# Authentic Assessment of Leadership in Pro

Issues concerning the identification and training of leaders have roots in the earliest forms of modern Western education. Plato's *Republic* outlines a plan allowing only those persons possessing the highest intellectual ability to receive training as a philosopher king, those who comprised the ruling body (Bloom, 1991). Thomas Jefferson also addressed the need for selecting and educating leaders for the United States of America, a burgeoning democracy at the time. Jefferson's 1779 *Bill for the More General Diffusion of Knowledge* argued that a responsibility of education in a democratic society lay in identifying people of talent and preparing them to assume leadership roles (Gutek, 1995).

# blem-Solving Groups

by Jennifer Jolly and Todd Kettler

## Assessment of Leadership

Twentieth-century educators continued to grapple with similar questions. Leta Hollingworth, one of gifted education's earliest pioneers, recognized the role and responsibilities that future leaders would encounter. In 1939, quantitative knowledge did not exist regarding the fundamental traits of leadership. Researchers largely agreed that leadership closely aligned with intelligence. For example, Hollingworth (1939) observed, "No one has ever advocated stupidity as a qualification for a leader" (p. 575). During this time period, intelligence became the "only fundamental qualification" (Hollingworth, p. 579). Hollingworth elaborated, "It will be a long time before we advance to a point where we can measure these [leadership traits] as well as we can measure intelligence" (p. 579). More than a half-century later, research in this field remains sparse despite the real need for empirical studies, including both quantitative and qualitative measures (Edmunds, 1998).

The 1972 publication of the Marland Report by the U.S. Commissioner of Education proposed a multifaceted definition of gifted and talented education, enhancing what traditionally had been a focus on academics. Leadership materialized as a component of giftedness, along with general intellectual ability, specific academic aptitude, creative or productive thinking, visual and performing arts, and psychomotor ability (Foster, 1981; Karnes, Riley, & McGinnis, 1996). States, including but not limited to Indiana, Oklahoma, Texas, Idaho, and Colorado, all define giftedness in their state education codes as including a high or unusual capacity for leadership (Stephens & Karnes, 2000). Definitions of giftedness and subsequently leadership at both the federal and state levels of government present an ongoing struggle between one based on governmental policy and one that can be conceptually and empirically defined (Foster). The inclusion of leadership in state education definitions of giftedness necessitates measures to identify those with leadership qualities; however, few exist. The measurements that are available possess marginal psychometric properties or are not normed for this specific population (Oakland, Falkenberg, & Oakland, 1996).

## Curricula to Develop Leadership

In the 30 years since the Marland Report, financial resources for leadership programs and curricula have been made available, but how to proceed with the implementation of such programs remains ambiguous (Foster, 1981). Bean and Karnes (2001) suggested that, even though leadership is a part of many state definitions on giftedness, little attention is given to curricular adjustments or the definition of leadership itself. Attempts through curricular strategies to develop leadership in all academic areas by studying the

biographies and autobiographies of outstanding leaders builds upon work originally pioneered by Hollingworth (Klein, 2002). Within the curriculum of *The Evolution of Common Things,* Hollingworth's classes at the Speyer School examined the biographies of people considered great and who significantly impacted their culture (Farrall & Kronborg, 1996; Hollingworth, 1939). Other curricular alternatives include units on leadership and building leadership through extracurricular activities. However, only a handful of gifted programs actually identify students with leadership potential or have leadership instruction integrated into the curriculum.

## Definitions of Emergent Leadership

Leadership has been characterized by particular personal qualities and traits, specifically one's ability to influence others' thoughts, energies, emotions, feelings, or behaviors within the scope of emergent leadership (Farrall & Kronberg, 1996). Based on self-organization patterns of groups, a leader emerges while other group members move into roles that are best suited for their skills and personalities (Cattell & Stice, 1954; Roach, Wyman, Brookes, Chavez, Heath, & Valdes, 1999; Zaror & Guastello, 2000). Leaderless group settings are also commonly used to identify workers for promotions in large corporations (Guastello, 2002).

