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Women who have been outstanding students rarely channel their leadership abilities into pre-college education careers. The nature of teaching careers, as well as societal views and reward of teaching, would have to change considerably to attract large numbers of academically gifted students.

LOSING THE LEADERS: Academic Talent and Teaching Careers

Karen D. Arnold

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I had wanted to be a teacher since I was in high school. I think a lot of it was respect for teachers. I liked to be motivated, liked school . . . Sometimes [people] think you're doing what you do because you couldn't do something else. Then I want to tell them: I did real well in high school, and I did real well in college, and I could have done other things. I chose to do this. (*Former middle school science teacher and high school valedictorian*)

The leadership pool in American schools depends on attracting and retaining talented female teachers. Exceptionally able educators serve as models to students, peers, and the public. They exemplify and stress intellectual excellence. And gifted women have the potential to contribute significantly to addressing the complex issues facing contemporary schools. Unfortunately, women who have been outstanding students rarely channel their leadership abilities into pre-college education careers. This article explores the career choice and professional experiences of academically talented female students in teaching paths, using data from a 15-year longitudinal study of high school valedictorians and salutatorians.

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A marked decline occurred over the past two decades in the academic qualifications of teachers, as measured by college entrance examination scores, high school and college grade point averages, and basic skills tests.¹ Of the 7.5 percent of college graduates who currently enter teaching, about 1 student in 10 scores in the highest quartile on standardized tests; 4 in 10 are from the lowest quartile.² Research has consistently shown that students who choose teacher education majors are less academically able than their peers in most other college majors.³ Highly ranked students who do choose teaching leave the profession earlier and in greater numbers than their less academically able peers.⁴

In their integrative review, Howey, Matthes, & Zimpher concluded that "a strong relationship has been found between intellectual performance and student learning. Teachers of high academic ability experience greater success in helping students learn than do teachers with low academic ability."⁵ Effective teaching requires highly complex tasks and behaviors that call for strong cognitive and academic skills.⁶ A 1989 American Association of School Administrators report cites an Oregon study on the relationship of high intellectual ability to effective teaching:

The complexity of the teaching function clearly demands high cognitive skills. Teachers must be life-long learners who are able to update continuously their base of knowledge, to use new strategies, and to adapt to changing students and community needs.⁷

Academic ability bears directly on teaching effectiveness, therefore, through its relationship to intellectually complex professional tasks and through a teacher's own ability to learn. Very strong students also presumably hold strong academic goals as teachers, an important point given the finding that most teacher education candidates favor interpersonal over academic goals of teaching.⁸ Besides its influence on classroom effectiveness, academic ability relates to the public image of teachers. Vance & Schlecty noted that the public's view of teaching, the attractiveness of the profession to able students, and the strength, vitality, and credibility of teacher education programs are adversely affected "by the relative inability of the teaching occupation to attract the more academically able students."⁹ Finally, the potential for intellectual and organizational leadership can be found disproportionately among academically talented individuals.

A Longitudinal Study of Academically Talented Teachers

The literature on teacher characteristics draws primarily from cross-sectional survey studies of single teacher education institutions.¹⁰ This article explores the entrance and retention of academically gifted women in teaching careers through a 15-year longitudinal study of high school valedictorians, the Illinois Valedictorian Project.

The 46 women and 35 men in the Project graduated in 1981 as valedictorian or salutatorian of public and private high schools in varied communities throughout the state of Illinois. Since 1981, the valedictorians have participated in six or seven semi-structured interviews of one to two hours and completed seven questionnaires. Seven of the eight valedictorians who majored in education or worked as teachers were interviewed in 1992-1993, during the most recent data collection point. Analysis of interview texts follows a grounded theory approach in which data collection and interpretation occur in an iterative cycle.¹¹

The first thirteen years of the Illinois Valedictorian Project demonstrated that academically talented high school students are indeed potential leaders.¹² The group continued to succeed magnificently in college academics, with a 95 percent college graduation rate, a mean college grade point average of 3.6 on a four-point scale, a fifty-seven percent graduate degree

attainment, and many academic honors and awards. Unlike the stereotypes of one-sided geniuses or study grinds, former high school academic stars are interpersonally adept, strongly career motivated, and exceptionally hard working.¹³ In addition to their indisputable academic skills, valedictorians are well-rounded individuals with multiple interests and with the ability and willingness to succeed within the rules and structures of established systems like formal schooling. These personal traits, along with outstanding academic credentials, led Illinois Valedictorian Project members to high level professions in their 30's.

