2000

Compensation Strategies Used by High-Ability Students With Learning Disabilities Who Succeed In College

Sally M. Reis
University of Connecticut

Joan M. McGuire
University of Connecticut

Terry W. Neu
Sacred Heart University

Recommended Citation

Reis, S. M., McGuire, J. M., & Neu, T. W. (2000). Compensation strategies used by high-ability students with learning disabilities who succeed in college. *Gifted Child Quarterly, 44*(2), 123-134. doi: 10.1177/001698620004400205.

Compensation Strategies Used by High-Ability Students With Learning Disabilities Who Succeed In College

Sally M. Reis *Joan M. McGuire*
University of Connecticut

Terry W. Neu
Sacred Heart University

ABSTRACT

To investigate how high-ability students with learning disabilities succeed in postsecondary academic environments, 12 young adults with disabilities who were successful at the university level were studied. Extensive interviews with these young adults provided examples of the problems faced by high-ability students with learning disabilities, as well as the specific compensation strategies they used to address and overcome these problems. Four of the participants had been identified as having a learning disability in elementary school; six were identified in junior or senior high school; and two were not diagnosed until college. The participants believed that having a learning disability was considered by elementary or secondary school personnel as synonymous with below-average ability. They reported that content remediation, rather than instruction in compensatory strategies, was usually provided in elementary and secondary school learning disability programs. In this article, the compensation strategies used by academically gifted students who succeeded in college are discussed. These include: study strategies, cognitive/learning strategies, compensatory supports, environmental accommodations, opportunities for counseling, self-advocacy, and the development of an individual plan incorporating a focus on metacognition and executive functions.

PUTTING THE RESEARCH TO USE

Many high-ability students with learning disabilities experience both frustration and difficulty in school as they get older and the content of their classes becomes increasingly difficult. Many are never identified because their learning disability masks their giftedness and their giftedness masks their learning disability. Current learning disability programs may not provide the special skills necessary to succeed in school for those who are identified. The research reported in this study details the compensation strategies used by successful university students with learning disabilities. Many of these students learned how to be academically successful when they participated in a university program for students with learning disabilities and had the opportunity to learn specific compensation strategies.

Too few learning disability programs focus on teaching compensation strategies for students with learning disabilities, and it would appear that only a minute number of districts offer any specialized training in these strategies for gifted students with learning disabilities. Instead of teaching compensation strategies, most of these programs appear to focus on students' immediate curriculum needs, such as content remediation and help with specific content and homework. Many of the participants in this study believed that if they had learned the compensation strategies described in this article when they were in elementary or secondary school, they would have been much more successful students, especially in secondary school. Both special educators and gifted educators should reexamine learning disability programs currently in place in many schools. High-ability students with learning disabilities will benefit from acquiring the specific compensation strategies described in this article. Indeed, these compensation strategies seem to be essential to both the academic and personal success of this population.

Although researchers have reported that gifted students with learning disabilities are often productive in nonacademic settings (Baum, 1984; Brody & Mills, 1997; Fox, Brody, & Tobin, 1983; Reis, Neu, & McGuire, 1995; Schiff, Kaufman, & Kaufman, 1981; Whitmore, 1980), limited research has been conducted on how these high-ability students with learning disabilities succeed in school. Even less research exists among college students with learning disabilities who also exhibit attributes associated with giftedness. Given the

recent trend of increasing numbers of students with learning disabilities enrolling in postsecondary settings (Henderson, 1995), it is likely that high-ability students who also experience learning disabilities are represented among this population. Without information that sheds light on the variables affecting the success of these students in postsecondary academic settings, both secondary and postsecondary personnel are left to speculate about interventions that will facilitate effective transition to an environment characterized by vastly different demands.

In one of only a few studies examining school-age high-ability students with learning disabilities, Baum and Owen (1988) found them to possess unique characteristics related to both persistence and individual interests. They also noted lower academic self-efficacy among their sample in comparison with peers without giftedness and learning disabilities. According to Bandura (1986), self-efficacy is the self-perception that a person can organize and carry out some action. Studies reveal that it is the beliefs an individual holds regarding his or her personal efficacy that shape academic performance, as well as career choices (Bandura, 1997). If some high-ability students with learning disabilities perceive themselves as less able to achieve in academic tasks, identification of the strategies used by successful high-ability students with learning disabilities could contribute to interventions that help students learn how to deal with the "paradox of the average student who is not the average thinker" (Vail, 1989, p. 136).

Other researchers (Shore & Dover, 1987; Sternberg, 1981) have found that the use of metacognition, defined by Flavell, Miller, and Miller (1993) as "cognition about cognition" (p. 150), and problem-solving skills to process information faster and more effectively is associated with gifted students. In several case studies of gifted students with learning disabilities (Baum, Owen, & Dixon, 1991; Daniels, 1983; Vail, 1987; Whitmore & Maker, 1985), the frustration between understanding complex information and having a disability in information processing emerges as a factor with implications for student self-efficacy, as well as interventions. The demands of college, including autonomy, self-monitoring, and problem solving, require students to adjust to multiple setting and task demands, and the development of strategies to enhance these skills may be particularly appropriate for high-ability students with learning disabilities (Miller, Rzonca, & Snider, 1991).

