Leadership Education for Gifted and Talented Youth: A Review of the Literature

Michael S. Matthews

Leadership has been retained in the federal definition of giftedness, across major revisions, since its inclusion in the Marland Report (1972) definition more than 30 years ago. Despite this history, there appears to be little consensus regarding the relationship between leadership education and education for talented and gifted youth. This review analyzes publications about leadership education among talented and gifted students since 1980. Four major emphases are identified within this literature, and empirical articles within each area of emphasis are summarized and critiqued. Analysis confirms that a consolidated theoretical framework for leadership giftedness has not yet materialized, although limited consensus may be emerging regarding the aspects of leadership that are more or less responsive to instruction. Findings suggest that more research may be needed to justify retaining leadership ability within the federal definition of giftedness. Three suggested directions for future research on youth leadership giftedness are extrapolated from this foundation.

Introduction

Beginning with its origins in the early history of psychology, giftedness was defined primarily in terms of intellectual ability. By the 1950s, however, spurred by factors that included the multifaceted model of intelligence developed by J. P. Guilford and the elaboration by DeHaan and Kough (1956, cited in Feldhusen, 1998) of 10 categories of gifts and talents, a variety of efforts began leading toward a broader conceptualization of giftedness (Díaz, 2002; Jarecky, 1959). In response to a Congressional mandate and a section on gifted and talented children in the 1969 Education Amendments, Commissioner of Education Sidney Marland (1972) published the first formal federal definition of giftedness as part of his report to Congress on the status of educational services for the gifted. The Marland Report codified six areas as the domains of giftedness, one of which was leadership ability.

The Marland definition went through revisions, deletions, and restatements in 1978, 1988, and again in 1994 (Stephens & Karnes, 2000). Yet, in spite of definitional narrowing, as evidenced by the

Michael S. Matthews is Postdoctoral Research Fellow, Talent Identification Program, Duke University, Durham, NC.

removal of psychomotor ability and performing arts categories and even discontinuation of the term *gifted*, leadership ability has remained a part of the definition and has undergone only minor changes in wording. As of 1998, most states were using some form of the 1978 federal definition, and 18 of the 45 states that had state-level definitions of giftedness included leadership (Stephens & Karnes).

Despite the more than 30 years that it has been included in formal definitions, leadership remains perhaps the least investigated, as well as least served, of the domains of giftedness (Chan, 2000a; Huckaby & Sperling, 1981; Karnes, 1988; Karnes & Bean, 1996; Roach et al., 1999; Smith, Smith, & Barnette, 1991). Further documenting the neglect of leadership studies in gifted education, Hays (1993) determined that less than 3% of the articles published in gifted education between 1958 and 1989 related to leadership.

This state of affairs is likely a result of several factors, many of which are analogous to issues affecting gifted education as a whole (Pfeiffer, 2003). These issues include the complexity of the construct of leadership (Bass & Stogdill, 1990); the difficulty of selecting a single definition or theoretical perspective from many plausible alternatives (Edmunds & Yewchuk, 1996; Simonton, 1995); the paucity of valid and reliable measures of leadership ability (Edmunds, 1998; Jarosewich, Pfeiffer, & Morris, 2002; but see Pfeiffer & Jarosewich, 2003); the difficulty of finding an adequately sized sample population (see Cohen, 1988) in which all members share a relatively uncommon trait, such as leadership ability (Simonton, 1995), giftedness (Pasternack & Silvey, 1969), or both; and the troubling lack of research linking leadership behavior or training among youth with adult leadership performance (Foster, 1981; Huckaby & Sperling, 1981; Roach et al., 1999).

For the purposes of this paper, I do not attempt to offer a formal definition of leadership. As might be evident by analogy with giftedness or creativity, there exist many overlapping conceptualizations of leadership. Each of these has utility in specific settings and for particular purposes, and each definition emphasizes some aspects of overall youth leadership, while de-emphasizing other aspects. In the remainder of this paper I use the term *leadership* primarily in a generic sense, without cumbersome contextual modifiers, to promote readability. This usage reflects the fact that no single definition is adequate across contexts, even when the scope is limited to leadership among gifted and talented youth. It may be that there never will be such a definition, as youth leadership lacks even the minimal statutory guidance that anchors applied defini-

tions of giftedness. Nevertheless, it is possible to assemble some common denominators that appear in most characterizations of youth leadership. These include (a) its social nature, particularly as expressed through relationships and the exertion of interpersonal influence; (b) its developmental aspects, which appear to be even more central among young leaders than among adults and which involve building general, as well as task-specific, skills; and (c) its particular context, including the organizational setting, surrounding individuals, and other external structural features that influence the ways in which particular individuals express their leadership abilities. The reader should keep in mind that many distinct expressions of these three general features will apply whenever the term *leadership* is encountered in this paper.

The present paper seeks to add coherence to the study of leadership education for the gifted by providing an overview of the state of the field through a review of the literature on this topic. Analysis proceeds from broad to narrow, first locating a crop of potentially relevant material and then winnowing this harvest to those portions that appear most nourishing. By systematically considering what has been accomplished, both of those aspects that have been researched, as well as those that remain to be addressed, may become apparent. Future work may then, it is to be hoped, focus on extending existing knowledge, rather than reinventing it.

Methods

The reference list in Bass and Stogdill's (1990) classic *Handbook of Leadership*, at nearly 200 pages alone, stands as a testament to the complexity of leadership studies and reinforces the need for conservatively delimiting the scope of the present review. Therefore, in this paper I consider only youth leadership, eliminating the vast literature on leadership among adults. Furthermore, I consider only studies of leadership involving youth identified in some fashion as gifted or talented, including studies published in gifted education journals, even if they involve students not formally identified as gifted. Studies not published in gifted education journals and not specifically involving gifted youth (e.g., Karnes & McGinnis, 1996; Kobe, Reiter-Palmon, & Rickers, 2001; Sternberg & Vroom, 2002; Zacharatos, Barling, & Kelloway, 2000) are not discussed here, although they likely inform larger questions about the nature of leadership and, therefore, may be informative for future research specific to gifted youth.

I also limited the scope of work under review by more specific decisions. Papers that discussed leadership as a single issue among many (e.g., Piirto, 2002; Taylor & Ellison, 1983) have not been reviewed, nor have unpublished reports or newsletter articles. Surveys of adult perceptions related to leadership (Feldhusen & Kennedy, 1988a; Karnes & Meriweather, 1988) have been excluded, as well. I have considered neither conference papers (for example, Zinskie, 2003) nor any of the several books published on leadership giftedness (such as the insightful work by Friedman, 1980). Finally, I elected to eliminate three opinion-based papers that purported to discuss leadership giftedness, but proved tangential to the topic upon closer inspection.

I identified pertinent journal articles using a combination of methods that included electronic and manual searching, as well as following bibliographic citations to publications in journals in related disciplines (e.g., psychology). Electronic databases listing relevant journals were searched using keywords "leader*" and "gifted*" or "talent*" (the asterisk indicating a wild card; for example, leader* includes the terms *leaders* and *leadership*). Database descriptors, for example, "gifted education," were also used when appropriate. The ERIC database was searched, too, although ERIC results proved useful primarily in locating additional journal articles listed in bibliographic citations.

Publications not indexed electronically or published in years prior to those indexed electronically were searched by manually inspecting tables of contents. Years searched ranged from approximately 1980 to early 2003, depending on the source and frequency of publication. Titles searched included major and minor periodicals in gifted education: *Gifted and Talented International* (formerly *Gifted International*), *Gifted Child Quarterly*, *Gifted Child Today* (and its title variants), *High Ability Studies*, *Journal for the Education of the Gifted*, *Journal of Secondary Gifted Education*, and *Roeper Review*. Some back issues of both the *Journal of Secondary Gifted Education* and *Gifted and Talented International* proved unavailable in any of the three comprehensive research libraries used during the course of this search, so it is possible that one or more articles from these sources that otherwise met search criteria may have been overlooked.

Sixty-seven citations were located in this manner. All references were examined in person, either online, in library stacks, or through interlibrary loan. After reading, I made notes describing and summarizing each article and used the EndNote program (version 6) to organize and track these notes. The presentation of research data

was judged to be the most important criterion, both in light of previous evaluations of the gifted education literature (Carter & Swanson, 1990; Hays, 1993; Plucker, 1997; Ziegler & Raul, 2000) and because research data are what move the field forward. Therefore, in this review I have focused on the 32 studies that reported empirical findings. These articles are marked in the bibliography with an initial numerical superscript. I have elected also to include works by four authors who have addressed theoretical issues related to leadership giftedness, raising concerns that I judged relevant even in the absence of new data.

Results

Classification and Content Description

I classified leadership articles into four categories, which I derived inductively through multiple readings of the initial 67 articles. These categories included Program Description and Evaluation, Measurement and Identification, Student Perceptions, and Theory and Model Development. Although most articles fell clearly into a single category, a few spanned categories, and these I classified under their major or primary emphasis. The reliability of these classifications was addressed by having a second researcher sort a randomly selected sample of 20% of the articles. Initial interrater reliability was 85%, reflecting articles that spanned categories or had ambiguous titles, and agreement increased to 100% after a brief discussion of discrepancies.