Valedictorians as Teachers

Although high school valedictorians universally experienced positive relationships with pre-college teachers, very few ever considered teaching careers. Valedictorians reported that lack of prestige and low pay in teaching careers along with perceived lack of academic challenge in teacher preparation curricula contributed to their decision not to consider undergraduate education majors. For students with unlimited options, teaching provided scant challenge to the well-regarded, high-paying, growth fields of engineering, business, law, and medicine.

In all, three men and five women from the Illinois Valedictorian Project eventually majored in education (two women and one man), returned to school for teacher certification (two women and two men), or taught as an uncertified private school instructor (one woman) in the first 14 years after high school. A sixth woman entered college as an aspiring mathematics education major, but almost immediately changed her plans when she learned of other career paths in mathematics. (She is now an actuary with a masters degree in mathematical statistics.) At age 31, none of the five women who majored in education or taught after college was a classroom teacher. One only remains in pre-college education, as an administrator. The cases of the five women demonstrate a variety of professional channels. (An overview of the cases appears in Table 1.)

- Emily was valedictorian at a private Catholic school. At the prestigious private university she attended, Emily switched her major to elementary education after earning poor grades in her pre-medicine major. After college, she returned to her own Catholic K-12 school, taught there for several years, and became an administrator. The value base of Catholic schooling is central to Emily. While working as Assistant Principal, she earned a Masters degree in educational administration and is continu-

ing for doctoral study. If she marries and has children, Emily has consistently reported, she will not continue working outside the home.

- Alice majored in psychology at the urban university where her father taught. After two years of unsatisfactory jobs as a restaurant manager, she returned to school for a teaching certificate. Unable to find a public school teaching job, Alice worked for one year teaching pre-school and gymnastics classes at a community center. The following year, newly married, she taught 6th grade at an urban Catholic girls school. Alice left the job before the end of the school year to have her first child. Now the mother of three, Alice does not work outside the home but plans to return to education in a non-classroom role when her children are in high school.
- The daughter of a community college instructor and an elementary school teacher, Jane qualified for early graduation after three years of pre-medicine studies at a fundamentalist Christian College. She received all A's in college. When she became engaged, Jane decided to forgo medical school and remained in college to complete a teacher certification program. She taught high school biology while her husband attended graduate school. Subsequently, Jane entered a doctoral program in science education and became a faculty member at a two-year college.
- Beth grew up in an upper middle class, intellectual family. She attended a public research university, where she excelled as a chemistry major. Conflicts with a research mentor led Beth to leave the elite doctoral program in chemistry that she began immediately after college. Between the time she withdrew from Ph.D. work and the time she began a new doctoral program at another university, Beth taught chemistry for two years at a prestigious independent girls school. In 1994 she completed her dissertation in organic chemistry and took a teaching-oriented faculty position at a 4-year college.
- Meg came from a middle-class family. She entered a Christian college as an education major but changed her major to psychology in her second semester. After three colleges and another switch of major to pre-medicine, she graduated as a secondary education/biology major and worked for eight years as a middle school science teacher. Meg married the summer after her college graduation. In 1993, she decided to leave teaching, returning to school to train as a physical therapist.

