APA CENTENNIAL FEATURE

Leta Stetter Hollingworth: Champion of the Psychology of Women and Gifted Children

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Leta Stetter Hollingworth (1886–1939), one of the most neglected pioneers of educational psychology, successfully challenged the prevailing scientific doctrine of women's inferior intelligence. Later in her career she established the field of gifted education, offering the first course and textbook in this area. In her tenure at Teachers College, Columbia University, she contributed major textbooks on mental retardation, adolescent psychology, and specific disabilities, as well as 80 scholarly papers. As the first psychologist in New York City, she helped establish professional standards for the field and was one of the few academicians who promoted and provided psychological services in the schools. She used the schoolroom as a laboratory for research. Her standards for research are exemplary even in modern times. Hollingworth was a courageous early leader in educational psychology who has finally begun to receive the recognition she deserves.

Beginnings

> I was born May 25th, 1886, Tuesday morning at 12:30. Grandma and Mrs. Brainard dressed me then Mrs. O'Linn took me to the bed that my mamma was lying on for her to see me. She took me in her arms, kissed me, and said, "A little girl; isn't she sweet?" . . .
>
> Now it was Friday and I had not seen my Papa yet. I was beginning to think I had no Papa or he was not very anxious to see his little girl. Uncle Willie sent him another telegram. (Your daughter is crying for her pa!) . . .
>
> Wednesday morning I heard Grandma tell Mamma that she saw somebody walking up the road with a white hat on. Mamma said, "Maybe it is Johnnie." Then I heard the door open—a man came in, walked up to the bed, kissed Mamma, then took me up in his arms, sat down on a chair by the side of the bed and took a good look at me—laughed—and said, "It's the prettiest baby I ever saw."
>
> I was looking at him too—I had been waiting eight days to see him and now I was wondering how well we would like each other. I had just about made up my mind that I was going to love him a great deal, when he said, "I'd give a thousand dollars if it was a boy."
>
> That made me so mad but I could not talk and tell Papa what I thought of him just then. It made Mamma angry too I think, because she said, "I would not give her for half a dozen boys." (H. L. Hollingworth, 1943, pp. 31–32)

Johnnie Stetter never did get a son. His young wife, Margaret Danley Stetter, died giving birth to their third daughter, 3 years after the birth of their first child, Leta Stetter. Margaret left behind a small red leather-bound notebook in which she had carefully recorded a diary of the first year of Leta's life as if written by the infant herself. It is intriguing how the first few paragraphs of her baby book seem to presage Leta Stetter Hollingworth's lifelong concern with the lack of equal rights for women. Her developmental milestones, as recorded in this little diary, indicate that she was an extraordinary gifted child (Terman, 1944); the education of the gifted is another theme that was to permeate Hollingworth's career. She smiled on her 2nd day, laughed at 7 weeks, sat unaided at 21 weeks, imitated before 3 months, and said "Papa" and "Mama" at 7 months.

These 24 treasured pages conveyed her mother's unconditional love and stood in sharp contrast to the rejection Leta felt from her stepmother. Leta's childhood was painful; she lived in constant terror of her stepmother's rage. School was the only refuge from the "fiery furnace" (H. L. Hollingworth, 1943, p. 53) she described as her home life and she devoted all of her energies to learning. Before she was 10 years of age, she made a "solemnly kept compact with life" (L. S. Hollingworth, July 1906; cited in H. L. Hollingworth, 1943, p. 44):

> —that if I left out part of childhood I should be granted other values which seemed more to be desired. . . . I decided to grow up then and there, solemnly renouncing the rest of childhood. . . . Nor has life failed thus far to keep the compact. (L. S. Hollingworth, 1906; cited in H. L. Hollingworth, 1943, p. 44)

Leta graduated from Valentine High School, Valentine, Nebraska, at the age of 15 years and then attended the University of Nebraska, where she met Harry L. Hollingworth. Recalling the time they first met, H. L. Hollingworth (1943) wrote the following:

> She used to frequent a remote stack room in the library, where the heavier volumes on anthropology, philosophy, psychology, and social science were shelved. Usually this room, if peopled at all, contained worried adult graduate students working on theses and a few unduly sober majors in philosophy and psychology. I first observed her on her frequent visits to these somber quarters, wearing a bright scarlet Tam-O-Shanter on her dark hair, and poring over one or another of the giant tomes. She brought a new and brighter note into the dusty stack room. (p. 63)

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After Harry Hollingworth graduated, he became an assistant to James McKeen Cattell at Columbia University, and Leta Stetter and Harry L. Hollingworth were married in New York City, December 31, 1908. A prestigious couple in the history of psychology, Harry became a somewhat reluctant leader in applied psychology (Benjamin, 1988) and Leta became a leader in the psychology of women and the psychology of gifted children, both of which were unpopular causes. However, these were not Leta's original ambitions.

As a young woman, Leta aspired to be a writer. The earliest record of her writing talent is a poem she composed at the age of 14 years, "Lone Pine," which was printed in the Valentine, Nebraska, newspaper. Terman (1944) remarked that the poem "compares favorably with the best juvenilia this reviewer has seen" (p. 357). Leta studied literature and writing at the University of Nebraska and was esteemed for her contributions as literary editor of *The Daily Nebraskan*, associate editor of *The Sombrero*, and assistant editor of *The Senior Book*. In a letter to Harry Hollingworth in 1906, at the age of 20 years, she expressed her youthful belief that any work worth printing would eventually be published.

> Do you really think that I could "write"? Somehow I always feel the quotation marks around that word. There is an incipiency in the term which grows out of associating it with the inefficient—aspiring youths, ungrammatical maidens, local "poets," and English Club members; all those who feel spasmodic up-wellings of emotion, and imagine that there is a reason why these experiences should be chronicled on paper.
>
> But what things are required of one who will really "write"? The power to see far and farther, general knowledge, acquaintance with all that has gone before, mechanical means (perfect mastery of his language), the power to put his thoughts uniquely and artistically, and the power to make people love him. He must catch the vision of his own age, furthermore, and must produce that for which there is demand. And if he have all these requisites and his work be not in some way unique and peculiarly helpful and serviceful, it is a failure.
>
> The problem of "demand" for written work need trouble one but little. If a thing is worthy it will find its place. . . . If one's efforts find no place in the "scheme of things," let him rest calm in the assurance that they were in some way wanting. (L. S. Hollingworth, 1906, as cited in H. L. Hollingworth, 1943, p. 72)

Leta began her writing career with a series of short stories, a medium newly in vogue, but despite several attempts, she was unable to get the stories published, so this dream was shattered. She taught school for 2½ years in Nebraska before joining Harry Hollingworth in New York, and she assumed that she could help support the two of them by continuing her teaching. Then she discovered that married women were barred from teaching appointments in the schools of New York City. She applied for scholarships and fellowships to obtain a graduate degree in literature, and these doors were also closed to her. She tried her hand at housework and sewing, but her frustration mounted daily until she would burst into tears with no apparent cause. Discouraged and puzzled by the role society had laid out for her, Leta Stetter Hollingworth began to ponder "'the woman question'" (L. S. Hollingworth, 1926c, p. 348): inequality of women's opportunities in society. At this point she shifted the focus of her career from literature to education and sociology.

The opportunity for Leta Hollingworth to begin graduate study came about as the result of a research grant from Coca-Cola in 1911 (Benjamin, 1988). The Coca-Cola Company was being sued by the government for producing a beverage that contained caffeine, which was thought to be dangerous to one's health. It seems that Coca-Cola appealed to James McKeen Cattell to study the effects of caffeine, but he declined and eventually the request reached Harry Hollingworth, who accepted. Harry hired Leta as the director of the study. As one of the first studies in applied psychology, it was extraordinarily well designed and, much to the Coca-Cola Company's delight, showed no deleterious effects of caffeine. (Ironically, in his later years, Harry Hollingworth remarked that despite the results of his study, he still thought caffeine kept him awake at night! [V. Florence, personal communication, May 7, 1989]) Harry received a sizeable stipend from Coca-Cola, which was sufficient to pay for Leta's graduate program, and she emerged from the experience as a skillful researcher, ready to apply her training to a much larger issue.