Because sources comprised a comprehensive cross-section of gifted education periodicals, each with a different target audience and with varied editorial practices, there was no immediately obvious standard through which to qualify articles as research based. The 67 articles formed a continuum from solidly empirical to purely anecdotal. As during the categorization process, I read the articles repeatedly and reached a decision inductively. To be classified as research based, I determined that articles had to include information in three areas: (a) description of participants (e.g., sample size, demographic information, or related data); (b) measurement or observation of some characteristic of these participants; and (c) analysis or interpretation of the measured or observed information. These criteria were inclusive of both quantitative and qualitative research designs, but excluded some articles that only alluded to such information without actually presenting it. These criteria also eliminated many opinion-based articles. The following sections present

articles within each topical category, followed by consideration of issues relevant across categories.

Program Description and Evaluation constituted the most prevalent category of articles (26), comprising more than three eighths of the initial 67 publications. Most of these proved to be program descriptions, rather than program evaluations. Articles in the Measurement and Identification (16) and Theory and Model Development (15) categories were also relatively common, each representing nearly one quarter of the total. The remaining articles (10) concerned Student Perceptions related to leadership.

Program Description and Evaluation. In one of the seven research-based articles in this category, Chan (2000b) reported results from a study with 46 students, mean age 16, who were nominated by their schools on the basis of leadership potential to participate in a leadership development program. Components of the program, which took place over four 4-hour weekend sessions, included leadership characteristics, leadership skills, simulation exercises incorporating creative problem-solving and decision-making skills, and role-playing activities to develop interpersonal and presentation skills.

Students completed self-ratings pre- and posttraining on a list of 25 leadership characteristics or abilities, responding on a 5-point scale from least to most characteristic. Paired *t* tests found significant positive changes on 17 of the 25 items, applying the Bonferroni correction for a number of comparisons. Self-ratings of "leading ability" increased, but did not differ significantly before and after training, suggesting the possibility that students did not equate the development of particular skills and abilities with global leadership ability. Through informal posttraining interviews, participants reported that they learned the most during group simulation exercises.

Chan (2003) reported results from a study of 60 students participating in a subsequent year of the Creative Leadership Training Program. By this time, the program had been expanded to 5 full-day module sessions and disseminated across Hong Kong in the form of guidebooks and video CDs. The program now incorporated five areas: becoming a successful leader, communication skills and public speaking, creative thinking and problem solving, leadership skills and group dynamics, and peer support and organizing school activities.

Chan's 2003 study retained the pre- and postprogram evaluation design used in the 2000b study, but added a pretest control group and incorporated additional measures beyond those used in the ear-

lier study. These added measures included two subtests of the Wallach-Kogan (1965) divergent thinking tests (verbal and figural ideational fluency) and a Chinese-scaled, abridged 15-question version of the Roets Rating Scale for Leadership (Roets, 1991), as well as assessments of communication skills, public speaking, and problem solving using abridged selections from Chinese versions of a variety of tests.

Comparisons of pretest scores of 116 secondary students showed no significant differences on leadership or creativity measures between the 60 students accepted to the leadership program and the control group, 56 students who were assigned to other university-based gifted programs due to space limitations in the leadership program. Age and gender makeup of the two groups did not differ significantly, while information regarding intelligence test scores was not available to allow comparison. The control group did not participate in postprogram assessments.

Verbal and figural fluency scores of students in the leadership program increased significantly from the pretest to posttest, but there were no significant differences across the three leadership subscales of the abridged Roets (1991) scale. Scores on interpersonal communication and public-speaking measures also increased significantly, and significant but minor increases (consistent with increased creative fluency) were found on the emotion subscale of the problem orientation measure and on the generation of alternatives subscale of the problem-solving skills measure.

A limitation of both Chan studies (2000b, 2003) was the lack of a posttreatment control group to account for possible gains due to test familiarity and to normal increases in ability and self-confidence over time. The use of translated tests, with attendant psychometric complications, may have been unavoidable in this context; but the use of truncated versions of measures probably could have (and should have) been avoided. Additionally, in a flaw common to most leadership development programs, no relationship was documented between the training components and effectiveness in actual leadership activities subsequent to the program. Yet, despite these caveats, some of the statistical and methodological components of Chan's work represent practices that other researchers should consider implementing.

Charitat (1988) described the planning, implementation, and evaluation of a cooperative public–private leadership development program for high school and 1st-year college students in Louisiana. Thirty students served as paid interns for 20 hours per week in this 8-week summer program, which had been in operation for 3 years at

the time the article was written. Although other authorities have echoed the relevance of mentoring in promoting leadership development (e.g., Feldhusen & Kennedy, 1988b), Charitat's comprehensive description of this program (particularly with regard to its fiscal characteristics and evaluation procedures) offers a unique contribution to the literature on youth leadership programming.

Follis and Feldhusen (1983) described leadership programming within an academic summer program for high school students at Purdue University, offering a detailed description of the application process. Students (n = 71) and parents completed a postprogram questionnaire evaluation. The authors summarized these responses, most of which averaged above 4 on a scale ranging from 1 to 5.

Gonsalves, Grimm, and Walsh (1981) described the preparation, implementation, and evaluation of a 1-week, student-governed summer camp program for 100 gifted seventh and eighth graders. Program evaluation consisted of a pre- and postcamp survey on which students and parents rated student abilities on 18 leadership characteristics. Although survey scores did not change significantly from pre- to postprogram, the authors judged the program a success on the basis of positive written feedback received from parents and students.

Karnes and Meriweather (1989) provided an example of a student-developed leadership project plan, explained the role of such plans within their university-sponsored Leadership Studies Program, and summarized the content areas (school, community, or religious affiliation) addressed by 327 student plans devised over a 5-year period. These authors suggested that the practice obtained through developing such plans helps students to realize their leadership potential.

Smith et al. (1991) reported evaluation results from a 1-week residential summer leadership program in Tennessee. The program, open to all students in the district in grades 10 and 11, attracted "many" gifted and talented program students, although their exact number among the 32 study subjects was not reported. The cognitive portion of the curriculum was based on Kolb's experiential learning model. Program components emphasized theoretical and conceptual models of leadership, then the application of concepts in experiential activities, simulations, and physical challenges, followed by debriefing sessions relating the experiences to theory. To encourage reflection, students kept journals relating their experiences and their affective responses to the programming.

Program effectiveness was evaluated with pre- and postprogram assessments of students and staff and with a student survey given 3

months after program completion. Specific pre- and postprogram measures included the Leadership Quotient Index and the Gordon Personal Profile Inventory (a measure of self-esteem). Student postprogram scores increased significantly on two of the three Leadership Quotient Index subscales (Openness and Persuasion), as well as on total scores, and the increase on the third subscale (Information) approached significance ($p = .056$). On the self-esteem measure, only the subscale measuring self-assuredness increased significantly over the duration of the program

Three months after completion, students rated the program's influence on their development of abilities in 15 areas. They also rated on a three-point scale (*none*, *some*, *a lot*) how much they had used each ability since the program and whether they had used these abilities in academics, school government, family or extracurricular activities, or other contexts. Students indicated that the most useful activities had been those developing cooperation, communication (both speaking and listening activities), and knowledge of leadership theory. Activities rated least important included a presentation by a politician, "alumni day," and sessions on history and government.

Smith et al. (1991) did not utilize a control group, even though such a selective program as theirs, having more applicants than program spaces, would have presented an ideal opportunity in which to implement a controlled research design. Therefore, it remains unclear how their results may or may not be typical of students judged high in leadership potential. Their publication does present several exemplary features, however. These features include the incorporation of an explicit theoretical perspective underlying instructional activities, the assessment of long-term outcomes in addition to data collection immediately postprogram, and the administration of published assessments used in their complete form.

Measurement and Identification. This category included 15 articles concerned primarily with measuring leadership ability, however defined; identifying students judged high in leadership or leadership potential for inclusion in leadership development programs; investigating the psychometric aspects of various measures of leadership, particularly the Leadership Skills Inventory (Karnes & Chauvin, 1985, 2000; or comparing different identification methods and procedures. Thirteen of the articles in this category were empirical.

Chan (2000a) compared leadership self-ratings by students with ratings made by their parents and teachers. He administered a

Chinese version of the Roets Rating Scale for Leadership (RRSL, Roets, 1991) to 163 students ages 12 to 18 who had been nominated by their schools to participate in a 1-week summer gifted program in Hong Kong. Ninety-four parents and 149 teachers also rated these students on a modified Chinese version of the Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS; Renzulli, Smith, White, Callahan, & Hartman, 1976).

The Chinese SRBCSS incorporated six subscales, including leadership, and, except for the (added) section on mathematical reasoning, parent and teacher ratings of students on SRBCSS subscales were significantly correlated with students' self-rated scores on the RRSL. Correlations were positive, yet low to moderate, ranging from $r = .17$ to $r = .38$. Teacher ratings displayed lower correlations with student self-ratings on all RRSL subscales in comparison with parent ratings, and parent and teacher ratings on the SRBCSS leadership subscale were correlated significantly with one another ($r = .32$, $p < .01$). Chan interpreted correlations of the RRSL with the nonleadership SRBCSS subscales as an indication that the RRSL might measure other gifted characteristics in addition to leadership.

