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ABSTRACT

There was widespread initial interest and use of intelligence tests in the schools immediately after World War I; this interest is reflected in the fact that "Reader's Guide to Periodic Literature" indexed nearly 300 articles on intelligence tests in the 5-year period from 1919-1924 alone. The history of intelligence testing and the schools contains a more nuanced story than testing statistics reveal. Questioning what the historian really knows about teachers' motives and the ways they implemented intelligence test scores into their classrooms, the paper finds that the answer will probably never be conclusive, since teachers, like the students and the classroom itself, remain the most elusive subject within the history of education. A deeper look into the teacher-oriented journals and teacher-training textbooks of the day suggests that the teacher's and principal's relationship to testing was complicated and fraught with ambivalence. Testing rhetoric of the time aimed for the strongest declaration of its potential for the schools. Historians of the early testing movement have often reduced the testing controversy to a conflict between those who were philosophically opposed to the deterministic implications of testing versus the educational psychologists, but that the educational arena of the 1920s was far more varied than that and the historian who attempts to tease out these variations of response must consider the source of records as well as their intended audience. The paper concludes with a discussion of the spread of standardized testing in the schools and results of that policy. Contains 89 notes. (BT)

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"Sea Changes in the Curriculum of United States Schools"

"Fads and Frills in the Classroom: Perceptions of Testing in the Schools, 1920-30"

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Fads and Frills in the Classroom:

Perceptions of Testing in the Schools, 1920-30

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> A certain superintendent received a lengthy questionnaire from the department of education of one of our higher institutions of learning. All but one of the many questions came as a condition subsequent to the first question which read, "What battery of tests have you used in your school this session?" To which this the superintendent answered, "None, thank God."[1]

There can be little doubt about the widespread initial interest provoked by a test that promised to quickly and accurately measure one's intelligence. Alongside the advent of airplanes, radio, and other astonishing technological advances, intelligence tests drew national attention in the immediate post-war period. The *Reader's Guide to Periodic Literature* indexed nearly 300 articles on intelligence tests in the five year period from 1919-24 alone. Sales figures from *Publisher's Weekly* reflected a similar interest in mind and science with the 1922-23 bestsellers, *The Mind in the Making* and *The Outline of Science*. A faith in self-improvement and progress was by no means new to Americans in 1920, but when new approaches in marketing, advertising and efficient large-scale publishing coincided with the 1920s economic boom, a new genre of self-help non-fiction gave a new twist to American individualism. "Day by day in every way I am getting better and better" wrote Emile Coué in another best-seller from 1923, *Self-Mastery Through Conscious Auto-Suggestion.* [2] While Coué's book had nothing to do with the intelligence tests themselves, the appeal of improvement through scientific method proved equally irresistible for

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[1] R. R. Turner, "Away with Fancy Frills and Fads," *School Executives Magazine* 51 (November 1931): 110-111.

[2] Alice Payne Hackett and James Henry Burke, *Eighty Years of Best Sellers, 1895-1975* (New York, 1977).

school administrators and teachers alike. Modern education could only get better in a scientific age of precise measurements and fine-tuned application of scientific educational principles.

Sales figures and school reports from the 1920s reveal just how firmly standardized testing had secured its niche within twentieth-century schools. Hundreds of articles in the most popular educational journals explored a full range of testing issues, written by school administrators, psychologists, and the occasional teacher. Educators were eager to display their progressive-mindedness with the scientific instruments of the day, and group intelligence testing symbolized for many the most advanced educational thinking of this postwar period. This enthusiasm for testing has not escaped the notice of historians looking back on this episode. Alongside the voluminous writings of prominent testing pioneers such as Lewis Terman or Edward Lee Thorndike, there are seemingly few examples of criticism. Teachers College professor William C. Bagley challenged his peers in a number of articles that were published in *School and Society*, and later in a thin volume entitled *Determinism in Education*.[3] The famous journalist Walter C. Lippmann, however, attracted far greater notice in a series of exchanges with Lewis Terman, published in the decidedly non-pedagogical magazine the *New Republic*. Later critics of the schools placed tremendous significance on this apparently universal acquiescence within the educational community. Schools were not meritocratic, nor did they offer equal educational opportunity, critics of the 1960s and later have charged. Schools merely reinforced the socio-economic status quo, revisionist historians Clarence Karier, Joel Spring and others have argued, through the tracking that was made possible by the whole-hearted endorsement of intelligence testing.

One can broadly agree with the revisionist conclusion and still have many questions about why group intelligence testing was embraced in the schools. Schools and their teachers feel eminently comfortable with the way things are, displaying a conservative tendency that has been apparent at least since social reconstructionist George C. Counts unsuccessfully urged teachers to

[3]Bagley gave a number of speeches to Teachers College students against testing. Several of these addresses, and their baited rejoinders from testing advocate Guy Whipple and others, were reprinted from 1922-23 in *School and Society* and subsequently published in book form in 1925 as William C. Bagley, *Determinism in Education* (1925; reprint, New York, 1969).

build a new social order during the Great Depression.[4] This persistent, conserving nature of schooling and teachers confounds the assertion that teachers and administrators would be so eager to embrace this new standardized testing, if in fact they did. The world of the classroom may well have mirrored its socio-economic surroundings, especially as urban schools coped with the children of the record numbers of immigrants. However, tracking had existed before testing, as Paul Chapman has shown, and testers repeatedly praised their wares for "proving" what teachers and principals already suspected about their students' capabilities.[5] There lies in the history of intelligence testing and the schools a more nuanced story than testing statistics reveal.

What does the historian really know about teachers' motives and the ways they implemented intelligence test scores into their classrooms? The answer to this question will probably never be conclusive, since teachers, like the students and the classroom itself, remain the most elusive subject within the history of education. Nevertheless, there are sources that probe deeper than Terman's statistics. The *Journal of Educational Research* and various university research publications dominate the testing literature of the period, setting the confident tone that would emerge from any cursory glance of the 1920s. A deeper look, into the teacher-oriented journals and teacher-training textbooks of the day, suggests that the teacher's and principal's relationship to testing was complicated and fraught with ambivalence. To be sure, the teacher remained on the bottom of an increasingly hierarchical and stratified educational pyramid. Superintendency directives and curriculum reconstruction flooded the schools in the high tide of progressive educational administration, and the teacher ultimately had little control over whether she would administer intelligence tests in her classroom. The actual use of those test scores remained a lively discussion, since teachers rightly perceived an impact that would transform their

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[4]George Counts' famous lengthy essay, "Dare the Schools Build a New Social Order," is the most famous example of many more radical educators' unfounded hopes of inspiring teachers to assume a more activist role in shaping society through the schools. Other educational historians have explored the conserving nature of schools in a variety of ways. See for example, Larry Cuban, *How Teachers Taught: Constancy and Change in American Classrooms 1890-1980* (New York, 1984); David Tyack and Larry Cuban, *Tinkering toward Utopia : a Century of Public School Reform* (Cambridge, Mass., 1995).

[5]See Paul Davis Chapman, *Schools as Sorters: Lewis Terman, Applied Psychology, and the Intelligence Testing Movement, 1890-1930* (New York, 1988) . Chapman raises the question of teachers' actual response to intelligence tests, but curiously neglects to pursue the question in any detail.

working lives at least as much as it would change the lives of their students. This chapter recreates the dimensions of the debate.

The testers' rhetoric allowed little room for any doubts. Early psychologists' efforts towards more accurate mental measurement tools had been years in the making on both sides of the Atlantic. Stanford psychologist Lewis Terman's 1916 revision of Alfred Binet's individual mental scales first devised in France improved score consistency and test reliability for predicting a child's academic success. Terman's improvements represented for many scientific educators the final psychological breakthrough. Ellwood P. Cubberley called it "the perfection of another and a very important measuring stick. . . intelligence tests will become as much a matter of necessary routine in schoolroom procedure as a blood-count now is in physical diagnosis."[6] In these early and overly optimistic years of the testing movement, educational leaders dubbed it "the most significant and important movement in the field of education during the past decade." With so much praise at hand, testers only belatedly acknowledged that there were many more important accomplishments yet to be achieved with intelligence tests.

Testing rhetoric initially aimed for the strongest declaration of its potential for the schools. One standard test for intelligence—whether that be the Detroit Intelligence Test, the Otis Group Intelligence Test, the National Intelligence Test or another less common one—could be administered to a classroom full of students at the same time, often in an hour or less, and reveal a standard score that would largely remain fixed over time. Subsequent test studies would retreat from declaring such tests either simple or straightforward, but the connection between standardized testing and educational improvement remained secure. As early as 1920, Superintendent Ira B. Fee of Missoula, Montana accurately speculated that, "The mental tests have come to the schools to stay, and soon, I predict, that school system that does not avail itself of their use will be counted non-progressive."[7] Advertisements for standardized tests published by the World Book Company and others filled the pages of educational journals, encouraging school administrators to join the

[6]Lewis M. Terman, *The Measurement of Intelligence: An Explanation and a Complete Guide for the Use of the Stanford Revision and Extension of the Binet-Simon Intelligence Test* (Boston, 1916), viii.