The work of Gerber and Reiff (1991) and Gerber, Ginsberg, and Reiff (1992) has contributed powerful observations from highly successful adults with learning disabilities with respect to strategies they view as integral to vocational success and adult adjustment. These highly successful adults emphasize their potential to achieve rather than stressing the deficits of the disability. Factors such as persistence, self-confidence, the will to conquer adversity, and strong character have been cited as contributing to the success of individuals with disabilities (Maker, 1978). Several themes emerged that increased the likelihood for vocational success, and the authors synthesized these patterns into one overriding factor: the desire and effort to gain control of one's life. A greater degree of that control indicated more likelihood of succeeding in life. Factors that emerged from extensive interviews with these adults from 24 states and Canada included control or taking charge of their lives; the desire to succeed; goal-orientation; reframing or reinterpreting the disability in a positive sense; persistence; goodness of fit between strengths, weaknesses, and career choice; learned creativity or divergent thinking; and a social ecology of support systems, including family and friends. Remediation of their learning disability was not a major factor in the lives of these successful adults.

Remediation of basic skills deficits through repetition to ensure mastery has proven ineffective for high-ability students with learning disabilities (Baum, 1984; Baum & Owen, 1988; Daniels, 1986; Jacobson, 1984; Whitmore, 1980). Educators must examine the underlying rationale of the interventions provided for these students, especially as they progress into secondary settings where compensatory approaches may better prepare students for the demands of higher education. The development of coping or compensatory strategies to perform a task in a different manner (e.g., using an audiotape to accompany text material) has, in fact, been cited as a major benefit by college graduates with learning disabilities (Adelman & Vogel, 1993).

Compensation Strategies

Crux (1991) defined compensation strategies to include study strategies, cognitive strategies (also called learning strategies), compensatory supports (e.g., tape recorders and computer word processing programs), and environmental accommodations such as test-taking accommodations (e.g., extended test time, less distracting test-taking setting). Other researchers (Garner, 1988; Mayer, 1988) have noted that learning strategies comprise behaviors of a learner that are intended to enhance information processing. Rather than focusing on what is to be learned (i.e., the content), instruction in cognitive strategies emphasizes learning how to learn. Specific learning strategies (e.g., repetition, verbal elaboration, organization techniques, paraphrasing, association) gradually come under the control of efficient learners through executive function processes or self-regulation.

Competent learners are proficient in their capacity to choose strategies according to the demands of a task, monitor strategy usage, and adapt or devise strategic behavior using a problem-solving paradigm (Borkowski & Burke, 1996). Very little has been written about compensation strategies for gifted students with learning disabilities in elementary and secondary schools. Baum et al. (1991) suggested that high-ability students with learning disabilities should be able to work within their interest areas while also addressing their disabilities. Since so few compensation strategies are suggested for elementary or secondary students, an excellent explanation of the use of specific compensation strategy service delivery systems can be found in the education of university students with learning disabilities (Adelman & Vogel, 1993; Brinckerhoff, Shaw, & McGuire, 1993; Shaw, Brinckerhoff, Kistler, & McGuire, 1992).

Study and Performance and Counseling Strategies

As noted by Crux (1991), study strategies comprise a component of the compensation strategies that are very important for these adult learners. In a comprehensive study of learning specialists' logs that recorded the activities of sessions with university students with learning disabilities, McGuire, Hall, and Litt (1991) found specific areas commonly addressed in a successful university program for students with learning disabilities. These included study strategies, course-related performance strategies (e.g., reading comprehension and written expression), counseling, and self-advocacy training. Study strategies and specific skills to compensate for the learning disability emerged as the overwhelming need of university students with learning disabilities, including specific types of note-taking strategies, time management, test-taking preparation, and library skills. Note-taking strategies are not typically taught in the regular university curriculum, yet are critical for the organization of information delivered in classes.

Time management was the most frequently occurring objective among study strategies. The use of one-month organizers and semester overview calendars was consistently modeled and further enhanced by analyzing each week, and sometimes each day, to maximize the students' use of time. Time management has been found to depend on students' abilities to self-monitor their activities and make appropriate decisions based upon awareness of the extra time required to complete academic tasks in the area of the specific disability.

The actual instruction of test-taking skills is rarely provided in students' educational experience (Bragstad & Stumpf, 1987). For successful university students with learning disabilities, learning specialists usually facilitated a plan for test preparation, modeled strategies for analyzing multiple choice questions, suggested methods to reduce test-taking anxiety, and trained students to use an error analysis approach to review tests and pinpoint reasons for incorrect answers (McGuire et al., 1991).

Strategies related to classroom performance, such as written expression, reading comprehension, and mathematical processes, were also modeled and facilitated by learning specialists (McGuire et. al, 1991). Written expression instruction helped students in the development of skills such as the organization of written assignments, proofreading, and sentence structure and mechanics. Learning specialists also addressed the need for compensatory strategies using word processing and other software packages for some individuals. To aid students with reading comprehension, learning specialists provided modeling and practice in paraphrasing, highlighting the text, identifying main ideas and supporting details, and training in a technique known as SQ3R (Survey, Question, Read, Recite, Review). This strategy provides a reading format that promotes an organized approach to absorb written information (Bragstad & Stumpf, 1987). Content materials from a course the student was taking were used to provide the opportunity to apply strategies and reinforce transfer (McGuire et al.).

Counseling for university students with learning disabilities comprised one-third of the learning specialists' instructional time (McGuire et al., 1991) and included academic, personal, and career concerns. For example, students were encouraged to consider balancing their academic courseload in light of their learning strengths and weaknesses. If rate of reading was a problem, students were advised to adjust their selection of courses to avoid a class schedule that required a great deal of reading. Students were also advised of the other more clinical counseling services available to them at the university.

Self-Advocacy

High-ability students with learning disabilities often need guidance in understanding their strengths and weaknesses in order to utilize appropriate strategies and advocate for academic accommodations. Self-advocacy involves the recognition of these strengths and weaknesses and the students' skills in presenting their abilities, as well as weaknesses, in their communication with faculty. This self-awareness enables students to request accommodations such as extra time on tests, alternative testing environments, or extensions for assignments. Again, self-monitoring is essential.

