

Counseling Highly Gifted Students to Utilize Supplemental Educational Opportunities: Using the SET Program as a Model

Linda E. Brody

Introduction

Jonah scored double 800s on the SAT as a 13-year-old eighth grader—a rare occurrence even among top talent search participants and an indication of extremely advanced cognitive abilities. While his parents and teachers had recognized that he was bright, the level of ability demonstrated by Jonah’s scores surprised them, and they worried about how to meet his needs. It was clear that a typical high school program would not provide the level of challenge Jonah needed. At the same time, he did not feel ready to enter college full-time. Ultimately, with support from the Johns Hopkins Study of Exceptional Talent (SET), a program was developed that combined accelerated learning with a variety of rigorous supplemental opportunities.

For his core high school program, Jonah focused on Advanced Placement (AP) courses. By the time he graduated from high school, he had earned scores of 5 on 15 AP examinations. He accomplished this by bypassing prerequisites and supplementing AP courses offered by his high school with several others via distance education and summer programs. Accelerated in math, Jonah completed AP Calculus in ninth

grade and followed it with college math courses for the next 3 years at a local university.

Jonah's learning was not limited to his coursework, as he also took advantage of a variety of extracurricular activities and supplemental programs. In school, Jonah was editor of his school paper, on the debate team, active in Model UN, had a role in the school play, and played violin in the orchestra. Not only did he enjoy these activities, he also took on responsibilities that honed his leadership skills and provided a way for him to relate to peers.

Outside of school, Jonah attended prestigious summer programs where he took courses not available in his school and engaged in research activities. He particularly valued the summer program that paired him with a mentor who guided him in doing original research in mathematics; now Jonah is preparing a paper for publication on his findings. He also participated in national and international math and science competitions, earning much recognition for his efforts. In addition to the challenges that these opportunities provided, Jonah met intellectual peers (i.e., other students who shared his abilities and interests) through these venues.

As a result of these experiences, Jonah entered college feeling that he had been well challenged during his high school years and had gained a solid background in a wide variety of content areas. In addition, his math knowledge and research skills rivaled that of many graduate students, and the university he chose to attend was willing to place him ahead appropriately in mathematics courses. He had also developed solid social skills and strong leadership abilities. Overall, the combination of in- and out-of-school educational opportunities that Jonah selected seemed to serve him extremely well.

SMPY and the Growth of Opportunities

Jonah's scenario would not have been possible 35 years ago when Dr. Julian Stanley established the Study of Mathematically Precocious Youth (SMPY) at Johns Hopkins University, because few of the opportunities Jonah availed himself of existed then.

At that time, schools were extremely resistant to modifying their programs for academically talented students, the AP program was pretty much limited to high school seniors, distance education was confined to correspondence courses that were not widely respected, few summer programs existed that addressed the academic needs of advanced high school students, and rigorous competitions such as the Westinghouse Science Talent Search (now sponsored by Intel) were dominated by students who attended relatively few high schools. Because so few options existed for meeting their academic needs, the first prodigies identified by Stanley in the early 1970s entered Johns Hopkins University at extremely young ages, in some cases without attending high school at all (Stanley, 1974).

It was never Stanley's first choice to enroll his prodigies in college full-time, however, and, although follow-up studies attested to the success of these students in college and afterward (e.g., see Stanley, 1985), he remained concerned that radical acceleration might not be the best vehicle for meeting their social and emotional needs. He also worried that, while they could move ahead in their area of strength (e.g., mathematics), rapid grade advancement might limit radical accelerants from gaining the breadth of content knowledge important for ultimate satisfaction in life. So, Stanley set about to find ways to provide appropriate challenge for gifted students without having them enter college full-time at too young an age. He founded SMPY, as he said, to "find youths who reason exceptionally well mathematically and to provide them the special, supplemental, accelerative 'smorgasbord' of educational opportunities they sorely need and, in my opinion, richly deserve for their own optimal development and the good of society" (Stanley, 2005, p. 9). This smorgasbord, which includes a variety of ways for students to access advanced content, is described in numerous publications (e.g., Benbow, 1979; Lupkowski-Shoplik, Benbow, Assouline, & Brody, 2003; Southern, Jones, & Stanley, 1993).

