The Sphinx of American Education: Ralph Tyler's Peculiar Relationship with Standardized Testing

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ABSTRACT: Standardized testing currently dominates the American educational landscape. Federal and state policy makers use standardized tests as the primary means to evaluate school performance, resulting in schools narrowing their curriculum toward experiences specifically aimed toward improving test scores. Ralph Tyler, the renowned evaluation expert from the twentieth century, had much to say about how standardized tests should be used, with warnings about the detrimental effects that ill-advised use of these tests can have on the school experience. Yet, his advice on tests garner little attention by policy makers and the public writ large. In this article, I examine Tyler's advice about how tests should be used in the school experience and then explore how Tyler's *Rationale* for educational evaluation may actually be linked to the contemporary paradigm that embraces high stakes testing. Although Tyler's *Rationale* never endorsed high stakes assessments, policy makers and educational evaluators alike, in the wake of the contemporary standards and accountability movement and the spirit of social efficiency, use the linearity of Tyler's *Rationale* for educational evaluation to justify the wide and far-reaching use of standardized testing. These policy makers, I discuss, should strongly consider Tyler's warnings about the misuse of standardized testing in the evaluation of a school curriculum.

RESUMÉ: Aujourd'hui, le monde de l'enseignement aux Etats-Unis a recours, en majorité, aux examens standards. Les décideurs scolaires des gouvernements fédéral et d'Etat s'en servent avant tout pour vérifier les résultats scolaires ce qui permet aux écoles de spécialiser leur programme afin d'améliorer les résultats

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d'examens. Ralph Tyler, connu du XXe siècle comme expert chargé de l'évaluation, avait beaucoup à dire sur la façon de se servir des examens standards. Il mettait en garde sur les effets néfastes qu'un emploi fâcheux peut causer sur l'expérience scolaire. Néanmoins, ses conseils n'ont que très peu retenu l'attention des décideurs scolaires et du public dans son ensemble. J'analyse ici les suggestions de Mr Tyler sur la façon de se servir des examens standards dans un cadre scolaire, puis j'étudie la manière dont The Tyler Rationale peut, en fait, être mis en rapport avec le paradigme du monde moderne qui intègre des examens d'enjeux élevés. Bien que The Tyler Rationale n'ait jamais considéré des contrôles d'enjeux élevés, les décideurs académiques ainsi que les juges à la suite d'un mouvement contemporain de normes et de responsabilité, utilisent la linéarité de ses observations pour les contrôles ou examens scolaires afin de justifier l'emploi massif et répandu des examens standards. Je traite du fait que les décideurs scolaires devraient sérieusement prendre en considération les mises en garde de Tyler sur le mauvais emploi des examens standards lors de contrôle d'un programme scolaire.

The American school experience is infiltrated by high stakes standardized testing. A recent report produced by the American Federation of Teachers revealed that test preparation and testing absorbed between nineteen and forty-five full school days in heavily tested grades. The annual cost for this testing, the report revealed, ranged from $200 to $400 per student for grades K-2 to $600-$800 per student for grades 3-8. One high school in the Eastern coast of the United States was even reported to have an annual cost of tests above $1,100 per student in grades 6-11 (Nelson, 2013). This current emphasis upon tests has an enormous tail-wind effect on entire school communities. Test scores, for instance, affect evaluation results of administrators and teachers alike, students'

advancement from grade to grade, and even the property values within a school district. These tests are mandated to schools by American policy makers under the auspice of ensuring that individual students are academically prepared for challenges of the twenty-first century, and that schools and their teachers are effectively meeting the public's expectations of academic rigor. In 2001, for instance, the *No Child Left Behind Act* (NCLB) affixed standardized testing into federal law by judging school performance on a singular test score (Schul, 2011). NCLB was followed by *Race to the Top*, the crown jewel of the American Recovery and Reinvestment Act of 2009, which furthered the use of tests to evaluate teacher effectiveness (Ravitch, 2013; Tanner, 2013). This litany of American policy measures that emphasize high stakes standardized testing leads to the following riddle: Who receives the ire of blame for the high stakes standardized testing movement, yet forewarned us of its dangerous effects on the school experience? The answer to this riddle is Ralph Tyler, renowned curriculum developer and evaluation expert from the twentieth century. I am befuddled to classify Tyler as either a protagonist or antagonist in this saga of standardized testing in the American school experience. Like the sphinx of antiquity, Tyler is a historical mystery, an anomaly among all of the major contributors to the high stakes testing movement. This investigation is an intellectual exercise for me, and hopefully for you, the reader, to better understand and clarify Ralph Tyler's role in the high stakes standardized testing movement.