Executive Functions and Metacognition

Executive functions and metacognition contribute to compensation strategies for high-ability students. Executive functions were defined by Stuss and Benson (1986) as

> the planning and sequencing of complex behaviors, the ability to pay attention to several components at once, the capacity for grasping the gist of a complex situation, the resistance to distraction and interference, the inhibition of inappropriate response tendencies, and the ability to sustain behavioral output for relatively prolonged periods. (p. 158)

Metacognition includes one's self-knowledge and self-regulation. Denckla (1989) proposed that school-related behaviors within the executive function domain include the abilities of proactive organization to initiate, shift, inhibit, and sustain; to plan, organize, and develop strategies or rules. These abilities, or lack thereof, according to Denckla, make a significant contribution to the demonstration of learning disabilities.

Research has suggested that the improvement of learning ability includes the use of metacognition and executive function (Denckla, 1989; McGuire et al., 1991; Miller et al., 1991; Sternberg & Davidson, 1986). Because skilled learners and students with learning disabilities differ in metacognitive behaviors (Graham & Harris, 1987; Wong, 1987), interventions that train students to think about their thinking and engage in self-reflection and questioning are particularly important for success in postsecondary settings.

Research Methods

The primary purpose of this study was to explore the perceptions of high-ability university students with learning disabilities regarding a variety of issues germane to their academic experiences (see Reis et al., 1995). This article addresses one facet of the broader study: the insights relating to compensation strategies used by gifted college students with learning disabilities to address their disabilities and result in successful academic performance. Qualitative methods were used in this study to investigate participants' perceptions about compensation strategies related to overcoming their learning disabilities. In order to obtain the most accurate image of the subjects' experiences and perceptions, open-ended questionnaires and in-depth interviews were used to explore both the participants' and their parents' perspectives and experiences. A questionnaire was used for demographic information and as a guide for extensive follow-up interview questions focusing on elementary and secondary school and university academic and social experiences.

Sample

Twelve university students with learning disabilities comprised the sample for this research (see Table 1). Experts in the University Program for College Students with Learning Disabilities initially selected participants from a pool of 140 university students with learning disabilities. Criteria for selection included: (a) current university enrollment or graduation from the university during the year preceding the study; (b) identification as having a learning disability as verified by documentation required to establish eligibility for university services (McGuire, Shaw, & Anderson, 1992); (c) qualifications for designation as gifted on the basis of scores for IQ, achievement, and other indicators of performance (e.g., a notable talent in an area such as visual arts); and (d) academic success in the university setting. These individuals were identified as having a well-above-average or superior IQ in either elementary or secondary school (range 125–158), but had generally not been identified as gifted, usually because of lower achievement due to their learning disability. IQ scores on the Wechsler Adult Intelligence Scale Revised (WAIS-R) are included in Table 1, but it should be noted that IQ scores of several of the participants in this study declined from elementary to secondary school to college. Information used to document the label of giftedness in the selection for this study, in addition to IQ, included achievement tests results, academic awards, grades, outstanding performance in one or more academic areas, teacher nomination, elementary and secondary school records, and product information from an extensive academic portfolio. Approximately 20 students were initially identified for participation in this study, and their records were carefully screened. Letters of invitation were sent to 18 students, and the final selection of 12 took place based on interest and time available to participate in the study.

Data Collection

Gathering multiple viewpoints on a phenomenon, or triangulation, enables greater accuracy of interpretation than any of the data sources considered individually (Guba, 1978; Jick, 1983; Van Maanan, 1983). To ensure the highest degree of accuracy possible, data for this study were collected using three methods: document review of extensive records and testing information, written responses to an open-ended questionnaire, and in-depth interviews with each participant and one of his or her parents.

The open-ended questionnaire served as a preliminary source of issues investigated later during the interviews, which were conducted by two of the researchers. Before the

Table 1

Summary of Respondent Self-Report Questionnaire Data and WAIS-R Scores

Participant	Nature of the LD	Time period in which identified as LD	Time period in which identified as gifted	WAIS-R Scores		
				Verbal	Performance	Full Scale
Arthur	reading disability, slow processing of information	College	No	128	118	126
Colin	spelling, handwriting, poor short-term memory, reading, decoding	7th grade	7th grade	132	139	139
Diane	dyslexia, language problems	College	No	101	118	109
Evan	spelling, abstract math problems	11th grade	No	136	106	124
Fred	math, spelling, social problems	8th grade	No	120	126	126
Forrest	dyslexia, processing	7th grade	No	120	139	133
Jake	dyslexia, motor skills	6th grade	No	117	124	121
Joe	verbal and written expression, auditory	3rd grade	6th grade	142	132	140
Kate	language, spelling, reading	2nd grade	No	103	143	123
Mike	processing, attention deficit disorder	10th grade	No	106	122	113
Martin	dyslexia	1st grade	No	107	129	118
Peggy	slow thought processes, spelling, penmanship, reading comprehension	5th grade	No	133	104	121

initial interview, each participant and his or her parent were given written information about the study and his or her anticipated role in it. Each interview session was used to clarify, verify, and expand upon the participant's responses. All interviews were tape-recorded and transcribed, and the field notes and observations made by the researchers at the time of the interviews were added to the transcriptions. Interviews and other data collection procedures followed guidelines suggested by Spradley (1979), Strauss (1987), and Strauss and Corbin (1990). Participant and parent interviews were conducted by two of the researchers. The number of interviews conducted was determined when data saturation was reached; that is, when the participant could only provide information that was redundant and did not offer useful reinforcement of previously collected information (Spradley).