Utilizing above-grade-level aptitude tests to identify students with advanced reasoning abilities, SMPY experimented with numerous program models. Research evaluating these programs demonstrated that students with advanced cognitive

abilities could master content in much less time than is typically expected and also validated the importance of bringing students together with their intellectual peers (Stanley, 1996). In addition to providing direct services, SMPY counseled students to take advantage of challenging educational opportunities in their schools, communities, and elsewhere (see Stanley, 1989, for recommendations for counseling gifted students).

SMPY's counseling spurred participation, and participation increased the demand for programs. For example, students were advised to take AP classes before their senior year if they were ready earlier, and schools have gradually responded to these requests, allowing qualified students to take a greater number of AP courses before graduation and thus contributing to the growth in AP offerings at high schools around the country (Curry, MacDonald, & Morgan, 1999).

High-math scorers were encouraged to enroll in rigorous summer programs such as the Ross Program at Ohio State University, and many did so. Today, numerous summer math programs serve an increasing number of students seeking this form of academic enrichment. Similarly, students were encouraged to participate in contests and competitions, especially at the international level, and these events have been an important vehicle for intellectual stimulation for top students (Muratori et al., in press; Stanley, 1987). The number of available competitions and contests has also increased, as more students have recognized the value of these activities (see Karnes & Riley in this volume; also Karnes & Riley, 2005).

The scope of academic offerings grew dramatically with the establishment of university-based talent search programs at Johns Hopkins, Duke, and Northwestern Universities, the University of Denver, and elsewhere. Today, many thousands of students participate annually in residential summer programs or take distance education courses offered by the talent searches (see chapter by Olszewski-Kubilius in this volume; also Lupkowski-Shoplik et al., 2003; Touron, 2005).

Concern about young students entering college led to the establishment of early college entrance programs at a number of universities. These programs attempt to provide the social,

emotional, and academic support considered to be crucial to the success of many young college entrants (Brody, Muratori, & Stanley, 2004; Sethna, Wickstrom, Boothe, & Stanley, 2001). Part-time college entrance has also been made more available to high school students through dual enrollment programs (McCarthy, 1999), and many gifted students have chosen this option in lieu of full-time early college entrance.

The growth in available opportunities during the past three decades—in the extracurricular activities, academic summer programs, distance education courses, part-time college courses, competitions, internships, and other learning opportunities that Jonah and students like him have been able to utilize—is clearly helping many gifted middle and high school students gain the experiences they need to achieve their potential. A key component to taking full advantage of these programs, however, is being knowledgeable about options and being encouraged to seek them out.

The Study of Exceptional Talent

After founding the Center for Talented Youth (CTY) at Johns Hopkins University to administer talent searches and academic programs, Julian Stanley established a national search in 1980 for students who scored between 700 and 800 points on the math portion of the SAT before the age of 13. Believing that students with profoundly advanced reasoning abilities are most in need of a differentiated educational program and that they are at risk for social and emotional difficulties if they fail to interact with intellectual peers, Stanley hoped to provide the students who qualified for this group with the personalized counseling that he had offered to the early SMPY prodigies. He also felt strongly that it is important for the future of society that the talents of our most able problem solvers be developed.

In 1991, this initiative moved to CTY and became the Study of Exceptional Talent (SET). At that time, the program expanded to include high-verbal, as well as high-math scorers. More than 4,000 students have qualified for and joined SET since its inception, and approximately 300 new students qualify

each year. Jonah's scores on the SAT made him eligible for SET, and the counseling and information he received helped guide his educational decision making. Research is also an important component of SET's work, as students are followed up and evaluated over time (Brody, 2005; Brody & Blackburn, 1996; Muratori et al., in press).

Although all of the students who qualify for SET exhibit extremely high cognitive abilities at the time they are identified, they differ in the profiles of their specific abilities, as well as in their interests, goals, values, maturity, and social skills (Brody & Blackburn, 1996). They also live all over the country (and, in some cases, in other countries) so that the resources available in their schools and communities vary tremendously. These differences result in SET students having differing educational needs and solutions, so that an individualized approach to counseling them is required (Brody, 2004, 2005).