If there is such a thing as a hallowed shrine of educators in American history, Tyler would certainly have a prominent place within it. One admirer of Tyler (Simpson, 1999) classified him as "one of the most brilliant educational thinkers of our century, a giant among

educational giants" (p. 85). Tyler's accomplishments are numerous and significant. His career spanned most of the twentieth century and his influence upon the landscape of education remains prominent. Tyler first rose to prominence in the 1930s as a curriculum professor at the Ohio State University and then became nationally renowned when he moved to the University of Chicago. In 1933 Tyler headed the evaluation team of the Progressive Education Association's Eight Year Study which arose out of a concern that college admission requirements at the time were unduly burdensome on high school innovation and resulted in a confirmation that progressive education strategies better prepared students for the rigors of college than traditional schooling strategies ("What did the Eight Year Study reveal," 1942). Tyler's book *Basic Principles of Curriculum and Instruction* (1949), which emerged out of his work on the Eight Year Study, has long been regarded by most in the curriculum field as a classic and central work in understanding curriculum development. In this book he laid out his well-known *Rationale* for the school curriculum where he provided four key questions that should be asked when designing a curriculum:

1) What educational purposes should the school seek to attain?
2) What educational experiences can be provided that are likely to attain these purposes?
3) How can these educational experiences be effectively organized?
4) How can we determine whether these purposes are being attained?

With this *Rationale*, Tyler introduced the educational community to the simple idea that "you cannot evaluate something unless you know what it is meant to do"

(Finder, 2004). In the 1960s, Tyler spearheaded the development of the National Assessment of Education Progress (NAEP), which still to this day serves as the sole national assessment of learning outcomes in the United States. In sum, Tyler's fingerprints can be found all over the American educational landscape. But there is debate about Tyler in the curriculum field as to the nature of these fingerprints. After all, Tyler's warnings about the use of tests, which I will later lay out for you, were given simultaneously with his creation of the *Rationale*. Critics of Tyler's *Rationale* (e.g., Pinar, 1975; Kliebard, 1995; Block, 2012) argue that it paved the way for American school reformers to use standardized tests as a clean and efficient measurement of academic outcomes of schools. But, as you will see, this was far from Tyler's intent.

Revisiting the Rationale

Ralph Tyler, ever the pragmatist, created the *Rationale* simply as a means to solve a problem. In 1929, he was brought to Ohio State by W.W. Charters, then the director of the university's Bureau of Educational Research, as someone who could improve the education of undergraduates. Charters believed that standardized tests could play a positive role with improving education and Tyler sought to create useful tests that were tied to educational objectives. At the time, faculty at the Ohio State University were not connecting their evaluation techniques to their educational objectives. This is perhaps when Tyler first developed his *Rationale* – as a simple means to better do his task of evaluating the undergraduate curriculum of Ohio State. A few years later, in his work in the Eight Year Study throughout the 1930s as its director of evaluation, Tyler first used his *Rationale* at the national level. The Eight Year Study examined thirty U.S.

secondary schools and three hundred colleges and universities. Tyler's work with evaluating the curriculum of so many educational institutions led to his conception of the four questions that make up the *Rationale*. As previously mentioned, Tyler published his *Rationale* in 1949's bestseller *Basic Principles of Curriculum and Instruction.* Tyler was clear that his *Rationale* was not meant to be a prescription for how all school curriculum should be evaluated: "This book outlines one way of viewing an instructional program as a functioning instrument of education," Tyler proclaimed and then went on to say the following: "The student is encouraged to examine other rationales and to develop his own conception of the elements and relationships involved in an effective curriculum" (Tyler 1949, p. 1). However, while Tyler stated a hope that its readers would form their own conclusion, it became common stance for others to simply affirm Tyler's *Rationale* as the sole means to evaluate a curriculum as evidenced by the popularity of sales of the book, its translation into three dozen languages, and the fact that no alternative emerged from academia that had any traction with educational evaluation[1].

