with either one.

Most of us are not comfortable with word problems and we were not comfortable with them in school. Now, research in cognitive science and neurobiology is yielding an explanation for our discomfort. Our math brain was not designed for words. We developed strategies for coping, but we didn't develop fluent understanding. Or we hated word problems, developed math anxiety, and avoided any further math (Ashcroft & Moore, 2009; Choe et al., 2019). Alas, real life presents us with "word problems" every day: knowing what 20% off means, balancing checkbooks, understanding simple and compound interest, income and tax rates, or analyzing statistics for accurate interpretation.

Confidence and competence in word-problem solving depends on knowledge of arithmetic (Fuchs et al., 2016b). Although this is basic and essential, it is not enough. For spoken story problems or word problems presented in text, language and reading comprehension is also necessary (Fuchs et al., 2020). For anyone with a learning issue that involves reading, executive function, working memory, or number sense, no matter how gifted in other areas, word problems become even more challenging (Knop & Chou, 2020). This is why arithmetic problem solving and translation of word problems into mathematics must be taught separately and explicitly.

Development of the ability to address and solve word problems is important. It takes many carefully structured years of instruction to develop the ability to analyze, translate, solve, and translate again to communicate solutions effectively in both numbers and words. Our brains do not process word problems the same way as mathematical problems presented numerically. Learning to solve word problems is an important adjunct, and it is necessary. But word problems should not be taught or assessed *instead of or as the entryway* to numerically based mathematics. There must be separate well-designed approaches and progress monitors to both; otherwise it is like trying to teach children to see with their ears.

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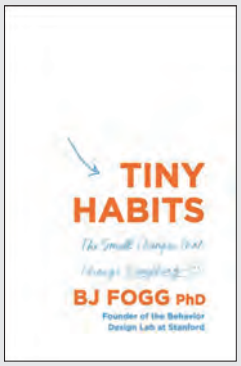

Book Review—Tiny Habits

Laurie Fox, EdD, ET/P

BJ Fogg, PhD

Tiny Habits: The Small Changes That Change Everything

Virgin Books (2019)
306 pages, $20.00 (paperback, London ed.)

We encourage our students to develop habits as a counterbalance to forgetting and self-debate. Still, many cling to old ineffective patterns. Fascinated with resistance to change, I dove into four best-sellers on the subject. Tiny Habits by Dr. BJ Fogg emerged as the most instructional with its focus on simple = tiny = easy = success.

Book Review

Tiny Habits is based on a program from Stanford University's Behavior Design Lab. Fogg is a behavior scientist whose thinking reflects his computer design experience. Flowcharts, graphs, acronyms, and behavior equations abound, all of which could inspire eyeball-crossing were it not for his engaging illustrative stories and speaking to readers as if we were seminar participants. Tiny habits, he posits, are the way to behavior change.

Habit science asks us to think on a granular level. We're reminded that the brain, to reduce cognitive load, seeks familiarity stored in the basal ganglia where minimal bandwidth is required. The law of least effort is our natural tendency. Change directs attention to the prefrontal cortex where conflict is experienced, decisions are weighed, and energy is required. Hence, we resist.

Three popular habit-science authors agree that habitual behavior is context-dependent; priming or changing the environment is crucial. *The Power of Habit* (Duhigg, 2012) has a business focus, explaining a cue-routine-reward loop. *Atomic Habits* (Clear, 2018) adapts both Duhigg's loop and Fogg's Tiny Habits program by espousing four laws: Make the behavior obvious (state where and when), attractive (reframe as "I want to ..."), easy (tiny), and satisfying (yields immediate pleasure). *Good Habits, Bad Habits* (Wood, 2019) is by a fellow academic at University of Southern California and, with over 300 references, provides the richest research collective. She asserts that nearly half of our daily actions are habitual and, despite our lack of awareness, we mistakenly expect willpower to change them. To effect behavior change, we need "to acknowledge that we aren't fully rational" (Wood, 2019, p. 5). This sparked personal ponderings about hot-topic grit and resilience assumptions based on willpower.