[7]Ira B. Fee, "Advantages and Disadvantages of Mental Tests," *American School Board Journal* 61 (August 1920): 30.

ranks of progressive schools that had incorporated the tests into their yearly routine, "convinced of their value." As an added incentive, World Book Company promised to "give publicity to the best results that schools secure from using standard tests."[8] At the same time, however, advertisers most often appealed to convenience and the practical help that standardized tests presumably provided to busy educators. "What to do after testing?" was a refrain heard from promoters and administrators alike.

Few could ignore the financial implications of standardized tests. Prominent educational psychologist Arthur S. Otis, who was a former student of Terman's at Stanford, had developed a group test based on Terman's 1916 revision of the Binet individual test and had already marketed the test by 1918. The Army psychologists were not far behind Otis. They quickly pooled their efforts immediately after the war into a new business venture called the Psychological Corporation and released the National Intelligence Test for school use amid much publicity at the 1920 National Education Association convention. Educational publishers quickly realized the market potential of these devices. World Book Company immediately hired Otis to be their testing director during the early years of test introduction. Educational publishers filled their catalogs with all kinds of intelligence and achievement tests, plying their wares in lavish suites during the N.E.A. and other prominent educational conventions.

One peculiar promise within the testers' rhetoric was that standardized testing would reveal each student's individuality. Educators had to identify the endless variations of mental ability within each student, yet so-called "homogeneous" grouping reduced these differences into only three categories: bright, normal, and dull. Moreover, the true nature of those differences was frequently distorted by the teacher's subjective judgment: "Annoying behavior and timidity are particularly likely to affect the teacher's judgment unfavorably. Objective tests offer the only available means of checking up the accuracy of subjective impressions."[9] It remained unclear how an objective test score would change the daily relationship between the teacher and the student

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[8]See for example the April 1921 advertisement on page 108 of the *American School Board Journal* 62.

[9]Lewis M. Terman et al., *Intelligence Tests and School Reorganization* (Yonkers-on-Hudson, NY, 1922): 13.

whose behavior was annoying. In the thrill of scientific precision, this human element of the educational process was seldom considered. Teachers and testers alike accepted the notion that such tests provided a fair and impartial means of getting at what a student was capable of. An IQ score "knocks out from under [the students] all such lame excuses as 'doing the best I can.'" predicted one hopeful New York City teacher, since it would provide incontrovertible proof of what each student could and could not achieve.[10]

Standardized tests at first promised to be quick and easy to use, an appeal not lost in schools that were short on teachers and funding. Intelligence tests in particular promised to eliminate costly and frustrating student "retardation" by pointing to the actual intellectual capabilities of each individual student. High scorers would do well in an academic track, while low scorers would avoid discouragement and failure by participating in the "opportunity classes" or the vocational program. The elimination of student failure, more efficient use of instructional time, and a scientific objectivity that was beyond reproach—when coupled with the constant refrains of success from the testers—persuaded even skeptical administrators and teachers to consider a reform that promised to help them get on with their work. Few practitioners objected in principle to the implications of testing in these years. Indeed, the *practical* appeal of intelligence tests is the single biggest appeal expressed in educational journals of the early 1920s. To a teacher or administrator, the practicality of tests guided their ultimate appeal. When Superintendent Theodore Saam of Council Bluffs, Iowa inaugurated his own experimental testing program, he accordingly declared the following: "The method of ascertaining the intellectual ability of a child should be simple. . . It must be brief. . . It must be reliable. . . If [the student's] intelligence can be definitely ascertained, the first step will have been taken in the proper administration of the public schools."[11] Fellow superintendent Ira B. Fee of Missoula, Montana put it more bluntly: "School time is of such great value that its interruption is justified only when some substantial result is to be

[10]John W. Doyle, "The Use of Intelligence Tests in the Julia Richman High School," *High Points* 8 (February 1926): 24.

[11]Theodore Saam, "Intelligence Testing as an Aid to Supervision," *The Elementary School Journal* 20 (September 1919): 26.

secured thereby."[12] Alice Butler of the New York's Theodore Roosevelt High School was readily convinced in 1920 that intelligence tests had already successfully passed their experimental phase, but "if they indicate no different grades from those of the elementary schools, they are of no particular use."[13] Many educators expressed some reservations about the higher implications of such a test, but as long as the tests promised to help them do their jobs, they were a benefit. As one high school teacher wrote in 1919, "Let us make some use of the measures we have, but not to the neglect of our true business. Our business is to teach our pupils, not to measure them."[14] The practical and readily apparent benefits of testing were therefore what enticed many educators. This challenge defined testers' rhetoric in these early years.

The most visible level of debate over the use of intelligence tests involved the issues that most concerned the educational psychologists. Were these tests reliable? How could one discern the validity of the test? Could intelligence be regarded as a unitary and fixed attribute, and therefore capable of being measured once and for all by one of these tests? What is the correlation between test scores and school success? When Walter Lippmann dared to challenge the testers in the *New Republic*, he unsuccessfully assumed the jargon of the testers—and prompting their professional disdain in return. "It was not prepared for journalistic use!" Guy Whipple decreed in his own rebuttal of Lippmann's accusations.[15] Yet the specialized language of the psychologist dared not be entirely exclusive, or it would certainly risk excluding the teachers and principals who would use the tests. Moreover, psychological debates over test validity and reliability remained well within their own specialized dialogues. For the busy teacher, the vital question translated more simply into: "how will these tests lighten my teaching burden?" and "how will these tests affect my own professional status?" From this perspective, the implementation of intelligence tests affected everyone involved in the educational enterprise—not just the student.

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[12]Fee, "Advantages and Disadvantages of Mental Tests."

[13]Alice S. Butler, "The Otis Intelligence Test," *High Points* 2 (April 1920): 38-40.

[14]Arthur G. Skeeles, "The Educational Yard Stick," *Journal of Education* 102 (23 January 1919): 95.

[15]Guy M. Whipple, "The Intelligence Testing Program and Its Objectors—Conscientious and Otherwise," *School and Society* 17 (26 May; 2 June 1923): 561-68; 596-604.

Teachers were by no means entirely convinced that such tests were sufficiently practical to merit even an initial trial. Frances Blumenthal of P.S. 4 in the Bronx registered "A Plea for Interest in Intelligence Tests," conceding that many busy teachers regarded these tests as "trivial little intellectual 'stunts'" and that no testing program, however, scientifically grounded or administratively supported, would be fruitful unless undertaken with the teachers' "conviction that the time, effort and general interruption involved in the testing will be compensated by the accumulation of data reliable enough to serve as criteria for classification."[16] Some frustrated testing advocates blamed this teacher skepticism on their inadequate dedication to the highest ideals of the profession. Edgar Mendenhall of the State Normal School in Pittsburg, Kansas complained that teachers and would-be teachers needed a more "scientific attitude." The average student "prefers on the whole, glittering generalities to hard facts and basic principles requiring some effort of attention." Too many educators, in Mendenhall's estimation, neglected the constant self-evaluation of aims and goals that befit a properly scientific teacher. "Superintendents and teachers are still to be found who resolve ignorantly that there is nothing in the measurement movement in education; that psychologies and discussions of educational methods, educational experiments should be 'scrapped.'" Holding Charles Darwin's patient and lengthy studies as the proper example, a teacher must strive to "enjoy a technical discussion in education, and experience some thrill when she reads Thorndyke [sic], or Judd, or James."[17] Even when educators settled for a far less ambitious professional role model, however, testers still doubted their commitment and their qualifications.

Historians of the early testing movement have often reduced the testing controversy to a conflict between those who were philosophically opposed to the deterministic implications of testing versus the educational psychologists themselves. The educational arena of the 1920s, however, is far more varied than that. Testing professionals recognized, to their alarm, that they had to promote their cause and at the same time caution their adherents against any overly rash and

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[16]Frances Blumenthal, "A Plea for Interest in Intelligence Tests," *High Points* 2 (November 1920): 16-17.
[17]Edgar Mendenhall, "The Need for a More Scientific Attitude in Education," *Education* 41 (February 1921): 385-86.

therefore unscientific application of these measurement tools. Testing pioneer Edward Lee Thorndike declared in 1922 that, "This measurement has abundantly proved its worth," and variations of this certainty became a kind of mantra in these years, echoed in countless articles written by individuals of considerably lesser distinction.[18] It is tempting to look at these kinds of bold and prevalent statements and make a straightforward connection to the kinds of standardized testing that continues to predominate American education today. But is the connection so simple? Many testers' claims in 1919 and 1920 were quietly disproven or curiously left without any follow-up or resolution by the end of the decade. Over time, the prediction that "tests are here to stay" has been proven true. Even by 1933, psychologist Gertrude Hildreth of the Teachers College Lincoln School compiled a bibliography of hundreds of standardized tests, assessing all kinds of achievement and native ability.[19] The language of many testing enthusiasts was frequently imprecise, along with their methodology and proven outcomes. When Arthur G. Skeeles of the Peabody High School in Pittsburgh contemplated the value of "the educational yard stick," nowhere did he distinguish between tests of intelligence and tests of achievement.[20] Indeed, such scientific sloppiness evident throughout the literature would concern more trained educational professionals, making psychologists wonder whether their partnership with the rank and file of the educational world endangered the purity of their cause.