Data Analysis

Data analysis was conducted using techniques designed by Strauss (1987) and Strauss and Corbin (1990). As suggested by these researchers, data analysis coincided with data collection and affected the collection of additional data. Data analysis techniques included the use of a coding paradigm described by Strauss and Strauss and Corbin, as well as coding suggested by the same researchers, including three levels: open coding, axial coding, and selective coding. The initial type of coding, known as open coding, involved unrestricted coding of all data included in field notes, interviews, and other pertinent documents. In open coding, data were analyzed and coded. As the researchers verified codes and determined relationships among and between codes, a determination was made about the relationship of a code to a category. After initial categories were determined, axial coding enabled the researchers to specify relationships among the many categories that emerged in open coding and, ultimately, resulted in the conceptualization of one or more categories selected as the "core." A core category accounted for most of the variation in a pattern of behavior; therefore, "the generation of theory occurs around a core category" (Strauss, 1987, p. 34). In the final stage of coding, selective coding, the relationships among categories were examined to determine the saturation of categories in the identification of the core category.

Results

The early educational experiences of these students strongly influenced their approaches to compensating for their learning disabilities (Reis et al., 1995). During the interviews, all of the participants recalled negative and, in many cases painful, memories of elementary and secondary school experiences in which teachers accused them of being lazy because of the intersection of their abilities and disabilities. The learning disability programs in which some participated varied in organization and quality, and most students were critical of these programs. The reasons for the fluctuations in the quality of the special education learning disability program were numerous, including different teachers each year, no clear program goals, and a lack of a coherent program. Almost all of the respondents described scattered activities in an unclear, disorganized learning disability program. It should be noted that some of these students participated in new programs for students with learning disabilities. In some cases, students were placed in a program with many students whom they perceived to have more serious learning problems than they did. Many of the participants had a difficult time describing what they did in their elementary or high school learning disability program. Kate described her program as follows:

> I was, I guess, mainstreamed. I was put in a regular classroom with "normal students," and they would take me out for an hour every day or something, and I would go to a learning specialist or resource teacher, and then go over and do games and stuff like that.

Jake reflected on his public school program for students with learning disabilities:

> No, they hadn't gotten that far. Now that I think about it, they were kind of pretty backwards. We just worked on, like vocabulary and spelling. I figured I guess they would teach you to spell better, then your disability would go away maybe.

These programs and the participants' negative elementary and secondary school experiences in general were not usually conducive to gaining compensation strategies or effective learning strategies. Not surprisingly, after the participants became involved in a university LD program, they reflected on how helpful it would have been if they had learned certain coping skills or strategies earlier. Martin explained,

> I will complain to this day about high school and how they don't teach study skills. . . . This is the first time in my freshman year [at the university] that I had to use SQ3R as some kind of method of study. They never demanded it in my high school. In homework, I had maybe a little bit more than an hour, unless I had an exam.

Another participant concurred, explaining, "Yeah, I didn't realize then, so I do realize as I look back on it . . . just that they didn't demand you to use study skills."

Compensation Strategies

Multiple compensation strategies were employed by all of the participants in this study in order to succeed in challenging university settings, as indicated in Table 2. Each partici-

pant reported using all of the categories of compensation strategies listed in Table 2; however, the use of individual strategies within each category varied by participant. All participants attributed their success in their scholastic environments to their ability to employ these varied strategies. Study and time management strategies included, but were not limited to, methods of learning to study; note taking; identifying key points when reading and preparing for tests; library skills; and the use of daily, weekly, and monthly calendars. Among the compensation supports (Crux, 1991) reported were the use of computers, word processors, and books on tape. Executive functions included planning techniques, such as time management, metacognition, setting work priorities, and self-directed speech to help in difficult academic situations. Most of the participants in this study had previously learned some, but not many, compensation strategies without the benefit of a formal, structured learning disability program in their elementary or secondary careers. Peggy explained,

> I learned to compensate for some of my learning problems, but for others, I was still working it out. I knew I had learning disabilities. I knew that was why I couldn't do things the same way other people did them, but I didn't necessarily know how to work it out [the other problems].

Diane, who did not fully understand the nature of her learning difficulties and how to compensate for them until she entered college, explained one of the compensation strategies she used to identify the best topics for her research papers. She would make appointments with her professors.

> Professors like to talk, and if I had to do a paper and couldn't find a topic, I would ask my professor what are the major research areas in the field. Then, I would go to the next professor and say, "What are top areas [in the same field]?" And I would go to each of the five professors in the field, ask the same questions, look at the lists they gave me, and identify the areas that matched.

Diane also cultivated friendships with persons in her classes whom she would invite to lunch. During lunch and after explaining about her learning disability, she would bring up the current work being done in class and turn the conversation toward the reading required for class, notes she had missed, or lectures that she hadn't understood. It was difficult, if not impossible, for many of the participants to listen and take notes at the same time. Mike and others used a similar compensation strategy. Mike, who had difficulty taking notes, explained what happened:

> I started to write things and stopped when I got lost and thought, "What am I going to do?" Luckily, a kid in my dorm was in my class, and I looked at his notes and I said, "Wow, this kid's got all the things I don't have." And it worked to my advantage. I used his notes and I started asking people if I could photocopy [their notes]. Up to date, I've always had at least one friend in the class. Every one of the classes that I've taken. It helps to be in a fraternity because you meet a lot of people, and you have a lot of brothers who have taken classes already or been in class with you.

