Pearson New International Edition

Education of the Gifted and Talented

Gary A. Davis Sylvia B. Rimm
Del Siegle

Sixth Edition

ALWAYS LEARNING

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- allows easy communication between students and mentors, with the option of having an archive of all communications; and
- eliminates scheduling problems between students and mentors, because both parties can email at their convenience (Siegle et al., 2009).

Good Mentors

There are many characteristics of effective mentors—persons who typically model the values, attitudes, and behaviors that the protégé will strive to emulate (Clasen & Clasen, 1997, 2003). We already noted that a good match in regard to ethnicity, gender, social class, background, and values can be crucial to the mentorship. Three assumed characteristics are high competence in an area, a strong interest in teaching young people, and a willingness to devote time to the mentorship. Especially important is the ability to provide learning experiences that are enjoyable and challenging; that enable students to use their gifts, abilities, and imagination; that bring the protégé to higher levels of thinking and problem solving; and that enable students to see their own possibilities. One caution—educators should beware of potential underachieving mentors who easily attract underachieving gifted students and lure them to hopes of easy solutions instead of steadfast effort (Rimm, 2008c; see also www.sylviarimm.com).

FUTURE PROBLEM SOLVING

The popular *Future Problem Solving* (FPS) program is an enrichment activity that can take place in a pull-out program, resource center, special class, or Saturday program, or with gifted students who are mainstreamed or clustered in the regular classroom. If an FPS team is good, it might have the opportunity to travel to a state Future Problem Solving bowl or even to the International FPS Conference. FPS was begun in 1975 by E. Paul Torrance at the University of Georgia. It grew into a state-wide program, then into a national program, and now it is an international program.

The objectives of FPS are to help gifted children (1) become more aware of the future in order to deal with it actively and optimistically; (2) become more creative and learn to go beyond the obvious; (3) improve communication skills, especially speaking and writing clearly, accurately, and persuasively; (4) develop teamwork skills such as listening, respecting, understanding, and compromising; (5) learn to use a problem-solving model and integrate it into their daily lives; and (6) develop research skills, including how and where to gather information (Crabbe, 1982).

The yearlong *Team Problem Solving* program begins with the registration of each four-student team in one of three grade divisions: Juniors (grades 4–6), Middle (7–9), and Seniors (10–12). The teams complete two practice problems and one qualifying problem, which they solve by using the seven-step model, based on the Creative Problem Solving (CPS) model (see Chapter 8). Using the seven-step model, the the teams

1. research the general topic;
2. brainstorm problems related to a specific ("fuzzy") situation;
3. select an important underlying problem from the brainstormed problems;
4. brainstorm solutions to the underlying problem;
5. develop five criteria by which to judge the ideas;
6. use the criteria to evaluate the 10 most promising solutions and then select the "best" solution; and
7. describe the best solution.

Past problems have dealt with poverty, terrorism, garbage disposal, school dropouts, crime, drug abuse, child abuse, ozone depletion, water shortages, acid rain, medical advances, space exploration, ethics in sports, use of land, and many others. The 2010–2011 topics dealt with healthy living, air transportation, genetic testing, water quality, and emergency planning.

As each problem is completed, it is sent for scoring to the state FPS organization. The first two problems are practice problems. On the basis of the quality of the third problem, top teams are invited to participate in the state FPS competition. For the state competition, the teams are given a topic to research in advance. At the competition site, each team is given the problem scenario—then sequestered in a room for 2 hours to prepare problem statements and

solutions according to the previously listed steps. The three winning teams in the state competition, one per division, are sent to the International FPS Conference.

In addition to *Team Problem Solving*, FPS offers *Individual Problem Solving* for students who wish to work individually rather than as a member of a team; *Action-Based Problem Solving*, which is a yearlong, noncompetitive program for use in the regular classroom; *Community Problem Solving* (*CmPS*), which has teams apply their FPS skills to real community problems; and *Scenario Writing*, where students compose futuristic short stories related to the current year's problems.

Torrance and Torrance (1978) reported student testimonials on the benefits of FPS. For example, a fifth-grade girl reported, "I learned to cooperate, to share ideas, to produce creative and clever ideas, to be excited, to learn, and to work." Rimm and Olenchak (1991) successfully used FPS to motivate underachievers. (Information is available from FPS Program, Future Problem Solving Program International, 2015 Grant Place, Melbourne, FL, 32901, Phone: (800) 256–1499, www.fpspi.org.).

NATIONAL HISTORY DAY

Our experience has shown that gifted students are particularly drawn to the National History Day competition. Each year, over half a million students from around the nation participate at the local, state, and national levels in National History Day competitions. Students choose historical topics related to a theme and conduct primary and secondary research through libraries, museums, archives, oral history interviews, and historic sites. After analyzing and interpreting their data and drawing conclusions about the historical significance of their topic, students present their findings in original papers, websites, exhibits, performances, and documentaries. The National History Day process helps students develop critical thinking and problem-solving skills, research and reading skills, oral and written communication and presentation skills, and self-esteem and confidence.