While situations and solutions vary, some common elements are evident in SET's recommendations. The use of accelerative options is encouraged for these very bright students, particularly subject acceleration in the student's areas of strength (Colangelo, Assouline, & Gross, 2004; Southern & Jones, 1991). Articulation with school officials is important so that the student gets credit for any out-of-school experiences, not necessarily as credit toward graduation, but so that he or she does not have to repeat the course. Sometimes students decide a boarding school or full-time enrollment in college is the only solution for an unchallenging high school situation, but more often students stay in their home schools and request flexibility to be placed in more advanced courses, to be allowed to leave school early to take college courses, and/or to be granted credit for out-of-school experiences.

SET strongly encourages students to take advantage of supplemental programs outside of school, believing that these programs extend learning beyond the school day and school year, help develop talents, and can provide a way for students to meet and interact with intellectual peers. Thus, informing students about out-of-school programs is a key component of SET's services so that the students can then choose the programs most

appropriate for developing their talents and achieving their goals. To this end, students are encouraged to increasingly take responsibility for their own education and make their own decisions. Thus, while SET does work with parents, counselors work directly with students as much as possible.

There are four components to SET's services: (1) providing individual counseling about educational options and choices, (2) providing information about supplemental opportunities and resources, (3) helping students connect with intellectual peers, and (4) exposing students to role models and mentors. These services combine to help students identify the strategies and resources they need to be academically challenged and socially and emotionally fulfilled during their precollege years, and to be prepared to excel in college and beyond.

Educational Counseling

SET's staff provides counseling and advice to students and/or their parents. This can take place in person or by phone or e-mail, and can range from answering specific questions to developing full learning plans. Jonah is one student who worked with a SET counselor throughout high school. Similarly, the student who wrote the following when she joined SET also received regular advice and support: "Because of the problems of language and culture, my parents can't give me any help. I am only 12 years old and have to make all decisions by myself. I really need SET's help with everything."

Some SET students request help in choosing a high school. For example, one student wrote in an e-mail: "My local school has such limited course offerings. Should I consider boarding school or go to college early? Or can I find enrichment opportunities so that I can stay home with my family during my high school years?" A SET counselor followed up with phone calls and helped her consider options. Ultimately, her choice was to supplement school offerings for the first 2 years of high school and then apply to her state's residential math and science magnet high school.

Another student struggled with a decision about whether to attend a prestigious New York City magnet school that required an hour's commute each way or to attend his local high school, which was good, but clearly did not have as many opportunities. SET helped him evaluate the pros and cons of both options, and he ultimately chose the magnet, although he was assured that he could supplement the local school program if he decided against the commute.

Once students choose their high school, they often still need help selecting courses and/or finding ways to access more advanced courses. For example, one student posed this question to SET: "My high school does not offer AP Computer Science or Calculus-based Physics. Is there a way I can learn such coursework on my own?" This student was encouraged to consider distance education courses in these subjects. Another student asked: "I am taking multivariate calculus as a 10th grader and my school has no more math courses; where can I get more math?" Online courses were an option for this student, but ultimately local college courses proved to be a better choice for him.

Students also seek advice with regard to accelerating in grade placement, and quite a few students who are identified for SET in seventh grade elect to skip eighth grade if they are particularly unchallenged by middle school and are socially and emotionally ready to be with older students. For example, one student inquired as follows, "I am a 7th grader but taking Algebra and Science with the 8th graders. What can I do about courses next year?" Skipping eighth grade and placing him in high school full-time gave him access to the more advanced high school curriculum.

Some students accelerate in subject matter until they ultimately run out of courses and enter college at younger-than-typical ages. One of these students reflected about her experience: "I was a 16 year old completing my sophomore year officially, but I was taking all AP courses with seniors that year. I was totally ready to move on to college with them and had no interest in staying behind with my age peers. I love college and it was the right decision for me."