It is possible that Tyler's *Rationale* became popular because of the era in American history from which it was conceived. At the cusp of the twentieth century, a "social efficiency" movement swept the economic and political landscape of the United States and since schools are public institutions with both economic and political implications, they served as likely dance partners for this overarching movement. The nature of social efficiency involved an

[1] Hlebowitsh (1992) refers to personal correspondence with Ralph W. Tyler, 23 August, 1990 to make this point about the poverty of alternatives to the *Rationale*.

emphasis upon practicality and proper use of resources, talent, and time in the school experience (Knoll, 2009). Two forces were responsible for the increasing popularity of social efficiency in the school experience. First, rising industrialism in the decades before and after World War I led to a surge of interest among school administrators in Frederick Taylor's theory of scientific management as a means of ensuring that taxpayers' monies were efficiently spent. Second, schools embraced social efficiency in the wake of the political progressive movement that swept across the socio-economic landscape of America. The political progressive movement affected any one thing from the food industry to the management of the labor force, and, yes, a growing concern toward improving the school (Callahan, 1964). At the center of the social efficiency movement's effort to improve school was the standardized test. A pivotal point in the development of standardized tests in schools emerged when E.L. Thorndike, a renowned American psychologist from Teachers College in Columbia University, extended the use of them as a means to measure "anything and everything relevant to education – mental capacities, changes in behavior, and even the aims of education" (Lagemann 2002, p. 59). During the 1920s, Thorndike, whose work at Teachers College was popularized by a series of textbooks that he authored, developed a standardized test used to measure individual intelligence that consisted of completion, arithmetic, vocabulary, and directions (CAVD) which became a precursor to modern intelligence tests. The work of Thorndike and others led to a revolution in the use of standardized achievement tests in American schools. Between 1917 and 1928, nearly 1,300 achievement tests were created in the United States; by 1940 that figure rose to 2,600 (Monroe, 1950). By the 1930s and 40s, a multitude of objective tests were

available that aimed to assess anything from intelligence, personality, or vocational aims (Reese, 2005). In the wake of this fury of measurement, Tyler came upon the educational landscape with his *Rationale* in hand, ready to clarify how schools may be effectively evaluated.

At the core of Tyler's *Rationale* is the measurement of student behavior. Critics of Tyler such as Herbert Kliebard (1975, 1995), William Pinar (1975), and Alan Block (2012) assert that the *Rationale's* formulaic nature led to a narrow curriculum that focused on the immediate behaviors of students in response to their teacher's instructional purposes and activities. Peter Hlebowitsh (2013), in his forward of the most recent version of Tyler's *Basic Principles of Curriculum and Instruction*, asserted that Tyler did not seek to narrow the curriculum toward scripted behaviorist tendencies, as Kliebard accused, but instead sought to identify behaviors at a generalized level "so that teachers could exercise their own intelligence and creativity in fashioning responsive school experiences" (p. viii). However, Hlebowitsh (1992) did note in an earlier appraisal of the Tyler *Rationale* that Tyler indeed "valued clarity in the specification of the behavioural objectives" but that "Tyler did not at any time make these claims in the name of efficiency and cost-saving" (p. 536). Regardless of Tyler's intent, there can be little substantive debate about the effect of Tyler's objective-driven evaluation formula: it fostered a conception of the school experience that fit well with the social efficiency movement and set the stage for a business-model approach toward evaluating the school experience (i.e., input results in output). Hlebowitsh (2013) even admitted that "well-meaning interpreters of Tyler have indeed taken his ideas and turned them into behavioristic devices that have favored hyperspecific objectives and highly atomized classroom

applications" (p. viii). Although Tyler may not lay claim to these interpreters of his *Rationale* as heirs, they are his heirs nonetheless.

The contemporary wave of standardized testing in American educational policy has been influenced by a behavioristic interpretation of Tyler's *Rationale.* To contemporary educational policy makers, Tyler's *Rationale* is a perfectly sensible means to evaluate a school curriculum. The public ensures that certain academic standards are imbedded within the context of the school experience by answering the first question of the *Rationale*: What educational purposes should the school seek to attain? The creators of NCLB even sought to answer Tyler's second question (What educational experiences can be provided that are likely to attain these purposes?) by prescribing "scientifically based research (SBR) teaching methods. The U.S. Department of Education attached a requirement into NCLB that instructional practices be "evidenced based" and directed federal funding toward educational research that produced "ideas with proven results into the classroom" (Schul, 2011). The final question of Tyler's *Rationale* (How can we determine whether these purposes are being attained?) was, of course, answered with standardized tests that conveniently produced tangible results to the prescribed standards imbedded into the school experience by the policies.

