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El estudio de Julian C. Stanley sobre talento excepcional: Una aproximación personalizada para dar respuesta a las necesidades de los estudiantes con altas capacidades

The Julian C. Stanley Study of Exceptional Talent: A Personalized Approach to Meeting the Needs of High Ability Students

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Abstract

Typical school programs that are designed for average students, as well as programs for gifted students that do not address their unique characteristics, fail to meet the academic and personal needs of most advanced learners. In developing an appropriately challenging program to meet their individual needs, each student's specific pattern of abilities, achievement levels, interests, motivation, and other personal traits should be considered, along with a wide a variety of educational strategies and programs in- and out-of-school. The level and pace of instruction should be adjusted as needed, students should have opportunities to probe topics of interest in depth, and provision should be made for them to interact with peers who share their interests and abilities. This personalized approach to meeting the academic and psychosocial needs of exceptionally advanced students has long been successfully employed by staff at the Study of Exceptional Talent (SET) at Johns Hopkins University, as well as its predecessor the Study of Mathematically Precocious Youth (SMPY). With a renewed interest today in personalized learning, there is an opportunity to institutionalize this approach more widely. However, students need information

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and recommendations from knowledgeable adults about programs that will develop their talents; schools must be flexible and willing to modify their curricula and to grant credit for work done outside of school; and financial barriers that might limit access to out-of-school programs need to be addressed. In addition, informed decisions are often helped by assessment, especially above-grade-level assessments, that differentiate among gifted students, some of whom benefit from challenging grade level work while others need access to above-level content. This article describes SET's approach to personalizing the educational experiences of the students with whom this program has worked in the hope that it can be replicated by others.

Key words: personalized learning, acceleration, differentiation, smorgasbord of opportunities, above-grade-level assessment, supplemental programs, optimal match, Study of Mathematically Precocious Youth, Study of Exceptional Talent.

Introduction

We hear a great deal today about personalized learning. Though not a new concept, current interest in this approach to guiding student instructional programs is heavily linked to the increased availability of technological options for addressing students' individual needs and usually includes online components to enhance learning. The term personalized learning is often used interchangeably with individualization and differentiation, and it is both individualized and differentiated from what others receive; but personalized learning implies a broader use of resources than individualization and differentiation, which are typically teacher-directed within a classroom. It can and should include these classroom strategies, but it should also employ a wider range of resources and strategies in- and out-of-school that are appropriate for students' abilities, content knowledge, interests, and learning styles. If done well, it can help students achieve at higher levels, encourage their love of learning, and help them develop their talents, interests, and passions.

Personalized learning recognizes the individual differences and needs that students bring to their learning environments. It addition to adjusting school programs, it incorporates after school and summer activities and programs, as well as online resources, to supplement classroom instruction. Clearly, all students can benefit from personalized learning programs and enrichment opportunities geared to their specific abilities

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and interests. However, this approach may be particularly essential for students whose advanced abilities and academic needs are not adequately addressed in typical school programs or in programs for gifted and talented students that fail to accommodate individual needs. With personalized programs that utilize the strategies and programmatic options that can help them develop their talents and achieve their goals, we can do much to strengthen the educational experiences of academically advanced students.

History and Mission of SET

For over 20 years, the Study of Exceptional Talent (SET) has worked with exceptionally talented students who meet SET's eligibility requirements to help them personalize their educational programs. Based at the Johns Hopkins University Center for Talented Youth (CTY), this initiative provides them with information about educational programs and strategies and with academic advising to assist them in choosing the opportunities that best meet their needs. Their progress is studied over time to help the staff evaluate options and better understand the talent development process.

SET is an outgrowth of the Study of Mathematically Precocious Youth (SMPY) at Johns Hopkins University. After working with several exceptionally precocious students, Psychology Professor Julian Stanley founded SMPY in the early 1970s to "*find [more] youths who reason exceptionally well mathematically and to provide the special, supplemental, accelerative smorgasbord of educational opportunities they sorely need and richly deserve for their own optimal development and the good of society"* (Stanley, 2005, p. 9). Under Stanley's direction, SMPY pioneered the concept of holding "talent searches" where students with advanced abilities are identified as a result of their performance on above-level aptitude tests. The SMPY staff also assessed students' characteristics in order to gain a better understanding of their needs, experimented with intervention strategies, identified and recommended programs that might serve these students, and established talent centers at CTY and elsewhere to carry on all of this work (Brody, 2009; Stanley, 1976, 2005; Stanley, Keating, & Fox, 1974).