National History Day winners have presented their projects at the White House Visitor Center, the National Archives, the National Museum of Health and Medicine, and different Smithsonian Institution Museums. A recent Hallmark Hall of Fame production about a Polish woman who saved thousands of Jewish children from the Nazis was based on a project by a group of Kansas students for National History Day. In 1999, students from Uniontown High School were inspired by their teacher's short clipping on Irena Sendler. Their National History Day Project became a short play, "Life in a Jar," that Hallmark Hall of Fame picked up and made into the full-length movie, "The Courageous Heart of Irena Sendler" (Henning, 2009).

National History Day provides material for teachers and students that relates to learning standards. More information about NHD is available online at www.nationalhistoryday.org.

ODYSSEY OF THE MIND AND DESTINATION IMAGINATION

Like Future Problem Solving, *Odyssey of the Mind* (OM; formerly Olympics of the Mind) and *Destination ImagiNation* are national and international programs, and they are considered excellent vehicles for teaching creative thinking and problem solving, along with self-confidence, interpersonal skills, and more.

The key assumption of OM's founders, Ted Gourley and Sam Micklus, is that the mind can be trained and strengthened through exercise with mental games just as the body is trained with physical exercise (Gourley, 1981).

There are four age divisions within OM. In Division I, team members must be younger than 12 or in the fifth grade; in Division II, younger than 15 or in the eighth grade; in Division III, 15 or older and attending high school; and in Division IV, in college. Teams include seven members, but only five can be "on the playing field." Each team chooses one of five competitive problems to solve. Kids apply their creativity to solve problems that range from building mechanical devices to presenting their own interpretation of literary classics. They then bring their solutions to competitions at the local, state, and world levels. Thousands of teams from throughout the United States and from about 25 other countries participate in the program. In addition to the four

competitive divisions, there is a primary (K–2) division in which children participate in a noncompetitive creative skit.

OM provides each team with detailed directions for preparing long-term problems that will require months to plan and implement prior to the regional competitions in April or May. Performance time is 8 minutes. Costs are limited, which supports buying at Goodwill. The following are brief summations of the five long-term problems for 2009–2010:

Problem 1: Nature Trail'R

DIVISIONS I, II, III, & IV Teams designed, built, and drove a human-powered vehicle and camper that went on a camping trip. When the vehicle arrived at the Campground, the camper was disconnected and the vehicle traveled on a team-created Nature Trail. On the Nature Trail, the vehicle overcame an obstacle, cleaned up the environment, encountered wildlife, and underwent a repair. The performance included a character, in or near the camper, who explained the experience as part of his or her role.

Problem 2: Return to the Gift of Flight

DIVISIONS I, II, & III Teams made and operated a series of aircraft that completed a variety of flight plans. The flight plans included flying straight, making a target spin, traveling slowly, dropping something into a target, touching down and taking off, and a mass launch of multiple aircraft. The aircraft in the solution was made of a variety of materials and had a variety of power sources. The testing of the aircraft was presented in a team-created performance that included a character who served as a creative "air traffic controller."

Problem 3: Discovered Treasures

DIVISIONS I, II, III, & IV Teams created and presented an original performance that included the portrayal of the discovery of two archaeological treasures. One portrayal was a team-created version of the discovery of an actual historical treasure. The other portrayal was the team's depiction of a modern sculpture or structure that exists today, but is discovered in the future. The performance included an artistic representation of the two discovered treasures and characters who were part of the discovery teams.

Problem 4: Column Structure

DIVISIONS I, II, III, & IV The problem was to design and build balsa wood columns that functioned together to balance and support as much weight as possible. The columns were not connected to each other in any way. The team tested its Column Structure by placing weights on it. Each team continually added weight until its Column Structure broke or time ended. Bonus points were awarded for the number of columns used. The teams incorporated the testing of its columns in an original team-created performance.

Problem 5: Food Court

DIVISIONS I, II, III, & IV The problem was to create and present a humorous performance where a food item was accused of being unhealthy and had to defend itself among its food peers. All characters were food items and included "the accused," "the accuser," a jury that was portrayed by individuals who were not team members, and additional team-created characters. The jury revealed its decision to the audience.

Primary: Surprise Party

GRADES K—2 The team was charged with creating and presenting a humorous performance that included a Surprise Party for a team-created character. The theme of the party was a surprise because it was being given for something that was not normally celebrated. Partygoers gave three gifts that helped symbolize the theme of the party. The performance also included an original party "noisemaker" that made an unusual sound instead of a loud sound.