Table 1. Valedictorians in K-12 Education

Name	College Major(s)	Education Credential	Teaching Positions	Current Status
Emily	1. Pre-medicine 2. Elem. Ed.	Bachelors and Masters in Education	High School history: 6 years	Catholic administrator
Alice	1. Pre-medicine 2. Theater 3. Psychology	Post-BA teaching certificate	Elementary: 1 year	Homemaker
Jane	Biology	Post-BA teaching certificate	High school biology: 1 year	2-year college science faculty member
Beth	Chemistry	None	High school chemistry: 2 years	4-year college science faculty member
Meg	1. Education 2. Pre-medicine 3. Biology	Bachelors in Education	Middle school science: 8 years	Physical therapy student

Results

The valedictorians who chose teaching, both female and male, differed from the other academically able students of the Illinois Valedictorian Project in several ways. Teachers were generally from less advantaged families and were more risk-averse than other Project members. They expressed greater interest in serving others and lower emphasis on financial gain. Teachers and education majors changed majors and occupations more often than other valedictorians. The following themes characterized the women who seriously considered pre-college teaching careers.

1. All of the teachers and education majors are white, European-Americans. All but Beth describe themselves as coming from working class or lower middle class backgrounds.
2. Valedictorians who considered or who entered teaching adhere to traditional sex-roles, including the relative subordination of the woman's career in a marriage. Women reflect the stereotypical female emphasis on selflessness, relationships, and caring for others.
3. Valedictorians who enter teaching describe themselves as people-oriented and use that as a rational base for their decision to go into teaching.
4. Female teachers express strong Christian religious conviction. Their religious conviction supports altruism, traditional sex roles for women, deemphasis of material goals, and service to others.
5. Valedictorians attracted to K-12 education careers describe themselves as disliking risk and competition. They perceive teaching as a secure, safe, noncompetitive career in which they can succeed.
6. Those students who prepared for or entered education careers emphasize the vocational outcomes of higher education. They value career relevance in the curriculum and perceive college education as a vehicle for social mobility.
7. All of the valedictorians who taught or earned undergraduate education degrees spent part or all of their college years in other majors.
8. The majority of the valedictorians in education have family members who are teachers.
9. The valedictorians did not find their undergraduate or graduate coursework in education intellectually absorbing.

MEG: A Teacher's Career Path

The short descriptions of the valedictorians who chose teaching majors or careers and the themes that cross their cases can be elaborated and interpreted through the longitudinal story of Illinois Valedictorian Project member Meg (a pseudonym). Meg's case demonstrates both the personal factors that affect career development in teaching and the commonalities that link the experiences of academically talented teachers and teacher candidates.

Meg grew up in a middle-class home, considering college as vocational preparation and searching for a career that would yield secure employment. Although she received recognition in biology, she did not have sufficient self-confidence or career orientation to consider pursuing medicine or research science. After three changes of major, Meg settled on science education as a secure vocation in which she was confident she could succeed. She had no undergraduate mentors in education. At least one biology professor tried to dissuade her from becoming a teacher. "A professor in college said, 'Meggie, don't go into teaching. You need to go to medical school or do something else. That's a real waste.'"

By 1992, eleven years after high school graduation, Meg considered herself a successful teacher at her suburban middle school. She generally enjoyed her work but was planning to

leave teaching in the next few years. Meg gave several different reasons for leaving teaching. First, she felt she was not growing in her job.

It isn't that I hate teaching. I like teaching, there are certain aspects of teaching that I love. And I think, um, I think I'm an effective teacher. It's rare for me to say something like that. But on the other hand I feel as if I'm not growing myself. I just keep doing the same thing over and over and over . . . I feel a little bit bored. I feel a little bit like I'm in a rut.

The second reason Meg had decided to leave teaching was related to external rewards and social views of teaching. Meg felt teaching was valuable but was keenly aware of the societal attitudes about her profession.

Being a junior high science teacher is not a very prestigious position. In fact, I think it's something that's almost looked down on. 'Gee, is this all you do?' type thing. Although I enjoy it for the most part, sometimes I want to say, 'how could you do that?' . . . For myself, I want to feel like I'm doing something worthwhile, something important, and I'm viewed that way.

A third reason for Meg leaving teaching was personal change and growth. Meg had chosen teaching partly because another route to success would be chancy. Since college, however, Meg had slowly come to realize that opportunities sometimes requires taking chances.