To clarify the structure of the RRSL, Chan (2000a) conducted an exploratory maximum likelihood factor analysis on the 163 students' RRSL responses. A three-factor solution incorporating task orientation (task completion), leadership self-efficacy (self-perceived competence), and leadership flexibility (interpersonal skills) was judged most appropriate. In a subsequent readministration of the Chinese RRSL with 75 leadership program participants 1 week after program completion, Chan found that self-ratings of perceived competence and interpersonal skills had increased, while task completion ratings did not change over this interval.

Despite a few caveats, this work should be regarded as an important study. Modifications to the Chinese SRBCSS may have adversely affected the measure's validity or reliability, while the RRSL translation appears to have been carried out in accordance with recommended practice. Additionally, Chan's (2000a) factor analysis of the RRSL responses represents one of the most sophisticated statistical applications located in the course of this review. Chan's findings suggest that youth leadership may have some aspects that are amenable to modification through instruction, but that other aspects may be relatively more stable.

Karnes and her colleagues have made numerous contributions to the literature on the measurement of youth leadership. In an early study, Chauvin and Karnes (1982) investigated the reliability of a 19-item self-report leadership inventory developed by the Yakima,

Washington, public schools. Chauvin and Karnes administered the measure to 122 gifted children in grades 4–7, and found moderate split-half reliability coefficients of approximately 0.68. The authors apparently did not use this particular measure of leadership again after this investigation.

Chauvin and Karnes (1983) next administered the High School Personality Questionnaire, a variant form of the Sixteen Personality Factor Questionnaire, to 181 high school students having IQs of 130 or higher on the WISC-R. They compared student scores with scores previously reported for 1,000 adult leaders on the earlier form of the questionnaire, considering only the five factor categories on which adult leaders had obtained the highest scores. Mean student scores were higher on intelligence, enthusiasm, and self-sufficiency factors, but lower on conscientiousness and self-control factors than those of adults. Chauvin and Karnes reported only descriptive statistics in this study and did not use *t* tests or other means of evaluating the degree of mean differences. In a related paper, Karnes, Chauvin, and Trant (1985) administered the leadership portion of the same measure to 176 students attending a high school for the fine and performing arts, but found no differences between students who held leadership positions at the school and those who did not. These findings admit the possibility that school-level leadership positions may reflect such related factors as popularity more than they reflect peer judgments of leadership potential. It is also possible that peer ratings would have revealed perceptual differences not reflected by self-ratings.

In two publications, Karnes and D'Ilio (1988a, 1988b) addressed the concurrent and criterion-related validity of the Leadership Skills Inventory (LSI). In the first study, 60 gifted students in grades 6 and 7 were administered the LSI. Four teachers also rated these students using the LSI. Ratings by the two teachers with more experience did not differ from student self-ratings, but ratings by the two less experienced teachers were significantly lower than students' self-rated scores. In the second study, the authors compared LSI scores of students in a summer leadership program with scores of community leaders and found that the score profiles were similar.

In a third study, Karnes, Meriweather, and D'Ilio (1987) used the LSI as a pretest and posttest with students in their Leadership Studies Program. Results of *t* tests showed significant pre- and post-differences on all nine LSI subscales. Edmunds (1998) has criticized these studies on methodological grounds. In each case, he suggested that validity cannot be established using the LSI alone; instead, the LSI must be compared to other measures of leadership.

Friedman, Jenkins-Friedman, and Van Dyke (1984) investigated whether self-, peer, or teacher nominations were more effective in choosing students with leadership ability. From a pool of 83 students in grades 5 and 6, 28 were selected by nomination to serve on an event planning committee. Those selected included (a) 4 students identified by self-, peer, and teacher nominations, (b) three groups of 4 students identified by two of the three nomination sources, and (c) three groups of 4 identified through a single nomination. Extrapolating from Renzulli's (1978) well-known model of giftedness, researchers measured student performance in the categories of leadership ability (as rated by peers), creativity, and task commitment. Leadership performance was summed across these three categories, and this score was compared across the three groups of students identified using one, two, or three nomination methods. Those who had nominated themselves, either alone or in addition to peer or teacher nomination, had higher leadership scores on average than students nominated by peers or teachers alone. The highest scores of all belonged to the group of students identified by all three types of nomination.

These results are tantalizing, but should be viewed with caution. Most of the variation in leadership scores across groups was due to differences in task commitment scores, rather than to differences in creativity or group-leadership skills. Task commitment was scored as the number of hours a student offered to volunteer in support of the group project, from 1 to 10, a relatively unsophisticated measure. Furthermore, by soliciting volunteers for a particular task as opposed to a generic one, it might be expected that motivation would be greater among students who nominated themselves than among students selected by their peers or teachers. Small group sizes also limit the strength of the conclusions. Within-group standard deviations are generally larger than between-group mean differences, suggesting that individual differences may account for more variation than group differences. Despite these limitations, however, Friedman et al.'s (1984) work offers a good starting point (as evidenced by its adaptation by Edmunds and Yewchuk, 1996, below) that shows promise for guiding future investigations.

Edmunds and Yewchuk (1996) assessed the leadership skills of 90 gifted 12th-grade students at a Catholic high school in Canada using the Leadership Skills Inventory. The entire senior class was apparently considered gifted, although students' Otis-Lennon School Ability Test (OLSAT) IQ scores ranged from 101 to 149 with a mean of 126. Adapting methods described by Friedman et al. (1984), which, in turn, were based on Renzulli's work, Edmunds and

Yewchuk conceptualized leadership behavior as a composite of creativity (fluency, flexibility, and originality), task commitment (number of hours volunteered), and leadership style (peer ratings of task and people orientation). The researchers also evaluated past leadership positions held and derived a composite score from the self-, peer, and teacher leadership ratings.

A significant correlation was observed between current and past leadership ($r = .389$), and both these behavioral measures were significantly correlated with student scores on the Leadership Skills Inventory. Students' IQ scores were significantly, yet weakly correlated with LSI scores ($r = .220$), but not with leadership positions held. The authors suggested that these relationships might reflect similarity between the LSI and OLSAT, while the behavioral measures might address some additional aspect of leadership ability. Self-, peer, and teacher ratings were mostly unassociated with IQ scores, but were intercorrelated within three of the six classrooms in the study. When IQ scores were used to categorize students into high, medium, and low groups for analysis of variance (ANOVA), there were no significant differences on LSI scores or behavioral measures across IQ groups.

A potential limitation of the Edmunds and Yewchuk (1996) study is the overly broad criteria used to define giftedness, wherein an entire grade level of students was classified as gifted despite IQ scores beginning at 101 and academic grades averaging only 81% (with a range from 70–93%). Although identification criteria vary with location, few programs in the U.S. would consider all these students to be gifted. The lack of correlation between leadership measures and IQ suggests that academic giftedness has little effect in this context, although the authors are to be commended for including this information, as researchers commonly fail to describe gifted populations adequately (Ziegler & Raul, 2000). The adequacy of the leadership style measure may also be questionable, as groups apparently were given only 20 minutes to reach consensus on selections from a list of 872 topics. Considering that this represents nearly one topic per second, leaving little time for reflection or discussion, one wonders whether the ratings of peer leadership style based on this activity might be somewhat imprecise.

Edmunds (1998) identified four indicators of leadership ability prevalent in the literature: pencil-and-paper tests; various forms of election, nomination, or ranking; observed actual leadership behavior; and past leadership behavior. Following up on the earlier study by Edmunds and Yewchuk (1996), Edmunds developed a measure corresponding to each type of leadership indicator he identified.

Each of these four measures had significant positive correlations with scores on the Leadership Skills Inventory, supporting the concurrent validity of the LSI. Edmunds also investigated its factor structure and determined that the LSI could be best explained using just a single factor instead of the nine elements listed by the measure's authors. Neither of these Edmunds papers nor three earlier LSI reviews by other authors are cited in an updated edition of the LSI (Karnes & Chauvin, 2000).

In a study utilizing a composite measure drawn from three published leadership scales, Feldhusen and Pleiss (1994) compared 54 teachers' ratings of student leaders with ratings of student creativity and dramatic ability on scales from the SRBCSS (Renzulli et al., 1976). The study included 54 students in grades K–12 (one per teacher) who the teachers had informally identified as showing leadership. Leadership scores were not significantly correlated with creativity, but were moderately and significantly correlated with dramatics ($r = .31$), while creativity and dramatics scores were significantly and highly correlated with each other ($r = .66$). Results of this study are questionable due to the high alpha level selected (.10), the "shotgun" approach taken to measurement (i.e., combining a variety of measures without explicit justification), and the inappropriate matching of students with measures (21 children in grades K–3 were assessed using LSI items that were designed for ages 9–18).