Table 2

Compensation Strategies Used by Gifted Students with Learning Disabilities to Succeed

Strategy	Components
Study and Performance Strategies	Note taking Test-taking preparation Time management Monitoring daily, weekly, and monthly assignments and activities Using weekly and monthly organizers to maximize use of time; chunking assignments into workable parts Library skills Written expression Reading Mathematical processing
Cognitive/Learning Strategies	Memory strategies such as mnemonics and rehearsal using flash cards Chunking information into smaller units for mastery
Compensation Supports	Word processing Use of computers Books on tape

By photocopying someone else's notes and comparing them with their own notes, participants in this study could determine whether they missed anything important during lectures.

Several of the students indicated that another compensation strategy they used was taking a reduced load of courses. Students who used this strategy usually took four or, occasionally, three classes a semester, as compared to five classes, which is normally considered a full course load at their university. This strategy provided the flexibility that is important if students must invest additional time and effort in their studying to compensate for disabilities.

Most of the students also used many of the compensation strategies available to them because of their identification as having a learning disability and their participation in UPLD (University Program for College Students with Learning Disabilities) (Brinckerhoff et al., 1993), such as extended time for examinations or taking an exam using a computer. Many

requested extra help from professors who knew that these students had learning problems because they had disclosed their difficulties when requesting accommodations. Kate explained,

> I work with my professors. I even go to one of my professors with my notebook, and she has time enough to sit with me and read through my notebook. She sees that I miss certain things, and she fills in my notebook. She fills in notes that I have missed. Another professor, I always go to him and just talk to him, and he goes through the stories with me, and I write everything, I am visual, so I write everything out and make little, not pictures, but sort of like trees and attach them onto my notes.

Most of the participants used various types of equipment, described by Crux (1991) as compensatory supports, such as computers, tape recorders, spelling machines such as Franklin spellers, or books on tape. Most also used various learning strategies described in the SQ3R strategy, including preview reading, structured reading (i.e., reviewing what they will focus on by using boldfaced topic headings), reading abstracts or chapter summaries that provide a "blueprint" of key information, and planning considerable amounts of time for reading. Martin, who used multiple strategies to succeed at reading, described his approach to completing his work:

> For reading I need time, just give me time, and I can get it. If I read it slowly, then I can understand what is going to be discussed, whereas if you assign a book on Thursday and make it due Tuesday, I won't get much out of the book.

He also explained that he uses margin notes, as did many of the other participants:

> I check in the margin those things in the text that I think are important information. And then I go back, and I write a question out for what was discussed, and then in my own words I answer it underneath, and that way I could quiz myself.

Students also indicated they used outlining and notecards, as well as mnemonic techniques. Evan explained this way:

> If I have a list of terms or subcategories to use, I usually use mnemonics. Using the first letter of each one and make up a little saying or something like that or see if it spells half a word, I'll use that. It depends on what I'm trying to learn. I think I've found what works best for me in certain instances.

While many of the students mentioned multiple learning and compensation strategies, it is clear that each developed an individual set of strategies that enabled him or her to succeed. For some participants, this system included various study strategies, organizing their time to enable them to find the large blocks they needed to complete their reading, and analyzing their own difficulties to be able to overcome them. Arthur explained his system by elaborating on the planning that he learned to use in UPLD:

> Well, I'm better at planning. If you want to go over the major things that enabled me to improve my grades at school, there is the untimed test time for the testing accommodations. There was planning and organizing. I now carry a calendar around, and I go through all my syllabi and plan out when the exams are and what reading has to be done. I don't always get it all done. Right now I'm behind in a couple classes. But, I know what I need to do and I have it in little pieces . . . chunking, the term that they use. Keeping me from getting overwhelmed, if I have a list of eight chapters that I need to do by next Saturday, that's overwhelming for me. I have to break it up; I have to start with chapter one. If the chapters are really long, I do sections of chapters, stuff like that. Self-awareness, I guess that was a big thing, knowing how long I need to do something. When I started the program, I couldn't plan out how long I needed to read a chapter. How long I needed to work on something. Now, I take note of the time it takes me, so I get a better idea of how to plan.

Most of the participants also indicated that they could not be employed during the academic year because of the amount of time necessary for them to complete their academic work. One participant, who worked at a job related to his passion and avocation, bicycling, took only two courses in several semesters when the nature of the courses was particularly demanding in light of his learning disability; most others work only in the summer.

Several of the participants also mentioned what may be labeled an "underground network," a system of checking with other students about professors from whom they should take classes. They tried to find professors who were fair, who would make the necessary accommodations for students with learning disabilities, and whose lectures were keyed to the assigned text. The option of selecting these professors was possible because participants attended a large university. At a smaller college, fewer choices exist. Joe indicated that selection of professors was a major "success" strategy for him: "I learned to cope by getting the right teachers, those who let me compensate for my learning disability."

Three themes emerged relating to compensation and learning strategies used by successful high-ability university students with learning disabilities. First, each participant developed a system that was unique to the nature of his or her disability, his or her personal styles and preferences, and the most appropriate compensation strategies. Second, they applied an extraordinary amount of time, effort, and energy to their studies. Forrest described his preparation for a chemistry exam:

> For the last chemistry exam in particular. My notes run very close to the book. I went through the book. I took notes on nearly everything in the book that wasn't considered important. All the major theories of people. On the six chapters, I took 12 pages of notes, and then I went through that, and what I did is, I studied that, and then I rewrote everything that I didn't feel like I had the first time. I would just do that until I knew everything backwards and forwards, and then I went through the notes in the book, and anything I hadn't studied already in the book and the notes. I just wrote down what to study, but I spend days of doing that amount of studying. It wasn't just taking the notes. I didn't count that as just studying. I would finish reading the chapters about a week before the exam, and spend a couple of days taking notes on the exam, for the exam from the book. I'd say I probably put in 30 hours or more studying for the exam. I mean that. . . . I'd put in the days before the exam, I'd put in three to five hours a day for at least four to five days in a row, at least four days in a row.