According to this theory, a leader emerges in a situation in which one was not formally appointed. The type of leader that develops in an emergent situation typically is a transformational leader. This form of leadership is differentiated from facilitative leadership by the following four indices: (a) idealized influence—the leader becomes a role model for others in the group; (b) inspirational motivation—the leader may inspire or motivate the group members to forge ahead when the generation of ideas has stalled; (c) intellectual stimulation—the leader is supportive of others thoughts and ideas; and (d) individualized consideration—the emerging leader begins to see the match between tasks and group member traits, thus delegating work accordingly (Guastello, 2002).

In the last review of leadership assessments for youth by Oakland, Falkenberg, and Oakland (1996), no one assessment adequately assessed the construct of leadership in youth. The 11 assessments examined did not meet psychometric standards, were inappropriate for the age of the population, or were not constructed under the current concepts of leadership. The 11 assessments included The Leadership Ability Evaluation (Cassel & Stancik, 1982), Leadership Skills Inventory (Karnes & Chauvin, 1985), Eby Gifted Behavior Index (Eby, 1989), Gifted and Talented Screening Form (Johnson, 1979), Gifted Evaluation Scale (McCarney, 1987), Scales for Rating the Behavioral Characteristics of Superior Students (Renzulli, 1976), Leadership Appraisal Survey (Hall, 1986), Styles of Leadership Survey (Hall & Williams, 1986), Leadership Opinion Questionnaire (Heishman, 1989), Supervisory Behavior Description Questionnaire (Heishman, 1989), and Campbell Leadership Index (Campbell & Kraut, 1991).

The existing leadership assessment instruments are largely teacher or self-report instruments. These instruments often fail to define a specific set of behaviors linked to leadership. Furthermore, none of the instruments specifically assess leadership in an authentic setting. These concerns with current leadership assessment instruments require a new light to be cast upon the assessment of leadership behaviors and traits.

This study seeks to answer the following questions: When students are assigned to groups where no leader is appointed or designated, can a process be created to identify the emerging leader? What observable behaviors support the identification of an emergent leader in a problem-solving situation? Does a relationship exist between leadership self-report assessment instruments and authentic assessments through structured observations?

## Method

### *Participants*

The Interdisciplinary Creative Problem Solving Conference is an annual conference held at Baylor University for identified gifted and talented students in grades 8–12. Students from across Texas spend 2 days working in groups and use the Creative Problem Solving process (Treffinger, Isaksen, & Dorval, 2000). All groups are given a common mess, form a problem statement, and develop a subsequent solution. The groups then present their solutions using skits, banners, brochures, and PowerPoint presentations to an audience of judges, teachers, and peers.

In this study, participants included 83 8th- through 12th-grade students from various middle schools and high schools in Texas. All participants were identified as gifted and talented by their school district. The group was composed of 32 male participants and 51 female participants. Age ranged from 13 to 18 years of age, with 2% ($n$ = 2) 13 year olds, 24% ($n$ = 20) 14 year olds, 33% ($n$ = 27) 15 year olds, 25% ($n$ = 21) 16 year olds, 12% ($n$ = 10) 17 year olds, and 3% ($n$ = 3) 18 year olds. The 83 participants were assigned to six

color-coded groups. Participants from the same school were separated to the extent possible and also were assigned by age and talent so that each group was diverse and contained students with talents in each of the product areas. Twenty-one (25%) of the participants attended the ICPSC in at least one previous year. This was the first conference for 51 (61%) of the participants, and 11 (13%) did not respond to the question. An adult facilitator (2 males and 4 females) and counselor (6 females) were present to guide the students through the process. Three facilitators had previous training in the area of gifted education and the process of facilitating Creative Problem Solving groups. Two had training only in gifted and talented education, and one facilitator was a faculty member of Baylor's School of Education with no previous experience with Creative Problem Solving or gifted and talented education.

***Instruments***

The participants completed two self-assessments of leadership at the beginning of the conference. The instruments were an altered form of the Renzulli-Hartman Scales for Rating Behavioral Characteristics of Superior Students and an altered form of the Gifted and Talented Evaluation Scales (GATES; Gilliam, Carpenter, & Christensen, 1996). Each item on the instruments was altered from third person to first person, producing a self-report instead of a third-person report. Thus, the content was not altered, but the person of the pronouns and verbs was (see Student Self-Assessment, Part I and Part II in Appendices A and B).