"The Woman Question"

In the first epoch of Leta Hollingworth's career, from the time she began graduate school in 1911, until her first faculty appointment in 1916, she was preoccupied with the difficulties experienced by professional women. "Everywhere she . . . observed barriers, overt or tacit, between women and such goals, and the philosophy of this situation aroused her not only to vigorous resistance but to active inquiry" (H. L. Hollingworth, 1940, p. 184). She scoured the university libraries, reading everything she could find on sex differences, and determined that several of the claims could be investigated empirically.

In Hollingworth's master's thesis, completed in 1913, she used many of the techniques she had learned in directing the caffeine study. The thesis was actually a work in progress that she expanded for her dissertation and completed 2 years before she obtained her doctoral degree. *Functional Periodicity: An Experimental Study of the Mental and Motor Abilities of Women During Menstruation* (L. S. Hollingworth, 1914a) challenged the essential principle behind sexist hiring practices: the alleged incapacitation of women each month due to menstruation. In this era, it was widely believed that women could not be expected to hold major responsibilities or be as productive as men in the work world because of the inevitable cyclic impairment of their mental and physical capacities. Hollingworth empirically investigated this hypothesis and found no differences in the performance of men and women on a variety of cognitive, perceptual, and motoric tasks during all phases of the women's menstrual cycle (L. S. Hollingworth, 1914a). It is rather curious that she undertook such a study under the direction of Edward Lee Thorndike, who was not known to be particularly sympathetic toward women's issues.

It is even more curious that throughout her entire graduate program Hollingworth instigated a public campaign against

Thorndike's position on women's intelligence. Thorndike was a vocal proponent of the doctrine of greater male variability, which predicted that more men than women would be counted among the gifted and retarded. The variability hypothesis was a legacy of Charles Darwin (1897). From his research, Darwin had concluded that the male members of all species were more advanced on the evolutionary scale than the female members because of greater variability of secondary sex characteristics. It was clear to him that women were inferior to men intellectually, as so few women had attained eminence:

> The chief distinction in the intellectual powers of the two sexes is shown by man's attaining to a higher eminence, in whatever he takes up, than can woman—whether requiring deep thought, reason, or imagination, or merely the use of the senses and hands. (Darwin, 1897, p. 564)

Nearly 40 years later, Thorndike echoed this sentiment. In his second edition of *Educational Psychology* in 1910, Thorndike wrote the following:

> The trivial difference between the central tendency of men and that of women which is the common finding of psychological tests and school experience may seem at variance with the patent fact that in the great achievements of the world in science, art, invention, and management, women have been far excelled by men. One who accepts the equality of typical (i.e., modal) representatives of the two sexes must assume the burden of explaining the great differences in the high ranges of achievement.
>
> The probably true explanation is to be sought in the greater variability within the male sex. . . .
>
> In particular, if men differ in intelligence and energy by wider degrees than do women, eminence in and leadership of the world's affairs of whatever sort will inevitably belong oftener to men. They will oftener deserve it. (p. 35)

In an earlier work, "Sex in Education," Thorndike (1906) warned that postgraduate instruction for women was a poor investment and less needed than education for such professions as "nursing, teaching, medicine and architecture" (p. 213) in which average intelligence was considered sufficient. "A slight excess of male variability would mean that of the hundred most gifted individuals in this country not two would be women, and of the thousand most gifted, not one in twenty" (Thorndike, 1906, p. 213).

Thorndike's assertions were the central focus of a 21-page critique Hollingworth published in the *The American Journal of Sociology* 2 years before she graduated:

> Thorndike has gone farther than almost any other man of science in declaring that woman's failure may to some extent be due to difference in instincts *connected with reproduction.* He declares also that "We should first exhaust the known physical causes" before we proceed to any assumption of mental inferiority in explaining woman's lack of achievement. But have these "known physical causes" been exhausted if we end with the conclusion that "the probably true explanation is to be found in the greater variability within the male sex"? Surely we should consider *first* the established, obvious, inescapable, physical fact that women bear and rear the children, and that this has always meant and still means that *nearly 100 per cent of their energy is expended in the performance and supervision of domestic and allied tasks, a field where eminence is impossible.* Only when we had exhausted this fact as an explanation should we pass on to the question of comparative variability, or of differences in intellect or instinct. Men of science who discuss at all the matter of woman's failure should thus seek the cause of failure in the most obvious facts, and announce the conclusion consequent upon such search. Otherwise their discussion is futile scientifically. (L. S. Hollingworth, 1914b, pp. 527–528)