While the fit between the contemporary high-stakes testing movement with Tyler's *Rationale* may appear to be, at first glance, seamless, it is not what Tyler surmised should happen. While Tyler's critics are usually busy pinpointing the connections of his *Rationale* to the social efficiency movement and immediately align this connection to standardized testing, it is essential to note that Tyler's *Rationale* never supported a test-driven

curriculum nor did Tyler himself advocate for one in his writings and interviews (Hlebowitsh, 2005). In fact, Tyler's words and actions serve as a clear forewarning of the high-stakes standardized test movement. In this next section, I will provide for you why Tyler's contribution to standardized testing is mired in a fog for those of us who seek to objectively understand both the man and the movement. While his *Rationale* might seem to create a school curriculum that enables for seamless use of standardized testing as a measurement tool, Tyler, perhaps more than anyone else in the history of American education, was immensely concerned with the dangers of overemphasizing standardized testing in an evaluation program.

Tyler and Tests

Test development was central to Tyler's career as he sought means to evaluate various curricular projects. He maintained close ties with giants of testing, most notably E.F. Lindquist. Lindquist, a University of Iowa professor of education in a timespan similar to Tyler's own career, was known for his creation of the *Iowa Test of Basic Skills*, the *American College Test* (*ACT*), and inventor of the optical recognition scanner (popularly known as a *Scantron*® machine). Tyler was hopeful of tests as he saw in them the possibility for the upward expansion of educational opportunities for all American citizens since they had the potential to inform colleges of students' learning needs and enable them to make the appropriate curricular adjustments to fit those needs (Lemann, 1999, Schul, 2013). While Tyler's career closely connected with the rise of standardized tests in American society, he was not blind to their shortcomings and to the curricular pitfalls if used unwisely.

Tyler fully understood the public's impulses when it came to standardized testing. In a 1978 report of a conference on testing, Tyler candidly explained that tests were used in American society for four reasons: accountability of teachers and schools; selection of students; evaluation of educational innovations and projects; and guidance for teachers in the classroom (Tyler & White, 1979). Tyler clearly believed that testing itself was helpful but ill-advised use of tests could be damaging to the school experience. "Educational testing can be a useful aid to contemporary education or it can be an impediment," Tyler warned (Tyler & White, 1979, p. 47). In that same report, Tyler outlined the major criticisms of tests emphasizing, among other things, that standardized tests "have only limited value for holding teachers, schools, and school systems accountable for the quality of education" and that "tests exercise a limiting effect on classroom teaching" (pp. 8-9). At the forefront of determining the usefulness of a test, according to Tyler, was pinpointing exactly what it was meant to assess while resisting the ever-present temptation to grandiosely use tests as a means to evaluate the entire school experience.

Education, as a public entity that is subject to large-scale policy initiatives, is vulnerable to faddish impulses. Tyler believed that curriculum developers, particularly those who use tests, should be leery of these impulses due to their likelihood of distorting exactly what tests can assess. Because test results can be quantified, an aura of scientific sway surrounds the standardized test. Instead, Tyler was adamant that tests have the capacity to evaluate a certain problem, or problems, but not the school experience in its entirety:

> You've got to use common sense about it rather than falling into movements ... We

> should always ask the question, "What are our problems?" Find out what is really happening. The problem is, we get into movements rather than saying where we are now, what's the problem here? The problem in my school may not be the problem in your school. All assessments should be performing whatever actions they are required to perform. Better ask them to do things that require them to use that knowledge rather than just to answer questions (Horowitz, 1995, p. 71).