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SMPY was influenced in its efforts by the work of a number of researchers. Lewis Terman's (1925) longitudinal study of high ability students inspired many of the ideas for SMPY's initial efforts. Harvey Lehman's (1953) findings that mathematicians produce their greatest work at young ages fueled the belief that students who aspire to be great mathematicians or scientists would benefit from accelerated math instruction. The retrospective studies of eminent individuals (e.g., Cox, 1926; Goertzel & Goertzel, 1962) reinforced SMPY's understanding that a variety of experiences, not a single strategy or program, contribute to the development of talent. And Harriet Zuckerman's (1977) discovery that Nobel Laureates benefitted from the accumulative advantage of one opportunity leading to another demonstrated the need for a continuum of services for academically talented students.

SMPY's assessments of the exceptional students with whom they worked demonstrated how diverse the students were and reinforced the idea need for individualized responses for developing talents. Even among those who exhibited truly exceptional strengths in mathematical reasoning, there was great variability in the students' actual knowledge of and interest in math and math-related subjects, as well as in their verbal abilities and personal attributes. Some were eager to move ahead in their grade placement or study of mathematics, while others were not. Consequently, SMPY understood the need to respond to students' needs on a very individualized basis and to have numerous options available for addressing them. Throughout the 1970s, Stanley and the SMPY staff counseled many of the top scorers personally and maintained relationships with them so that the support could be ongoing (e.g., see Stanley & Benbow, 1983).

A talent development model, represented in the literature as MVT:D ^{4}, signifies the four stages of Discovery, Description, Development, and Dissemination (D ^{4}) that typify the components of SMPY's efforts to develop students' mathematical (M) and verbal (V) talents (T) (Brody & Stanley, 2005). Discovery refers to finding students with above-level reasoning abilities through systematic talent searches, students whose full abilities might not be recognized without above-level assessments. Description involves assessing and understanding the unique characteristics of individual students, which is important for addressing their needs. Development refers to the educational programs and strategies that are needed to help students develop the skills, knowledge,

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and passions necessary to achieve their full potential. And Dissemination involves sharing information about the students' abilities with schools and others so that they will respond by meeting their needs, and also sharing research findings about this model of talent development with other researchers. These steps continue to be incorporated into the programs and strategies utilized by the talent search programs today (Brody, 2009).

In 1980, SMPY launched a search for students who could score 700-800 on SAT-M before age 13. Having founded CTY the previous year to administer the talent searches and academic programs, Stanley was eager to return to counseling individual students who exhibited exceptionally advanced mathematical reasoning abilities, and to assess their progress over time. Well aware of the diversity of the students, Stanley avoided describing them as gifted or as specifying that they had any characteristics in common beyond their advanced mathematical abilities. Instead, he referred to the students who qualified for this initiative as the «700-800 on SAT-M group» and as «youths who reason extremely well mathematically» (Stanley, 1988). SMPY's work with these students continued under Stanley's direction until the initiative moved to CTY as SET in 1991. Its efforts were then expanded to recognize and serve high verbal as well as high mathematical scorers, and this work continues today. In 2005, SET was renamed in Stanley's honor as the Julian C. Stanley Study of Exceptional Talent.

Students qualify for SET by scoring 700 or above on the SAT Math or Critical Reading test before the age of 13. Scores at this level on this college admissions test are at or above the 95th percentile among college-bound high school seniors. Among middle school students, Stanley estimated that the math qualifiers represent at least the top one in 10,000 of their age group in mathematical reasoning ability, while students who qualify for SET on Critical Reading or both parts of the SAT are much rarer. There are currently over 1500 precollege student members served by SET, including about 150 from outside of the United States, and approximately 6,000 alumni who are college-age or beyond. SET members are provided with support throughout their high school years, and SET alumni are followed over time.

The following assumptions, which are grounded in research and/or SMPY/SET's many years of direct experience working with academically advanced students, underlie SET's counseling efforts.