What I'm realizing about myself is that I tend not to be a risk-taker. I tend to not just jump into something and do it, I need to be assured of success. And I think I'm starting to get over that a bit. I'm trying to get myself to take risks and do things because they're fun, because they have growth potential . . . So I'm getting ready to get and go back to school and do something else. I think part of it is just getting up the courage to do it.

As Meg grew as a person, she began seeking ways to live according to her own wishes and goals, rather than her usual expected or safe path. Pursuing a career that might be more fulfilling, despite the risks and unknowns, was an expression of Meg's new self-understanding.

Finally, Meg had come to doubt the service mission that had initially drawn her to teaching.

I think when you look at kids and realize all the forces in their life, you're really a very small force . . . I question how big an effect it is. That doesn't mean that it's nonexistent, but I don't feel like I'm changing the world.

Meg speculated about academically gifted students choosing teaching. Gifted students are expected to enter other fields, she said. "I think for the most part, those students that are gifted aren't encouraged to enter teaching . . . I think it's encouraged that they do something else, medicine or law. That's what the kids want to do." Once in teaching, such students might find themselves frustrated in some of the ways Meg expressed.

If we're talking sincerely gifted, very creative genius-level kids, I don't think they would be rewarded teaching. Because a lot of teaching is fairly mundane tasks. That's not all of it, there is a lot of creativity and I think really good teachers don't allow themselves to be caught up in the mundane tasks. There's always going to be a certain amount of that. I think it's just part of the job. And that's one of the characteristics of a gifted student is that they don't like repetition.

By 1994, Meg had decided to leave her job and enter a new "people-oriented" field. Physical therapy would offer more flexibility, variety, money, and prestige, she said. Meg is

currently earning top grades in an accelerated physical therapy degree program and looking forward to beginning her new career.

Discussion

Following Meg from high school graduation to age 31 reveals the complexities of her career path and perceptions and the interaction of her gender, class, and personality with the decisions to enter and then leave teaching. Regardless of her superior academic performance, Meg's story demonstrates the major themes in the literature on first-time teacher characteristics.

Like nearly all the other K-12 teachers and college education majors in the Illinois Valedictorian Project, Meg is white, European American, and from a middle-class background. For her, teaching does not represent downward mobility; for some Project members, it offers a step up from their parents' material circumstances. Like her valedictorian peers in education, Meg holds traditional sex-role beliefs. Alice chose teaching because the profession allowed her to mold her career around her primary childrearing role. Similarly, Jane changed from medicine to education in order to remain flexible for her husband's career moves. Emily, an administrator contemplating a doctorate, expects to leave paid work when she marries and has children. Only Beth does not expect family to drive career and she has chosen to teach at the university level.

The academically talented students who became teachers are strongly people- and service-oriented. Each sees her involvement in education as socially valuable. Beth and Jane, for example, care deeply about connecting young people to science. Emily describes the Catholic values of her private school as essential to her professional commitment. The theme of service to others relates to the strong religious convictions of most of the academically gifted teachers. In particular, Jane and Emily's religious faith anchors their value system and choice of teaching careers.

Meg and other academically talented students who studied and worked in education chose teaching as a safe, secure profession in which they could be reasonably assured of success and continuing employment. Alice chose teaching as a profession to which she could reliably return after full time childrearing.

Their pragmatic reports of choosing teaching might relate to the valedictorians' rather isolated experiences of career planning. The academically talented teachers all enjoyed their own schooling experiences deeply and all could point to influential elementary and secondary school teachers. At the college level, however, few in the group reported strong professional role models. Meg, for instance, did not have mentors among her educational professors or supervising teachers who urged her to consider teaching or helped socialize her into the profession. Only Emily, with her strong ties to Catholic schooling, cited important outside influences in her decision to become a teacher. Interestingly, few of those with educator parents reported that their family members either urged them to enter education or discouraged them from becoming teachers. However, it is likely that teacher parents influenced their daughters by modeling a sense of the profession and its issues.