Either the atmosphere in academia was very different 68 years ago or Hollingworth was an incredibly courageous graduate student and Thorndike a most tolerant advisor. It seems doubtful that this type of public attack on the cherished beliefs of one's advisor would be condoned in modern academia. Perhaps Thorndike had a keen appreciation of his student's audacity because it matched his own. When Thorndike joined the faculty of Teachers College, Columbia University, as an assistant professor in 1898, he apparently took great pleasure in attacking his elders and was not at all intimidated by the first-generation psychologists (Joncich, 1968). It is a credit to Thorndike that he and Hollingworth became good friends; they eventually purchased properties near each other 38 miles up the Hudson River (personal communication, R. Thorndike, October 2, 1989).

Dismantling the Variability Hypothesis

Just as she was completing her master's degree, Hollingworth was offered a position administering mental tests in a clinic for the mentally retarded. This provided an opportunity for her to collect data on the variability of the sexes. Hollingworth's first published study, in 1913, "The Frequency of Amentia as Related to Sex," produced evidence contesting one part of the hypothesis: that there are substantially more retarded male than female children and adults. She demonstrated that although boys brought to a clearing house for mental defectives far outnumbered girls in the younger age groups, by the age of 16, the situation reversed itself, and twice as many women as men were committed (L. S. Hollingworth, 1913). While assessing 1,000 individuals on the Binet-Simon Scale, she learned that men could only survive outside an institution with a mental age of 12, whereas women could survive with a mental age of 6, by means of housekeeping chores, child care and selling sex, therefore obscuring an accurate count (L. S. Hollingworth, 1914b).

The experience early in Hollingworth's career of administering and interpreting the new intelligence scales gave her great respect for the knowledge that could be gleaned through mental testing and laid the foundation for her future work in educational psychology. The first position of psychologist established by the Civil Service in the City of New York in 1914 was given to Hollingworth. She was also appointed clinical psychologist at Bellevue Hospital in 1915 and consulting psychologist to the New York Police Department.

Continuing empirical studies of the doctrine of greater male variability, Hollingworth with Helen Montague undertook a study of 2,000 neonates (1,000 of each sex) and demonstrated that the variability of infants was no greater in male infants than in female infants. Where variability did exist, it favored the girls (Montague & Hollingworth, 1914). Therefore, Hollingworth argued, the preponderance of men among the eminent could not be traced to their greater inherent variability. She offered differences in opportunity in society as the logical explanation for the disproportionate representation.

In 1916, Hollingworth and Robert Lowie's article, "Science and Feminism," in *Scientific Monthly* (Lowie & Hollingworth, 1916), ostensibly put to rest the variability hypothesis. In addition, that year Hollingworth published a radical piece in the *The American Journal of Sociology* entitled, "Social Devices for Impelling Women to Bear and Rear Children" (L. S. Hollingworth, 1916b), in which she questioned the maternal instinct. Women, she claimed, were educated to believe that they had no right to a life of their own or to aspirations beyond motherhood. The true potential of women could not be known until women were free to choose a career, maternity, or both (Shields, 1975). By this time, Hollingworth was firmly established as the "scientific bulwark" of the feminist movement (H. L. Hollingworth, 1940, p. 184).

By the time she earned her doctorate at Teachers College, Columbia University, in 1916, Hollingworth had published nine scientific articles and one book, all of which were germinal contributions to the psychology of women. Four additional articles related to this topic would be published in the ensuing years. Her controversial studies were bringing her a considerable amount of national attention in the press (Dorr, 1915). The career path of this indomitable young social reformer appeared to be set.

However, Hollingworth's career was to take a different direction. During the summer after Hollingworth graduated, Naomi Norsworthy, the first female faculty member in educational psychology at Teachers College, Columbia University, became ill and passed away. On August 10, 1916, Hollingworth was appointed as her replacement as Instructor of Educational Psychology and there she remained for her entire career. If Norsworthy's unexpected death had not provided an opening for her in the field of educational psychology, it is likely that Hollingworth would have continued to contribute to the psychology of women, a field she had founded. But she was hired to fill a post in educational psychology, and another unpopular cause captured her imagination, becoming her passion for the rest of her life.