Tiny Habits asks readers to apply the process step by step—good teaching. While its foundations overlap with the other authors, it reads more as a guide supported by 15 pages of examples. The tiny theme and several points stood out as helpful in our work with students:

1. **Start With Anchor Prompts:** Stack new behavior onto one that already exists as part of a routine (in the same place, has the same frequency, and serves a similar purpose). The template is: *After I ..., I will ..., then celebrate.*

2. **Choose Celebrations and Do Immediately After:** Fogg provides 100 celebration ideas to underscore the importance of a dopamine rush, ranking it the critical component. It can be a quick ✓ or a "Yes!" Immediacy is key. Emotions create behavior; a favorite line is, "Not fairy dust. Emotions" (Fogg, 2019, p. 137).

3. **If Forget, Rehearse the Sequence:** *Anchor Prompt + New Habit + Celebrate* seven to ten times in a row.

4. **Simple=Tiny=Easy:** Make it ridiculously radically so. *Book on the table* (+ celebrate it). "Feeling successful helps us wire in new habits, and it motivates us to do more" (Fogg, 2019, p. 10).

5. **Redesign Your Environment:** Phones and people are triggers. There's much to consider in environment design.

6. **Embrace a New Identity:** "Your habits shape your identity, and your identity shapes your habits...[it's] the North Star of habit change" (Fogg, 2019, p. 40). We're to encourage *I am a reader* rather than *I need to read this chapter* and *I am a person who...*

Education talk is mostly non-existent, so educational therapists need to extrapolate. Active reading for application kept this reviewer engaged. Fogg is the one author who mentions working with students with ADHD.

These habit-science readings add to the ever-evolving cognitive science corpus on such related topics as automaticity, addiction, behavioral economics' decision-making, cognitive dissonance,

shift, rigid thinking, and tolerance for ambiguity or uncertainty, all of which can ignite anxiety and impact learning. We're reminded that old habits are hardwired; they lurk forever beyond awareness. We can, however, guide the development of new ones that increase confidence and success one tiny step at a time.

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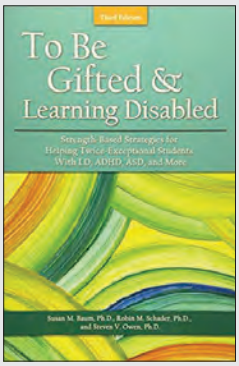

Book Review—
To Be Gifted and Learning Disabled

Cynthia Z. Hansen, MEd, ET/P

Susan M. Baum, PhD
Robin M. Schader, PhD
Steven V. Owen, PhD

To Be Gifted and Learning Disabled: Strength-Based Strategies for Helping Twice-Exceptional Students With LD, ADHD, ASD, and More

Prufrock Press (2017)
301 pages, $39.95 (paperback)

The authors' expertise complements the philosophy of educational therapy by exploring the complex range of cognitively diverse learners. They offer research, insights, and strategies to support our clients in the complex intersection between high abilities, creativity, disabilities, and the role of social and emotional stressors in the learning process.

Book Review

A text used at Bridges Graduate School, *To Be Gifted and Learning Disabled* by Susan M. Baum, PhD; Robin M. Schader, PhD; and Steven V. Owen, PhD (2017), is a comprehensive primer for educational therapists, parents, and allied professionals. The text offers a solid theoretical background blended with practical strategies and examples of the complex issues facing twice-exceptional learners. These students demonstrate the high abilities and creativity of giftedness comorbid with a specific learning disability (SLD) such as difficulties with mathematics, reading, or language arts; other health impairment (OHI) such as Attention Deficit Hyperactivity Disorder (ADHD type I or II); Autism Spectrum Disorder (ASD); processing difficulties (visual, auditory); emotional or sensory dysregulation; or mental health difficulties such as anxiety.