SET members are invited to receive help with college selection, and this is particularly helpful to those whose parents are unfamiliar with the process such as the one who said: "My parents are immigrants and I am the first in my family to go to college . . . I need help with college planning." SET also puts students in touch with other SET members who attend the colleges under consideration, and provides letters of recommendations to colleges on behalf of its members.

Students often ask for help in finding particular programs or mentors. For example, one student said: "I am looking for a mentor in math who can prepare me for higher-level math competitions." A SET girl said, "I want to contribute more to society by doing community service but I don't know where to start," and a young man asked for help as follows: "I would like to do scientific research to prepare for science competitions, but my school does not even hold science fairs. How can I find opportunities on my own?" SET helped these students and others, including Jonah, who found his math mentor through a SET-recommended summer internship. SET's counselors talk knowledgeably to students about competitions, summer programs, study abroad opportunities, and other options they are considering, and/or put them in touch with others who have attended these programs.

Social and emotional issues arise often with this population. The need for peers is a major concern among new SET members who express a desire to meet other SET students or, as one student said, "I would like to meet others like myself." One of the girls asked, "How can I be gifted and also be cool and have friends and have a social life?" SET provides students with access to counselors who understand the difficulties many gifted students experience with such issues as finding peers, dealing with perfectionism, struggling with multipotentiality, and other concerns common to exceptional students (Neihart, 1999; Neihart, Reis, Robinson, & Moon, 2002).

Advice, reassurance, and resources are provided, and students are linked to peers and mentors for ongoing support. We have found that for many SET students, appropriate educational placement and access to intellectual peers through sum-

mer programs and extracurricular activities addresses many of their social and emotional needs. However, those who exhibit depression or more serious problems of any kind are encouraged to seek professional help in their home communities.

Resources and Opportunities

In addition to recommending programs to students through its counseling efforts, SET provides them with much information about educational resources and opportunities through its print and Internet offerings. The hope is that when students learn about these opportunities, particularly from other students who have taken advantage of them, they will be encouraged to participate.

SET publishes *Imagine* magazine, which has been awarded a Parents' Choice Gold Award for content and design. Available by subscription, it is provided free of charge to SET members, because the information is a crucial part of SET's mission. Each issue spotlights a focus topic such as an academic discipline or content area and includes articles and resources related to this topic. Many of the articles are written by students, whereby they reflect on their personal experiences of participating in a program or activity. Nonfocus articles, college and career planning columns, a book review, and puzzles are also included in each issue. A parent shared this feedback about *Imagine*:

We live in a small Midwestern town and my son is the first from his high school to be named an Intel and Siemens semifinalist and the first in 10 years to get into Harvard. Without *Imagine* we wouldn't know about such programs as Ross Young Scholars, CTY, RSI, Intel Science Talent Search, Siemens-Westinghouse, and MathCounts, let alone have thought to participate. Your magazine opened my son's ideas and gave him the motivation to reach his dreams.

A student said, "It was through *Imagine* that I first read about the National History Day competition, and this year my school's

history club, of which I am the student coordinator, has entered students into the competition for the first time.”

SET also publishes a newsletter, which spotlights members' activities and accomplishments. Rigorous programs in which SET students are well represented, such as the International Olympiads and the Research Science Institute, are given special attention in an effort to encourage other students to participate. Students have shared that they value this information, as this comment suggests: “I enjoyed reading the SET newsletter to see what the other students were doing. It encouraged me to try some of those things, especially the math competitions.”

Supplementing the publications in this technological age are Internet resources, with the SET and *Imagine* Web sites providing links to a wide variety of programmatic options. Specifically, links to summer programs, competitions, distance education programs, and content related to topics profiled in *Imagine* are all available on the *Imagine* Web site. A new venture is <http://www.cogito.org>, a Web site that has been developed by SET's staff in cooperation with the regional talent search organizations and other partners in the gifted education field. This site, which plans to launch in September of 2006, provides a searchable database of programs, as well as articles and resources for profoundly gifted math and science students.