The third theme was the degree of comfort the participants gained using the various learned compensation strategies. A continuum existed relating to the adjustment these students experienced around the use of compensation strategies for their learning problems. Forrest and Diane believed they were "cheating" or not really working if they used reasonable accommodations, such as extended time for tests and the use of a word processor for exams. Diane was constantly told in elementary and secondary school that if she would only work and study harder, she could overcome her learning problems. Accordingly, in the university setting, she continued to believe that asking for help was analogous to admitting she hadn't worked hard enough. Forrest initially felt the same way:

> If I got an A, I wanted to get it under the same circumstances as everybody else. Because I felt like maybe I was cheating in my work if I had an advantage that they [other students] didn't. After a while, though, I realized that I am at a slight disadvantage, anyway, so it [using extra time in exams] just balances out. Now that doesn't bother me at all anymore; and, like I said, with the extra time in exams, sometimes I use it. I am always prepared to use [this accommodation], like I will get there early, or I will have the option to stay late.

Approximately half of the students used services provided in the UPLD and various learned compensation strategies easily and without guilt, while still others analyzed and reflected about why they needed help and why it may be difficult to request assistance. Peggy noted this:

> I think that the hardest thing is to . . . know when I need more help and when I can do it on my own. I am an individual, and I don't like someone else doing things for me, or even doing things with me, and it was very hard to get to the point to say, "I need help learning to memorize things." I want to be able to do it on my own, and I was constantly being told that I was smart enough to do it on my own, and it was frustrating to realize that I have to do extra to get to [the] same point that other people can get to just by reading it.

Although many of the students mentioned multiple learning and compensation strategies, it is clear that each selected the particular strategies that worked best for him or her. For each participant, an individual system, defined by Denckla (1989) as executive functions, was developed, sometimes intuitively by the individual student and sometimes collaboratively by the student and a learning specialist from the UPLD, which enabled him or her to succeed using a combination of compensation and learning strategies.

Self-Perceived Strengths Including Work Habits and Flexibility

Another strategy for success, one developed by almost all of the participants, was the acquisition of excellent work habits in response to difficulties. Dedication was needed to succeed in a challenging university system, and many students emphasized their strong belief in their own potential and a willingness to go to great lengths to realize that potential. The majority believed their capacity for hard work was their greatest asset. These students learned how to work hard because of their learning disabilities, as was clear in these representative comments:

> I worked very hard. I would do hours of homework every night, but I am glad I learned how to do homework in high school, and so now I know how to do it here in college. (Peggy)

> I was always. . . . I even consider myself now, and complain sometimes about it, but I was always the worker. I always did the gardening, or the landscaping, or the vacuuming, or the dishes. (Martin)

The determination and motivation of each of these students was quite clear in their interviews and in the corresponding interviews with their parents. Their commitment to hard work, to follow through on what they needed to accomplish, and their self-initiative often made them tired. Half of the participants experienced this feeling. Arthur explained,

> It's just, you know, I just got through three big exams, stayed up to four in the morning, got up at six, and now I got to do more work. So, I need a break.

The work ethic described by the participants carried over into their employment; each had one or a number of summer jobs to defray college costs. The motivation that enabled them to work hard usually focused on obtaining a university degree. In fact, many of the participants reported that they became *more* committed to graduate because of their learning disability.

Several of the participants had to be flexible about choices and change their majors in order to succeed in a university setting. For those who must spend hours reading what students without learning disabilities can read in minutes, the pursuit of a liberal arts degree remains challenging, even with the use of compensation strategies. Some did major in liberal arts and used many of the compensation and learning strategies discussed in this article. However, other students learned to select majors in areas that enabled them to tap into their strengths and succeed without the hours of reading required in the liberal arts curriculum. Mathematics, engineering, sciences, physical therapy, and music are all areas selected for majors by this group. Evan's learning disability created problems for him in mathematics, so he altered his career goal by choosing a prelaw major:

> I came into school as prebusiness and I found that my learning disability hindered me, especially in the math. And accounting, I mean, I dropped both of those classes . . . It was kind of hard, but I think I'm better prepared to handle something like [law] than the math aspect of business.

Counseling

Half of these students were deeply affected by what happened to them as children due to the discrepancy created by

their high abilities and their learning disabilities. Complex emotions continue to affect many of them, and counseling may be a consideration for other students with similar problems relating to the intersection of giftedness and learning disabilities. Five sought counseling to reconcile some of the problems and mixed messages they encountered in their educational experiences. Kate, who had problems dealing with the interaction of her ability and her disability, was proud that she was going to graduate from college. She explained that her father, who had never really understood her learning disability, attended a special program with her during her senior year of high school and finally seemed to understand some of the problems she had been dealing with during school.

> When I graduated from high school, the look in his eyes. He said, "I am so proud of you for graduating, not just because you graduated, but because you are learning disabled and you graduated." Now, my goal is, I'll be the first. My brother got lazy, my sister just didn't go to college. It wasn't her thing. So I will be the first [in my family] probably to graduate. I don't want to just do it for my parents. That would be wonderful; but, yet, to get ahead you have to work, and I can do it. I can do it. I knew one girl who was learning disabled and she didn't go to college because she couldn't. She couldn't do it. I know that I do have a potential, and I can do it, so I had to.