Myers, Slavin, and Southern (1990) categorized existing research as either an investigation of the nature of leadership or a description of traits of a successful leader. Gifted education research, they noted, primarily has focused on characteristics of the individual. In contrast, research on adult leadership in business and military contexts has emphasized the importance of the situation, rather than individual characteristics alone. Myers et al. grounded their study within Fiedler's (1967) model of situational leadership, which focuses on the influence of structural and task demands on leaders' effectiveness. Fiedler's framework categorizes leadership styles as Active–Authoritarian, Participative, Passive, Product–Process, or Organizational. This perspective predicts that participative leaders would be most likely to emerge, and most likely to be effective and successful, when a group task is unstructured.

Myers et al. (1990) placed 122 rising 10th and 11th graders at a governor's school program for the gifted in groups of 8 and gave these groups an unstructured task with a 1-week time frame for completion. Data were collected using structured individual and group evaluations by program staff, peer ratings, and product ratings made by independent observers.

Observations suggested that there were varied paths through which leadership emerged and that these could be categorized successfully within Fiedler's (1967) framework. In the early project stages, leaders were verbally aggressive or fluent, a path classified as Active leadership using Fiedler's scheme. Some of these Active–Authoritarian leaders could be classified further as authoritarian, while others appeared to focus primarily on socializing, rather than on addressing the task at hand. Fiedler's Participative leader type used communication skills and sought input from group members, but also tended to mold group responses to fit his or her ideas. The Passive leader type tended to emerge later in the process, particularly in groups lacking an active leader, and provided direction mainly through taking on personal responsibility for the project (sometimes to the point of completing the task by themselves). Product–Process leaders focused on a particular skill-oriented aspect of the task, usually in conjunction with an Active–Authoritarian or Participative leader. The Organizational leader type was not observed in this setting, a finding that may reflect a difference between youth and adult manifestations of leadership.

Student ratings of peer leaders did not distinguish between effective leaders and strong, yet ineffective, ones. Students gave high ratings to verbally dominant or antagonistic individuals, suggesting that they did not distinguish between verbal fluency and other more effective leadership behaviors. Product ratings by staff revealed that groups with Participative leadership produced the best product, while Active–Authoritarian leadership produced results judged less creative and less effective and Passive leadership was associated with the lowest quality group products. Groups with Active–Authoritarian or Passive leaders appeared to define success as simply finishing on time, while success for groups with Participative leaders depended upon both the adequacy of the group's conception of the task problem and the particular membership expertise and internal organization of the group involved.

These findings related to student perceptions of effectiveness also offer implications for gifted education. Results suggest that, when tasks are low in structure and ill defined, group success depends on having leaders who are able to help the group focus on problem definition (an aim also mentioned by Feldhusen & Kennedy, 1988b; Torrance, 1995; and others). To promote the development of such leadership, effective teacher strategies might include working with the group to refine its leadership structure and assisting the group in conceptualizing the particular tasks it faces.

Perez, Chassin, Ellington, and Smith (1982) used sociograms (a formal means of peer rating) and observational data from two kindergarten (full-day) and two preschool (half-day) classes to investigate leadership giftedness among young children. Students with the highest verbal scores as measured by the Peabody Picture Vocabulary Test were also those children selected by their classmates as leaders. An important methodological strength is that this represents one of the few applications of experimental research design to investigating leadership giftedness; Perez et al. manipulated both tasks and groupings. They determined that groups with a single identified leader performed better than groups with more than one leader, while these in turn performed better than groups with no identified leaders on the outcome (performance) measures. Teacher observations concurred with identifications made using sociogram data and verbal ability scores.

Student Perceptions. Studies of student perceptions are relatively common, perhaps due to the ease of doing this type of research. Such articles commonly report tabulations of student opinion or comparisons of attitudes between groups. Unfortunately, such studies have not often been designed to inform the development of leadership theories, models, or even curricula; so, consequently, I present research in this category in minimal detail.

Chauvin and Karnes (1984) investigated perceptions of leadership among 122 gifted elementary students using an 18-item list of traits. They found that students' self-perceptions were correlated with their perceptions of ideal leaders on 12 of 18 items, although correlations were uniformly low. In a similar study, Karnes and D'Ilio (1989a) asked 97 students to rate who (male, female, or either gender) could hold each of a list of 34 leadership positions. Female students rated most leadership roles as suitable for either gender, while male students more frequently chose males as leaders. The authors suggested that instructional activities should be designed to allow students (especially males, presumably) to learn about nontraditional leadership roles. In a third study, Karnes and D'Ilio (1989b) found that students rated their home environment lower, compared to ratings by their parents, on independence, intellectual-cultural orientation, and expressiveness subscales of the Family Environment Scale.

Riley and Karnes (1994) used the Leadership Strengths Indicator (Ellis, 1990) to investigate perceptions of leadership among 34 gifted youth in grades 4–6. This instrument, a 40-item self-report measure designed for grades 6–12, presents characteristics a leader might pos-

sess. Riley and Karnes found that, among students participating in their summer gifted enrichment program, girls (n = 21) scored significantly higher than boys (n = 13) on total scores and on cluster scores measuring sympathy and conscientiousness. These results were compromised, however, by using the measure with students younger than the recommended age range. Abel and Karnes (1993) also used the Leadership Strengths Indicator to compare scores of suburban (n = 49) and rural (n = 49) gifted high school students. Using t tests to compare performance, Abel and Karnes found no significant differences between the groups on any of the ability clusters measured. The Leadership Strengths Indicator is listed in neither the Buros online catalog of test reviews (Buros Institute of Mental Measurements, 2004) nor the Educational Testing Service's (2003) test collection database, suggesting that the measure may not meet relevant psychometric standards.

A study by Karnes, Riley, and McGinnis (1996) surveyed students classified as academically talented, intellectually gifted, or leadership gifted to determine their perceptions of the three greatest leaders of the 20th century. In a similar study, Karnes, Bean, and McGinnis (1994/1995) surveyed 50 female high school students to determine their thoughts about great leaders and leadership development. Students participating in this study were attending a 2-day leadership seminar and were not formally identified as gifted.

Outside of the particular classroom in question, the preceding reports have little bearing on the development of leadership curricula. In addition to problems posed by measurement issues, these studies generally have not surveyed "normal" control groups. Consequently, the extent to which results are characteristic of gifted students of any variety remains unknown (Ziegler & Raul, 2000).

In a somewhat more sophisticated survey, Wade and Putnam (1995) examined attitudes toward leadership-development activities among 138 gifted high school students in a summer program for the gifted in Iowa. Students responded to open-ended questions about their feelings toward student government and community service, and the authors inductively derived categories for coding based on the student responses. In a finding supporting the use of service learning in leadership development, more students reported positive attitudes toward community service activities (38%) than toward student government participation (14%). Students indicated that they wanted leadership-development activities that offered genuine responsibility and that they wanted to be offered a choice in decision making, in terms of both initially selecting activities

and subsequently making decisions within those activities. Although limited in scope, the Wade and Putnam study was reported clearly and in detail and offered tangible implications for instructional practice.

Theory and Model Development. Articles in this category include a variety of approaches ranging from broad overviews of ideas about leadership giftedness, to narrowly focused empirical investigations of particular theoretical points. Below, I first present the four empirical articles in this category, followed by selected nonempirical contributions by Foster (1981), Huckaby and Sperling (1981), Passow (1988), and Simonton (1985, 1988, 1995).

Kitano and Tafoya (1984) conducted qualitative observations of preschool-age children identified as leaders. They found that these children tended to follow, as well as lead; used fewer coercive techniques than peers rated lower in leadership; reinforced compliance in followers; and spent less time either alone or in interaction with adults in comparison with students not identified as leaders. The children defined leadership functionally and identified as leaders the same peers that the teacher had identified. Although preschoolers fall below the age range commonly of interest in gifted education, continued study of preschool leadership is warranted because of the implications such study may hold for leadership development among older children.

Roach and her colleagues (1999) have provided what may be the only study addressing the long-term development of youth leadership and its relationship with adult leadership (although other researchers, for example, Kitano & Tafoya, 1982, have long noted the need for such investigation). In introducing their work, Roach et al. noted that "in most cases, identification, assessment, and program evaluation do not sit firmly within grounded theories of *youth leadership* or understanding of how developmental processes might be characterized, particularly across contexts of cultural practices" (p. 13, italics in original). Roach et al. considered leadership giftedness wholly separate from academic giftedness. They also noted other limitations of existing research, particularly the lack of consideration or inclusion of everyday contexts wherein youth leadership can develop and emerge, as well as the troubling lack of data connecting youth and adult leadership.

Theories of adult leadership, noted Roach et al. (1999), have considered the individual leader and the traits, behaviors, skills, and abilities displayed at the individual level. In contrast, youth leadership seems to be primarily situational (i.e., responding to challenges

posed by particular situations), rather than positional or product based. Basic aspects of leadership that youth recognized include self-knowledge, accessibility, and responsibility to followers, in contrast to the adult leadership characteristics described as influence and charisma. Observations also suggested that, among young leaders, the ability to take reasoned action quickly is more relevant than experience because youth generally have not yet developed a base of experiential knowledge about leadership. Youth leadership is thus closest to the situational and story-based models of adult leadership.