The historian who attempts to tease out these variations of response must consider the source of records as well as their intended audience. It is not likely that the *Journal of Educational Research* or its readers would challenge the validity or value of these new measurement tools. Likewise, educational journals that subscribed to the same formula of educational progress played no small part in encouraging any teacher contributions, however parrot-like, that revealed the same adherence to this progressive creed. Research departments such as the one established in Baltimore sprang up in nearly all major cities just prior to and after the war, providing full-time

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[18]Edward L. Thorndike, "Measurement in Education," in *Intelligence Tests and Their Uses: The Twenty-First Yearbook of the National Society for the Study of Education*, ed. Guy Montrose Whipple (Bloomington, IL, 1922), 7.

[19]Gertrude A. Hildreth, *A Bibliography of Mental Tests and Rating Scales* (New York, 1933).

[20]Arthur G. Skeeles, "The Educational Yard Stick."

trained personnel whose primary job was to oversee and utilize these standardized tests. The long-term success of a testing program depended in large part upon the extent of cooperative effort between the schools and the research departments. The tests, and invariably those who were tested, represented the power dynamic within a rapidly expanding educational administrative network. New York City's Bulletin of *High Points* requested teacher representatives from high schools throughout the boroughs. The editorial board assigned each representative a monthly issue that their school had to fill with encouraging articles and promising reports. Submissions, readers were reminded, should illustrate the "high points" of classroom practice. Despite these pressures, some teachers remained determined to voice their skepticism about the latest signs of educational progress. Editors published the Wadleigh High School English teacher's critical piece on the doubtful contribution of intelligence tests to educational improvement, but with the prominent disclaimer that the teacher had confused her varieties of standardized tests; journal editors showed far less concern to clarify similar inaccuracies in more laudatory articles.[21]

Some teachers recognized that their professional commitment might well be judged by their commitment to such administrative innovations. The growing number of summertime programs at Teachers College, the University of Chicago, and many state schools offered small-town teachers a chance to visit exciting cities while sharpening their own pedagogical savvy. Educators returned to their local communities from these programs reinvigorated and awash in the latest pedagogical approaches. When W.D. Buchanan of St. Louis's Dozier Elementary School attended one of these sessions at the University of Chicago under the direction of educational psychologist Frank Freeman, he returned to his position newly aware of the tremendous inadequacies of their old-fashioned method of student classification. Buchanan's fresh awareness made educational problems visible for the first time, prompting him to start a study group with fellow teachers to discuss articles in the *Journal of Educational Psychology* and to rid themselves of personal factors influencing their judgments of students' intelligence. These St. Louis teachers believed they had developed purer standards of intelligence as compared to student test scores, an improved gauge of

[21]Julie Mathilde Morrow, "Concerning "New Style" Tests in English," *High Points* 6 (June 1924): 16-19

professionalism in itself. Practical usefulness for these teachers was clearly less important than the triumph of including themselves in the scientific educational community.[22] Still other teachers formed a reading club focused on the latest educational offerings, periodically presented in a light-hearted format in the pages of *School and Society* under the title, "A Review of Better Books by Hoi Bibliologoi." These nameless Chicago teachers met faithfully throughout the decade, self-conscious of their inferior qualifications in assessing these books by the educational experts but hopeful that their insights might be more on par with their fellow "amateur" teachers.[23]

In one respect, the rapid spread of standardized testing in the schools is one sign of important developments within the national educational community. Educational leaders consciously strived for a professional sensibility amongst their members akin to the professional communities emerging within engineering, medicine, and law. Historians Joanne Brown, Dorothy Ross and others have traced the ideological similarities between these newly-emerging professions in the late nineteenth and early twentieth centuries; educational psychologists prized the testing movement as an anchor for their scientific and professional validity.[24] By extension, educators were sensitive to their lowly status and actively fostered the trappings of professionalism. New departments of education first appeared at the turn of the century, leading in turn to more stringent teacher training requirements and a study of pedagogy at the university level. University-sponsored educational journals became just one part of the increasingly influential connections between schools and the emerging research-focused university. The *Journal of Educational Psychology*, the *Journal of Educational Research*, and various university research bulletins first appeared in these years, publications that were fueled in the post-war years by the exciting new possibilities in mental testing. State teacher journals similarly fostered the sense of professional community in a largely isolated occupation with articles about continual teacher training and

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[22]W. D. Buchanan, "Improvement in Teachers' Estimates of Intelligence," *The Elementary School Journal* 23 (March 1923): 542-6.

[23]See for example the February 2, March 2, and April 6 issues for 1929.

[24]See for example JoAnne Brown, *The Definition of a Profession: The Authority of Metaphor in the History of Intelligence Testing, 1890-1930* (Princeton, 1992); Dorothy Ross, *The Origins of American Social Science* (New York, 1991); Franz Samelson, "Putting Psychology on the Map: Ideology and Intelligence Testing," in *Psychology in Social Context*, ed. Allan Buss (New York, 1979), 103-68.

professional improvement. News of the exciting developments in testing garnered widespread media attention due to the Army testing program, quickly followed in educational arenas with test samples and demonstrations from publishing companies who sensed the tremendous commercial possibilities. The educational community was becoming more complex and more accessible at the same time, when principals, superintendents and (less often) teachers regularly joined together in city, state and national educational meetings to discuss the latest educational developments while educational publications such as *School and Society* or the *Journal of Education* reported weekly on the latest events on the national scene. Psychologist B. R. Buckingham inaugurated the *Journal of Educational Research* in January of 1920 with an editorial that expressed the highest hopes for this young field of "applied" psychology: "Research for the sake of research we shall leave for others. What uses the teacher and supervisor have made or may make of the findings of the experimentalist, what methods are transferable from the laboratory to the classroom and office, what workable means of meeting common needs have been developed under actual school conditions—these will be our chief concern." Practicality was a key concern of the testers as well as the teachers. In the exciting developments of 1920, few scientific educators doubted that the practical benefits of testing would be enormous.[25]

Educational psychologists wished to protect the scientific purity of their testing efforts and were therefore ambivalent at first about the extent to which they wanted to involve teachers, who had little or no test training and initially regarded the tests as a "fad." At the same time, these psychologists recognized the tremendous commercial potential of their products. The major commercial publishers of these new tests were already publishing giants in their own right, and obviously eager to partake in what promised to be a profitable and long-lasting enterprise. World Book Company and Houghton Mifflin anticipated the testing craze with their early publication of the Stanford-Binet. Not long after, the Public School Publishing Company, Educational Test Bureau, Ginn and Company, and the Psychological Corporation established their own testing departments and filled the market with endless variations of standardized tests. Commercial

[25]B. R. Buckingham, "Announcement," *Journal of Educational Research* 1 (January 1920): 1.

possibilities did not end with the tests themselves. "Possible uses of test results, so clear to the educational psychologist, were sensed but dimly if at all by the teacher," reflected one fond reminiscence from a test publisher of these early years. World Book Company and other test publishers were eager to assist teachers' enlightenment through ample textbook series geared for teacher training programs. World Book Company established a Test Service Department, which issued a series of Test Service Bulletins in 1923 for the teacher, and began a series of textbooks on testing, "Measurement and Adjustment Series" edited by Terman, in order to demonstrate uses of the tests. Test publishers coordinated with universities in setting up courses in tests and often made arrangements with university research bureaus to distribute its tests. Sales representatives honed sales pitches that appealed to educators' sensibilities.[26]

No precise numbers recorded the volume of American schoolchildren who took Terman's National Intelligence Test, the Otis Intelligence Test, or the dozens of other general intelligence tests that quickly flooded the market. Terman's own guess was that enthusiastic principals and their unquestioning teachers had administered three million tests by the end of 1921.[27] The testing momentum gained speed, despite the practical and logistical obstacles that punctuated journal discussions. Already by June of 1921, educational psychologist Sidney Pressey counted twenty-seven group intelligence tests that had been developed in the immediate postwar period.[28] A testing frenzy may have had a countering effect, however. As with any boom, testers were already recognizing that quality control was crucial for the longevity of the measurement movement. Educators grew quickly bored and even cynical with turgid accounts in education journals of school testing exercises that had faulty methodology and contributed nothing new to the field. Large-scale testing in urban school systems was no trivial matter, involving the cost of purchasing test materials, paying for their shipment, training teachers and staff in the basics of test administration, and obtaining scores quickly enough for school staff to implement instructional and

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[26]World Book Company, *Standardized Testing—An Adventure in Educational Publishing* (Yonkers-on-Hudson, NY, 1955).

[27]Terman et al., *Intelligence Tests and School Reorganization*, 3.

[28]Sidney L. Pressey, "The High Cost of Testing," *The Elementary School Journal* 21 (June 1921): 771-77.

grouping changes before the school year was too far advanced. Many superintendents and principals grew frustrated and skeptical when costly test materials were too complicated or time-consuming. Sensing the growing frustration over elaborate testing devices, Pressey warned his fellow test makers, "The measurements movement can survive only if it renders a real service to the schools. It is fast coming to be largely a burden. . . If the tests are not convenient, or the statistics are over involved, these materials may well be rejected."[29] Urging the testing zealots to "calm down," University of Washington's Harlan Hines reasoned that, "If the children in our schools are to receive no benefit from these standardized examinations, the fact will be evident soon enough. As the situation now stands, the lack of benefit seems to come in the inability of examiners to determine what to do with the results of tests."[30]

Many fellow educational psychologists shared these concerns. Following the first rush of test-taking in the immediate post-war years, Stanford psychologist Lewis Terman compiled in 1922 a slim collection of reports from various school districts entitled *Intelligence Tests and School Reorganization*.[31] National Education Association Chairman of the Commission on the Revision of Elementary Education Margaret S. McNaught had hoped to fund a much more ambitious look at educational testing. In these years of high inflation and increased anxiety over teacher shortages and poor pay, however, other N.E.A. concerns took precedence. In his introduction to the book, Terman anticipated the inevitable question from practically-minded educators: "'After tests, what next?' is now the question that is causing deepest concern."[32] Still other educational psychologists offered what they hoped would be useful suggestions to the countless schools who were "fumbling" over what to do with the test scores.[33] Terman provided the parameters for responding to this dilemma. Intelligence tests, Terman predicted, would find their greatest usefulness in a broad and frequent administration. All children—not simply the "duller"

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[29]Ibid.