In addition to the long-term problems, OM students also solve *spontaneous* (short-term) problems, both in practice and on the day of competition. For example, students might be asked to improvise with a ping-pong ball ("It's a clown's nose!" "It's an egg from a plastic bird!"). Teams are awarded one

point for each common idea and three points for each creative idea, thereby learning to give creative ideas. For further information, visit www.odysseyofthemind.com/.

Destination ImagiNation is similar to Odyssey of the Mind. It was formed from the original OM nonprofit organization. It also features five challenge problem and a preschool problem. The age divisions are similar to those of OM. The elementary level includes students from kindergarten to 5th grade, middle level is 6th to 8th grade, secondary level is 9th to 12th grade, university level is students bound for higher education or full-time postsecondary students, and the rising stars level is preschool to second grade.

The long-term problems of OM are known as *Team Challenges* in DI. DI teams consist of two to seven members. The DI team challenge has two components: a *Central Challenge* and *Side Trips*. The short-term (spontaneous) problems of OM are known as *Instant Challenges* in DI. Additional informaton about Destination ImagiNation is available at www.idodi.org

Some states include both OM and DI organizations, whereas other states may feature only one of the programs. Both programs provide outstanding opportunities for students to develop and hone their creative talents.

MATHCOUNTS

MATHCOUNTS is a national program that promotes better math skills in all students, while creating opportunities for those who excel to compete at local, state, and national levels. Through coached sessions at their schools, students in sixth through eighth grade learn to see mathematics as exciting, challenging, rewarding, and fun. The program was founded by the National Society of Professional Engineers, the National Council of Teachers of Mathematics, and the CNA Foundation. A School Kit is free and includes the MATHCOUNTS School Handbook, a poster, and a registration form. The modest registration fees are based on the number of teams and individuals participating in the program.

The 3-hour MATHCOUNTS competition involves three rounds. The Sprint Round (40 minutes) consists of 30 problems that are designed to test computational accuracy. Calculators are not allowed. The Target Round (30 minutes) tests multistep problem-solving, with eight problems that are presented to competitors in four parts. The Team Round (20 minutes) measures how well team members work together to solve 10 problems. Calculators are allowed for the Target and Team Rounds.

Any student who is interested in the program is encouraged to compete in the School Competition. The School Competition is used to select students for the Chapter (Local) Competition. The winning team from the Chapter Competition (as well as the two highest-scoring students who were not on the winning team) move to the State Competition. The four highest-ranked students (referred to as Mathletes) and the top team coach from each State Competition receive an all-expenses-paid trip to the National Competition.

Of course, students receive recognition and awards at each competition level. More information about MATHCOUNTS can be found at www.mathcounts.org.

JUNIOR GREAT BOOKS

Junior Great Books (JGB), a program of the *Great Books Foundation,* is another popular enrichment program currently used in gifted programs across all 50 states and in many foreign countries. Two goals of JGB are implementing JGB programs in grades K–12 and training teachers to become JGB leaders. In 1- or 2-day workshops at several levels, the JGB Foundation trains teachers to ask probing questions that require students to think and to interpret literature.

The carefully selected books consist of modern and traditional literature for each grade level from kindergarten through high school. Children in kindergarten through grade 4 read (or hear) fairy tales and folk tales. Grades 4 through 9 cover children's classics and modern short stories. High school students read short selections from great works of philosophy, political science, economics, and fiction. All readings have proved to be comprehensible, rich in ideas for sustained discussion of the interpretive questions, and enjoyable to read and discuss. Teachers engage students in in-depth discussions of their reading in three to five class periods per week, with homework only for high school students.

Strengthened reading skills (e.g., vocabulary), listening skills, and interpretation and inquiry are some of the benefits of JGB (Nichols, 1992), along with greater self-awareness and insights into psychological and social problems. For further information, visit www.greatbooks.org.

ACADEMIC COMPETITIONS

The best sources of information on national competitions, many of which are open to students of all ages, are the books *Competitions: Maximizing Your Abilities* (Karnes & Riley, 1996a) and *Competitions for Talented Kids* (Karnes & Riley, 2005). They list hundreds of competitions in the categories of academics, fine and performing arts, leadership, and service learning. Each competition is summarized in about one page, listing the competition name, sponsor, purpose, description, eligibility requirements, dates (for applications and awards), entry requirements and instructions, judging criteria, and awards. The awards include medals, ribbons, certificates, prizes, scholarships, and in a few cases cash. For example, the category of academics includes subcategories of general academics (including an AP competition), business, foreign languages, language arts (10 subcategories), math, science (7 subcategories), social studies (6 subcategories), and technology.

TECHNOLOGY AND THE GIFTED

Computer and Internet technologies present endless enrichment opportunities. Computers increase students' control over learning and improve their productivity (Berger & McIntyre, 1998; Pyryt, 2003; Siegle, 2005b). They also increase the sophistication of the products that gifted and talented students can produce. For example, a talented musician can record and produce an impressive set of songs with a home computer and some inexpensive software and accessories.