Along with a notable lack of mentors, students gave mixed reviews to their preservice experiences. No certified teacher spoke highly of the intellectual component of education coursework. Meg said her education courses were unchallenging and unenriching. Emily thought teaching could only be learned through full time practice. During college, the group focused their deep intellectual interests on liberal arts studies. At the graduate level, Emily thought her Masters degree was "too easy." Meg disdained a degree she perceived as unchallenging:

They are making it easy to get [the Masters] so you can step up the salary schedule. And I really don't want my Masters degree to be that. I want it to be something I'm proud of, that I feel that I've worked for, that I feel like I learned something.

Student teaching reports ranged from "enjoyable" to "terrible," but no teacher candidate referred to her field experience as deeply meaningful.

Meg, along with Jane, Emily, and Beth, eventually came to consider teaching as repetitive and unable to generate continued intellectual engagement and professional growth. Alice and Jane could not envision long classroom careers because of the pressures related to heavy work loads, school politics, and discipline. Finally, Meg and her fellow teachers in the Illinois Valedictorian Project actively considered other career paths. Many options were available to these top ranked students, and they reached teaching as a desired or compromise vocation in the full knowledge that the profession was demanding, relatively low paying, and unprestigious.

Conclusion

Creative efforts to involve academically talented women in the teaching profession are critical in developing a leadership pool for American education. The high leadership potential of academically talented teachers rests in part on their vision of schooling as centered on student effort, perseverance, and genuine engagement in academic learning. Highly effective students themselves, academically outstanding teachers also have access to complex cognitive processes for understanding and solving the ill-structured problems of contemporary classrooms and schools.¹⁴ They bring to teaching a record of achievement and effectiveness in reaching difficult, long-term goals. These academic values, complex reasoning abilities, and goal attainment skills provide academically talented women with exceptional potential for educational leadership.

What are the prospects for attracting more top women students to teaching? According to a yearly survey of over 200,000 entering college freshmen, the interest of American undergraduates in education majors and careers is gradually increasing. Although still many fewer than in the late 1960's, about twice as many 1993 entering college freshmen (10%) indicated an interest in teaching majors and careers than a decade before.¹⁵ Even as student interest in teaching careers is increasing, however, there is little indication that talented students will make up a greater proportion of those entering the profession. Schlecty's conclusion about attracting talented students to teaching in the mid-1980s continues to hold true a decade later:

Talented people who enter teaching must now do so out of a positive attraction to teaching. Unfortunately, teaching has few positive attractions and those few it does have are relatively unimportant when contrasted with the attractors of other occupations. Even persons who value working with ideas and with people and even persons who see themselves as nurturing and developmental can now find many equally attractive career opportunities that permit them to pursue such values while at the same time pursuing values like the need for recognition, advancement in status, and career growth.¹⁶

The Illinois Valedictorian Project illuminates the literature on the recruitment and retention of potential education leaders by placing profiles of academically talented teachers in the context of previous research findings. The analysis of these cases does not indicate that highly ranked students are much different from students in general in terms of their motivations to choose teaching and the disincentives to enter and remain in the profession. With their wide academic and career options,

many academically able students fit Schlechty's conclusion. Talented students often focus strong teaching interests on post-secondary careers. Even valedictorians seeking teaching as a second career report significant frustration with paths to the profession. "For a profession that says it wants young, talented and dedicated people to be a part of it, educational professionals have done nothing to help me. As a matter of fact, they have continually put up obstacles in my way," said a male second-career teacher. The valedictorians' stories suggest that the nature of teaching careers, as well as societal views and rewards of teaching, would have to change considerably to attract large numbers of academically gifted students.

The profile of the entire valedictorian group also suggests, however, that many top students who choose other fields have a deep interest in education and service careers that might lead them to short or long-term teaching activities after college graduation. The results of this study point clearly to the need to encourage such late entrants, as well as to continue establishing leadership channels, career ladders, and professional development opportunities for current teachers. Given the interest of academically talented students in service and education, but not in teaching careers, educators should seriously consider working with industry, government, and higher education to engage talented adults in non-teaching professions in formal, ongoing participation in schools.