Discussion

The data collected in this study indicate that some high-ability students with learning disabilities succeed in a rigorous university setting with the help of various compensation strategies. The ways they incorporated these strategies into a successful academic college or university experience warrant discussion.

Participants who were involved in an elementary or secondary program for students with learning disabilities believe that they learned during their college years most, if not all, of the compensation and learning strategies that made them successful. Unfortunately, the LD programs in which they participated in elementary and secondary school, according to the perceptions of the participants and parents in this study, focused on remediation of content-related deficits or the opportunity to do homework or catch up on work missed in class instead of instruction in the compensation strategies they needed. Their participation in a university program for students with learning disabilities provided their first organized opportunity for training in compensation and learning strategies, and they all believed that this postsecondary program was essential to their success.

Participants were able to resolve the conflict between their abilities and their disabilities. Some learned the compensation strategies needed to directly address their learning disabilities and become successful in an area that may have initially appeared difficult, if not impossible. Evan, for example, became a political science major despite a learning disability that hindered his skills in writing and reading. Some participants were careful to select an academic direction in which they had strengths *and* in which their success was not dependent upon the acquisition of compensation strategies or the mastery of academic content that was directly affected by their learning disabilities. For example, Peggy's musical talents led her to pursue a major in voice, thus enabling her to avoid the continued struggle to compensate for her numerous learning difficulties in verbally demanding academic areas. These options are not available to an elementary or secondary student who has either no choices or extremely limited academic choices in school. Third, the majority of participants in this study combined the two options mentioned above as they attempted to compensate for their learning disability and select a major area of concentration that fostered the use of their strengths to enhance their academic performance. For example, Colin, whose learning disability was particularly manifested in reading and writing, pursued a major in electrical and systems engineering, thereby enabling him to focus on his talents. He still had to learn compensation strategies in order to be successful, but he did not have to use them to the extent that would have been necessary had he majored in an area that primarily required reading and writing skills. Baum's (1984) observations about the importance of focusing on a talent while developing compensatory strategies are certainly affirmed by these successful adults with learning disabilities.

Conclusion

The creation of a personal plan for academic success varied among participants, but always included these elements: the use of carefully selected and individually necessary compensation strategies and the integration of certain executive functions that guided the students' decisions and the directions they took (or didn't take). Similar to the highly successful adults in Gerber and Reiff's research (1991), all of the successful participants shared the ability to focus on developing their talents instead of focusing on their deficits. Their university experiences often enabled them to select courses and later majors, in which their considerable potential for talent could develop.

The process of creating academic success was slightly different for each participant in this study. All 12 came from different types of families, although similarities existed. All were White, and many came from above-average socioeconomic backgrounds. One wonders what may happen to high-ability students with learning disabilities who come from culturally

different backgrounds or economically disadvantaged environments. These participants also found a college academic environment in which they could succeed, but few found this type of environment in elementary or secondary school. We must hypothesize that many high-ability students who do not learn compensation strategies in an appropriate elementary or secondary school learning disability program and/or gifted program do not learn the skills necessary to succeed in elementary, secondary, or postsecondary education. Educators must reexamine the approaches used at the elementary and secondary levels to address the special education needs of high-ability students with learning disabilities. Pull-out programs that focus on remediation may be detrimental for this population. Instead, instruction in compensatory strategies and self-advocacy must be incorporated in an inclusive approach that fosters self-reliance, a critical factor in the arena of higher education.

References

Adelman, P. B., & Vogel, S. A. (1993). Issues in program evaluation. In S. A. Vogel & P. B. Adelman (Eds.), *Success for college students with learning disabilities* (pp. 323–343). New York: Springer-Verlag.

Bandura, A. (1986). *Social foundations of thought and action.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: W. H. Freeman.

Baum, S. (1984). Meeting the needs of the learning disabled gifted student. *Roeper Review, 7,* 16–19.

Baum, S., & Owen, S. V. (1988). High ability/learning disabled students: How are they different? *Gifted Child Quarterly, 32,* 321–326.

Baum, S., Owen, S. V., & Dixon, J. (1991). *To be gifted and learning disabled: From definitions to practical intervention strategies.* Mansfield Center, CT: Creative Learning Press.

Borkowski, J. G., & Burke, J. E. (1996). Theories, models, and measurements of executive functioning: An information processing perspective. In G. R. Lyon & N. A. Karsnegor (Eds.), *Attention, memory, and executive function.* (pp. 235–261). Baltimore: Paul H. Brookes.

Bragstad, B. J., & Stumpf, S. M. (1987). *A guidebook for teaching: Study skills and motivation* (2nd ed.). Newton, MA: Allyn and Bacon.

Brinckerhoff, L. B., Shaw, S. F., & McGuire, J. M. (1993). *Promoting postsecondary education for students with learning disabilities: A handbook for practitioners.* Austin, TX: PRO-ED.

Brody, L.E., & Mills, C.J. (1997). Gifted children with learning disabilities: A review of the issues. *Journal of Learning Disabilities, 30,* 282–296.

Crux, S. C. (1991). *Learning strategies for adults: Compensation for learning disabilities.* Middletown, OH: Wall & Emerson.

Daniels, P. R. (1983). *Teaching the learning-disabled/gifted child.* Rockville, MD: Aspen.

Daniels, P. R. (1986). Educator urges schools to identify plan for gifted/learning disabled. *Hilltop Spectrum, 4*(2), 1–6.

Denckla, M. B. (1989). Executive function, the overlap zone between attention deficit hyperactivity disorder and learning disability. *International Pediatrics, 4*(2), 155–160.