The paper by Roach et al. (1999) represents a monumental work with important implications for leadership giftedness. In a mixed-methods study of 30,000 youth ages 8 to 28 participating in 120 youth organizations across 34 activity areas, Roach et al. searched for structural features shared across organizations. The authors also documented 11 features held in common among effective youth organizations. Single leaders did not emerge within these contexts; rather, leadership was distributed such that older and more experienced members helped prepare younger members to assume leadership roles. In the model of youth leadership developed by the authors, the micro- and macrostructural features of leadership are tied together by categories labeled Roles, Rules, and Risks.

Roach et al. (1999) suggested that their work supports the importance of self-knowledge, a characteristic that is commonly considered within existing leadership-development curricula. Likewise, the value of the small-group activities and simulations that are a staple of existing programs is limited; Roach et al. suggested that these components alone are insufficient to help youth develop a goal-oriented vision or the ability to motivate others to work toward such a vision. Likewise, for the purpose of developing leadership ability, the authors found that academically oriented domain-specific knowledge was less relevant than engagement in sustained group work directed toward a particular goal. Because of the massive scale of the research, conducted within a larger project investigating giftedness through linguistic and cultural lenses, their findings are likely to be particularly robust and useful in guiding further investigation.

Landau and Weissler (1991), in a study fraught with methodological shortcomings, attempted to determine whether characteristics of leadership identified among adults also existed among young gifted children. Sixty-three gifted children aged 10 to 14 completed a researcher-designed Leadership Questionnaire on which students self-scored a list of statements about leadership on a three-point scale (*false, maybe,* or *true*). Although 11 of 13 traits, considered individu-

ally, discriminated between students with overall scores above or below the group mean, scores (n = 25) obtained before and after participation in a leadership enrichment program did not differ significantly. In the absence of information to the contrary, grouping students either above or below the overall mean suggests that the response to a single question could move a student from the low to the high group. The authors did not describe the content or duration of their leadership program, making it difficult to determine how or why it may have failed to produce a change among the students.

The questionnaire developed by Landau and Weissler (1991) had serious flaws. Items were initially developed based on traits found in literature related to military leadership. Researchers then removed any items not mentioned by students in selection interviews, and in a final step the authors discarded more than half of the remaining items because they did not meet reliability criteria. Student responses were restricted to a three-point scale (*false*, *maybe*, or *true*), and comparisons were apparently made on the basis of summed, rather than averaged responses when a trait was assessed by more than one item. Most items had observed standard deviations about twice the magnitude of the mean item score difference between high and low groups, suggesting that observed differences may have been due to individual, rather than group variation. A more defensible analysis might have presented a mathematical or statistical justification for the high and low groupings, possibly by demonstrating a bimodal distribution or by removing students scoring near the mean from the analysis, and would have measured all traits on a comparable scale.

Transformational leadership theory (cf. Ross & Smyth, 1995) posits leadership outcomes in three areas: Inclusiveness, Enacting the Ideal, and Monitoring Growth. Specific instructional recommendations may also be derived from transformational leadership theory, particularly with regard to teacher roles and curriculum content (Ross & Smyth). Teacher roles might include delegating greater responsibility to student groups, adjusting opportunities for leadership to the maturation levels of gifted learners, and developing pullout programs for leadership training. According to this theory, appropriate content (a) allows multiple levels of response, (b) minimizes the presence of routine tasks, (c) requires the application of multiple abilities, and (d) contains task complexity sufficient to allow the solution procedures to be divided and recombined in different ways.

Smyth and Ross (1999) used videotape analysis to investigate the development of transformational leadership in both homogeneous

gifted and heterogeneous small-group settings with 58 students in grades 4–6. In three phases of analysis, the researchers developed an observational process, observed leadership strategies among homogeneous and heterogeneous student groupings, and designed instructional interventions to improve students' leadership skills. In each phase, groups of 4 to 5 students worked together on open-ended, student-directed tasks that researchers videotaped. Students were told that the videotaping was for a research experiment, but were not told that the research was about leadership.

A team composed of nine classroom teachers and the two authors analyzed videotapes from the sessions, recording all observed instances of positive and negative transformational leadership. All the transformational leadership strategies, except for visioning and contingent rewards, appeared in taped analysis, and most appeared in both positive and negative manifestations, supporting the utility of the transformational perspective in explaining leadership development.

Smyth and Ross (1999) clearly described the gifted criteria that applied to students in their study. They derived measurement categories based in a well-articulated theoretical framework and explained their research design in a detailed and practical manner so that it could be replicated easily. The authors focused on observation prior to developing instruction, and they selected a minimally intrusive single-blind research method. Taken as a whole, this study could serve as a standard for others designing research related to leadership giftedness.

In a theoretical paper, Foster (1981) discussed four views of leadership expressed in the literature (the great person, small-group, nonleader, and social-role perspectives). Gifted education, Foster noted, explicitly or implicitly has accepted the small-group approach because it is "the only one of the four that suggests leadership to be improved through direct educational intervention" (p. 23). The great-person model supports identification, but not development, of leadership, Foster noted, while the nonleader and social-role perspectives situate leadership outside the individual and, thus, do not allow for intervention at the individual level. Foster noted furthermore that the leadership program models then existing in gifted education all viewed leadership as solely a group process, likely because of the easy availability of instructional strategies and curriculum based in the group-level approach.

Foster (1981) described the federal definition of giftedness (see discussion in Stephens & Karnes, 2000) as a relatively unsophisticated, yet appealing approach that inappropriately lumped together diverse

psychological and performance categories. Foster suggested that Renzulli's (1978) definition of giftedness might make a more suitable starting point for defining leadership giftedness, as it would implicitly recognize that the primary components of superior performance reside within the individual. Foster also favored a definition developed by Cohn (1977), who divided ability into three domains (intellectual, artistic, and social) and situated leadership as a talent within the social domain. Foster combined the models of Renzulli and Cohn into a hybrid model of gifts and talents, but noted that, despite the "native psychological appeal inherent in the concept of leadership" (p. 17), all models (including his) demonstrated limited explanatory value in accounting for the origins and particular expression of leadership talent. Foster's support for the application of the Renzulli model to leadership giftedness research has since been echoed by other researchers, and the small-group approach remains unchallenged. However, his final point about the limited explanatory power of leadership models seems less relevant today, perhaps due to increasing awareness in recent years of the value of nonpredictive models in the social sciences.

Passow (1988) reprinted an extended version of an article originally published in 1978. Passow framed leadership in social terms, including eight related ideas, as follows: (a) It is a process of group interaction, not a trait cluster; (b) it arises out of group behavior; (c) possession of some particular skills may facilitate its emergence, although its emergence is more dependent on the needs posed by a specific situation; (d) it emerges when the group perceives that a particular member is able to help reach group goals; (e) goals and the person and means to achieve them will vary with the situation; (f) group and individual psychological factors affect the emergence of leadership; (g) individuals may reach a leadership role through varied pathways; and (h) the quality of leader roles will depend on situational factors.

Effective leadership development based on this conceptualization would have several aspects. These would include (a) separation of the leadership process from a particular position or individual; (b) recognition that leadership may be exercised by many people, regardless of formal position; (c) attention to the development of goal-specific, as opposed to all-purpose, traits and competencies; and (d) awareness that the skills and attitudes possessed by an individual are learnable and will influence the emergence of quality leadership. Passow's (1988) recommendations are consistent with those made more recently, particularly by Ross and Smyth (1995) and Roach et al. (1999), for youth leadership development.

In a 1981 volume of *Roeper Review* dedicated to leadership training, Huckaby and Sperling (1981) weighed in against the provision of leadership development programs for the gifted. They argued that the lack of a unitary definition of leadership has led to the widespread adoption of curricula that lack empirical justification, and they suggested that arguments for other forms of differentiated education for the gifted retain little or no meaning when applied to leadership giftedness. Because leadership cannot be defined or measured, they contended, any process that selected students on the basis of purported leadership ability would be problematic or even invalid. Justifiable leadership-development programs must, therefore, be available to the entire student body.

Even if selection could be justified on some basis, Huckaby and Sperling (1981) continued, leadership could not be taught using simulations or artificial contexts, but could only be learned through experience in real situations. Content taught in an artificial context would likely be low level and lead to superficial technical proficiency, rather than higher, self-directed leadership. Labeling problems could be severe for both those labeled and for those not labeled, they argued, due to false negative and false positive errors in identification. Finally, these authors noted, perhaps most seriously damaging to leadership education, the lack of evidence connecting school and youth leadership experiences with actual adult leadership performance.

Some of Huckaby and Sperling's (1981) criticisms remain relevant, although others do not. Many, if not most, programs presently take place outside of schools, and participants are often selected on the basis of competitive applications (including evidence of academic achievement), rather than on academic giftedness alone. Labeling of students does not seem to have become a problem either, as leadership programs usually have been considered enrichment, rather than acceleration. Furthermore, as is the case with attempts to define giftedness, multiple competing theoretical perspectives likely reflect the real complexity of the construct, rather than any failure on the part of researchers. However, the lack of evidence connecting youth and adult leadership remains problematic.