There are four sections in the text: (1) "The 2e Basics," (2) "Neurodiversity: The Complex Minds of 2e Learners," (3) "Comprehensive Programming," and (4) "Strategies that Work." While it is tempting to go straight to the fourth section, it is

impossible to fully serve 2e learners or support their families and schools without a deep understanding of their complex natures.

"The 2e Basics" focuses on the theoretical history of the term *twice-exceptional* and introduces the student exemplars used throughout the text. There are many definitions of gifted children with learning disabilities. In this text, the authors use the description developed by the National Joint Commission on Twice-Exceptional Students:

> Twice-exceptional learners are students who demonstrate the potential for high achievement or creative productivity in one or more domains such as math, science, technology, the social arts, the visual, spatial, or performing arts or other areas of human productivity AND who manifest one or more disabilities as defined by federal or state eligibility criteria. These disabilities and high abilities combine to produce a unique population of students who may fail to demonstrate either high academic performance or specific disabilities. (Reis et al., 2014, pp. 222–223)

This section highlights identification difficulties. Using a color metaphor, the authors describe the gifts as yellow, the deficits blue, and the combination of the two exemplifying the rainbow of possible greens representing the 2e learner. The three case studies demonstrate the general categories of 2e students in the educational setting: the child with disabilities that mask their giftedness, the highly gifted child whose abilities mask their disability, and the child who has both unidentified gifts and disabilities resulting in an average-seeming student. These chapters detail how giftedness manifests alongside learning disabilities.

"Neurodiversity: The Complex Minds of 2e Learners" presents theoretical constructs that inform the reader about how all students learn, process information, and the obstacles many twice-exceptional students encounter. Starting with an information processing model, the authors then discuss how Gardner's multiple intelligences theory relates to a strength-based approach with children having both high abilities and learning obstacles. Moving to personality preferences as gateways to understanding the reasoning and motivations of these complex learners, we learn about methods that help practitioners discover a learner's optimal learning conditions. These discussions would not be complete without an examination of Chapter 7, "Factors Leading to Misidentification and the Perils of Misinterpretation" (pp. 101–119).

"Comprehensive Programming" focuses on identifying 2e students in educational settings, creating strength-based environments that offer psychological safety, creativity, opportunities to develop true peers, and academic rigor. The authors emphasize the critical need to attend to these students' interests and talents as motivational forces and to offer opportunities to engage with appropriate mentors to inspire life-long passions. These students are often defined by their disabilities, but their abilities and talents will determine their future and success when nourished.

The text concludes with "Strategies That Work" using a strength-based, talent-focused, dually differentiated classroom. Dual differentiation is "the fulcrum that maintains the delicate balance between the student's strengths and limitations" (Baum, 2001, pp. 485–486, as cited in Baum et al., 2017). Using tables and implementation examples, the authors address compensatory strategies, accommodations, creative modifications, and design considerations for environments that offer intellectual, physical, social, and emotional growth and may be adapted for practitioners, schools, and home use.

The appendices contain tools that model some of the resources mentioned in the chapters. An example is the "Reflective RTI" (pp. 276–279) which is helpful when evaluating a younger learner's strengths, interests, talents, and obstacles to success. This tool includes room for reflections about the learner's times of personal bests. Notably, the Reflective RTI requires input from teachers, parents, and the learner.

This reviewer has a spine-reinforced, dogeared copy of this book. Highly recommended for educational therapists, parents, and allied professionals who notice a learner with a creative spark, inconsistent academic performance, or who question the basis for emotional outbursts in a learner, this text addresses many questions about these uniquely wired individuals.

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Cynthia Z. Hansen, MEd, ET/P, is an educational therapist and twice-exceptional consultant facilitating the growth of gifted and creative individuals with executive function delays, ADHD, dyslexia, and complex learning profiles using a strength-based, whole-child approach. Promoting awareness of the strengths of these learners, Ms. Hansen develops and leads parent and professional development workshops and conference presentations on issues facing gifted and twice-exceptional learners. Ms. Hansen advocates for these students as president of the Tri-County GATE Council in Southern California, as an advisory board member for *The G Word* movie, debuting in 2022, and is pursuing her doctorate at Bridges Graduate School of Cognitive Diversity.