Endnotes

1. Judith E. Lanier (1984). *Research on teacher education*. Occasional Paper No. 80. East Lansing: Michigan State University, Institute for Research on Teaching. (ERIC Document Reproduction Service No. ED 251 450); Phillip Schlechty & Victor S. Vance (1981). Do academically able teachers leave education? The North Carolina case. *Phi Delta Kappan*, 63, p. 106; Victor S. Vance & Phillip Schlechty (1982). The distribution of academic ability in the teaching force: Policy implications. *Phi Delta Kappan*, 64, p. 22; W. Timothy Weaver (1979). In search of quality: The need for talent in teaching. *Phi Delta Kappan*, 61, p. 29.
2. Kenneth R. Howey, William A. Matthes, & Nancy L. Zimpher (1987). *Issues and problems in professional development*. Elmhurst, IL: North Central Regional Educational Laboratory.
3. Susan M. Brookhart & Donald J. Freeman (1992). Characteristics of entering teachers. *Review of Educational Research*, 62, p. 37; Fred L. Pigge & Ronald N. Marso (1988, April). *Cognitive, affective, and personal characteristics associated with motives for entering teacher training*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Service No. ED 266 140); See also, Schlechty and Vance, "Do academically able teachers leave education?"; Vance and Schlechty, "The distribution of academic ability in the teaching force."
4. Linda Darling-Hammond (1984). *Beyond the commission reports: The coming crisis in teaching*. Santa Monica, CA: The Rand Publication Series; Howey, Matthes, and Zimpher, *Issues and problems in professional development*; Lanier, *Research on teacher education*; Vance and Schlechty, "The distribution of academic ability in the teaching force."
5. Howey, Matthes, and Zimpher, *Issues and problems in professional development*, p. 13.
6. Nancy L. Zimpher, & Kenneth R. Howey (1992). *Policy and practice toward the improvement of teacher education*. Elmhurst, IL: North Central Regional Educational Laboratory. See also, Schlechty and Vance "Do academically able teachers leave education?"
7. Jensen, cited in Mary Steuteville-Brodinsky, Russ Burbank & Charles Harrison (1989). *Selecting, recruiting and keeping excellent teachers: Problems and solutions*. American Association of School Administrators, Arlington, VA., p. 16.
8. Cassandra L. Book, Joseph Byers, & Donald J. Freeman (1983). Student expectations and teacher education traditions with which we can and cannot live. *Journal of Teacher Education*, 34, p. 47; J. Marc Jantzen (1981). Why college students choose to teach: A longitudinal study. *Journal of Teacher Education*, 32, p. 45; Carol S. Weinstein (1990). Prospective elementary teachers' beliefs about teaching: Implications for teacher education. *Teaching and Teacher Education*, 6, p. 279.
9. Vance and Schlechty, "The distribution of academic ability in the teaching force," p. 26.
10. Brookhart and Freeman, "Characteristics of entering teachers."
11. Anselm L. Strauss (1987). *Qualitative analysis for social scientists*. New York: Cambridge University Press.
12. For a detailed description of Illinois Valedictorian Project sample methods, and findings, see Karen D. Arnold (1993). *Academic achievement: A view from the top. The Illinois Valedictorian Project* (Monograph and executive summary). Oak Brook, IL: North Central Regional Education Laboratory.
13. Arnold, *Academic achievement*.
14. Philip Hollinger, Kenneth Leithwood, & Joseph Murphy (Eds.). (1993). *Cognitive perspectives on educational leadership*. New York: Teachers College Press.
15. Alexander W. Astin, Kenneth C. Green, & William S. Korn (1987). *The American freshman: Twenty year trends*. Los Angeles: Higher Education Research Institute, UCLA; Eric L. Dey, Alexander W. Astin, & William S. Korn (1991). *The American freshman: Twenty-five year trends*. Los Angeles: Higher Education Research Institute, UCLA; This year's freshmen: A statistical profile. (1994, January 26). *The Chronicle of Higher Education*, p. A30.
16. Phillip Schlechty (1984). *Restructuring the teaching occupation: A proposal*. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, LA. (ERIC Document Reproduction Service No. ED 273 574), p. 9.