Simonton's work creating descriptive mathematical models of leadership (Simonton, 1985, 1988, 1995) offers what may be the most overlooked of the various theoretical contributions to understanding leadership as a form of giftedness. Although he considers leadership primarily among eminent adults, Simonton's models offer a unique mathematical conceptualization of leadership ability that could likely be extended to apply to some aspects of youth

leadership. In these papers, Simonton both relates exceptional leadership to other forms of giftedness (particularly creative ability) and offers predictions that could be tested through additional research.

Simonton (1985) noted that there seems to be a minimal threshold of IQ around 120 for both creativity and leadership, a finding that may help to justify the continued presence of leadership within definitions of giftedness. Drawing on historiometric research, Simonton draws a parallel between the IQ-creativity threshold relationship and the IQ-leadership relationship. In the first iteration of his model, intelligence is connected to leadership through both general problem-solving ability and communicative efficacy. Subsequent refinements of the model incorporated the distinction between social versus task functions of the leader and the balance between comprehension and criticism in the leader–follower relationship (a distinction that apparently is dependent on the relationship of follower IQ to leader IQ).

In a subsequent paper, Simonton (1988) advocated a product-centered, rather than psychometric, approach to the study of achievement, which he conceptualized as exceptional personal influence in either creative production or leadership. Both domains, when graphed, form an inverted backward J-shaped curve featuring a rapid rise to a peak, followed by a gradual decline to about half of peak output. The location of the peak and the degree of decline are both domain dependent, but are invariant across cultures and historical periods, suggesting that they may depend upon information-processing requirements, rather than age-related factors. Both the quality and quantity of output are consistently and positively correlated across age (with correlation coefficients from the .20s to .50s) and across careers (.50s to .70s).

In using a historiometric perspective, Simonton (1988) considered primarily eminent leaders. He suggested that prior research on eminent leaders had failed to account for the success or failure of a leader over time, and he noted that existing studies had considered exclusively linear relationships between leadership and age. Most such leaders remain in power for relatively brief spans of time, complicating research efforts, but studies of military generals and hereditary monarchs suggest that leadership appears to follow an inverted U relationship when graphed against age. On such a graph, ability peaks in the early 40s. However, leadership also seems to depend on the domain, as revolutionaries (for example) are much younger on average than politicians. Simonton also pointed out the serious difficulties inherent in measurement of leadership achievement and

noted that studies of everyday leadership and age have reached inconsistent findings.

Finally, Simonton (1995) outlined theoretical and mathematical factors that could explain the rarity of exceptional leadership ability. He also reiterated the weak nature of the observed relationship between intelligence and leadership and suggested that leadership ability may be much less stable over time than is intelligence.

Discussion

Quality of Research

Empirical data was as likely to be published in leadership giftedness articles as in gifted education articles in general (as reported by Ziegler and Raul, 2000, in their analysis of 1997 and 1998 data). Among both leadership giftedness and general gifted articles, from approximately one third to two thirds of published papers (depending on the journal) reported data in some form. Thus, studies of leadership giftedness have been neither more nor less empirical than gifted education research as a whole.

Considering all 67 articles initially identified, the majority did not have a basis in any particular theory. Among the few articles that did, theories either were based on general models of learning or giftedness or were more narrowly focused and specific to leadership. Articles incorporating broadly focused theories used Kolb's experiential learning model (Smith et al., 1991), Renzulli's three-ring model of giftedness (Edmunds & Yewchuk, 1996; Friedman et al. 1984), and various syntheses of existing views, including theories of Guilford and Bloom (Plowman, 1981), Renzulli and Cohn (Foster, 1981), or other less immediately recognizable combinations (Cawood, 1983; Hambach, 1988; Passow, 1988; Roach et al., 1999). Articles based on specific theories of leadership used state-trait theory (Roets, 1988), situational leadership theory (Myers et al., 1990), and transformational leadership theory (Ross & Smyth, 1995; Smyth & Ross, 1999).

A total of 43 research designs were described among those studies that reported data; the number of designs is higher than the overall number of research articles because some authors included more than one design within a single report. Statistics were almost uniformly basic. The most commonly reported data were descriptive in nature, generally including only means and standard deviations. Applying the classification schema for statistical designs used by Carter and Swanson (1990), there were no applications of intermedi-

ate statistics (factorial ANOVA or multiple regression) and only three instances of advanced statistics (two applications of factor analysis and one of multivariate analysis of variance). Among the remaining basic statistical designs, 16 studies were survey designs, while 7 were single-group pretest-posttest designs, and another 8 reported correlational data. Six studies used qualitative or observational designs, and the remaining 6 employed factorial designs. Authors reported *t*-test results twice as often as they used correlations (12 vs. 6 instances). Only 2 articles reported the use of chi-square tests, and although three authors reported using ANOVA, only one reported results in the format recommended by the APA. No authors appear to have reported effect sizes (cf. Plucker, 1997), although given the absence of research questions held in common, the utility of such data for making comparisons across studies probably would be limited.

Measurement

Commonly used measures of youth leadership reported in the gifted literature include the Leadership Skills Inventory (Karnes & Chauvin, 2000), the Leadership Strengths Indicator (Ellis, 1990), the RRSL (Roets, 1991), the leadership subscale of the SRBCSS (Renzulli et al., 1976), and, occasionally, the Leadership Skills and Behaviors Scale (Sisk, 1987). A few studies also used other less readily available measures. With the possible exception of the leadership subscale of the recently developed and as-yet-unreviewed Gifted Rating Scales (Pfeiffer & Jarosewich, 2003), and consistent with earlier reports (Oakland, Falkenberg, & Oakland, 1996), available measures of youth leadership seem uniformly prone to psychometric shortcomings. Yet researchers frequently use these measures without acknowledging any of the potential biases or sources of error that their use might entail. Researchers' fondness for abridged versions of published scales, use of measures with populations for which they were not intended, and application of idiosyncratic measures of leadership also detract from the reliability and generalizability of much of the existing research related to leadership giftedness.

Probably due to the ease of construction and administration they offer, leadership has been assessed primarily through self-rating scales, rather than with actual performance measures. The handful of studies that have observed actual leadership behaviors (Hambach, 1988; Myers et al., 1990; Perez et al., 1982; Roach et al., 1999; Smyth & Ross, 1999) should be emulated, as these studies have avoided the

potential biases of self-report measures (see, for example, Oakland et al., 1996).

Conclusions

Theories, Traits, and Interventions

The same limitation seems to apply to leadership giftedness research that Ziegler and Raul (2000) found among studies of high ability, a shortcoming they classified humorously as a "toothbrush concept":

> It seems that everyone has a toothbrush, but nobody wants to use a toothbrush which belongs to somebody else. How can the data gathered from one study be carried over to another study when differing operationalizations of the object under investigation have been deduced from different theories? (p. 114)

This may be the most serious issue affecting studies of leadership giftedness, as it directly constrains the potential for synthesis of research-based knowledge. If a single theory of leadership were to be developed, it would have to encompass the wide diversity of explanations that currently characterize the field. Until such a theory is available—and it may never be—researchers should focus on using theories that both admit meaningful measurement of the leadership components of interest and support the possibility of affecting these components through educational interventions.

Because of this diversity of theories, underlying aspects of leadership that are probably very similar have been assigned different names by different researchers. However, it seems that limited consensus can be identified, suggesting which areas of leadership ability may be amenable to instruction and which areas may be less susceptible to such influence. Synthesizing existing research, two youth leadership trait clusters that appear to be readily susceptible to instruction incorporate (a) interpersonal skills (Chan, 2000a) or persuasive ability (Smith et al., 1991) and (b) perceived self-efficacy (Chan), self-assuredness (Smith et al.), or self-knowledge (Roach et al., 1999). With somewhat more effort, knowledge base (Smith et al.) or verbal ability (at young ages; Perez et al., 1982) may be increased through instruction, although this combination is more diffuse when compared to the first two trait clusters.

Behaviors variously called motivation (Roach et al., 1999), conscientiousness (Chauvin & Karnes, 1983), or task orientation (Chan,

2000a) appear resistant to change through direct instruction, although Roach et al. suggested that development in this area may be more likely to occur as a consequence of sustained group effort toward a particular goal than through any specific curricular activities.

Finally, some aspects of adult leadership appear to be absent from leadership behavior among youth. These include promoting an appealing vision of the future (Roach et al., 1999; Smyth & Ross, 1999), making followers aware of institutionalized contingent rewards for performance (Smyth & Ross), and solving problems via hierarchical organizational structures (Myers et al., 1990). It seems likely that these observed differences may reflect contextual variation between youth leadership in short-term volunteer settings and adult leadership in the work or business setting.

As these tentative conclusions are derived primarily from research using self-report measures, it would be desirable to replicate them using observational methods. In comparison to the self-rating approach, the observational perspective appears to have great potential for increasing our knowledge base about leadership and its development. More effort probably should be expended in this direction, rather than continuing the simple self-assessments that characterize much of the current literature on leadership among gifted and talented youth. Likewise, program evaluations must become more common, as well as more rigorous. Surveys of student opinion may or may not reflect authentic learning and development and should be relied upon with caution, if at all.