The Renzulli-Hartman Scale consists of 10 subscales, one of which specifically assesses leadership characteristics. Subjects respond to a 10-item four-point Likert scale, and the possible range of scores is 10 to 40. The stability coefficient reported for this instrument is .77, with the interrater reliability coefficient being .67 (Oakland, Falkenberg, & Oakland, 1996).

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The GATES is a behavioral checklist used to identify people who are gifted and talented. There are five independent scales based on federal and state definitions of leadership totaling 50 items. GATES reports a test-retest measure from .42 to .97. The leadership subscale agreement has a test-retest measure of .68 to .95. A Cronbach alpha was reported at .96 to .97 with SEM + 2.6. A correlation of .81 was reported for the Renzulli-Hartman (Gilliam, Carpenter, & Christensen, 1996). The jot down instrument consists of 12 behaviors. Each group participant received one tally mark from the observer for each instance a behavior was exhibited.

The jot down instrument was developed through focused interviews with experienced facilitators. They were asked to describe behaviors of students who are influential within the problem-solving group. Responses were compiled and combined until 12 behaviors emerged that operationalized the definition of leadership. The 12 behaviors were resubmitted to the facilitators for review. Revisions and clarifications were made, resulting in the final form. The facilitator, counselor, and students completed the jot down instrument, requiring that one student be chosen who best exemplified each specific behavior.

***Procedure***

The students spent a total of 10 hours together over a 2-day period applying the Creative Problem Solving model. The six groups worked through a mess, identified what they perceived to be the overarching problem, and then created a solution to the problem. After the mess was introduced, group members volunteered to attend expert sessions to gather further information that pertained to the mess. Subgroups were also formed to create a banner, brochure, and skit expressing both the problem statement and the solution. A research assistant observer was assigned to each group to record on the jot down sheet the behaviors student participants exhibited. A video of each group's interactions was also taken for verification of the research assistants' observations. Near the end of the problem-solving process, student participants were asked to complete an observational form indicating which group member they thought most exhibited each of the behaviors included on the jot down sheet. Facilitators and counselors in each group also completed observational forms containing the jot down behaviors.

## Results and Discussion

This study examined the question of whether leaders can be identified through observations in a problem-solving situation where students are assigned to groups where no leader is appointed or designated. In each of six groups, the facilitator and counselor, students, and research observers reached agreement regarding the leader.

The question posed focused on whether a recognized leader will emerge in a group in which no leader is appointed or designated, and student participants' perceptions were also examined to find agreement with the perceptions of the adult observers. Agreement between the student responses and the adult responses suggests that a recognized leader did emerge. This supports a consensual theory of leadership; though hard to define, people are able to agree on who is the leader of a group working on a problem-solving task.

Within the problem-solving situation, four specific leadership behaviors emerged as most prominent from the 12 included on the jot down. The behaviors most attributed to the emerging leaders were the following: (a) this student kept the group focused, (b) this student offered compromises that were accepted by the group, (c) the group listened to this student and respected his or her opinion, and (d) the group frequently agreed with this student (see Appendix C). The hypothesis that emergent leaders also exhibit a broader range of behaviors (Guastello, 1995) is reinforced by these data. Each leader identified by his or her fellow group members, facilitator, counselor, and observer demonstrated a greater number of behaviors from the jot down sheet in comparison to his peers.

In addition, the relationship that exists between the leadership self-report assessment instrument and the authentic assessment through structured observations using the jot down was examined. In three of the six groups, the top two leaders identified by the jot down scored higher than the other members of their group. Therefore, some relationship exists between the observational assessment using the jot down and the self-report (see Table 1).

**Table 1**
**Self-Report Assessment Results**

| | Identified Leaders ($n$ = 13) | | Nonidentified Leaders ($n$ = 70) | |
|---|---|---|---|---|
| Self-Report Assessment | *M* | *SD* | *M* | *SD* |
| Renzulli-Hartman | 33.68* | 2.78 | 30.69 | 4.02 |
| GATES | 75.20 | 10.53 | 68.73 | 9.86 |

Note. * $p < 0.05$

Limitations of this study need to be explored. Placement of the video cameras left much of the footage unusable, which prohibited verification of the observers' results from this data point. In replication studies, the use of two observers per group is suggested in order to establish interrater reliability. Due to the situational nature of the study, further data should be collected on leadership roles taken by these students in their schools and communities to examine relationships and validity of concepts of emergent leadership.