The Plight of Gifted Children

Along with Norsworthy's post, Hollingworth inherited one of the first courses on the psychology of exceptional children (L. S. Hollingworth, 1940c). The Stanford–Binet Intelligence Scale had just been published, and Hollingworth was probably among the first to use it. She demonstrated the new test for her students with retarded children and thought it would be a good idea to test a "bright" child by way of contrast. Her demonstrated assessment of a gifted child, on November 4, 1916, was the turning point of her career. "Child E" scored 187 IQ, apparently one of the highest recorded IQs at that time (Garrison, Burke, & Hollingworth, 1917; Kearney, 1990).

> I perceived the clear and flawless working of his mind against a contrasting background of thousands of dull and foolish minds. It was an unforgettable observation. (L. S. Hollingworth, 1942, p. xii)

From this moment on, Hollingworth's future was sealed, and the field of educational psychology was the richer for it. In her tenure at Teachers College, Columbia University, Hollingworth wrote the most influential textbooks on giftedness, adolescence, mental retardation and special education. *The Psychology of Subnormal Children* (L. S. Hollingworth, 1920), a classic in the field, has been reissued numerous times and is still in print. In what reads like a contemporary view of the subject, *Special Talents and Defects* (L. S. Hollingworth, 1923b) describes abilities that are highly correlated with intelligence and those that are independent, which Hollingworth designated as "special talents." She depicted the relationship of students' various strengths and weaknesses by plotting them on a "psychograph." Among the first to recognize that giftedness and learning disabilities could coexist, Hollingworth also founded the study of gifted children with learning disabilities. *Gifted Children: Their Nature and Nurture* (L. S. Hollingworth, 1926c) was the first comprehensive textbook on the psychology and education of gifted children. *The Psychology of the Adolescent* (L. S. Hollingworth, 1928) was the standard text in the field of adolescent psychology for two decades (Benjamin, 1984). It is ironic that the work most frequently cited, *Children Above 180 IQ* (L. S. Hollingworth, 1942), was not completed in her lifetime. It was finished by Harry Hollingworth from Leta's notes 3 years after her death. It remains the only study of children in this IQ range.

The breadth of Hollingworth's interests is impressive. She was widely acclaimed for her research on mental retardation (L. S. Hollingworth, 1913, 1917, 1920, 1922a, 1937; Schlapp & Hollingworth, 1914, 1915); specific disabilities (L. S. Hollingworth, 1918, 1919a, 1919b, 1923b); mental testing (Caroll & Hollingworth, 1930; Cobb & Hollingworth, 1925; L. S. Hollingworth, 1916a, 1921, 1925a, 1925b, 1925c, 1933b, 1936; L. S. Hollingworth & Rust, 1937); adolescence (L. S. Hollingworth, 1926a, 1926b, 1928, 1929a, 1931a, 1931b, 1933a); "nervousness" in children (L. S. Hollingworth, 1927, 1939a); and family psychology (L. S. Hollingworth, 1929b). As one of the first psychologists to establish professional regulations for the field (L. S. Hollingworth, 1922b), she wrote several articles on the delivery of psychological services (L. S. Hollingworth, 1921, 1925b, 1933b). In addition, she was "among the few who pioneered school psychological services while employed in an institution of higher education" (Fagan, 1990, p. 157).

However, Hollingworth's greatest contributions were in the study and nurturance of giftedness. At the same time that Lewis Terman was "turning the first furrows in the field" (Pritchard, 1951, p. 47) on the West Coast, Hollingworth "was preparing to cultivate the field from the other direction" (Pritchard, 1951, p. 47) on the East Coast. "It was in these simple agrarian terms that Professor Hollingworth thought and often spoke of her task as similar to that of her colleague across the country" (Pritchard, 1951, p. 47). The two never met but held an abiding respect for each other's work. Terman's *Genetic Studies of Genius* was published in 1925, and Hollingworth's *Gifted Children: Their Nature and Nurture* in 1926 (L. S. Hollingworth, 1926c). Terman (1944) noted the following:

> Comparable productivity by a man would probably have been rewarded by election to the presidency of the American Psycho-

> logical Association or even to membership in the National Academy of Sciences. This opinion of the reviewer is primarily a reflection on the voting habits of male psychologists. Actually the work of Leta Hollingworth did not lack appreciation. She won not only the respect and admiration but also the affection of her students, her colleagues at Columbia, and the innumerable psychologists and educators everywhere who knew her personally or through her publications. (p. 358)

Although Hollingworth and Terman held similar views in many respects, they differed in one very fundamental way. Terman believed that giftedness was primarily hereditary and that one need only study the individual to see how the phenomenon evolved. Hollingworth, however, believed that heredity was only part of the story and that opportunity and education were the critical factors in the development of potential. What a person *can do* may depend on congenital endowment, but what he or she "actually *does do* depends on [the] environment" (L. S. Hollingworth, 1926c, p. 14).

Whereas Terman was basically interested in the description of giftedness, Hollingworth sought to determine how to properly educate children with superior abilities. As one of the earliest examples of a scientist–practitioner, she carefully documented the effects of educational interventions. She "pioneered research and development in naturalistic settings—in functioning classrooms and schools" (Passow, 1990, p. 135). She published 30 extraordinarily well-executed studies of the gifted: case studies of highly gifted children; comparison of the sexes on mental traits; longitudinal studies of gifted children in a special class placement; and original research on incidence, physical condition, size, growth rate, neuromuscular capacity, stature, tapping rate, early intellectual development, vocabulary, leadership, personality development, playmates, social adjustment, adult status, the relationship between general intelligence and special talents, and other topics. She used state-of-the-art technology, such as tape scripts of classroom interaction, psychographs, and photographic records. Analyzing the quality of Hollingworth's research efforts, Benbow (1990) concluded the following:

> Leta Hollingworth's research contributions must be viewed as a model to be aspired to even today. Although there are clear exceptions, the general research contributions in the field of gifted rarely have approached the standards she set. Her research questions, which were varied, were addressed with scientific rigor. She even used control groups to evaluate her findings. . . . Moreover, many of her papers were published in the best journals. In the 1980s Leta Hollingworth would be considered a powerful researcher. That she conducted her work in the 1920s and 1930s, without ever receiving a grant, makes her contributions even more remarkable! (p. 214)

Hollingworth conceived the notion of "above-level" testing and inspired Julian Stanley to initiate today's nationwide talent searches (Stanley, 1990). Although Hollingworth was a staunch supporter of the individual IQ test, she was also the first advocate of "multiple criteria" in the identification of the gifted (Passow, 1990). She was the first counselor of the gifted (Kerr, 1990) and the first to study their emotional and social development. She conducted intensive studies of the adjustment of children of different levels of ability and found that the farther the child is from average in intelligence, the more adjustment problems occur. "Persons who deviate widely from the mean of human intelligence tend to become 'isolates'" (L. S. Hollingworth, 1940a, p. 272). She developed "child-centered therapy" and trained Carl Rogers, whose "client-centered therapy" was a derivative (Kerr, 1990). Rogers (1961) recalled her as a "sensitive and practical person" (p. 9) and remarked that he learned more from who she was than from what she taught him.

Hollingworth taught the first course in gifted education in 1922–1923, thereby inaugurating the field. She was the first to introduce the study of biography in the curriculum and felt it was particularly relevant for the highly gifted. She designed the first program for "emotional education," an early prototype of today's "affective curriculum." As part of this program, the highly gifted were introduced to the etiquette of argumentation, including how to argue with oneself! (L. S. Hollingworth, 1939c, p. 585).

Hollingworth is often remembered for having initiated one of the most famous experimental programs for gifted and retarded learners at the Speyer School in Manhattan, New York. It was a school within a school, with "Binet" (retarded) and "Terman" (gifted) classes. The purpose of the program was twofold: (a) to nurture the children's abilities, and (b) to study the children, adding to the knowledge base for guiding the differentiation of gifted children's schooling. To this end, Hollingworth stressed the importance of keeping records of gifted children's development and progress physically, socially, and emotionally (L. S. Hollingworth, 1923a). The special "opportunity classes" were carefully designed to include representation from all cultural and socioeconomic groups and involved both acceleration and enrichment. This was actually Hollingworth's second experimental program for the gifted, the first of which was created at Public School 165, New York City, between 1922 and 1925.

