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5. THE TYLER RATIONALE

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One of the disturbing characteristics of the curriculum field is its lack of historical perspective. New breakthroughs are solemnly proclaimed when in fact they represent minor modifications of early proposals, and, conversely, anachronistic dogmas and doctrines maintain a currency and uncritical acceptance far beyond their present merit. The most persistent theoretical formulation in the field of curriculum has been Ralph Tyler's syllabus for Education 360 at the University of Chicago, *Basic Principles of Curriculum and Instruction*, or, as it is widely known, the Tyler rationale.¹ Tyler's claims for his rationale are modest, but, over time, his proposal for rationally developing a curriculum has been raised almost to the status of revealed doctrine. In the recent issue of the *Review of Educational Research* devoted to curriculum, Goodlad, commenting on the state of the field, reports that "as far as the major questions to be answered in developing a curriculum are concerned, most of the authors in [the] 1960 and 1969 [curriculum issues of the *Review*] assume those set forth in 1950 by Ralph Tyler." Later, he concludes with obvious disappointment, "General theory and conceptualization in curriculum appear to have advanced very little during the last decade."² Perhaps the twentieth anniversary of the publication of the Tyler rationale is an appropriate time to reexamine and reevaluate some of its central features.

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Tyler's rationale revolves around four central questions which Tyler feels need answers if the process of curriculum development is to proceed:

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?³

These questions may be reformulated into the familiar four-step process by which a curriculum is developed: stating objectives, selecting "experiences," organizing "experiences," and evaluating.⁴ The Tyler rationale is essentially an elaboration and explication of these steps. The most crucial step in this doctrine is obviously the first since all the others proceed from and wait upon the statement of objectives. As Tyler puts it, "If we are to study an educational program systematically and intelligently we must first be sure as to the educational objectives aimed at."⁵

THE SELECTION OF EDUCATIONAL OBJECTIVES

Tyler's section on educational objectives is a description of the three sources of objectives: studies of learners, studies of contemporary life, and suggestions from subject-matter specialists, as well as an account of how data derived from these "sources" are to be "filtered" through philosophical and psychological "screens." The three sources of educational objectives encapsulate several traditional doctrines in the curriculum field over which much ideological blood had been spilled in the previous several decades. The doctrines proceeded from different theoretical assumptions, and each of them had its own spokesmen, its own adherents, and its own rhetoric. Tyler's proposal accepts them all, which probably accounts in part for its wide popularity.

While we are aware that compromise is the recourse frequently taken in the fields of diplomatic or labor negotiation, simple eclecticism may not be the most efficacious way to proceed in theorizing. When Dewey, for example, identified the fundamental factors in the educative process as the child and the "values incarnate in the matured experience of the adult," the psychological and the logical, his solution was not to accept them both but "to discover a reality to which each belongs."⁶ In other words, when faced with essentially the same problem of warring educational doctrines, Dewey's approach is to creatively reformulate the problem; Tyler's is to lay them all out side by side.

Subject Matter as a Source of Objectives

Of the three "sources"—studies of the learners themselves, studies of contemporary life, and suggestions about objectives from subject-matter special-

ists—the last one seems curiously distorted and out of place. Perhaps this is because Tyler begins the section by profoundly misconceiving the role and function of the Committee of Ten. He attributes to the Committee of Ten a set of objectives which, he claims, has subsequently been followed by thousands of secondary schools. In point of fact, the notion of objectives in the sense that Tyler defines the term was not used and probably had not even occurred to the members of the Committee of Ten. What they proposed were not objectives, but “four programmes”: Classical, Latin-Scientific, Modern Languages, and English. Under each of these rubrics is a listing of the subjects that constitute each of the four courses of study. This recommendation is followed by the reports of the various individual committees on what content should be included and what methods should be used in the various subject fields. Unless Tyler is using the term “objective” as being synonymous with “content” (in which case it would lose all its importance as a concept), then the use of the term “objectives” in the context of the report of the Committee of Ten is erroneous. Probably the only sense in which the term “objective” is applicable to the Committee of Ten report is in connection with the broad objective of mental training to which it subscribes.

An even more serious error follows: “It seems clear that the Committee of Ten thought it was answering the question: What should be the elementary instruction for students who are later to carry on much more advanced work in the field. Hence, the report in History, for example, seems to present objectives [*sic*] for the beginning courses for persons who are training to be historians. Similarly the report in Mathematics outlines objectives [*sic*] for the beginning courses in the training of a mathematician.”⁷

As a matter of fact, one of the central questions that the Committee of Ten considered was, “Should the subject be treated differently for pupils who are going to college, for those who are going to a scientific school, and for those, who, presumably, are going to neither?”⁸ The Committee decided unanimously in the negative. The subcommittee on history, civil government, and political economy, for example, reported that it was “unanimously against making such a distinction”⁹ and passed a resolution that “instruction in history and related subjects ought to be precisely the same for pupils on their way to college or the scientific school, as for those who expect to stop at the end of grammar school, or at the end of the high school.”¹⁰ Evidently, the Committee of Ten was acutely aware of the question of a differentiated curriculum based on probable destination. It simply rejected the doctrine that makes a prediction about one’s future status or occupation a valid basis for the curriculum in general education. The objective of mental training, apparently, was conceived to be of such importance as to apply to all, regardless of destination.