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- Above-grade-level assessments are crucial for estimating a high-performing student's true level of ability or achievement. It is never the only factor that should be considered, but the information can help differentiate students for whom challenging grade-level work is appropriate from those who might be ready for content typically offered to older students.
- Students need to be taught at their optimal level and pace of learning. Advanced learners may need to proceed at a faster pace than other students their age and/or have access to more advanced content.
- Students with advanced academic abilities are at risk of failing to achieve their potential if they are not adequately challenged. In particular, a lack of interest in learning, poor study skills, and negative social and emotional traits can result when a student is consistently unchallenged in school.
- The more talented/advanced a student is, the greater the need for a differentiated program. Of course, this depends a great deal on the level of challenge in the regular program, but students at the upper end of the continuum in ability and/or achievement may need access to an above-grade level curriculum.
- Students with advanced academic abilities vary greatly in their specific abilities, content knowledge, interests, motivation, goals, personalities, and learning styles; and these differences result in differing educational needs. This is the primary reason for educators needing to personalize educational programs for individual students.
- School programs can be enhanced for advanced students with curricular flexibility and articulation at the next level. This can include letting them take classes with older students, providing options for independent and/or online work, and giving credit for content mastered outside of school.
- Students with advanced academic abilities can increase their learning opportunities by participating in supplemental educational programs and extracurricular activities. These programs also allow students to interact with peers who share their interests and abilities.
- Mathematically talented students, while moving ahead appropriately in mathematics, should also gain a broad background in the liberal arts. Julian Stanley often emphasized this, saying that students need to prepare to be educated adults and not just prepare for a future career.

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- Students with advanced academic abilities need to be able to interact with intellectual peers who share their interests. This can reinforce their sense of belonging, enhance social skills, and encourage the pursuit of subjects in depth.
- Students with advanced academic abilities need access to role models and mentors who can provide insight into real-world applications of learning. It can help them establish academic goals for the future and solidify career goals.

Students may seek counseling from SET's staff for any number of reasons. Some require relatively brief and specific interactions, while others have needs that demand ongoing reevaluation of educational choices and additional options. For example, some students really struggle with few opportunities for adequate challenge in school and seek advice about possibly changing schools, skipping a grade, or entering college early, or they choose to stay where they are and need to identify numerous options to supplement their school program. Others may be satisfied with what their school offers but need help finding a summer program or an internship opportunity. For the students who accelerate rapidly through their math courses, finding enough high-level math courses to keep them engaged in math throughout high school can be a challenge, though many more options exist for this today than in years past, especially online courses. Many students seek help finding a mentor or advice on selecting a college.

Smorgasbord of Opportunities

Stanley coined the term «smorgasbord of opportunities» to suggest how one might approach personalizing learning opportunities (Stanley, 1979). Like food options on a buffet table, one should consider putting all available educational strategies, programs, learning opportunities, and resources on the table, and choose from them those that best meet the individual needs of the student. He described it this way:

After the mathematically talented youth is identified and studied, it is feasible for someone to devise a smorgasbord of educationally accelerative options from which the student may choose. This flexible counseling approach, adapted to the abilities, interests, motivations, and

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individual circumstances of each youth, does not constitute a program in the sense that the usual procedures for helping gifted children do. Some highly talented students choose little or nothing from the bountiful possibilities, whereas others gorge themselves almost to the point of having to be restrained. No two tend to do exactly the same things at the same time. (Stanley, 1979, p. 175)

The concept of an «optimal match» between programmatic options and individual academic needs is helpful in this context, bearing in mind that not just abilities but students' interests, motivation, and available resources must also be taken into consideration. Suggested by Robinson and Robinson (1982) as the best way to serve highly gifted students, the optimal match involves devising an educational program that stretches and challenges the individual learner without it by being so difficult as to be discouraging.

When SMPY was founded, Stanley was eager to accelerate students who exhibited an advanced knowledge of mathematics and math-related subjects yet were still sitting in middle school math classes being taught skills they had already mastered. However, there was little support for subject acceleration in any form, and relatively few out-of-school learning opportunities. This reality led Stanley to suggest radically accelerating the first few exceptional students with whom he worked to enter college at very young ages, which proved quite successful for those students. This history has led many educators to still associate Stanley with radical acceleration, when in fact he knew that this was not an optimal solution for most gifted students, and he set out to identify and develop numerous alternatives to radical acceleration. He sought opportunities for students to move ahead in a single subject without necessarily skipping grades and to find opportunities for them to interact with age peers who shared their interests and abilities, and he established numerous programs to achieve these goals, including the residential summer programs offered by CTY and others. Today, early entrance to college is one option for academically talented students to consider, but they are fortunate to have many more ways to expand their learning opportunities as they strive to achieve that optimal match for themselves.