It is paramount, Tyler cautioned, for curriculum developers to first determine what an assessment has the capacity to assess before using it in school evaluation. The contemporary use of tests as the barometer to gauge the entire school experience may appear to be an efficient means to evaluate the school experience but it is impossible, Tyler believed, for a singular assessment to be the lone assessment tool and the entire school experience defaults to that singular assessment, narrowing the learning experience for students. Tyler emphasized that an effective educational appraisal should include a wide array of techniques, including the standardized test. In a book published in 1942 in the aftermath of the Eight Year Study, Tyler explained his reasoning behind why multiple learning purposes and experiences should be accompanied by multiple forms of assessment:

> A written test may be a valid measure of information recalled and ideas remembered. In many cases, too, the student's skill in writing and in mathematics may be shown by written tests, and it is also true that various techniques of thinking may be evidenced

> through more novel types of written test materials. On the other hand, evidence regarding the improvement of health practices, personal-social-adjustment, interests, and attitudes may require a much wider repertoire of appraisal techniques. This assumption emphasizes the wider range of techniques which may be used in evaluation, such as observational records, anecdotal records, questionnaires, interviews, check lists, records of activities, products made, and the like. The selection of evaluation techniques should be made in terms of the appropriateness of these techniques for the kind of behavior to be appraised (Maddaus & Stufflebeam 1988, pp. 103-04).

Tyler's warnings about tests were clear: they are part of a larger evaluation process that must encompass other variants of assessment. If the school is evaluated on a lone assessment, particularly a standardized test, then that assessment has a controlling effect on the classroom curriculum. Tyler understood that tests should be the servants of the teacher, not their master and a variety of assessments are essential in upholding that axiom[2].

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[2] This axiom was actually used by E.F. Lindquist during the American Historical Association's Commission on Social Studies (1929-1934). Lindquist helped his colleague at The University of Iowa, Ernest Horn, to craft a response to the Commission's statement on standardized testing. This statement included the advice: "tests should be the servant and not the master". Lindquist and Horn both consulted with Tyler during the work of Commission. This quote was found on page 14 on the following archival source: Horn, E. (1933). Compromise Statement created by AHA subcommittee, box 2, Papers of Ernest Horn (RG 99.0223, Box 2), Special Collections and University Archives, University of Iowa Libraries.

Ralph Tyler placed a great deal of hope in the ingenuity of education measurement, not to direct the curriculum but instead to assist the teacher and school officials in the appraisal of the school experience. Yet, how can an appraisal of the school experience not direct the curriculum? Tyler fully understood that the school experience and its appraisal system were intrinsically linked with one another. Because of this link, Tyler believed that key measures by test administrators needed to be taken to ensure that tests did not "master" the teacher. These measures are mirrored in Tyler's evaluation masterpiece that is well known as the "nation's report card": the *National Assessment of Educational Progress* (NAEP).

The *National Assessment of Educational Progress* has a unique nature among standardized tests used for educational evaluation in the American school experience. The test is not aggregated to the individual; in fact, no individual who has ever taken the NAEP knows what score they earned on it. The scores are only taken at the state and national level and sometimes, for research purposes, at the district level. Far different than tests mandated under NCLB and *Race to the Top*, the scores are never taken at the school building or classroom or individual level. These features of the NAEP are intentional and Tyler created them. Tyler understood that test scores, once publicly known, can overtake the curriculum and become the basis for the curriculum. At the inception of the NAEP, in the 1960s, fears were abound that the test would become a national assessment that would direct the school curriculum at the national level. Tyler soothed these concerns by explaining his plans to ensure this did not occur:

> A good deal of public confusion has been encountered. The project is being confused with a nation-wide, individual testing program, and several common fears are expressed by those who make this confusion. They note that tests used in a school influence the direction and amount of effort of pupils and teachers. In this way, if national tests do not reflect the local educational objectives, pupils and teachers are deflected from their work. This criticism does not apply to the assessment project because no individual student or teacher can make a showing. No student will take more than a small fraction of these exercises. No scores will be obtained on his performance. He will not be assessed at any later time and can gain no desired end, like admission to college or a scholarship. (Tyler, 1966, pp. 2-3)

Tyler's parameters on the NAEP have ensured that the test does what test scores are intended to do: assess the curriculum. Interestingly, Tyler's approach has worked despite the contemporary thirst for quick methods of assessment at the local and teacher level. Today, no teacher or principal is ever compelled, or even interested, in teaching to the NAEP, or cheating on the NAEP, or otherwise making the NAEP the basis of the school experience. This cannot be said about state assessments, given all of the documented cheating scandals (Booher-Jennings and Beveridge, 2008) and the now common practice of judging good teaching by student achievement measures (Ravitch, 2010; 2013). The difference is that Tyler removed all the incentives to convert the NAEP into a curriculum by making it a no-stakes exam with only a

randomly chosen testing population, making it impotent as a political tool yet more meaningful as a long-standing evaluative measure for school improvement.