Jonah learned about educational opportunities through SET's publications and by following the *Imagine* online links. In particular, he found distance education programs where he could get the AP courses he needed and was inspired by the successes of other SET members to compete in rigorous math and science contests. He said that he enjoyed reading the content in *Imagine*, especially about topics he wasn't knowledgeable of, and used the information in the college reviews to help him choose a college to attend. Getting information about programs into the hands of gifted students is critical to their participation in these opportunities, and SET focuses much effort on being a clearinghouse of information for students.

Peer Networks

Students who are exceptionally able compared to their age-mates can have difficulty finding peers who share their abilities and/or interests, so another important goal of SET is to develop a network of peers and encourage interaction among SET members. Students are invited to join SET's Peer Network by giving permission to have their identity shared with others who have similar interests. A student who requested being part of the network said: "I would like to interact with kids my age who know a lot about computers and want to talk about them." He was put in touch with several students who shared this interest.

SET also provides a listserv for its members, where they can freely interact with others in the group. A fair amount of discussion on the listserv relates to issues about being gifted; other topics include current events and politics, school issues, and even books and movies. One student shared that "The listserv was lots of fun . . . I loved learning about so many different points of view . . . the discussions challenged me and definitely sharpened my debating abilities."

Utilizing the Internet to build a vibrant community of bright math and science students is also a goal of the Cogito Web site. Numerous forums and discussion groups have been included to encourage students (SET members and other high-ability students) to connect with each other and share their interests and knowledge as they enhance their learning of science.

Articles in *Imagine* and the newsletter are also intended to engender the idea of being part of a peer group, even among students who don't meet each other. For students who feel isolated in their school or community because their interests are more intellectual than those of their classmates, it can be emotionally supportive even to read about the activities of other highly gifted students, to know that there are others like them out there somewhere. One student wrote: "I feel so different from my classmates. It is good to read about other SET students and I hope to meet some of them someday."

It is most desirable, however, for these high-ability students to meet each other. SET fosters social development by encour-

aging students to participate in challenging out-of-school opportunities where they are likely to meet other extremely able students. More than one student has shared comments like “I met my soul mates at CTY” or “RSI changed my life—the other ‘Rickoids’ were amazing!” Students who get involved in math activities often meet peers repeatedly through the wide variety of summer programs and competitions that attract top students in this discipline and become lifelong friends and colleagues. For example, Dr. Terry Tao, a former SMPY participant (see Muratori et al., in press), reminisced that “the competitions contributed quite a bit to my social life. I could hang out with kids with similar interests and I still keep in touch with a lot of people I met that way.”

Occasionally, SET brings students together through regional meetings, sometimes with their parents. Typically, a SET counselor organizes and attends the first meeting with the goal of the group continuing to meet on their own. Of four group meetings that were organized in the past year, two have led to the creation of math circles that continue to meet on a regular basis, another has decided to meet regularly for social reasons, and the fourth has not gotten together since the initial meeting. The social needs and interests of the particular students who attend and the willingness of parents to organize subsequent events are factors in whether these network groups are successful in continuing to function (Muratori, 2004). The parent who hosted one of the more successful group meetings reported that: “We [the parents] chatted like old friends. The kids had a wonderful time, played board games, and engaged in interesting discussions. Everyone is eager for the next gathering, and several parents have offered to host it.” The value of this exchange is reinforced when one remembers that a number of these students have had great difficulty making friends in their school environments.

Jonah had reasonably good social skills and friends when he was identified for SET, so his needs in this area were less than many SET students exemplify. However, his truly exceptional abilities demanded that he begin to find ways to be more challenged. As he began to participate in selective summer programs

and competitions, he found joy in interacting with other high-ability students and engaging in intellectual conversations. He joined SET's listserv, was connected through the Peer Network to several students, and met highly able math and science students at competitions. He keeps in touch regularly with a number of the students he met through these programs and events.

Role Models and Mentors

In addition to connecting SET students with intellectual peers, we try to link them to role models and mentors—individuals who were gifted young people themselves and who can help guide students toward their future goals. In *Imagine*, in particular, we spotlight individuals as writers or as the subjects of interviews who are accomplished in an area and can serve as role models for the readers. In the newsletters, as well, we hope to inspire students by portraying the accomplishments of older SET members. The Cogito Web site is also designed to embody this goal, as interviews with, and profiles of, scientists and mathematicians are an important component.