Some precollege students have a choice about where to go to school and may find one that can meet many of their needs quite well, whether a public and private school, or possibly a special magnet school that focuses on a talent or interest area. In the United States, interest in STEM

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(science, technology, engineering, and mathematics) fields has led to the creation of numerous schools specializing in these subjects, particularly at the secondary level, with some of these schools having admission requirements to select students with high abilities in these areas (Subotnik, Tai, Rickoff, &Almarode, 2010). Early college entrance programs that admit young students as a cohort and provide important academic, social, and emotional support to ease the transition to full-time college entrance have also grown in number (Brody & Muratori, in press).

For advanced students who prefer to attend a local school, or for whom that is the only option, school programs can be made more challenging if the school administration is willing to be flexible. Students can skip one or more grades to access more advanced content, or move ahead to take just one or more subjects by enrolling in classes with older students (e.g., a 9th grader might be ready to take Calculus in a class with mostly high school juniors and seniors). When logistics don't permit this, or the student is uncomfortable about the placement, independent study, possibly using an online course, may be an option. Schools can also offer credit for courses taken outside of school, possibly in an academic summer program or at a local college or university. When advocating for flexible credit and placement or differentiated instruction on behalf of a student, SET's staff has found that it is helpful to present the results of assessment as evidence of a student's advanced abilities and/or achievement.

In their work with SET students, counselors focus much attention on suggesting out-of-school supplemental options as vehicles for learning. Through summer programs, academic competitions, internships, online courses, and extracurricular activities, students can study subjects not available in school, pursue topics of interest in depth, assume leadership roles, be exposed to role models and mentors, and/or enjoy the companionship of peers who share their interests (VanTassel-Baska, 2007). Research has shown that a combination of the right supplemental experiences can have an impact much like attending full-time specialized high schools (Olszewski-Kubilius, 2010). In support of this finding, when outstanding STEM professionals and alumni of the SET program were interviewed about what had contributed to their talent development, they uniformly cited the summer programs, competitions, and other activities in which they had participated in high school as contributing to their love for their subjects because they provided opportunities to study a subject intensely in the company of a community of peers with similar interests.

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The role of technology as an option for personalizing and customizing an educational program for gifted students should be highlighted because it offers so many possibilities today (e.g., Pyryt, 2009; Siegle, 2010; Thomson, 2010). With options ranging from full virtual schools (e.g., Stanford University Online High School) to individual online courses that offer credit and/or grades (e.g., those offered by CTY or the Center for Talent Development at Northwestern University), to non-credit courses (e.g., the Massive Open Online Courses or MOOCs offered by universities around the world and the Khan Academy which has many options for children and youth), students can access courses they can't get in school and/or accelerate their educational program. In addition, the Internet provides access to websites full of content for researching topics of interest, as well as discussion forums where students can interact and converse around subject areas (e.g., the Art of Problem Solving). While not all students prefer taking classes online as opposed to in a classroom, there are few students today who don't use technology in some way to augment their learning.

Psychosocial Concerns

Tracy Cross (2013) has noted that he believes "the most pervasive threat to the mental health of gifted students is the mismatch between the school's curriculum and the student's academic needs" (p.79). This mismatch is more likely to occur when students' needs vary considerably from what schools typically offer, as is often true with extremely gifted students. In fact, though the majority of SET students appear to be reasonably well-adjusted and to have friends, research has shown that such exceptionally talented students are more at risk for social and emotional difficulties than more moderately gifted students, and it is one of the reasons SET focuses its efforts primarily on serving students with the highest abilities. Within this group, it appears that those with extremely high verbal abilities may be more at risk than mathematically talented students, possibly because there are more opportunities for mathematically talented students to connect with like-minded peers through math teams and other activities (Brody & Benbow, 1986).

Placing highly talented students in rigorous academic environments with intellectual peers, can minimize many of the risk factors associated

with psychosocial difficulties for gifted students, such as perfectionism, low self-esteem, weak social skills, and/or difficulty with peer relationships. In these environments, students may discover that they are not the smartest student in the room and that it's okay. They also learn they can't always perform perfectly in a very rigorous, competitive setting, and that that's okay too. Most importantly, being with like-minded peers who share their interests cultivates a sense of belonging among teens who may have difficulty relating to age peers in typical school environments. This can boost students' self-esteem and enhance the development of their social skills. When asynchronous development is an issue, either because their social and emotional development lags behind their cognitive development or because their skills are not equally developed in all academic areas, being with other students who share these issues can be enormously helpful.