[30]Harlan C. Hines, "Measuring the Intelligence of School Pupils," *American School Board Journal* 64 (April 1922): 35.

[31]Terman et al., *Intelligence Tests and School Reorganization.*

[32]Ibid., iv.

[33]J. N. Mallory, "Following Up a Testing Program," *American School Board Journal* 67 (September 1923): 51-52, 135-6.

students—would benefit from an IQ score that would help predict their success at school. An intelligence test score, rather than the subjective and often faulty assessment from the teacher, could best determine the individualized approach for each student's educational needs and abilities.

Terman was perhaps more cautious in these early years than most later critics allowed, since he warned the reader about assuming that some sort of "educational millennium" had arrived. The precise usefulness of standardized tests had not yet been determined. The various examples of school reorganization given in his volume were merely "tentative," awaiting the proof of time and demonstrated improvement in student achievement. The exciting reality, however, was that tests were indispensable in this new scientific education. What is striking, amid all this caution, is the certainty surrounding the intrinsic value of such tests. "Standard tests of the school's raw material can no more be dispensed with than standardized tests in agriculture, manufacturing, or medicine," Terman wrote. This belief would prove to be a constant refrain throughout the decade, despite countless measures and adjustments that never seemed to give the precise student outcomes that these fixed scores promised. Intelligence test and other standardized test scores suggested a measure of control and educational reform effort when administrators had no funding to improve anything else. Geoffrey F. Morgan of Teachers College was puzzled by one superintendent's insistence on administering yearly tests despite the fact that he had no resources to improve teachers' salaries or change the courses of study. Dismal test scores were as much as this superintendent could afford within the complex and costly reform agenda, but he administered the tests faithfully in his seemingly quixotic quest to improve education locally.[34]

Despite Terman's official caution in placing an unreasonable amount of faith in the tests, school officials in the 1920s were confronted with a number of pressing problems that they clearly hoped intelligence testing would solve. Chief among these problems, particularly in the largest American cities, was an unprecedented increase in student enrollment. Testing promised a systematic and quick approach to finding a place for everyone. Terman encouraged varied

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[34]Geoffrey F. Morgan, "On Certain Fallacies Concerning the Use of Standard Tests," *American School Board Journal* 61 (November 1920): 33-34.

curricula with a fluid tracking system, but administrators were more excited about perfecting courses of study that could be used with large groups of students without over-taxing the teacher. Terman and other psychologists devised standardized tests that were inexpensive and simple enough for the classroom teacher to administer. Intelligence tests were the quickest, cheapest and simplest phase of an elaborate and constantly-evolving curricular program, providing a quick and tangible result. Testers would soon learn that the elimination of student failure or under achievement remained beyond any standardized test's capabilities.

The new group intelligence tests were not without their inherent challenges. Testers heralded the tests' scientific precision and their superior accuracy when compared to subjective and imprecise teachers' judgments of student intelligence. Yet these same teachers would be largely responsible for administering and utilizing these tests. Cubberley confidently predicted that, "sufficient skill to enable teachers and school principals to give such tests intelligently is not especially difficult to acquire."[35] Such skill, however, was dependent upon authoritative training and the willingness of busy school administrators to provide such training for their teaching force, who were not always college graduates or alumni of graduate programs.

Perhaps closer to the source of teachers' initial skepticism were many administrators' efforts to use intelligence test scores as a way of evaluating or comparing teaching effectiveness. Some superintendents promised that standardized tests might equally reveal the quiet skills of more modest teachers, but other superintendents fancied their educational crusade as a mission to update all established classroom features, including the teachers. Samuel Brooks, superintendent of a rural district of one-room schools in Winchester, New Hampshire, approached his new position in 1919 with almost none of the modern educational apparatus in place.[36] Textbooks were old. Teachers lacked professional training. Schoolhouses were rickety, poorly ventilated and ungraded. Community members retained local control of their schools and were suspicious of Brooks' interference. Of their teaching methods, Brooks wrote: "The results were the use of

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[35]Terman, *The Measurement of Intelligence*, ix.
[36]Samuel S. Brooks, *Improving Schools by Standardized Tests* (Boston, 1922).

methods and texts so archaic as to be amusing if they had not been at the same time such a sad commentary on our boasted educational system." Not surprisingly, Brooks held little regard for these teachers' methods of assessment. "It has been proved beyond doubt that ordinary teachers' marks are unfair, inaccurate, and generally unsatisfactory as a means of measuring progress or as a basis for promotion."[37] In contrast, Brooks considered his own training in the "scientific method in education" to be "pretty thorough." Brooks immediately launched a testing program, confident that he could convince his teachers of the inadequacy of their traditional methods of evaluation by calling a series of meetings on Saturday afternoons. Brooks chronicled the process of securing "teacher cooperation" during these meetings as the dawning of "intelligent comprehension" within the teachers themselves. Those few teachers who remained unconvinced of these superior assessment methods were hopelessly fixed in the past. "It is useless to waste time with such people." Brooks concluded. "The only thing to do is to get rid of them at the first opportunity."[38] Support for this superintendent's reforms was clearly tied to these teachers' livelihood. Nevertheless, Brooks remained convinced of his own scientific objectivity when he elicited teacher response to the value of standardized tests. The responses were not kept anonymous or confidential, which may explain why a third of the teachers chose not to respond. It is perhaps more revealing that, with job security clearly on the line, three of the nineteen teachers who responded were negative. Those few teachers who dared to question Brooks' judgment were either "local cranks" who were poorly educated, in an educational "rut," or frivolously undedicated to the commitment required of any true teacher.[39]

Brooks' testing zeal included an elaborate plan for gauging teacher efficiency by student test scores. Teachers were understandably reluctant to put their salaries on the line when student ability and school conditions were so varied. Brooks argued that supervisors' evaluations were far more varied and "apt to be colored by personal prejudices." Brooks determined an average score for the district based on a comparison between scores on the Otis Intelligence test and various

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[37]Ibid., 9-13.
[38]Ibid., 26.
[39]Ibid., 124-31.

achievement tests, a system likely derived from Edward Thorndike's Accomplishment Quotient or A.Q. formula. Most teachers in the district agreed to a bonus pay scale based on the increased number of points achieved by the end of the school year. Samuel Brooks apparently never published the status of his merit pay system in subsequent years, and it remains questionable whether teachers would have agreed to the arrangement without the "substantial general raise in salaries" that Brooks arranged with the school board. Even Brooks dared not to suggest a punitive pay arrangement for lost points.[40] There were a few administrators who ventured more daring ways of improving teacher performance through intelligence tests scores, such as the Niles, Michigan superintendent. Upon finding his own fairly well-paid teachers to possess a wide range of IQ scores, this superintendent suggested enforcing a minimum IQ requirement for all prospective teachers. [41]

Superintendent J. A. Nietz of the Perrysburg, Ohio public schools suspected that some teachers too easily "bluffed" their way to a favorable evaluation during a supervisor's brief classroom visit, disguising serious inadequacies "as far as real results are concerned." Standardized tests, therefore, revealed definite proof of effective teaching methods, the "comparative merit of his teachers," and a superior means of controlling teachers scientifically. "The use of standardized tests will often reveal that she is not as good a teacher as she thought herself to be."[42] Testing programs that were imposed from above invariably faltered from teacher skepticism and resentment. Psychologists advised their eager administrative supporters to introduce testing programs slowly, using only those teachers who were interested or at least "open-minded." It was a suggestion that more arrogant administrators often ignored, believing that the scientific certainty of their more modern methods would inevitably prevail. Reflecting on the first few years of the testing frenzy, however, educational psychologists were concerned that the excessive testing would ruin their cause and turn teachers decisively against the movement.

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[40]Ibid., 69-81.

[41]Otto W. Haisley, "The Intelligence Test and the Teacher," *The Elementary School Journal* 21 (May 1921): 703-07.

[42]J. A. Nietz, "Tests and Scales as Aids to the Supervisor," *American School Board Journal* 62 (February 1921): 47.