In both of her gifted programs, Hollingworth condensed the regular curriculum into half the day (a process now referred to as "telescoping" or "compacting") and provided enrichment in the afternoon, which was focused on the development of creativity and the study of the history of civilization. She used a thematic approach; "The Evolution of Common Things" formed the basis of the program. Within this framework, students selected topics for individual and group projects and constructed curriculum units that were eventually shared with other school districts. Interwoven into the program were modern languages and literature, art and music appreciation, science, and a multitude of field trips (L. S. Hollingworth, 1930, 1938, 1940b). These methods are still used today as staples in gifted education.

Hollingworth was able to report detailed results of the first experiment at Public School 165, New York City, but she passed away before the Speyer School experiment was completed. After 3 years of studying the Public School 165 program, she found that students in this enriched program did just as well in their academic subjects as students who had studied nothing but academics, that students in the enriched program had learned a great deal besides, and that these students were happier, having found friends and true peers, some of them for the first time in their lives (L. S. Hollingworth, 1930). Many of the students in Hollingworth's programs have continued to be friends throughout their lifetimes and have made substantial contributions in various fields. They attribute their accomplishments in large part to the influence of the early intervention in their special opportunity classes (C. R. Harris, personal communication, August 10, 1990).

In her autobiographical sketch for *Women of Achievement*, L. S. Hollingworth (1940c) summarized her life's work as follows:

> I have published four textbooks and parts of others, but the bulk of my writing is in original studies, published in educational and psychological periodicals. There are about eighty of these and they deal for the most part with the psychology and education of highly intelligent and gifted children. I consider this one of the most important of all problems for the development of social science—the problem of how to recognize, how to educate, how to foster and how to utilize the gifted young. (p. 34)

H. L. Hollingworth (1940) added this note in a biographical sketch written after Leta Hollingworth's untimely death.

> Although tangible support was often petitioned for, no research funds from any source were ever granted for any of the projects directly initiated by Leta S. Hollingworth.
>
> The difficulties, objections, and discouragements she encountered in endeavoring to carry forward educational experiments with gifted children, and the sacrifices she had finally to make of her own energy and resources in order to accomplish what she did, constitute an eloquent testimonial . . . to the social apathy toward and jealousy of the gifted, against which she always had to struggle. (p. 187)

That Leta Hollingworth's projects were never funded may have had as much to do with the fact that she was a female academic as with the focus of her research interests. After all, Lewis Terman studied the gifted, too; yet, he had the backing of the Commonwealth Fund. However, Hollingworth was just one of many excellent female academics who received little support during their lifetimes and have never been recognized in the pages of educational psychology's history. Norsworthy, a figure whom Hollingworth considered the foremother of educational psychology, is a good example. Norsworthy devised a test of children's intelligence for her dissertation at the same time that Alfred Binet was constructing his intelligence test in France. A letter from Thorndike to Dean William Russell in the Columbia University archives attests to the fact that Norsworthy was hired because they could get her for half the price of a man! Even more unsettling is the plight of women who worked closely with prominent men, such as Thelma Thurstone, Maude Merrill, Melita Oden, and Barbara Burks: all the "et al.s" who disappeared into obscurity.

A Lasting Legacy

Hollingworth's educational principles and philosophy spawned other programs throughout New York City, as well as programs in other cities. "Largely as a result of Hollingworth's experiments, New York City organized special classes in selected elementary schools that absorbed the gifted from neighboring schools and provided them with enriched experiences for the conventional eight years" (Tannenbaum, 1983, p. 14). Several of Hollingworth's innovative ideas have become standard fare in general education today: adapting the school to the child, individualized education, the child centered approach, independent and small group projects, interdisciplinary education, seminars (student discussion), thematic education, education for creativity, movable desks, modern languages, general science, art and music appreciation, health and nutrition, physical education, the study of biography, handicrafts, field trips, affective development, and the use of typewriters in the classroom (Silverman, 1991). The uniqueness of these concepts cannot be fully appreciated unless one remembers that these were all introduced in an era in which classroom chairs were bolted to the floor and group recitation was the norm.