In addition to these informal efforts to provide role models, SET offers a Mentor Program whereby younger SET members are paired with older ones. The relationships vary; some are ongoing and long-term, while others serve a short-term need. However, students benefit from developing relationships with others who may have experienced and dealt with issues they now face. Jonah requested a mentor when he joined SET, at the time wanting to work with someone who could share his expertise in computer graphics. The individual he was paired with was a computer science major who encouraged Jonah's interest in computer science and also helped him with college selection, as Jonah ended up ultimately choosing the college this young man attended.

SET students sometimes request an adult professional as a mentor, such as a scientist who can advise them on a science fair project or an individual who can expose them to a career field. For example, one student requested help in meeting a university professor working in nanotechnology for expert guidance

on his project in this area. SET's staff guides students in how to approach professionals who might serve as mentors and/or recommends programs that have mentoring components. Jonah found his math mentor through a summer internship program that SET recommended.

Individual Pathways to Challenge

Jonah is just one of many highly gifted SET students who were challenged throughout high school as a result of flexible schooling and participation in supplemental out-of-school experiences. A few more examples may be helpful.

Drs. Terry Tao and Lenny Ng were considered by Julian Stanley to be among his greatest prodigies (see Muratori et al., in press). Although Terry lived in Australia and Lenny grew up in North Carolina, both were able to move through school at their own pace by being placed simultaneously at different levels such as taking high school courses while in middle school and college courses while in high school. However, Terry accelerated quickly in grade placement and entered college several years younger than is typical, while Lenny, not eager to go to college early, focused on part-time college courses during high school. Both young men supplemented schooling with summer programs and high-level math competitions, although Lenny did more of this, including winning two gold and one silver medal representing the United States in the International Mathematics Olympiad. Lenny has looked back very positively on the academic and social benefits that competitions provided him, and he said they were a factor in his decision not to leave high school too early (Muratori et al.).

Two other SET students, Thomas and James, have also been profiled to illustrate how different pathways can reflect the unique profiles of abilities and circumstances of the individuals (see Brody, 2005). These students were equally exceptional in math, but James had stronger verbal skills as evidenced by early language development, as well as his verbal SAT in seventh grade. Because he was so advanced across subject areas and with limited challenge in regular school classes, James accelerated

rapidly in both subject matter and grade placement. In addition to moving ahead in math with distance education courses, he skipped several grades, took mostly college courses while he was in high school, and entered college full-time at age 16 with a great deal of college credit behind him. Thus, his solution to accessing more advanced work was to enroll in courses with older students. Because he spent little time in high school, he did not pursue the extracurricular math and science internships and competitions that many students with his math abilities do.

In contrast, Thomas was less advanced verbally and attended a selective and rigorous charter school that he found very challenging. But, Thomas was eager for more advanced experiences in math and science, which he sought through out-of-school opportunities. He took summer courses, worked with a mentor, and participated in math and science competitions, where he won awards at the international level. Both James and Thomas were well challenged during their high school years, but their specific abilities, interests, and the available offerings in their schools led to different choices and pathways.

A young woman in SET, Anna, chose to attend a prestigious boarding school in an effort to access more advanced courses than were available in her small community and to be where she could find a compatible peer group. Her talents were broad, not only mathematically and verbally, but also musically. The school did offer a full range of AP courses, but it was not willing to let her take college or distance education courses during the year. However, she enjoyed her coursework and used her summers to access courses she couldn't get in school. Her extracurricular time during the school year focused heavily on developing her musical ability, which was important to her. Though relatively few SET students choose to attend boarding schools, Anna was pleased with her choice and felt well prepared for a highly selective college when she left high school.