Discussion

The contemporary wave of high stakes testing is, arguably, fostered by the linearity of the Tyler *Rationale.* Critics of Tyler's *Rationale* have been quick to point out the deficiencies in its linearity and how it has narrowed the American school experience toward a behavioristic-oriented curriculum. Recent research in the learning sciences clearly support the critics' concerns. As a case in point, Allison Gopnik's (2009, 2012) research on infants and young children reveals the exploratory nature of a person's learning processes. A teacher's craft is more than a scripted science but is an art form that allows for emergent learning experiences (Eisner, 1967). While it is crucial for teachers to initially determine their instructional purposes, it is equally crucial for the teacher to provide students leeway to add or supplant to those initial learning purposes. In doing this, the curriculum planner ensures that the process of learning is given consideration amidst a scripted plan of learning. Tyler's *Rationale* did not take emergent learning into consideration. It is, therefore, easy to take sides with Tyler's critics on this matter. Yet, little attention is paid by these critics to the fact that Tyler had much to say about the dangers of tests' reckless use as a single measurement tool in the evaluation of schools.

There are many lessons to take from Tyler's protocol on the use of testing as an evaluation tool. First, Tyler was always quick to point out that tests are used by the public for a myriad of purposes, most notably to judge the performance of teachers and schools. He emphasized that

tests can, and should, help to inform school administrators and teachers about teaching and learning in the classroom if special precautions are made. Tests are a neutral commodity that are used as the evaluator determines they should be used. Second, the purpose of a test used in an evaluation program should be reflected upon and used wisely in the midst of multiple forms of assessments. Evaluation, to Tyler, was an evidence collection process. Tests, he believed, are only one piece of evidence that should be used deliberatively. Finally, the parameters that Tyler set around the NAEP should remind contemporary policy makers and school officials how tests do not necessarily need to have a detrimental effect upon the school experience. By ensuring that the NAEP scores are not aggregated to the individual or school district, political pressure to use tests to judge teacher and school performance is paralyzed.

Ralph Tyler's place in the sanctum of American educators is secure. He is the creator of educational evaluation and his wisdom with the use of tests has been silenced amidst the contemporary surge in standardized testing as a means to evaluate schools and teachers. He warned us about the dangers of standardized testing yet moved forward with an optimism based upon its possibilities. The parameters that he created around the NAEP reveal that he was so far ahead of his time with the use of tests, but in many ways, his *Rationale*, what he is best known for, is indicative that he was of his time as well. The *Rationale* was written in the shadow of the social efficiency movement in education and was guided by a behaviorist paradigm of educational psychology. We are in the midst of the second decade of the twenty-first century, and the *Rationale* is still used by policy makers (though perhaps unknowingly) as a means to evaluate the school experience in the wake of the high-stakes academic

accountability movement. In need of a means to quickly evaluate the educational purposes of these policy measures, federal and state authorities default to the test. The contemporary wave of high stakes testing is, arguably, fostered by the linearity of the Tyler *Rationale*. It is safe to say that Tyler would be appalled with this outcome. Perhaps attempts on the part of curricularists to reexamine Tyler with hopes to heroify or villianize him is to make a moot point. His legacy is a complex one, and maybe it is best to leave it at that. Tyler's legacy remains shrouded in mystery. He offered the *Rationale* as one way to evaluate school curriculum and even urged others to offer other ways to do the same. The more crucial mystery for the contemporary world to solve might be why curriculum developers and policy makers are not breaking ground with new ways to conduct educational evaluation that ensures teachers and students are not enslaved by a single standardized test.

REFERENCES

Block, A. (2012). Toward objectives and assessment: Means of control. *Journal of the American Association for the Advancement of Curriculum Studies, 8*, 1-10.

Booher-Jennings, J. and Beveridge, A. (2008). Who counts for accountability? High- stakes test exemptions in a large urban school district. In A. Sadovnik, J. O'Day, G. Bohrnstedt, & K. Borman (Eds.), *No Child Left Behind and the Reduction of the Achievement Gap: Sociological Perspectives on Federal Education Policy* (pp. 77-96). New York: Routledge.

Callahan, R. E. (1964). *Education and the cult of efficiency*. University of Chicago Press.