Psychologist Helen Davis was only one of a number of testers who urged prudence among administrators and psychologists alike. By 1923, it was clear that tests had been misused and forced upon unwilling teachers and principals alike. An intelligence testing program, Davis cautioned, could only be successful when administered with equal intelligence.[43]

Other administrators were less enthusiastic about the prospects of tying teacher salaries to improvements in test scores. Certainly many pragmatic administrators realized that teacher support for standardized testing would only go as far as it improved their own teaching conditions and rewards. The typical response was to label these teachers as selfish and against progress, but University of Wisconsin's V.A.C. Henmon explained that little teacher support for testing should be expected as long as overzealous administrators seek to penalize teachers because of inadequate test score results while suggesting that most teachers were unqualified to administer and interpret such tools. "In fact there is no little distrust and antagonism among [teachers]" towards the measurement movement, Henmon warned his audience of fellow academics and scientists.[44]

Small-time administrators supplemented their own professional status with faithful submissions reporting their own individual testing programs, often adding little to the literature beyond the familiar conclusions that "more research is needed" or more hopefully, that, "our school has clearly benefited from the use of these tests." Certainly, the school that had faithfully invested a considerable amount of time and money in a testing program would hate to admit failure, with uncertain consequences for additional reform measures and budget appropriations. The principal of a small school in Port Arthur, Texas was unusually candid in expressing relief that his arduous two-year testing exercise had finally ended. The obstacles confronted in attempting to test every child's intelligence were so numerous, "most readers would not think the results justified the work necessary to obtain them." Ending his report on an upbeat note, however, teachers and administrators in Port Arthur apparently regarded this as a worthy effort, giving them more

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[43]Helen Davis, "Classification by Intelligence Tests in the Smaller Schools," in *Second Yearbook of the Department of Elementary School Principals*, ed. National Education Association, (Washington, D.C., 1923), 211-219.

[44]V. A. C. Henmon, "The Measurement of Intelligence," *School and Society* 13 (5 February 1921): 155.

information on the individual child than they had previously.[45] The language of many similar reports echoed this sense that there were only two positions that educators could take on the measurement movement: absolute acceptance or absolute rejection. Rejection implied a complete return to the "old-fashioned" teaching methods, along with their inaccuracies and flaws. Given this stark choice, it is not surprising that few educators dared to reject the progressive and modern tools of education.

Modern pedagogy or not, teachers were wary of any change that involved more of their time. The new multi-step testing procedure was an additional and therefore often unwelcome task. School budgets were already stretched to cover necessary building costs. An additional administrative apparatus to administer and evaluate the tests may have removed the testing burden from teachers in the larger cities, but at the threat of taking funds that teachers were desperately trying to secure for their own depressed salaries. Indeed, research bureaus were growing in size and popularity in the early 1920s, during the same years that teachers were vigorously campaigning for salaries to absorb the shock of post-war inflation.[46] New York City's research bureau reported spending over $104,000 in 1924 alone; even the national average for this year was over $16,000, according to U.S. Bureau of Education figures.[47] In comparison, teachers battled for inflation adjustments for salaries that started at about $1,000 annually. When New York Superintendent William J. O'Shea surveyed his 30,000 teachers and principals about how to better attract quality teachers, over a third of the high school teachers who responded believed that teachers suffered from a low social status and that they themselves discouraged their best students

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[45]Leonard Power, "The Effects of Grouping According to Intelligence in the Franklin School, Port Arthur, Texas," in *Second Yearbook of the Department of Elementary School Principals*, ed. National Education Association, (Washington, D.C., 1923), 249.

[46]See Elise H. Martens, "Organization of Research Bureaus in City School Systems," (Washington, D.C., 1924) for actual figures on the 50-60 city research bureaus that were in operation by 1924. According to Martens' figures, the research bureau budget in a mid-sized city grew nearly ten percent in one year, while major city education budgets expanded over twenty-five percent in the same year span.

[47]F. L. Cardozo, "Tests and Measurements in Public Schools," *School and Society* 20 (December 1924): 797-98.

from entering the profession.[48] It should not be surprising therefore, that teachers evaluated educational reforms such as intelligence testing according to how it may affect their profession.

Rural schools stood to gain far less than the urban schools in this elaborate scientific methodology. With small enrollments and tight budgets, many small school districts could not justify the expense of testing even in the name of progress. Efficiency experts attacked the "rural school problem" in these years for fostering an old-fashioned and dangerously out-moded pedagogy. Rural school educators resented being the brunt of urban progressive criticism and were naturally suspicious of any test that put their students in a bad light. Many test scores suggested that rural children were not as bright as their urban counterparts. When a sampling of mean IQ scores revealed that urban students scored at least ten points higher than their rural peers, university officials in Utah questioned whether intelligence tests really assessed a child's native intelligence.[49] Still another survey in 1925 of rural Californian school districts revealed that only a fraction of schools had a testing program or used intelligence tests, of which half the respondents questioned the value of having such a program.[50]

School superintendent Samuel Brooks was not alone among ambitious administrators who hoped standardized tests scores would shake up their staid teaching forces. Many more educational psychologists, however, wisely saw the danger in alienating teachers with punitive test score comparisons. Sidney and Luella Cole Pressey wrote in 1922 that, "If the tests are to be used only as evidence against the teachers they had best not be used at all . . . The teacher is not by any means the only factor in the educational situation—though she seems to be the one who is usually

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[48]"Teacher Recruiting—An Extract from the Report of the Survey Committee," *High Points* 7 (May 1925): 38-9.

[49]John T. Wahlquist, "Intelligence of Rural and Urban Children," *Elementary School Journal* 26 (June 1926): 682-84. Low test scores among rural school children received considerable attention from education journals and the press but may not have been accurate indicators of the quality of rural education. Testing advocates assumed that these new tests would prove the superiority of larger, graded, urban schools and were eager to make rural-urban test score comparisons. Scientific education advocates were often keenly disappointed to discover that test scores were often only marginally different. See Wayne Fuller, *The Old Country School: The Story of Rural Education in the Middle West* (Chicago, 1982): 240-43.

[50]R. D. Russell, "The Use of Educational and Intelligence Tests in the County Schools of California," *American School Board Journal* 70 (June 1925): 68.

blamed for any shortcomings!"[51] In a later section of their textbook entitled "Making the Testing Program Worth While," the Presseys revealed their particular motivation for securing the teachers' commitment for testing. Already, their involvement with local testing programs as professors of psychology at Ohio State University revealed poor and uninformed test administration, resistance, and an attitude that tests were a "perfunctory bit of procedure, a part of the red tape which seems a necessary evil in a school system."[52] One central office that remained unnamed ordered all schools in their district to administer a battery of mental tests in order to rank schools. Another survey obligated the teachers and principals to perform all the clerical tasks involved in administering a school-wide test, the results of which were never reported back to each school. Still another botched testing program hoped to replicate consistent test conditions among all the classrooms in a particular school, causing some students to miss recess time and many other students to be held beyond their normal dismissal time. The Presseys related an anecdote of a reluctant principal who finally agreed to administer a standardized test in arithmetic, declaring afterward that he "could not see that the children did a bit better in arithmetic than they did before!"[53] While some test enthusiasts saw in these kinds of examples unavoidable kinks that would soon be smoothed over, the Presseys sounded a frank concern that testing programs would risk losing their potential if they ignored the necessity of proving themselves to be useful and unobtrusive.

Virgil Dickson, Director of the Bureaus of Research and Guidance in Oakland and Berkeley, California and formerly Lewis Terman's student at Stanford, became alarmed at what he believed were "extravagant claims" about mental tests. Dickson tried to avoid technical jargon in order to appeal to the busy teacher. Dickson was cautious in encouraging the ordinary teacher, without specialized training, to participate in her school's testing program. Writing in 1923, Dickson noted that tests had been available long enough to be taken advantage of as the latest educational craze, but not long enough for anyone to have thoughtfully considered teachers' proper

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[51]Sidney L. Pressey and Luella C. Pressey, *Introduction to the Use of Standard Tests: A Brief Manual in the Use of Tests of Both Ability and Achievement in the School Subjects* (Yonkers-on-Hudson, NY, 1922).
[52]Ibid., 225.
[53]Ibid., 214-225.

role. Responsible teachers had to follow a long and careful process of outside coursework, extensive reading, repeated and supervised test administration, and continued diligence in adjusting classroom work according to each child's individual needs. Dickson pointed to his own school district for examples of a careful and responsible test administration, but admitted that the frenzy for something dramatically new often overwhelmed the practical considerations. He wrote: "The principal who forces a testing program upon his teachers before they are willing to accept it, or who asks them to do a large amount of work in giving and scoring tests when they do not feel that they get valuable returns for their labor will defeat his own purposes. It is far better to give one or two tests and to use the results than to give a dozen to be stacked away until the data are useless and the teachers have lost interest."[54] One senses in this warning Dickson's own frustrations over a testing frenzy that was already self-destructing.

The "simplicity" of using intelligence test scores unraveled quickly. Early test enthusiasts may have believed that their psychometric exercises firmly proved that intelligence test scores were an accurate prediction of student achievement. Too many other studies, however, revealed that a high IQ was no guarantee of high academic performance. Educational psychologists were faced with the awkward task of explaining how test scores provided a more reliable and objective measurement than teacher judgment when so many factors were beyond the scope of any objective test. How does one account for the important influences of "conscientiousness, deportment, interest, and application," wondered one notable test maker.[55] Indeed, the whims and interests of America's youth were changing in the 1920s, incorporating a new desire to stay in school longer that was unrelated to school success. High school enrollments skyrocketed from 1900 to 1930, contributing to the doubling of school expenditures many times over and challenging teachers' pedagogy. When the Lynds tried to answer the question "Who Go to School?" in their sociological study, *Middletown*, they discovered little connection between social class and IQ,

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[54]Virgil E. Dickson, *Mental Tests and the Classroom Teacher* (Yonkers-on-Hudson, NY, 1923), 222.