Flavell, J. H., Miller, P. H., & Miller, S. A. (1993). *Cognitive development.* Englewood Cliffs, NJ: Prentice-Hall.

Fox, L. H., Brody, L., & Tobin, D. (1983). *Learning-disabled/gifted children: Identification and programming.* Baltimore: University Park Press.

Garner, R. (1988). Verbal-report data on cognitive and metacognitive strategies. In C. E. Weinstein, E. T. Goetz, & P. A. Alexander (Eds.), *Learning and study strategies: Issues in assessment, instruction, and evaluation* (pp. 63–74). New York: Academic Press.

Gerber, P. J., Ginsberg, R., & Reiff, H. B. (1992). Identifying alterable patterns in employment success for highly successful adults with learning disabilities. *Journal of Learning Disabilities, 25,* 475–87.

Gerber, P. J., & Reiff, H. B. (1991). *Speaking for themselves: Ethnographic interviews with adults with learning disabilities.* Ann Arbor, MI: University of Michigan Press.

Graham, S., & Harris, K. (1987). Improving composition skills of inefficient learners with self-instructional strategy training. *Topics in Language Disorders,* 7, 66–77.

Guba, E. G. (1978). *Toward a methodology of naturalistic inquiry in educational evaluation.* Los Angeles: University of California Press.

Henderson, C. (1995). *College freshmen with disabilities: A triennial statistical profile.* Washington, DC: American Council on Education.

Jacobson, V. (1984). *The gifted learning disabled.* Calumet, IN: Purdue University. (ERIC Document Reproduction Service No. ED 254 981)

Jick, T. D. (1983). Mixing qualitative and quantitative methods: Triangulation in action. In J. Van Maanen (Ed.), *Qualitative methodology* (pp. 135–148). Beverly Hills, CA: Sage Publications.

Maker, C. J. (1978). *The self-perceptions of successful handicapped scientists* Washington, DC: U.S. Department of Health, Education, and Welfare, Office of Education, Bureau of the Education for the Handicapped (Grant No. G00–7701[905])

Mayer, R. E. (1988). Learning strategies: An overview. In C. E. Weinstein, E. T. Goetz, & P. A. Alexander (Eds.), *Learning and study strategies: Issues in assessment, instruction, and evaluation* (pp. 11–22). New York: Academic Press.

McGuire, J. M., Hall, D., & Litt, A. V. (1991). A field-based study of the direct service needs of college students with learning disabilities. *Journal of College Student Development, 32*, 101–108.

McGuire, J. M., Shaw, S. F., & Anderson, P. (1992). *Guidelines for documentation of a specific learning disability*. Storrs, CT: University of Connecticut Program Guidelines.

Miller, R. V., Rzonca, C., & Snider, B. (1991). Variables related to the type of postsecondary education experience chosen by young adults with learning disabilities. *Journal of Learning Disabilities, 24*(3), 188–191.

Reis, S. M., Neu, T. W., & McGuire, J. M. (1995). *Talents in two places: Case studies of high ability students with learning disabilities who have achieved*. Storrs, CT: The National Research Center on the Gifted and Talented.

Schiff, M., Kaufman, A. S., & Kaufman, N. L. (1981). Scatter analysis of WISC-R profiles for learning disabled children with superior intelligence. *Journal of Learning Disabilities, 14,* 400–404.

Shaw, S. F., Brinckerhoff, L. C., Kistler, J. K., & McGuire, J. M. (1992). Preparing students with learning disabilities for postsecondary education: Issues and future needs. *Learning Disabilities, 2*(1), 21–26.

Shore, B. M., & Dover, A. C. (1987). Metacognition, intelligence and giftedness. *Gifted Child Quarterly, 31,* 37–39.

Spradley, J. P. (1979). *The ethnographic interview*. New York: Holt, Rinehart, and Winston.

Sternberg, R. J. (1981). A componential theory of intellectual giftedness. *Gifted Child Quarterly, 25,* 86–93.

Sternberg, R. J., & Davidson, J. E. (Eds.). (1986). *Conceptions of giftedness*. New York: Cambridge University Press.

Strauss, A. L. (1987). *Qualitative analysis for social scientists*. New York: Cambridge University Press.

Strauss, A. L., & Corbin, J. (1990). *Basics of qualitative research*. Newbury Park, CA: Sage.

Stuss, D. T., & Benson, D. F. (1986). *The frontal lobes*. New York: Raven Press.

Vail, P. (1987). *Smart kids with school problems*. New York: E. P. Dutton.

Vail, P. L. (1989). The gifted learning disabled student. In L. B. Silver (Ed.), *The assessment of learning disabilities: Preschool through adulthood* (pp. 135–160). Austin, TX: PRO-ED.

Van Maanen, J. (1983). Reclaiming qualitative research methods for organizational research. In J. Van Maanen (Ed.), *Qualitative methodology* (pp. 9–18). Beverly Hills, CA: Sage.

Whitmore, J. (1980). *Giftedness, conflict, and underachievement*. Boston: Allyn and Bacon.

Whitmore, J. R., & Maker, J. (1985). *Intellectual giftedness in disabled persons*. Rockville, MD: Aspen.

Wong, B. Y. L. (1987). How do the results of metacognitive research impact on the learning disabled student? *Learning Disability Quarterly, 10*, 189–195.

Author Note

Research for this report was supported under the Javits Act Program (Grant No. R206R00001) as administered by the Office of Educational Research and Improvement, U.S. Department of Education. Grantees undertaking such projects are encouraged to express freely their professional judgement. This report, therefore, does not necessarily represent positions or policies of the government, and no official endorsement should be inferred.