Internet Options

The explosion of the World Wide Web in the mid-1990s marked the beginning of a new era in data retrieval and personal communication. The Web created an environment in which the traditional barriers to the collection, analysis, and sharing of information were removed. Today, students construct knowledge by gathering information, organizing it in meaningful ways, and sharing it with others. In this way, students are actively involved with the technology and use it as a tool to answer questions and solve problems. They also use technology to learn from others as well as share what they have learned. "The Internet is the single most significant technology available to gifted and talented students" (Siegle, 2005a, p. 30).

Six common uses of the Internet are as an information resource, a platform for interactive projects, a source for online classes, a publishing platform, a mentoring resource, and a social network. First, the Internet offers the most extensive and accessible collection of information available to gifted students. It can provide the depth and breadth of content that many gifted students crave. It also contains a myriad of electronic books (many of them free and in the public domain (visit, e.g., etext.lib.virginia.edu/ebooks/) and online newspapers from around the world. Second, the Internet creates a global community of learners who can collaborate on projects. A list of interactive online programs for K-12 is available at www.cln.org/int_projects.html. Third, gifted students who have outgrown the available courses in their school system can extend their learning through online courses. Many states and universities offer online courses for talented elementary and secondary students. Fourth, students can share their creative thoughts and creative products on the Internet. A talented photographer could create an online photo gallery, and a creative writer might share original short stories. Fifth, online mentors can provide expertise not normally available to students. We discussed mentoring earlier in this chapter. Finally, the popularity of social networks through programs such as *Facebook* provide opportunities for gifted students to interact with each other. Digital natives (Cross, 2006; Prensky, 2001) find this option particularly attractive.

Important Websites about Gifted Children

An Internet site for anyone interested in gifted education is www.hoagiesgifted.com. The National

Association for Gifted Children (www.nagc.org), the National Research Center on the Gifted and Talented (www.nrcgt.org), and the Davidson Institute for Talent Development (www.davidsongifted.org/) also feature a plethora of information related to gifted children.

COMMENTS ON GROUPING, DIFFERENTIATION, AND ENRICHMENT

When we modify, or "differentiate," the curriculum for gifted students, as per all of the enrichment and grouping strategies in this chapter, and as noted by Westberg and Archambault (1995), it means that we

- use advanced content;
- provide depth—for example, by teaching interrelationships among bodies of knowledge;
- accelerate the pace of instruction;
- group students according to skill level or interest area;
- allow independent, self-directed learning;
- strengthen higher-level thinking skills, such as through questioning (see Chapter 10) and through projects that demand analysis, planning, creativity, interpretation, and evaluation;
- allow independent, advanced-level projects;
- use outside mentors, at elementary as well as secondary levels;
- compact already learned or quickly learned curriculum to provide time for independent learning or projects; and
- use learning or interest centers.

Westberg and Archambault (1995) and their colleagues visited 10 elementary schools that had been identified as successfully teaching gifted students. Despite program differences, six repetitive themes emerged.

First, effective teachers had advanced training in gifted education, stemming from graduate degrees and in-service training that presented new teaching techniques.

Second, teachers were motivated. They were willing to make changes, spend extra time, and sometimes fail in trying to differentiate learning for gifted students.

Third, teachers collaborated with each other, with curriculum specialists, and with gifted education specialists to plan instruction for high-ability students.

Fourth, teachers used a variety of approaches to differentiate curriculum and instruction—all aimed at determining *what* students will learn, *how* they learn, and how they will *demonstrate* their learning. They modified the curriculum, set high standards, located mentors, encouraged independent projects, and created flexible instructional groups.

Fifth, teachers received clear support from their principals and superintendents.

The sixth recurrent theme was a "supportive atmosphere," or "collaborative culture," that encouraged teachers to experiment with and adopt new practices, such as flexible staffing patterns and new curricula.

Summary

In the category of full-time homogeneous grouping, magnet high schools draw students to the particular school that accommodates their needs and educational or career interests. Special schools, elementary or secondary, enrich and accelerate the education of gifted students.

Private schools usually produce, on average, higher achievement than public schools; some private schools are designed for gifted and talented students.

With the school-within-a-school plan, gifted students attend special classes for part of the day and mix with regular students for other, usually less academic, classes.

Special classes for gifted students may be created in the elementary or secondary school. Some problems are that the concept is contrary to the reform movement toward heterogeneous classes; some students may resist being separated; other students may resent the special status; and teachers may grade the more difficult class on a curve. Some high schools already provide differentiated opportunities for bright and motivated students.

Under full-time heterogeneous grouping, cluster grouping involves placing a group of 5 to 10 gifted students in the same regular class for special assignments. The