[55]S. L. Pressey, "An Attempt to Measure the Comparative Importance of General Intelligence and Certain Character Traits in Contributing to Success in School," *Elementary School Journal* 21 (November 1920): 220.

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contrary to Terman's assertions. Moreover, even school marks were a poor predictor of who would continue on to college in 1920s Indiana.[56]

Educational historians have noted the connection between intelligence testing and tracking. In these early years of the testing movement, however, such a connection was neither clear nor simple. Basic forms of student classification had been around long before the advent of intelligence tests in this decade. Age-grading had long been possible in large urban school systems, though without the strict connection between age and grade that only gradually characterized all American schools.[57] By 1920, school teachers and administrators were well aware of the perceived inefficiencies of repeated student failure and were encouraged to be "flexible" in their promotion policies, particularly since so much of what determined a student's promotion or "retardation" depended upon a teacher's estimation of the student's effort and use of abilities. Principal Paul Axtell of the high school in Bernards, New Jersey reflected that in the "storm of intelligence, standard, and various other types of tests that often [the teacher] has been nearly swamped." The result, Axtell candidly admitted, was too often that standard tests were dutifully given and then ignored. There is a "tendency to accept the standard tests as having value but to take no account of them in the matter of promotion."[58] Principal Axtell hoped to encourage a more integral role for standardized tests within the important task of student promotion, but his comments raise a challenging question: how often did teachers approve of testing without changing their own practices?

Neither standardized tests nor their critics disappeared through the course of the decade. W. S. Deffenbaugh of the U.S. Bureau of Education reported in 1925 on 215 cities of at least 10,000 people that used group intelligence tests for homogeneous classification, diagnosis of failure, supplementing teachers' estimates of student ability, and many of the other familiar

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[56] See chapters 5 and 13 in Robert S. Lynd and Helen Merrell Lynd, *Middletown: A Study in Modern American Culture* (New York, 1929).

[57] See the essay on the relatively recent development of this phenomenon in David L. Angus, Jeffrey E. Mirel, and Maris A. Vinovskis, "Historical Development of Age Stratification in Schooling," *Teachers College Record* 90 (Winter 1988): 211-36 and more recently, Maris A. Vinovskis, *Education, Society, and Economic Opportunity* (New Haven, 1995).

[58] Paul H. Axtell, "The High School Principal's Duty in Promotion," *American School Board Journal* 62 (April 1921): 33-34.

purposes. Deffenbaugh's questionnaire assumed, however, that all city school districts used such tests; none of the response options reported by Deffenbaugh allowed for superintendents to give any negative reactions to the use of standardized tests. A more balanced survey may have elicited some answers from the 65 percent of superintendents queried who did not respond.[59] Walter Lippmann, William C. Bagley, and John Dewey may have been the most prominent critics of intelligence testing, but many conscientious educators objected strongly to the anti-democratic and deterministic implications they saw in these tests. This spectrum of responses reflected, in retrospect, a natural response to a well-publicized reform that promised so many changes in schools. Given the commitment to this reform agenda among educational journal editors and regular contributors, objectors to testing not surprisingly continued to voice their opposition throughout the decade.[60]

By the middle of the decade, group intelligence tests had passed their first flush of trials in America's schools. Lewis Terman, Arthur Otis, and the other leading psychologists had further refined their earlier, cruder devices while more school administrators seemed more savvy about testing procedure and test construction. The Army Alpha tests, poorly geared for school use, were quietly retired and replaced. However, test skeptics often had more proof to confirm their suspicions. Baltimore's Charles Reigner anticipated the tester's common retort that opposition to testing implied an ignorance of educational science and progress. Reigner had no complaint against standardized tests per se; subject achievement tests "commend themselves to every thoughtful teacher." Turning to tests of general intelligence, Reigner proposed to lay out "common-sense conclusions" from a wide range of teachers—those most in contact with the tests and classroom realities. Reigner targeted many of the complaints that would hound intelligence tests in later years. Intelligence remained more complex than any of these tests, and as for early assertions that tests revealed intelligence's innate and fixed character, Reigner speculated that, "It

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[59]W. S. Deffenbaugh, "Uses of Intelligence and Achievement Tests in 215 Cities," (Washington D.C., 1925).

[60]See for example, William L. Hunter, "Intelligence as Viewed by Industry," *Education* 49 (December 1928): 217-25; Marion E. MacDonald, "The I.Q. and Democracy," *School and Society* 25 (28 May 1927): 631-34; and P. H. Pearson, "The I.Q. and other Q's," *Education* 49 (March 1929): 398-405.

may well be that some day the theory of the unimprovability of intelligence will go into the discard as has the 'faculty psychology' of our educational forebears." The remarkable advancement of intelligence testing said more about the tester's human tendency for self-praise than about the educational merits of these tests, Reigner suggested. Test questions addressed one's particular upbringing and enriched environment, not intelligence. Writing for his fellow educators, this Baltimorean concluded, "Mr. Intelligence Tester, you haven't yet proved your case to the man in the street."[61]

Few superintendents appeared to question the importance of group intelligence tests when they appeared in 1919, as Ellwood P. Cubberley declared, the most "significant development of the decade." After a year or two of strenuous testing, however, some administrators began feeling otherwise. Superintendent Culp of Tripp, South Dakota constructed a fanciful dream sequence for Superintendent Standard, a man exhausted by his thorough efforts to index every mental record of every child in his district. Standard fell into a deep sleep, dreaming that he too was now subjected to these same batteries of tests: "After underscoring a's for two minutes, he solved ethical problems for five minutes; next he was given a test in aesthetic appreciation and just before leaving this room he was asked to take a vocabulary test." Standard jolts awake after being labeled one of the "undesirables." After awakening, his planned meeting with teachers and school board members revealed a superintendent more in line with their own sentiments. Superintendent Standard and his teachers held a lively meeting in new agreement over the observations that: "A great deal of the material gathered is impractical and consequently is never used; common sense will often get the same results as a complicated test." Without a doubt, Culp's humorous vignette, tucked between lengthier and more somber treatments of the educational concerns of the day, garnered countless nods of recognition from *School Board Journal* readers.[62] The high school principal in Amherst, Massachusetts added his own administrative wisdom when he remarked, "It

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[61]Charles G. Reigner, "The Measurement Movement—And the Man in the Street," *Education* 44 (May 1924): 571-75.

[62]V. H. Culp, "Superintendent Standard Takes the Mental Test," *American School Board Journal* 67 (December 1923): 32.

has been said that one of the chief uses of the results of intelligence tests is to occupy the space on a top shelf, there to remain until some other demand for the space sends the data to the furnace."[63]

On a more serious note, a principal from Hobart, Indiana resolved after long and careful thought to make public in 1925 his school's conclusion that intelligence testing had "little if any value." This principal and his teachers at first decided to remain silent, knowing that their dissenting opinion would provoke controversy and backlash from "the high priests of education. . . who speak with authority and control the discussion in their respective ways and are bent on punishing the heretics who dare disagree with them." Breaking the silence, the principal hoped to open the level of free discussion in the spirit of "true science." Teachers' marks were more reliable than these test scores, an insight that most "practical" educators had realized by 1922. "If most educators were scientists and were to study intelligence tests with a view to discovering their real worth and value, rather than with a desire to court favor with ambitious montebanks, the literature of intelligence testing would read quite differently." Not surprisingly, one of the "high priests" of education quickly shot back a response in a subsequent journal issue, pointing out this principal's obvious ignorance of scientific technique. This Madison, Wisconsin clinical psychologist had missed the point. The proof of worthiness lay with the psychologists, not on the principals. If such tests had not proved their usefulness in this Indiana school, they were certainly being ignored in countless other schools as well. Once public, this principal was determined not to be cowed into silence. A follow-up article indicated that his candid assertion had elicited 84 letters of agreement from principals and superintendents, commending him on his courage to speak out.[64]

A different kind of response in these journals is perhaps more revealing of the obstacles confronted by the kind of thorough testing program that Terman and other psychologists hoped to establish in the schools. Group intelligence tests were promoted by many enthusiasts for their quick and inexpensive application, yet hasty and dramatic student reclassification alarmed

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[63]William Howard Brown, "The Value of Cold Storage for Intelligence Test Data," *American School Board Journal* 72 (June 1926): 48.

[64]Helen Davis, "Observations on Intelligence Testing: A Reply," *American School Board Journal* 70 (June 1925): 90; E. F. Orr, "A Plea for a Science of Education," *American School Board Journal* 73 (November 1926): 70-6; E. F. Orr, "A Principal's Observations on Intelligence Testing," *American School Board Journal* 70 (May 1925): 50ff.

professionals such as Dickson. Norman Fenton at the Tempe Normal School condemned the random distribution of tests as irresponsible "promiscuity."[65] Garry C. Myers of the Cleveland School of Education didn't challenge the fairness of intelligence tests, but questioned whether the shortcomings in available tests in predicting school success made them any better or more scientific than teachers' estimates of student intelligence.[66] The resulting tension between these viewpoints produced countless reports of various trial investigations that attempted to prove the instant merit of testing simply by stating its worth. Many teachers were doubtless eager about the promise of lightening their workload while improving their professional and progressive status, and were understandably open to the possibilities of standardized tests. When the standardization involved too much laborious typing, mimeographing, and elaborate score comparisons with overall student performance, however, teacher enthusiasm subsided. Could standardizing demands still be met with smaller testing pools? Who would be responsible for computing and plotting scores, given that so many teachers were too busy or too unknowledgeable about proper scoring?