Implications of this descriptive study suggest that, over a relatively short period of time, it is possible to identify the leader of a group by observing and recording predictable leader behaviors. In many cases, gifted and talented programs do not identify and serve gifted leadership, and it is hypothesized that this omission is not due to a lack of interest, but rather to a lack of confidence in the ability to identify those gifted with leadership abilities. Demonstrating that it is possible to observe a specific set of behaviors during an authentic task opens new possibilities for leadership identification and service in the field of gifted education. GCT

## References


Bean, S. M., & Karnes, F. A. (2001). Developing leadership potential of gifted students. In F. A. Karnes & S. M. Bean (Eds.), *Methods and materials for teaching the gifted* (pp. 559–586). Waco, TX: Prufrock Press.

Bloom, A. (Ed.). (1991) *The republic of Plato.* New York: BasicBooks.

Campbell, D., & Kraut, A. (1991). *Campbell leadership index*. Minneapolis, MN: National Computer Systems.

Cassell, R. N., & Stancik, E. J. (1982). *The Leadership Ability Evaluation–Revised: Manual.* Los Angeles: Western Psychological Services.

Cattell, R. B., & Stice, G. F. (1954). Four formulae for selecting leaders

on the basis of personality. *Human Relations, 7,* 493–507.

Eby, J. W. (1989). *Eby Gifted Behavior Index: Administration manual*. East Aurora, NY: D.O.K.

Edmunds, A. L. (1998). Content, concurrent, and construct validity of the Leadership Skills Inventory. *Roeper Review, 20,* 281–284.

Farrall, J., & Kronborg, L. (1996). *Leadership development for the gifted and talented*. Retrieved February 3, 2002, from http://www.nexus.edu.au/TeachStud/gat/far_kro.htm

Fleishman, E. A. (1989). *Leadership Opinion Questionnaire: Examiner's manual.* Park Ridge, IL: Science Research Associates.

Foster, W. (1981). Leadership: A conceptual framework for recognizing and educating. *Gifted Child Quarterly, 24*, 17–25.

Gilliam, J. E., Carpenter, B. O., & Christensen, J. R. (1996). *Gifted and talented evaluation scales: A norm-referenced procedure for identifying gifted and talented students.* Austin, TX: PRO-ED.

Guastello, S. J. (1995). Facilitating style, individual innovation, and emergent leadership in problem solving groups. *Journal of Creative Behavior, 29,* 225–239.

Guastello, S. J. (1998). Self-organization in leadership emergence. *Nonlinear Dynamics, Psychology, and Life Sciences, 2,* 303–316.

Guastello, S. J. (2002). *Managing emergent phenomena*. Mahwah, NJ: Erlbaum.

Gutek, G. L. (1995). *A history of Western education experience.* Prospect Heights, IL: Waveland Press.

Hall, J. (1986). *Leadership appraisal survey.* The Woodlands, TX: Teleometrics International.

Hall, J., & Williams, M. S. (1986). *Styles of leadership survey*. The Woodlands, TX: Teleometrics International.

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Hollingworth, L. S. (1939). What we know about the early selection and training of leaders. *Teachers College Record, 40,* 575–592.

Johnson, D. L. (1979). *Gifted and Talented Screening Form: Instruction manual*. Chicago: Stoelting.

Karnes, F. A., & Chauvin, J. C. (1985). *Leadership Skills Inventory: Administration manual and manual of leadership activities*. East Aurora, NY: D.O.K.

Karnes, F. A., Riley, T. L., & McGinnis, J. C. (1996). Perceptions of great leaders held by gifted youth. *Gifted Child Today, 19*(4), 14–15.

Klein, A. G. (2002). *A forgotten voice: A biography of Leta Stetter Hollingworth.* Scottsdale, AZ: Great Potential Press.

Marland, S. P., Jr. (1972). *Education of the gifted and talented: Report to the Congress of the United States by the U.S. Commissioner of Education and background papers submitted to the U.S. Office of Education*, 2 vols. Washington, DC: U.S. Government Printing Office. (Government Documents Y4.L 11/2:G36)

McCarney, S. B. (1987). *The Gifted Evaluation Scale: Technical manual.* Columbia, MO: Hawthorne Educational Services.

Mumford, M. D., & Connelly, M. S. (1991). Leaders as creators: Leader performance and problem solving in ill-defined domains. *Leadership Quarterly, 2,* 289–315.