Curricula appear to have advanced little in the more than 20 years since Foster (1981) noted that "intelligent decisions about materials and instructional strategies and settings are difficult, as there is little or no evaluation of the actual impact of present programming" (p. 24). In addition to adopting more complex research designs, researchers should offer direct instructional implications based on their findings more frequently. Only a few researchers (Myers et al., 1990; Roach et al., 1999; Ross & Smyth, 1995) have deliberately considered instructional practice, and the lack of such guidance has likely slowed the development of effective leadership programming. There does seem to be consensus that everyday, real-world contexts will constitute a vital aspect of any well-rounded leadership curriculum and that individual choice, responsibility, and the opportunity to assume multiple roles are also vital parts of how leadership develops among youth (Kitano & Tafoya, 1982, 1984; Roach et al.; Wade & Putnam, 1995).

Although it is sometimes called by different names, mentoring seems to offer a means of enrichment appropriate for the needs of

gifted students. Various authors have discussed characteristics and requirements related to using mentoring specifically for leadership development (Charitat, 1988; Chauvin, 1988; Feldhusen & Kennedy, 1988b), while authorities, including Roach et al. (1999) and Piirto (2002), have stressed the relevance of such related experiences as shadowing of adult role models or working together with older and more experienced peers. The mentoring relationship thus appears to offer another productive direction for future research.

In addition to the areas identified above, three specific themes seem particularly worthy of further investigation:

1. The transition between youth and adult leadership should be investigated through carefully implemented longitudinal study. This work should build on existing knowledge about youth and adult leadership and could proceed by means of retrospective interviews with adult leaders to determine which aspects of their development might be held in common. If any such areas are found, predictions could be generated and a large youth population followed over time to evaluate the predictions. A related approach might involve interviewing adults who had participated in leadership-development programs in their youth to determine whether and how these programs had influenced their development as leaders.

2. The relationship between the characteristics of gifted youth and the characteristics of effective leaders as mediated through particular theories of leadership should be examined more closely. Findings would offer guidance as to whether leadership should remain part of the federal definition of giftedness. Such work should be grounded explicitly in the psychology literature on personality and interpersonal influence and should aim to elaborate those aspects of personality that might illuminate the origin and ongoing manifestation of leadership ability.

Various researchers have noted tension between the desire for comfort and conformity versus the desire to achieve eminence, not only in relation to leadership, but also in regard to gifted education outcomes in general (e.g., Landau & Weissler, 1991; Piirto, 2002). The processes through which individuals make these choices are likely dependent upon personality factors. The relationship between intelligence and leadership as mediated through social interaction also remains in need of clarification (cf. Edmunds & Yewchuk, 1996; Pasternack & Silvey, 1969; Simonton, 1985). Conceptualizing leadership within a framework of social intelligence (e.g., Kobe et al., 2001) may offer one means of addressing these issues.

3. Research related to the measurement and identification of leadership ability is still needed. Within the context of gifted educa-

tion, this effort should focus on everyday, rather than eminent, aspects of leadership. Discussions regarding talent development (cf. Feldhusen, 1998) seem germane to this question. Existing research appears to have reached a consensus on some questions; for example, it seems well established that self-, peer, and teacher or parent nominations identify overlapping, but not identical sets of students who show leadership potential (cf. Chan, 2000a; Edmunds & Yewchuk, 1996; Friedman et al., 1984). Consensus regarding the utility of specific identification instruments, however, is not yet apparent.

The validation of many existing measures of youth leadership appears less than adequate when considered in light of the scrutiny to which other standardized measures are customarily exposed, suggesting that much more research needs to be devoted to this end. The influence of important potential sources of variation, such as economic, racial, or class differences, has been virtually ignored and must be considered if leadership education is to continue to avoid the criticisms of elitism that have been leveled at other areas of gifted education. Some of these omissions may be traced to the much shorter developmental history of leadership measures, as well as to the much smaller market demand they command in comparison with IQ tests. However, high-stakes uses, such as gifted identification, demand defensible measures, and much of the responsibility for producing such measures has not been met. The lack of appropriate measures has led to a dearth of appropriate programming in comparison with other areas of giftedness. Researchers can address this issue by instigating independent evaluations of the validity and reliability of both new and existing leadership measures.

Although limited progress is apparent, in light of the lacunae that remain after 3 decades of research, it may be time to consider retiring leadership as a form of giftedness. Alternatively, if this favored standing is to continue, substantial work remains to justify such special status. The old argument that today's gifted children are tomorrow's leaders has always been insufficient, as Delisle (1994) pointedly observed: "We can no more predict that today's gifted children will remedy their world as we can assert that today's politicians and 'change agents' were all involved in gifted programs when they were youngsters" (p. 213). Important decisions about education deserve efforts that are not just well meaning, but that also are supported by what we know—and do not know—about what we are doing.

References

[3]Abel, T., & Karnes, F. A. (1993). Self-perceived strengths in leadership abilities between suburban and rural gifted students using the Leadership Strengths Indicator. *Psychological Reports, 73*, 687–690.

Bass, B. M., & Stogdill, R. M. (1990). *Bass & Stogdill's handbook of leadership: Theory, research, and managerial applications* (3rd ed.). New York: Free Press.

Buros Institute of Mental Measurements. (2004). *Test reviews online*. Retrieved December 8, 2004, from http://www.unl.edu/buros

Carter, K. R., & Swanson, H. L. (1990). An analysis of the most frequently cited gifted journal articles since the Marland Report: Implications for researchers. *Gifted Child Quarterly, 34*, 116–123.

Cawood, J. (1983). The gifted child: Tomorrow's leader? The development of leadership potential in all children. *Gifted International, 2*, 129–153.

[2]Chan, D. W. (2000a). Assessing leadership among Chinese secondary students in Hong Kong: The use of Roets Rating Scale for leadership. *Gifted Child Quarterly, 44*, 115–122.

[1]Chan, D. W. (2000b). Developing the Creative Leadership Training Program for gifted and talented students in Hong Kong. *Roeper Review, 22*, 94–97.

[1]Chan, D. W. (2003). Leadership skills training for Chinese secondary students in Hong Kong: Does training make a difference? *Journal of Secondary Gifted Education, 14*, 166–174.

[1]Charitat, M. (1988). A program of leadership development. *Gifted Child Today, 11*(6), 17–19.

Chauvin, J. C. (1988). Mentoring: A powerful force in leadership development. *Gifted Child Today, 11*(6), 24–25.

[2]Chauvin, J. C., & Karnes, F. A. (1982). Reliability of a leadership inventory used with gifted students. *Psychological Reports, 51*, 770.

[2]Chauvin, J. C., & Karnes, F. A. (1983). A leadership profile of secondary gifted students. *Psychological Reports, 53*, 1259–1262.

[3]Chauvin, J. C., & Karnes, F. A. (1984). Perceptions of leadership characteristics by gifted elementary students. *Roeper Review, 6*, 238–239.

Cohn, S. (1977). *A model for a pluralistic view of giftedness and talent*. Unpublished paper prepared for the U.S. Office of Education.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. New York: Academic Press.

Delisle, J. R. (1994). The top ten statements that should never again be made by advocates of gifted children. *Gifted Child Today, 17*(2), 34–35, 42.

Díaz, E. I. (2002). Framing an historical context for the education of culturally and linguistically diverse students with gifted potential: 1850s to 1980s. In J. A. Castellano & E. I. Díaz (Eds.), *Reaching new horizons: Gifted and talented education for culturally and linguistically diverse students* (pp. 1–28). Boston: Allyn and Bacon.

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

[2]Edmunds, A. L., & Yewchuk, C. R. (1996). Indicators of leadership in gifted grade twelve students. *Journal of Secondary Gifted Education, 7*, 345–355.

Educational Testing Service. (2003). *ETS Test Link: World's largest test collection database*. Retrieved August 5, 2003, from http://testcollection.ets.org/cgi/swebmnu.exe?act=3&ini=TestColl

Ellis, J. L. (1990). *Leadership Strengths Indicator: A self-report leadership analysis instrument for adolescents*. Monroe, NY: Trillium.

Feldhusen, J. F. (1998). A conception of talent and talent development. In R. C. Friedman & K. B. Rogers (Eds.), *Talent in context: Historical and social perspectives on giftedness* (pp. 193–209). Washington, DC: American Psychological Association.

Feldhusen, J. F., & Kennedy, D. M. (1988a). Observing the nature and emergence of leadership talent among gifted youth. *Gifted Child Today, 11*(6), 2–7.

Feldhusen, J. F., & Kennedy, D. M. (1988b). Preparing gifted youth for leadership roles in a rapidly changing society. *Roeper Review, 10*, 226–230.

[2]Feldhusen, J. F., & Pleiss, M. K. (1994). Leadership: A synthesis of social skills, creativity, and histrionic ability? *Roeper Review, 16*, 292–293.

Fiedler, F. E. (1967). *A theory of leadership effectiveness*. New York: McGraw-Hill.

[1]Follis, H., & Feldhusen, J. F. (1983). Design and evaluation of a summer academic, leadership program. *Roeper Review, 6*, 92–94.

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

Friedman, P. G. (1980). *Teaching the gifted and talented oral communication and leadership*. Washington, DC: National Education Association.