Still other early reports, including that from Lewiston, Idaho Normal School Instructor I.N. Madsen, attempted to place a hypothetical dollar value on the savings to school systems in teaching efficiency and increased student promotions compared to the cost of purchasing and administering the tests.[67] Madsen's argumentation made group intelligence testing appear to be a low-cost, highly visible reform that would become irresistible to many school administrators who were strapped for funding and crowded with an increasingly diverse clientele. Those administrators who followed up their testing programs with the time-consuming teacher reviews and student adjustments would soon realize that group testing represented a false economy. An anonymously-written "Alice in Blunderland" amusingly suggested that what was once a simple process in education had become needlessly confused and meaningless.[68]

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[65]Norman Fenton, "Social Implications of Mental Tests," *School and Society* 20 (1 November 1924): 569-70.

[66]Garry C. Myers, "Teachers vs. Mental Tests as Prophets of School Progress," *School and Society* 16 (September 1922): 300-303.

[67]I. N. Madsen, "Procedures Following a Testing Program," *School and Society* 14 (24 December 1921): 600-05.

[68]"Alice in Blunderland," *School and Society* 18 (29 December 1923): 775-6.

Educationists believed that educational journals were an important source for informing and instructing busy classroom teachers in the proper science of education. A few of the more candid articles from these journals suggest that teachers seldom reaped their benefits. Some critics doubted the quality of research findings. Carroll D. Champlin of Penn State criticized in 1928 the "orgies of publication speculation" that engorged these journals with "wildcat experimentation" and irresponsible conclusions.[69] An editorial in the August 1922 *School Board Journal* lamented the dull, dry teachers journals, noting that, "the teachers of the land will read and pay for a popular magazine dealing in illustrated stories in preference to a regular school magazine."[70] Why did the hundreds of articles on intelligence testing in 1920 and 1921, indexed by the *Reader's Guide to Periodic Literature*, trickle to a mere few dozen by mid-decade and beyond? A survey of 500 elementary school teachers and principals conducted later in the decade supported this assertion: the most popular magazine for teachers was *Normal Instructor and Primary Plans*. Regular features in this tabloid-format magazine included the "Teachers-Help-One-Another Club" and similar inspirational articles about lesson planning and visual teaching aids. The regular reader of this magazine would find little mention of testing or its implications.[71] The apparent precision of testing may have had more inherent appeal to the administrator, but more pressing needs took away from the time they could spend on honing their scientific technique. One survey of elementary-school principal duties revealed a laundry list of obligations, of which testing and classifying pupils was only allotted about three percent of the busy administrator's time.[72]

It is perhaps the obvious response to conclude that intelligence testing led to student tracking, for indeed tracking was perhaps the most dramatic and controversial outcome of the administrative progressive agenda. As with many educational reforms, the anticipated improvements far outweighed the realities. By decade's end, group intelligence tests were

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[69]Carroll D. Champlin, "Using What We Have," *School and Society* 28 (24 November 1928): 656-59.

[70]William George Bruce and William C. Bruce, "Why Teachers' Journals are Dull," *School Board Journal* 64 (August 1922): 65.

[71]E. Lowell Kelly and Frederick L. Whitney, "Educational Magazines Read By Five Hundred Elementary-School Principals and Classroom Teachers," *The Elementary School Journal* 29 (November 1928): 176-80.

[72]Ida V. Flowers, "The Duties of the Elementary-School Principal," *The Elementary School Journal* 27 (February 1927): 414-22.

entrenched in the nation's school districts, but for what they symbolized rather than for what changes they actually wrought. A Bureau of Education leaflet listed twenty different uses for group intelligence and achievement tests, of which barely half of the 215 cities and towns who responded replied that they used such tests for homogeneous grouping. More common uses included using test scores for comparison to other school systems and supplementing teacher judgment. In a sense, schools may have gone full circle, from attempting to replace teacher judgment to supplementing the sensibilities that teachers and administrators gained from the daily interaction with students.[73] Psychologists were careful to balance the claims for superior homogeneous grouping with other benefits of testing, since the many thousands of smaller schools and rural districts could hardly achieve the same efficiencies of scale as New York or Baltimore. Accelerated promotions, readiness for school, ready comparisons to other schools or to the national norm were among the many justifications for pursuing a testing program in a small school system.

Intelligence tests continued to be used in the schools, along with homogeneous ability grouping. Educational testing created a thriving industry that continued to grow with time; one rough estimate for all educational tests placed sales at the close of the decade at thirty to forty million each year.[74] But the direct impact that group intelligence tests had in influencing student classification has been exaggerated. Overly-enthusiastic test promoters envisioned a very near future when tests would become the schools' all-purpose panacea. Teachers often took such grandiose promises at their word and then complained that "scientifically homogeneous" grouping from these tests amounted to classes as "badly graded" as ever. Teachers argued that they alone could assess the all-important qualities of industry, character or resolution within each student, areas beyond the reach of intelligence tests.[75] When IQ grouping was compared to more established modes of grouping, many teachers were decidedly unimpressed with the results,

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[73]W. S. Deffenbaugh, "Uses of Intelligence and Achievement Tests in 215 Cities," (Washington D.C., 1925).

[74]Hoi Bibliologoi, "A Review of Better Books," *School and Society* 11 (March 2 1920): 297-308.

[75]"'Beating' an Intelligence Test," *High Points* 5 (April 1923): 35-7.

particularly when contemplating the far greater effort demanded by the testing procedure. Other educators responded even more forcefully to this useless intrusion, predicting that intelligence tests and other standardized tests would be "overthrown" by the end of the decade.[76]

At the end of the decade, most articles in education journals continued to extol the merits of both intelligence tests and ability grouping. Ability grouping through IQ testing had become standard practice for any progressive school district, according to the laudatory articles. But journal contributors who dared to be more critical were remarkably candid in their comments, leaving the historian to speculate how far school practice followed the standard formula. A number of writers in the late 1920s and early 1930s questioned the usefulness of homogeneous grouping. Psychologists themselves remained divided over whether such grouping truly benefited children, particularly when the curriculum remained essentially unadjusted in so many schools.[77] Lewis Terman and others' reassurances did not assuage some parents' concerns that ability grouping was unfair and undemocratic. Teachers remained unconvinced that instructing the "dull" or the "bright" group was equally rewarding. The Manitowoc, Wisconsin school district abandoned homogeneous grouping in 1929 after concluding, through comparisons of consecutive intelligence and achievement test scores, that such grouping did not improve learning. Other school districts also questioned the purpose of grouping based purely on intelligence test scores. Montpelier, Vermont did not completely abandon homogeneous grouping, believing that it should offer special help to those elementary school students who scored extremely low on standardized tests. The rigid X-Y-Z Detroit classification approach, however, had been highly unpopular and had not proved its benefits. [78] Hundreds of other school districts continued with homogeneous ability grouping and testing, but with a heavy emphasis upon teacher judgment and school marks. The

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[76]Dudley H. Miles, "An Introduction to the Theory of Educational Measurements by Walter Scott Monroe," *High Points* 5 (April 1923): 40-1.

[77]See, for example, the debates between Lewis Terman and M. J. Van Wagenen. Terman devoted much of his professional efforts towards studying and improving the achievements of gifted children, but articles in the *Journal of Educational Method* and the *Journal of Educational Psychology* by Van Wagenen and others in the 1920s challenged the actual benefit of segregating bright children.

[78]Hugh S. Bonar, "Ability Grouping in the First Grade," *Elementary School Journal* 29 (May 1929): 703-06; Hugh S. Bonar, "A Study of Ability-Grouping at Manitowoc, Wis.," *American School Board Journal* 78 (March 1929): 72.

criticism of homogeneous grouping that emerges by the end of the decade was not always a criticism of intelligence testing, since many school districts gauged the degree of their educational successes through standardized test scores. But if intelligence testing could not be used for meaningful grouping, then what uses did it have? The benefits of testing became increasingly difficult to discern.