Oakland, T., Falkenberg, B. A., & Oakland, C. (1996). Assessment of leadership in children, youth, and adults. *Gifted Child Quarterly, 40,* 138–146.

Renzulli, J. S., Smith, L. H., White, A. J., Callahan, C. M., & Hartman, R. K. (1976). *Scales for rating the behavioral characteristics of superior students.* Mansfield, CT: Creative Learning Press.

Roach, A. A., Wyman, L. T., Brookes, H., Chavez, C., Heath, S. B., & Valdes, G. (1999). Leadership giftedness: Models revisited. *Gifted Child Quarterly, 43,* 13–24.

Stephens, K. R., & Karnes, F. A. (2000). State definition for the gifted and talented revisited. *Exceptional Children, 66,* 219–238.

Treffinger, D. J., Isaksen, S. G., & Dorval, K. B. (2000). *Creative problem solving: An introduction* (3rd ed.). Waco, TX: Prufrock Press.

Zaror, G., & Guastello, S. J. (2000). Self-organization and leadership emergence: Across-cultural replication. *Nonlinear Dynamics, Psychology, and Life Sciences, 4,* 113–119.

## Appendix A
## Student Self-Assessment, Part I

Name _____ Age _____ Grade _____

School _____ Male or Female *(circle one)*

Have you participated in this problem solving conference before? Yes or No *(circle one)*

*For the following ten items, please **circle** the number that best corresponds to you and your behavior. The numerical values are as follows:*

1. This seldom or never applies to you.
2. This occasionally applies to you.
3. This most of the time applies to you.
4. This almost always applies to you.

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| | | | | | |
|---|---|---|---|---|---|
| 1. | I can be counted on to do what I have promised, and I usually do it well. | 1 | 2 | 3 | 4 |
| 2. | I am comfortable when asked to show my own work in class, and I am confident in my abilities. | 1 | 2 | 3 | 4 |
| 3. | I am well-liked by my classmates at school. | 1 | 2 | 3 | 4 |
| 4. | My teacher and classmates would describe me as easy to get along with, and I tend to avoid arguments. | 1 | 2 | 3 | 4 |
| 5. | I can express myself well, and I am usually well understood. | 1 | 2 | 3 | 4 |
| 6. | I adapt easily to new situations, and I am not bothered when my normal routine is disturbed. | 1 | 2 | 3 | 4 |
| 7. | I prefer to be around other people rather than alone. | 1 | 2 | 3 | 4 |
| 8. | I prefer to be in charge of the activities in which I am involved. | 1 | 2 | 3 | 4 |
| 9. | I participate in most of the social activities at my school. | 1 | 2 | 3 | 4 |
| 10. | I excel in athletic activities and enjoy participating in sports. | 1 | 2 | 3 | 4 |

From Renzulli, J. S., Smith, L. H., White, A. J., Callahan, C. M., & Hartman, R. K., 1976.

## Appendix B
## Student Self-Assessment, Part II

Using the 9-point scales next to each item, rate yourself relative to the item descriptors. Indicate your rating by circling the appropriate number. Think about yourself in this way: *Example: Compared to other students of the same age, I work well in groups.*

*Compared to other students of the same age, I . . .*

| | | Below | | | Average | | | Above | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Am a leader among my classmates. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2. | Am liked by my peers. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 3. | Am persuasive in talking with others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 4. | Get along with others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 5. | Work well in groups. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 6. | Influence the behavior of others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 7. | Work effectively with others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 8. | Am social and enjoy being around others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 9. | Find it easy to participate in group activities. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10. | Actively participate in group decision making. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

From Gilliam, J. E., Carpenter, B. O., & Christensen, J. R., 1996

## Appendix C
## Leadership Observation Inventory

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| #1 | This student kept the group focused. | #2 | This student offered compromises that were accepted by the group. | #3 | The group considered this student popular. | #4 | This student involved the whole group. |
| #5 | The group listened to this student and respected his/her opinion. | #6 | The group frequently agreed with this student. | #7 | This student encouraged others in the group to cooperate. | #8 | This student encouraged others. |
| #9 | This person understands creative problem solving. | #10 | This student understands problem. | #11 | This student contributes new ideas. | #12 | This student organized the group. |