The value of out-of-school academic programs for achieving psychosocial goals has been well documented (e.g., Olszewski-Kubilius, 2007). For example, in a study of the benefits of the CTY residential summer program, students reported finding a sense of belonging, making friends, gaining confidence and adeptness in their social skills, developing independence, and gaining in maturity as a result of the program. They also reported gaining confidence in their academic abilities in the company of other talented students, an important result for future psychological well-being (Mickenberg and Wood, 2009a, 2009b).

Positive psychosocial effects also result from extracurricular activities. For example, SET alumnus and renowned mathematician Lenny Ng looked back on his involvement in mathematics competitions in high school and noted that they «contributed quite a bit to my social life…I could hang out with kids with similar interests. I still keep in touch with a lot of the people I met this way" (Muratori et al., 2006, pp. 316-317).

While the combination of rigorous coursework and the right extracurricular activities can serve the academic and psychosocial needs of advanced learners well, one must be careful not to overload a student to the point of causing too much stress. The pressure to excel and the competitiveness of college admissions today may be pushing some students to participate in too many activities for the wrong reasons, and this can create stress, emotional distress, and fatigue. Thus, students' specific talents and true interests, as well as energy level and time available, should influence the choice of out-of-school supplemental programs.

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Some SET students exhibit more serious issues that cannot be addressed through academic advising or dealt with through academic or extracurricular solutions. For example, they may experience psychological distress caused by a life event (e.g., a death in the family, a divorce, difficulty adjusting to a move). Others may show signs of a more serious mental illness, anorexia, depression, and/or suicidal tendencies. SET's staff does not try to address these issues but recommends seeking professional help elsewhere.

Factors to Consider in Educational Planning

Students qualify for SET on a single test, the SAT. While no decisions can be made based on this assessment alone, information provided by this aptitude test can be extremely helpful. Because it is administered as an above-level test (i.e., this test was developed as a college admissions test and SET students are identified in middle school), it can distinguish those students who may be ready to master content typically offered to older students from those who can be adequately challenged with well-designed grade level work, possibly in an honors class. It is also helpful that mathematical and verbal reasoning abilities are differentiated in this assessment.

As examples of how this information can be used, let's consider several students who recently qualified for SET. Out of a possible 800 points on each test, Michael scored 780 on math and 450 on Critical Reading, Rachel scored 750 Math and 700 Critical Reading, and Susan scored 550 on Math and 710 on Critical Reading. These scores suggest very different ability patterns. Michael exhibits a particular strength in math, and good but more typical verbal abilities, Rachel appears more universally gifted and exceptional in both areas, while Susan has stronger verbal abilities than math abilities. By combining this insight with other information gleaned from or about the students, informed educational decision-making is possible. To help determine appropriate placement in math, all three students were administered a Precalculus placement test.

Michael's high SAT Math score was supported by an excellent score on the Precalculus placement test. We learn he has been informally studying math on his own for many years. He is currently taking Algebra II in school but has studied Geometry and Trigonometry with a tutor fairly

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systematically so there are no definable gaps. He is also active in math competitions and aspires to compete at the international level so he needs access to advanced content. Clearly Michael has the content knowledge and motivation to do well in a Calculus class as an 8th grade student. Options for taking this course are to take it at a local high school, at a local college, or to take an online course, depending on what logistical arrangements can be made. He will need access to college-level math courses throughout high school and possibly to a mentor as his knowledge of math advances. He should consider enrolling in a summer program that will help prepare him for math competitions. Meanwhile, Michael's Critical Reading score suggests 8th grade placement for his other subjects may be appropriate for now, so grade skipping is not recommended, and he doesn't express any interest in doing this. He may want to spend some extra time developing his reading abilities and skills so that his profile will be somewhat more balanced in the future. Socially, he has friends he really likes from math team so that is not a problem for now.