A Counseling Model for Parents and Educators

Many of the components of what SET tries to offer its students can be found in other counseling-oriented programs for

gifted students. In particular, two scholarship programs, the Davidson Institute Young Scholars Program and the Jack Kent Cooke Foundation Young Scholars Program, incorporate many of the SET components. Advisors in both of these programs work individually with students to guide their educational progress. They encourage students to take challenging courses and to excel in them, to take advantage of supplemental out-of-school educational opportunities, and to meet and interact with intellectual peers through a variety of venues.

Increasingly, knowledgeable parents also have taken on the role of finding challenging out-of-school educational opportunities for their children, and Internet resources such as <http://www.hoagiesgifted.org> and publications such as *Imagine* have made the task of identifying programs easier. The result of this involvement by parents has been more and more students taking advantage of supplemental opportunities and excelling in them every year.

If we look at descriptions of winning projects from competitions such as the Intel Science Talent Search, the Siemens-Westinghouse Competition, and the Davidson Fellows awards, the achievement exemplified by the participants is incredibly impressive. Large numbers of high school students are completing college-level coursework through summer, distance education, dual enrollment, and AP programs, and thus are entering college prepared to excel in a rigorous college environment. Numerous activities are providing opportunities for precollege students to develop and demonstrate leadership skills. And, equally important, students report on the positive social and emotional effects of meeting intellectual peers through these many programs and activities.

Issues and Concerns

Unfortunately, many gifted students who would benefit from the opportunities described here fail to hear about them if they don't have knowledgeable counselors or parents advising them. Also, many of the supplemental programs are expensive and, while they may offer scholarship support, students and

parents may assume they can't afford them. Equity issues clearly suggest that, if supplemental programs contribute to talent development as much as we believe they do, there is a need to broaden access to these opportunities. More systematic ways of informing students about supplemental programs are needed. More programs like SET would be desirable, but parents and schools also can do more to get information about supplemental programs into the hands of their students.

School counselors and gifted coordinators, in particular, need to reconsider their roles and think more “out of the box” —with the box being school. They need to be willing to place students where they will be appropriately challenged, even if it's in a class or another school with older students. They also must become knowledgeable about supplemental programs and resources outside of school, encourage students to participate, and help them obtain credit for out-of-school experiences when it's appropriate. They also must become conscious of the importance of helping students interact with intellectual peers and find ways for them to do so.

While there is much that schools and school systems can do to enhance their offerings for the gifted students they serve (e.g., provide advanced and rigorous curricula, support opportunities to do independent research, be flexible with regard to acceleration), they may lack the resources to provide all the opportunities truly advanced students need. They also may not have enough high-ability students to provide a supportive peer group for them. Out-of-school learning opportunities can help fill this void. Schools can embrace these opportunities as part of their advanced students' educational programs.

Conclusion

Through a combination of accelerative strategies, flexible placement, supplemental programs, and out-of-school activities, Jonah and the other students described in this chapter found opportunities to be challenged and to meet intellectual peers. Their experiences kept their love of learning and motivation alive, enhanced their study skills, and prepared them well

for the challenges that lay ahead for them in college and in life. If students with such *extremely* advanced cognitive abilities as the ones profiled in this chapter can be appropriately challenged throughout their precollege years, we should not have gifted students languishing unchallenged in classrooms anywhere.

References

- Benbow, C. P. (1979). The components of SMPY's smorgasbord of accelerative options. *Intellectually Talented Youth Bulletin*, 5(10), 21–23.
- Brody, L. E. (2004). Meeting the diverse needs of gifted students through individualized educational plans. In D. Boothe & J. C. Stanley (Eds.), *In the eyes of the beholder: Critical issues for diversity in gifted education* (pp. 129–138). Waco, TX: Prufrock Press.
- Brody, L. E. (2005). The Study of Exceptional Talent. *High Ability Studies*, 16(1), 87–96.
- Brody, L. E., & Blackburn, C. C. (1996). Nurturing exceptional talent: SET as a legacy of SMPY. In C. P. Benbow & D. Lubinski (Eds.), *Intellectual talent* (pp. 246–265). Baltimore: Johns Hopkins University Press.
- Brody, L. E., Muratori, M. C., & Stanley, J. C. (2004). Early college entrance: Academic, social, and emotional considerations. In N. Colangelo, S. G. Assouline, & M. U. M. Gross (Eds.), *A nation deceived: How schools hold back America's brightest students* (Vol. 2, pp. 97–107). Iowa City, IA: The Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development.
- Colangelo, N., Assouline, S. G., & Gross, M. U. M. (Eds.). (2004). *A nation deceived: How schools hold back America's brightest students* (Vol. 2). Iowa City, IA: The Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development.
- Curry, W., MacDonald, W., & Morgan, R. (1999). The Advanced Placement program: Access to excellence. *Journal of Secondary Gifted Education*, 11, 17–23.
- Karnes, F. A., & Rile, T. L. (2005). *Competitions for talented kids*. Waco, TX: Prufrock Press.
- Lupkowski-Shopluk, A., Benbow, C. P., Assouline, S. G., & Brody, L. E. (2003). Talent searches. In N. Colangelo & G. A. Davis,