Hollingworth influenced the next generation of educational psychologists, most notably, Gertrude Hildreth (Fagan, 1990). She also informed her contemporaries:

> The work of Leta Hollingworth . . . on gender differences and environmental influences in the study of ability, altered the thinking of Terman and Thorndike on the question of gender and race differences in mental testing (Rosenberg, 1982). Thus, her research helped to encourage environmental understandings of human behavior. (Fagan, 1990, p. 160)

Two years before her death, in an article in the *Journal of Consulting Psychology*, L. S. Hollingworth (1937) wrote these prescient words:

> We need now to make wider studies, and especially to establish long-time researches as *institutional* responsibilities. Up to the present, each research in this field has been the responsibility of a single precarious human life. If the individual investigator dies, the group being observed is lost, and the research must start all over again, in a different connection. This should not be the case. (p. 75)

In the preface to Hollingworth's (1942) unfinished *Children Above 180 IQ*, she said, "I shall try to leave the records to some younger student who will comprehend them, and who will amplify them if I prove unable to do so myself" (p. xiii). Borland (1990) reminded his readers that the original data collected by Galton and Terman are readily available to any interested scholar, whereas the research of Hollingworth has been lost. It is difficult to know why her research files disappeared. Tannenbaum (1989) suggested that these data were probably buried during the renovation of one of the buildings on the Teachers College campus of Columbia University because no one regarded them as valuable enough to protect.

Hollingworth believed that "the most significant contribution of psychology to education, in this century [is] that we are enabled to know the mental caliber of a human in his early years" (L. S. Hollingworth, 1939b, p. 102). Her greatest vision was the establishment of a revolving scholarship fund to support economically disadvantaged gifted children, a fund from which they could draw, "*at any age* [italics added], the means for their development, with the moral (not legal) obligation to repay according to ability to do so, after twenty years, without interest." (L. S. Hollingworth, 1939c, pp. 590–591). Despite Hollingworth's efforts, the needs of the gifted

are still being neglected in the public schools, and only those from affluent families can take advantage of privately sponsored enrichment programs or private schools. Bright students from underprivileged families suffer the most from the lack of public support for the gifted.

Though Hollingworth clearly embraced the plight of gifted children for the lion's share of her career, traces of her earlier mission were to be found in many of her writings. She returned to "the woman question" often, linking it with her study of the gifted:

> Stated briefly, "the woman question" is how to reproduce the species and at the same time to work, and realize work's full reward, in accordance with individual ability. This is a question primarily of the gifted, for the discontent with and resentment against women's work have originated chiefly among women exceptionally well endowed with intellect. (L. S. Hollingworth, 1926c, pp. 348–349)

In one of her last articles, L. S. Hollingworth (1939c) shared this final wisdom about the contribution of educational psychology's mental testing movement to the future of society:

> All this knowledge has been gleaned since 1900, and it is a goodly amount. It is enough to modify education and social-economic procedure radically, if it becomes generally disseminated and accepted. These facts would be epoch-making, if applied to the limit of their power to apply. For a long time people will not believe in them, will be afraid of them, will not know what to do about them, but in the end the truth will be admitted and utilized, as everything is finally utilized that has power to bring order to human life. (p. 579)

It is encouraging that Hollingworth is being rediscovered five decades after her death and that she is being restored to her proper place in the history of educational psychology, the psychology of women, and the psychology of gifted children. However, were she to observe contemporary society, she would be gravely disappointed that in the past 50 years there has been so little progress in changing societal attitudes toward the gifted, and that women, particularly gifted women, still face so many impediments to achievement and recognition. The "woman question" remains unresolved, as Reis and Callahan (1989) pointed out, "bright women are clearly adult underachievers" (p. 102), and programs for gifted children are once again being eliminated in favor of equality of outcomes for all students, regardless of their ability. Much work remains to be done in both of these areas. Leta Stetter Hollingworth was a courageous pioneer in two unpopular fields, and the realization of her visions will require courage and determination from those who follow in her path.

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