Rachel's scores that qualified her for SET in both areas make her stand out even within the SET group. She excelled on the SAT-M, but her placement test revealed many gaps in her Precalculus math knowledge. She is formally taking Algebra I and has not studied much advanced math on her own. Yet, her exceptionally advanced mathematical reasoning abilities suggest she can master math content very quickly and that extending her study of Precalculus in regular school courses for the next three or four years seems excessive. Though math is not her passion, possibly because she has never been challenged in it, she might enroll in an online math program where she can move on her own at a more rapid pace, and she is interested in doing this. Rachel's interests focus on history, politics, and literature, and her SAT Critical Reading score suggests strong verbal abilities. It is unlikely that she would be adequately challenged in 8th grade courses in those subjects, and she is not particularly engaged socially with her peer group. In fact, her out-of-school friends tend to be older. Thus, the possibility of skipping 8th grade would allow Rachel to enroll in more challenging high school courses sooner. To expand on her interests, Rachel might consider getting involved in student government and/or debate in high school, doing an in-depth research project, and/or showing leadership in some community outreach initiative. Rachel would also benefit from summer programs that

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allow her to take more advanced courses in the humanities and to interact with peers who are on her intellectual level.

Susan was a verbal qualifier for SET, so she too is very bright, but she feels adequately challenged. Her placement test in math suggested that she may be appropriately placed and adequately challenged in Algebra I as a 7th grade student and she will take Algebra II in 8th grade, still somewhat advanced for her school. She has no interest in leaving her current school, where she has many friends. She is a musician and an athlete. She had a role in the school play and is on the soccer team. She has an interest in languages and studies French in school, but she would like to take Latin. She was directed to online and summer courses as options for doing so.

SET students are not immune from having learning disabilities or deficits that might affect their achievement, in spite of their high abilities. For example, Jim struggles with ADHD, dysgraphia, and visual processing problems. Yet, he qualified for SET with a 720 score on SAT-M, as well as a 540 verbal. Given his learning differences, these are incredible scores. He was fortunate to attend a school through 7th grade that let him move at his own pace, and because he moved quickly he skipped 8th grade. Now a 9th grader in a high school that is also proving to be very flexible, he has been placed in Calculus with seniors, and will utilize online courses for his math instruction for his subsequent years in high school. He takes medication for the ADHD and is given extra time if needed on tests and assignments. Jim has great difficulty writing by hand and having to handwrite answers for a test can cause great anxiety and require much extra time, so his school allows him to have computer access for all of his writing assignments and examinations. Jim is active in math competitions and numerous sports and has good peer relationships. Overall, he is doing extremely well, but school accommodations have been essential in allowing him to achieve at the level of his abilities.

These examples demonstrate the heterogeneity of students' characteristics and needs, even within a group who are all exceptionally gifted, and show the need to consider a range of options for meeting their individual needs. An important component is to involve the students themselves in any decision-making, not to work exclusively with parents. Students' interests are especially important to consider, in the hope that they will eventually find their true passions and pursue exceptional levels of achievement in those areas.

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Conclusion

Unfortunately, school programs too often fail to address the needs of their most advanced learners. Much of the curriculum is designed for average learners with few opportunities for students to study above-grade-level content, and really advanced students may have difficulty finding peers within the school who share their interests and abilities. Even schools that have established special enrichment programs for gifted and talented students may fail to account for the diversity of characteristics and needs within the population they aim to serve, i.e., they may not identify or have programs to develop domain-specific abilities, offer above-grade level instruction, or have opportunities for advanced learners to pursue topics of interest in depth or to interact with their true intellectual peers.

However, SET's experience personalizing programs for exceptionally talented students suggests that school programs can be greatly enhanced with curricular flexibility, and the needs of advanced students can be met quite well when curricular flexibility is combined with challenging out-of-school supplemental programs and opportunities. The approach should be very individualized, with care taken to assess the individual student's unique characteristics and needs, and a wide variety of programmatic options considered. Some advanced learners will benefit from special school-based gifted and talented programs, while it will be important to provide above-level content to others. All can benefit from some combination of summer programs, competitions, activities, internships or online courses where they can pursue topics of interest in depth and have opportunities to interact with intellectual peers, but the actual choices of what to pursue should also be based on personal needs and preferences.

With a renewed interest today in personalized learning, there is an opportunity to institutionalize this approach more widely. To put this in place, students need information and recommendations from knowledgeable adults about programs that will develop their talents; schools must be flexible and willing to modify their curricula and to grant credit for work done outside of school; and financial barriers that might limit access to some out-of-school programs need to be addressed. With this as a goal, however, it offers an effective and efficient way to meet the individual needs of gifted students and help them achieve their full potential.

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