- Handbook of gifted education* (3rd ed., pp. 204–218). Boston: Allyn & Bacon.
- McCarthy, C. R. (1999). Dual-enrollment programs: Legislation helps high school students enroll in college courses. *Journal of Secondary Gifted Education*, 11, 24–32.
- Muratori, M. C. (2004, November). *The meeting of the minds: Networks for the highly gifted*. Paper presented at the annual meeting of the National Association for Gifted Children, Salt Lake City, UT.
- Muratori, M. C., Stanley, J. C., Gross, M. U. M., Tao, T., Ng, L., Tao, B., et al. (In press). Insights from SMPY's greatest former child prodigies: Drs. Terrence ("Terry") Tao and Lenhard ("Lenny") Ng reflect on their talent development. *Gifted Child Quarterly*.
- Neihart, M. (1999). The impact of giftedness on psychological well-being: What does the empirical literature say? *Roeper Review*, 22, 10–17.
- Neihart, M., Reis, S. M., Robinson, N. M., & Moon, S. M. (Eds.). (2002). *The social and emotional development of gifted children: What do we know?* Waco, TX: Prufrock Press.
- Sethna, B. N., Wickstrom, C. D., Boothe, D., & Stanley, J. C. (2001). The Advanced Academy of Georgia: Four years as a residential early-college-entrance program. *Journal of Secondary Gifted Education*, 13, 11–21.
- Southern, W. T., & Jones, E. D. (Eds.). (1991). *The academic acceleration of gifted children*. New York: Teachers College Press.
- Southern, W. T., Jones, E. D., & Stanley, J. C. (1993). Acceleration and enrichment: The context and development of program options. In K. A. Keller, F. J. Mönks, & A. H. Passow (Eds.), *International handbook of research and development of giftedness and talent* (pp. 387–409). Oxford, England: Pergamon Press.
- Stanley, J. C. (1974). Intellectual precocity. In J. C. Stanley, D. P. Keating, & L. H. Fox (Eds.), *Mathematical talent: Discovery, description, and development* (pp. 1–22). Baltimore: Johns Hopkins University Press.
- Stanley, J. C. (1985). How did six highly accelerated gifted students fare in graduate school? *Gifted Child Quarterly*, 29, 180.
- Stanley, J. C. (1987). Making the IMO team: The power of early identification and encouragement. *Gifted Child Today*, 10, 22–23.
- Stanley, J. C. (1989). Guiding gifted students in their academic planning. In J. VanTassel-Baska & P. Olszewski-Kubilius (Eds.),

- Patterns of influence on gifted learners* (pp. 192–200). New York: Teachers College Press.
- Stanley, J. C. (1996). In the beginning: The Study of Mathematically Precocious Youth. In C. P. Benbow & D. Lubinski (Eds.), *Intellectual talent* (pp. 225–235). Baltimore: Johns Hopkins University Press.
- Stanley, J. C. (2005). A quiet revolution: Finding boys and girls who reason exceptionally well mathematically and/or verbally and helping them get the supplemental educational opportunities they need. *High Ability Studies*, 16(1), 5–14.
- Touron, J. (Ed.). (2005). Special issue: The Center for Talented Youth model. *High Ability Studies*, 16(1).