Extravagant early claims for the benefits of testing had altered radically by the close of the decade. Even among testing advocates, many doubted that intelligence was as fixed and unchangeable as Lewis Terman and others had argued. Even with a clearly defined IQ as measured by the tests, educators recognized that many more personal factors determined school success—factors that were not measurable by any standardized test. Testing advocates had long tried to gauge the impact of so many testing programs, but with frustrating elusiveness. Standardized testing appeared most justifiable when incorporated into a comprehensive school restructuring. At the same time, however, this made it impossible for testers to determine what specific impact testing alone had on the schools. These precise measurement tools created a frustratingly muddled outcome. Few reports could point directly to a change in the course of study, improved promotion rates, or improved student motivation. As early as 1923, one reviewer's survey of the literature on testing and its uses turned up few specific outcomes. The personal input from teachers became a much more certain standard for remedial efforts than did the tests themselves. Test scores alone were "cold-blooded" and without proper "humanitarian" discretion, according to one teacher who voiced her opinion.[79]

Articles in the latter half of the decade indicate that the honeymoon for intelligence tests was already over in many teachers' minds. Students were being tested too often and at too great a cost and effort to justify what meager benefits were gained. The majority of articles continue to promote the use of intelligence tests, but with revealing comments like, "The fact that every village school, as well as the most progressive city systems, are using the tests is no argument for their

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[79]G. A. Yoakum, "An Evaluation of After-testing Work, With Bibliography," in *Second Yearbook of the Department of Elementary School Principals*, ed. National Education Association, (Washington, D.C., 1923), 433-42.

continued use. . . If these teachers are to be won back as enthusiastic supporters of testing, they must be given arguments that are basic."[80] Some testers' early claims that intelligence was identifiable and largely unchangeable proved to be the biggest stumbling blocks for many teachers and psychologists alike. Many criticisms of intelligence testing found in the 1920s are not against the principle of standardized testing per se, but against these kinds of grandiose assertions. A student population with unchanging amounts of intelligence gave one teacher a "chill of hopelessness" and seemed at odds with the most ambitious goals of teaching. Twentieth century American education would continue to reflect the latest swing of the nature-nurture pendulum in successive decades, with group intelligence testing receiving its most serious debunking in the 1960s with the War on Poverty. It is important, however, to acknowledge that this debate was never entirely absent in educator circles, even in the heyday of 1920s group intelligence testing.[81]

When testers tried to prove the practicality of intelligence tests to the skeptical teacher or administrator, the practicality sometimes appeared to limit itself to the world of school and not the increasingly important world of business. One manufacturer didn't think much of a boy who came to work for him, recommended by his high IQ score but without the business sense that he needed.[82] One state normal school instructor encouraged teachers to think of themselves as "diagnosticians", much like physicians. A good physician does not stop at the medical exam but continues on to correct whatever ailments the patient may have. So too, the good schools should avoid the increasing trend to administer tests and then forget about them. "The shelves of our

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[80]Luke C. Rhoads, "Some Practical Uses of the Intelligence Tests," *American School Board Journal* 72 (February 1926): 67.

[81]Even the most famous objectors to intelligence tests, such as John Dewey, Walter Lippmann and Horace Mann Bond were careful to acknowledge that standardized testing, including intelligence testing, had some probable contribution to education; the challenge, however, was for thoughtful and careful educators to discern their "proper role", as John Dewey put it. See John Dewey, "Individuality, Equality and Superiority," *New Republic* 33 (13 December 1922): 61-63; John Dewey, "Mediocrity and Individuality," *New Republic* 33 (6 December 1922): 35-37. Later in the decade, many more educators and intellectuals were criticizing severely the notion that intelligence was easily identifiable, measurable and fixed. See Walter F. Dearborn, *Intelligence Tests: Their Significance for School and Society* (Boston, 1928); or Otto Klineberg, *Race Differences* (New York, 1935); Guy Montrose Whipple, ed. Nature and Nurture : Their *Influence upon Intelligence: Twenty-SeventhYearbook of the National Society for the Study of Education, pt. 1,* (Bloomington, Ill., 1928).

[82]Manufacturer, "When an Intelligence Test Went Wrong," *School and Society* 24 (20 November 1926): 641-43.

schools are becoming overloaded with tests that have been given and scored and forgotten," lamented this educational leader.[83]

Few psychologists held onto the grandiose expectations of what group intelligence testing could accomplish by the end of the decade. Testing promised to be impartial and not biased by subjective judgments. Yet, subjective qualities of character and effort proved to be crucial in student achievement and could not possibly be gauged by a test. Testing hoped to eliminate student failure by placing each student in the course of study suited to his or her ability; Boston's failure rate remained at sixteen percent in the first grade and twelve percent in the ninth grade, including students tested at high as well as low ability. Testers hoped that intelligence tests would be the initial step in refining and structuring a suitable course of study for different ability levels. Busy city superintendents acknowledged the importance of individualized instruction much more often than they gave it; the most common method of adjusting curriculum for bright students in 1929 was to allow the student to skip grades in a scheme known as "rapid advancement."[84]

Testers' response to claims of determinism was to repeatedly deny that any classification resulting from any test score was fixed and permanent. Groupings were subject to constant re-evaluation, teachers were reassured. In fact, however, few schools bothered with regrouping or retesting, since it rarely differed from their own estimation. Educators wrote about discerning "symptoms of intelligence" in their students and ways to quickly confirm, through a standardized test, what teachers already "knew" about their students. One frustrated principal in Newark, New Jersey concluded in 1929 that, of 150 New Jersey teachers surveyed, few had incorporated any changes or improvements from standardized testing into their teaching or grading.[85] Though these kinds of candid remarks are unfortunately rare in the journals of professionalism and expertise, they strike a chord with historians who have noted the remarkable degree of constancy in education

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[83]Isaac Doughton, "The Teacher as Diagnostician," *Education* 48 (October 1927): 107.

[84]Arthur W. Kallom, "Provisions in Large Cities for the Acceleration of Pupils," in *Eighth Yearbook of the Department of Elementary School Principals*, ed. National Education Association, (Washington, D.C., 1929): 337-47.

[85]John S. Herron, "How Teachers Rate Their Pupils," in *Eighth Yearbook of the Department of Elementary School Principals*, ed. National Education Association, (Washington, D.C., 1929): 235-44.

over the last century.[86] Intelligence tests were purchased and administered in thousands of school districts during the 1920s. This does not prove, however, that schools or classroom technique had fundamentally changed in their wake.

Even before the 1929 stock market crash and the subsequent decade of economic depression, psychologists and educators were looking back on their decade for signs of progress. Some backward glances from testers reflected optimistically on the refinement that educational research and testing had undergone during the decade. Walter Monroe of the University of Illinois was disgusted with the shallowness and the imprecision of so many of the early educational experiments that filled the pages of educational journals. Compared with those early years, however, Monroe felt reassured that educational research would someday be on par with research in the other sciences. Other writers, however, were not so confident that these "orgies of publication speculation" had gotten any nearer to the real needs of the schools. One concerned writer in 1928 compared the "get-famous-quick faddists" in education with the "furious zeal of the stock exchange."[87]

Testers had made many practical improvements to the tests by the end of the decade and into the 1930s, making intelligence tests easy to administer even if the results were not easy to use. Even if testers had convinced every educator of the practical use of intelligence tests, which they had not, there were still daunting logistical problems facing the kind of frequent mass testing that they advocated. Hand-scoring of hundreds of thousands of tests, even though they were objective tests, was incredibly time-consuming and subject to frequent error. Testers recognized the need to overcome this practical obstacle quickly, and World Book Company set about creating the ubiquitous "bubble sheet" scoring machine through IBM as early as 1933. For schools pressed by tight budgets and growing needs, the cost and time savings of these practical innovations were tremendous. Administration costs typically plummeted to a tenth of what they had been in the

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[86]The latest works on this subject are Larry Cuban, *How Teachers Taught: Constancy and Change in American Classrooms, 1890-1980*, (New York, 1984), and David Tyack and Larry Cuban, *Tinkering toward Utopia: a Century of Public School Reform* (Cambridge, Mass., 1995). 1995).

[87]William L. Hunter, "Intelligence as Viewed by Industry," *Education* 49 (December 1928): 217-25.

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1920s. Additionally, publishers revised test format so that test booklets were reusable and students recorded answers on compact, detachable sheets.[88] With these innovations, teachers were far less likely to complain about something that took little time or effort on their part.

"Efficiency" signified simplicity and practicality in the classroom; all too often, one suspects that the "scientific approach" became formulaic or altogether forgotten as test scores became the rationalization for what the teacher or principal already expected from each pupil. Psychologists and measurement advocates continued to make regular contributions to the nation's educational journals, debating the psychometric nuances of the various tests and testing techniques that regularly fortified the testing industry. "Intelligence" and "IQ" had entered the American educational lexicon, signifying scientific accuracy, objectivism, and vitally important attributes. Educators and other Americans frequently relied on the irreproachable symbolism of these words without regard to the accuracy demanded by scientific method.

At the same time, the IQ became another buzzword for American competitiveness. The average parent was even less likely than the teacher to understand testing theory or methodology, but nevertheless was imprinted with a certain awe for an entity that suggested their child was special. Like the spirit of later TV quiz shows, *Popular Science* and *American Magazine* tweaked their readership with, "How Fast Can You Think?" and "How's Your IQ?" The media added enhanced intelligence as one more obligation for respectable parenting in the baby boom years. *McCall's* published an "IQ Test for Babies" in 1955, the same year that *Science Digest* told anxious women how to "Up IQ by Mother's Diet."[89] Intelligence and "IQ" became fixtures in the

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[88]Daniel Resnick, "History of Educational Testing," in *Ability Testing: Uses, Consequences, and Controversies*, ed. Alexandra K. Wigdor and Wendell R. Garner (Washington, D.C., 1982), 190.

[89]The *Reader's Guide to Periodic Literature* indexed fewer than a dozen articles on intelligence testing for each year following the 1920s, down from a high point of 170 articles in 1922-24. Typical articles for these years more often indicated a popular science appeal for testing and one's IQ. See for example, S. Loyd, "How Fast Can You Think?" *American Magazine* 115 (January 1933): 58-60; or "IQ Test for Four-Week Olds," *Science Digest* 23 (May 1948):32-3.

twentieth century American psyche in a fashion that often had little to do with the nuances of testing technique.