Eisner, E. (1967). "Educational Objectives: Help or Hindrance?" *The School Review, 75*, 250-260.

Finder, M. (2004). *Educating America: How Ralph W. Tyler Taught America to Teach*. Greenwood Publishing Group.

Gopnik, A. (2009). The philosophical baby. *London: Bodley Head.*

Gopnik, A. (2012). Scientific thinking in young children: Theoretical advances, empirical research, and policy implications. *Science*, *337*(6102), 1623-1627.

Hlebowitsh, P. S. (1992). Amid behavioural and behaviouristic objectives: reappraising appraisals of the Tyler Rationale. *Journal of Curriculum Studies*, *24*(6), 533-547.

Hlebowitsh, P. S. (2005). Generational ideas in curriculum: A historical triangulation. *Curriculum Inquiry*, *35*(1), 73-87.

Hlebowitsh, P.S. (2013). Foreword. In Tyler, R. W. (2013). *Basic principles of curriculum and instruction*. University of Chicago press.

Horowitz, R. (1995). A 75-year legacy on assessment: Reflections from an interview with Ralph W. Tyler. *The Journal of Educational Research*, *89*(2), 68-75.

Kliebard, H.M. (1975). Reappraisal: the Tyler *Rationale*. In W. Pinar (ed.) *Curriculum Theorizing: The Reconceptualists* (Berkeley, CA: McCutchan), 70-83.

Kliebard, H. M. (1995). The Tyler rationale revisited. *Journal of Curriculum Studies*, *27*(1), 81-88.

Knoll, M. (2009). From Kidd to Dewey: The origin and meaning of 'social efficiency'. *Journal of Curriculum Studies*, *41*(3), 361-391.

Lagemann, E. C. (2002). *An elusive science: The troubling history of education research*. University of Chicago Press.

Lemann, N. (1999). The Big Test: The Secret History of the American Meritocracy. New York: Ferrar, Straus & Giroux.

Madaus, G. F., & Stufflebeam, D. L. (Eds.). (1988). *Educational evaluation: classic works of Ralph W. Tyler*. Springer Netherlands.

Monroe, W. S. (Ed.). (1950). *Encyclopedia of educational research: a project of the American educational research association* (Vol. 2). Macmillan.

Nelson, H. (2013). Testing more, teaching less: What America's obsession with student tests costs in money and invested time. *American Federation of Teachers*. Retrieved from http://www.aft.org/pdfs/teachers/testingmore2013.pdf

Pinar, W.F. (1975). *Curriculum theorizing: The reconceptualists*. Berkeley, CA: McCutchen Publishing.

Ravitch, D. (2010). *The death and life of the great American school system: How testing and choice are undermining education*. New York: Basic Books.

Ravitch, D. (2013). *Reign of error: The hoax of the privatization movement and the danger to America's public schools*. New York: Alfred A. Knopf.

Reese, W. J. (2005). *America's Public Schools: From the Common School to" No Child Left Behind"*. JHU Press.

Schul, J. E. (2013). Ensuing dog fight: the AHA Commission on the Social Studies' testing controversy. *Journal of Educational Administration and History*, *45*(1), 1-27.

Schul, J. (2011) Unintended consequences: Fundamental flaws that plaque the No Child Left Behind Act. *eJournal of Education Policy.* Retrieved from http://nau.edu/uploadedFiles/Academic/COE/About/Projects/Unintended%20Consequences.pdf

Simpson, R. D. (1999). Ralph Tyler on curriculum: A voice from the past with a message for the future. *Innovative Higher Education*, *24*(2), 85-87.

Tanner, D. (2013). Race to the top and leave the children behind. *Journal of Curriculum Studies*, *45*(1), 4-15.

Tyler, R., W. (1949). Basic principles of curriculum and instruction. Chicago: The University of Chicago Press.

Tyler, R. W. (1966). The objectives and plans for a national assessment of educational progress. *Journal of Educational Measurement*, *3*(1), 1-4.

Tyler, R. W., & White, S. H. (Eds.). (1979). *Testing, Teaching and Learning: Chairmen's Report of a Conference on Research on Testing.* August 17-26, 1978. Washington, DC: National Institute of Education.

What did the Eight Year Study reveal? (1942). *The High School Journal*, *25*(7), 305-309.

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