[2]Friedman, P. G., Jenkins-Friedman, R., & Van Dyke, M. (1984). Identifying the leadership gifted: Self, peer, or teacher nominations? *Roeper Review, 7*, 91–94.

[1]Gonsalves, W. C., Grimm, J., & Welsh, J. M. (1981). Leadership training: A lesson in living. *Roeper Review, 3*(3), 16–19.

Hambach, P. A. (1988). Finding leadership in the G/C/T classroom. *Gifted Child Today*, *11*(6), 49–50.

Hays, T. S. (1993). An historical content analysis of publications in gifted education journals. *Roeper Review, 16*, 41–43.

Huckaby, W. O., & Sperling, H. B. (1981). Leadership giftedness: An idea whose time has not yet come. *Roeper Review, 3*(3), 19–22.

Jarecky, R. K. (1959). Identification of the socially gifted. *Exceptional Children, 25*, 415–419.

Jarosewich, T., Pfeiffer, S. I., & Morris, J. (2002). Identifying gifted students using teacher rating scales: A review of existing instruments. *Journal of Psychoeducational Assessment, 20*, 322–336.

Karnes, F. A. (Ed.). (1988). Leadership training: A call to arms [special section]. *Gifted Child Today, 11*(6), 1–53.

Karnes, F. A., & Bean, S. M. (1996). Leadership and the gifted. *Focus on Exceptional Children, 29*(1), 1–12.

[3]Karnes, F. A., Bean, S. M., & McGinnis, J. C. (1994/1995). Perceptions of leadership held by young females. *Journal of Secondary Gifted Education, 6*, 113–119.

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

Karnes, F. A., & Chauvin, J. C. (2000). *Leadership development program*. Scottsdale, AZ: Gifted Psychology Press.

[2]Karnes, F. A., Chauvin, J. C., & Trant, T. J. (1985). Validity of the leadership potential score of the High School Personality Questionnaire with talented students. *Perceptual and Motor Skills, 61*, 163–166.

[2]Karnes, F. A., & D'Ilio, V. R. (1988a). Assessment of the concurrent validity of the Leadership Skills Inventory with gifted students and their teachers. *Perceptual and Motor Skills, 66*, 59–62.

[2]Karnes, F. A., & D'Ilio, V. R. (1988b). Assessment of the criterion-related validity of the Leadership Skills Inventory. *Psychological Reports, 62*, 263–267.

[3]Karnes, F. A., & D'Ilio, V. R. (1989a). Leadership positions and sex role stereotyping among gifted children. *Gifted Child Quarterly, 33*, 76–78.

[3]Karnes, F. A., & D'Ilio, V. R. (1989b). Student leaders' and their parents' perceptions of the home environment. *Gifted Child Quarterly, 33,* 165–167.

Karnes, F. A., & McGinnis, J. C. (1996). Scores on indicators of leadership skills, locus of control, and self-actualization for student leaders in grades 6 to 10. *Psychological Reports, 78,* 1235–1240.

Karnes, F. A., & Meriweather, S. (1988). Teacher trainers' views on leadership. *Gifted Child Today, 11*(6), 8–10.

[1]Karnes, F. A., & Meriweather, S. (1989). Developing and implementing a plan for leadership: An integral component for success as a leader. *Roeper Review, 11,* 214–217.

[2]Karnes, F. A., Meriweather, S., & D'Ilio, V. R. (1987). The effectiveness of the Leadership Studies Program. *Roeper Review, 9,* 238–241.

[3]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, 50.

Kitano, M. K., & Tafoya, N. (1982). Preschool leadership: A review and critique. *Journal for the Education of the Gifted, 5,* 78–89.

[4]Kitano, M. K., & Tafoya, N. (1984). Preschool children's perceptions of leadership and how it works. *Journal for the Education of the Gifted, 7,* 77–89.

Kobe, L. M., Reiter-Palmon, R., & Rickers, J. D. (2001). Self-reported leadership experiences in relation to inventoried social and emotional intelligence. *Current Psychology, 20,* 154–163.

[4]Landau, E., & Weissler, K. (1991). Tracing leadership in gifted children. *The Journal of Psychology, 125,* 681–688.

Marland, S. P. (1972). *Education of the gifted and talented, Volume 1: Report to the Congress of the United States by the U.S. Commissioner of Education.* Washington, DC: U.S. Government Printing Office.

[2]Myers, M. R., Slavin, M. J., & Southern, W. T. (1990). Emergence and maintenance of leadership among gifted students in group problem solving. *Roeper Review, 12,* 256–261.

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

Passow, A. H. (1988). Styles of leadership training . . . and some more thoughts. *Gifted Child Today, 11*(6), 34–38.

Pasternack, M., & Silvey, L. (1969). Leadership patterns in gifted peer groups. *Gifted Child Quarterly, 13,* 126–128.

[2]Perez, G. S., Chassin, D., Ellington, C., & Smith, J. A. (1982). Leadership giftedness in preschool children. *Roeper Review, 4*(3), 26–28.

Pfeiffer, S. I. (2003). Challenges and opportunities for students who are gifted: What the experts say. *Gifted Child Quarterly, 47*, 161–169.

Pfeiffer, S. I., & Jarosewich, T. (2003). *Gifted Rating Scales manual*. San Antonio, TX: The Psychological Corporation.

Piirto, J. (2002). "Motivation is first—then they can do anything": Portrait of an Indian school for the gifted and talented. *Gifted Child Quarterly, 46*, 181–192.

Plowman, P. D. (1981). Training extraordinary leaders. *Roeper Review, 3*(3), 13–16.

Plucker, J. A. (1997). Debunking the myth of the "highly significant" result: Effect sizes in gifted education research. *Roeper Review, 20*, 122–126.

Renzulli, J. S. (1978). What makes giftedness? Re-examining a definition. *Phi Delta Kappan, 60*, 180–184.

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 Center, CT: Creative Learning Press.

[3]Riley, T. L., & Karnes, F. A. (1994). Intellectually gifted elementary students' perceptions of leadership. *Perceptual and Motor Skills, 79*(1), 47–50.

[4]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.

Roets, L. F. (1988). *Leadership: A skills training program*. Des Moines, IA: Leadership Publishers.

Roets, L. F. (1991). *Roets Rating Scale for Leadership (RRSL): A self-rating scale for students grades 5–12*. Des Moines, IA: Leadership Publishers.

Ross, J. A., & Smyth, E. (1995). Differentiating cooperative learning to meet the needs of gifted learners: A case for transformational leadership. *Journal for the Education of the Gifted, 19*, 63–82.

Simonton, D. K. (1985). Intelligence and personal influence in groups: Four nonlinear models. *Psychological Review, 92*, 532–547.

Simonton, D. K. (1988). Age and outstanding achievement: What do we know after a century of research? *Psychological Bulletin, 104*, 251–267.

Simonton, D. K. (1995). Personality and intellectual predictors of leadership. In D. H. Saklofske & M. Zeidner (Eds.), *International handbook of personality and intelligence* (pp. 739–757). New York: Plenum Press.

Sisk, D. A. (1987). Leadership Skills and Behaviors Scale. In D. A. Sisk & H. Rosselli (Eds.), *Leadership: A special type of giftedness* (pp. 102–106). Unionville, NY: Trillium.

[1]Smith, D. L., Smith, L., & Barnette, J. (1991). Exploring the development of leadership giftedness. *Roeper Review, 14*, 7–12.

[4]Smyth, E., & Ross, J. A. (1999). Developing leadership skills of pre-adolescent gifted learners in small group settings. *Gifted Child Quarterly, 43*, 204–211.

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

Sternberg, R. J., & Vroom, V. (2002). The person versus the situation in leadership. *Leadership Quarterly, 13*, 301–323.

Taylor, C. W., & Ellison, R. L. (1983). Searching for student talent resources relevant to our USDE types of giftedness. *Gifted Child Quarterly, 27*, 99–106.

Torrance, E. P. (1995). *Why fly? A philosophy of creativity*. Greenwich, CT: Ablex.

[3]Wade, R. C., & Putnam, K. (1995). Tomorrow's leaders? Gifted students' opinions of leadership and service activities. *Roeper Review, 18*, 150–151.

Wallace, M. A., & Kogan, N. (1965). *Modes of thinking in young children: A study of the creativity-intelligence distinction*. New York: Holt, Rinehart & Winston.

Zacharatos, A., Barling, J., & Kelloway, E. K. (2000). Development and effects of transformational leadership in adolescents. *Leadership Quarterly, 11*, 211–226.

Ziegler, A., & Raul, T. (2000). Myth and reality: A review of empirical studies on giftedness. *High Ability Studies, 11*, 113–136.

Zinskie, C. D. (2003, April). *Evaluating the impact of service-learning on the leadership ability of gifted middle school students*. Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Note. Initial superscript indicates articles meeting search criteria and determined to be empirical and are categorized as follows: 1 = Program Description and Evaluation, 2 = Measurement and Identification, 3 = Student Perceptions, and 4 = Theory and Model Development. A complete listing of leadership article search results, including nonempirical papers not referenced here, is available from the author upon request.