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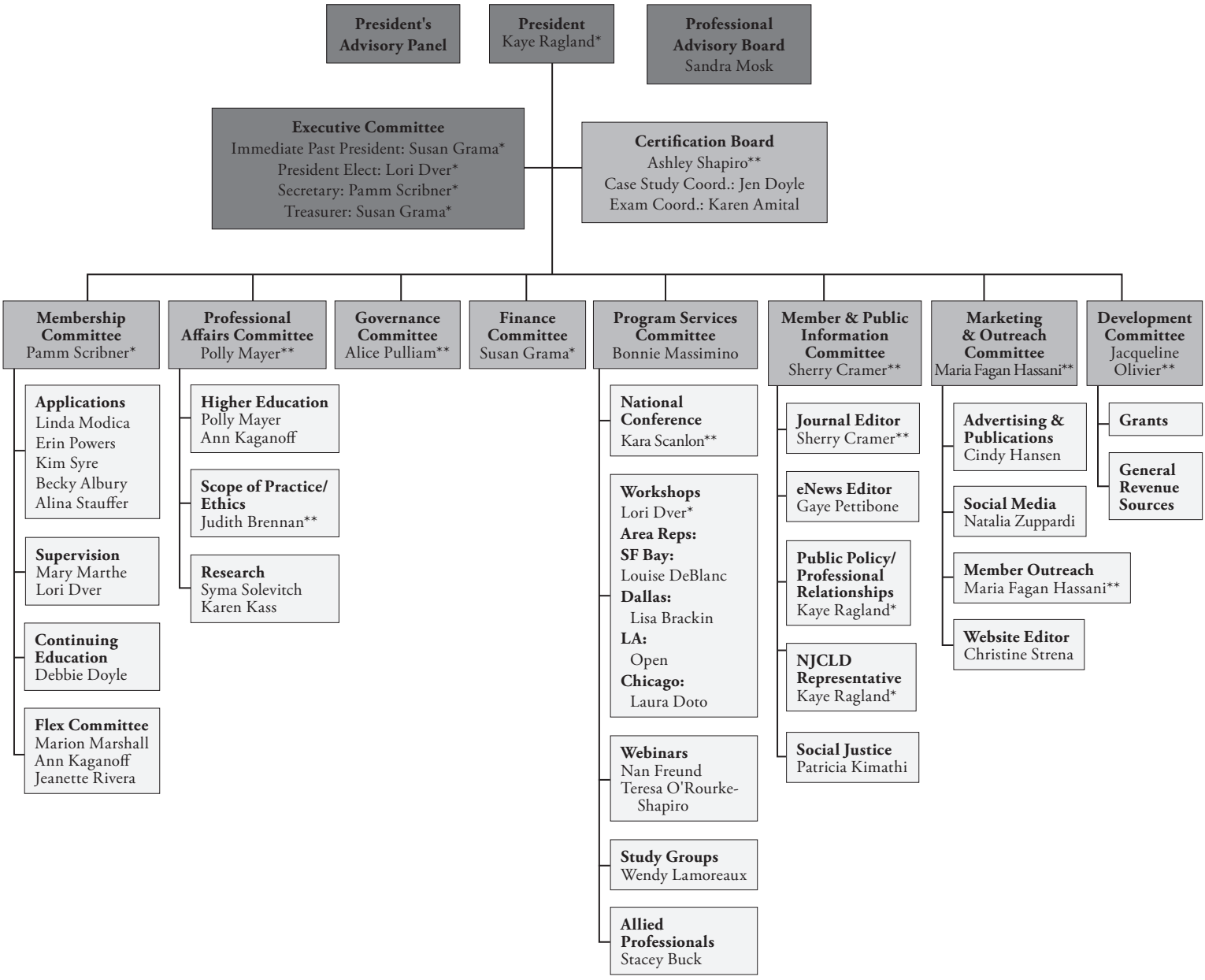

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