Tyler’s interpretation of the Committee of Ten report is more than a trivial historical misconception. It illustrates one of his fundamental presuppositions

about the subjects in the field of study itself the student to obtain a scientist and man’s universe”; or the subject of science to the conservation of nature serves as an instrument of characterizing a field of sources. Tyler’s appeal be at the heart of his studying history or algebra of Ten), if they are not fulfilling the vocation wise, how can one justify curriculum? As such, a source in the sense several means by aspirations or meets

Needs of the Learner

The section on “tives,” although it matter, is nevertheless “education is a process of course, is now with such a view, it would be different from treatment, brainwashing torture. Given such other ways of character

Tyler proceeds reason for wanting would seek to identify the educational in discussion of “new determination of curriculum development been a stable element. When tied to the have a clear-cut

about the subjects in the curriculum. Tyler conceives of subjects as performing certain "functions." These functions may take the form of a kind of definition of the field of study itself such as when he sees a function of science to be enabling the student to obtain a "clearer understanding of the world as it is viewed by the scientist and man's relation to it, and the place of the world in the larger universe"; or the subject may perform external functions such as the contribution of science to the improvement of individual or public health or to the conservation of natural resources. The first sense of function is essentially a way of characterizing a field of study; in the second sense of function, the subject field serves as an instrument for achieving objectives drawn from Tyler's other two sources. Tyler's apparent predisposition to the latter sense of function seems to be at the heart of his misreading of the Committee of Ten report. To Tyler, studying history or algebra (as was universally recommended by the Committee of Ten), if they are not meeting an obvious individual or social need, is a way of fulfilling the vocational needs of a budding historian or mathematician. Otherwise, how can one justify the existence of mathematics qua mathematics in the curriculum? As such, "suggestions from subject-matter specialists" is really not a source in the sense that the other two are. Subject matter is mainly one of several means by which one fulfills individual needs such as vocational aspirations or meets social expectations.

Needs of the Learner as a Source of Objectives

The section on the "learners themselves as a source of educational objectives," although it is less strained and more analytical than the one on subject matter, is nevertheless elliptical. Tyler proceeds from the assumption that "education is a process of changing behavior patterns of people."¹¹ This notion, of course, is now widely popular in this country, but, even if one were to accept such a view, it would be important to know the ways in which education would be different from other means of changing behavior, such as, hypnosis, shock treatment, brainwashing, sensitivity training, indoctrination, drug therapy, and torture. Given such a definition, the differences between education and these other ways of changing behavior are not obvious or simple.

Tyler proceeds from his basic definition of education to a consideration of the reason for wanting to study the learner: "A study of the learners themselves would seek to identify needed changes in behavior patterns of the students which the educational institution should seek to produce."¹² There follows an extended discussion of "needs," how they are determined, and how they contribute to the determination of educational objectives. The notion of needs as a basis for curriculum development was not a new one when Tyler used it in 1950. It had been a stable element in the curriculum literature for about three decades.¹³ When tied to the biological concept of homeostasis, the term "needs" seems to have a clear-cut meaning. Hunger, for example, may be conveniently translated

into a need for food when one has in mind a physiological state of equilibrium. Need becomes a much trickier concept when one speaks of the "need of a haircut" or the "need for a good spanking." These needs involve rather complex social norms on which good men and true may differ sharply. Tyler astutely recognized that the concept of need has no meaning without a set of norms, and he described the kind of study he envisioned essentially as a two-step process: "first, finding the present status of the students, and second, comparing this status to acceptable norms in order to identify the gaps or needs."¹⁴ This formulation is virtually identical to what Bobbitt referred to as "shortcomings" in the first book written exclusively on the curriculum, published in 1918.¹⁵ The key term, in Tyler's version, of course, is "acceptable norms." They are neither self-evident nor easy to formulate.

One of Tyler's illustrations of the process he advocates is a case in point: A "discovery" is made that 60 percent of ninth-grade boys read only comic strips. The "unimaginative" teacher, Tyler says, might interpret this as suggesting the need for more attention to comic strips in the classroom; the imaginative teacher uses the data as a justification "for setting up objectives gradually to broaden and deepen these reading interests."¹⁶ What is the acceptable norm implicit in Tyler's illustration? Apparently, it is not a statistical norm since this could imply that the 40 percent minority of boys should be encouraged to emulate the 60 percent majority. The norm seems to be the simple conviction that having broader and deeper reading interests is better than limiting oneself to the reading of comic strips. The question is what does the 60 percent figure contribute to the process of stating educational objectives. What difference would it have made if the figure were 80 percent or 40 percent? The key factor seems to be the nature and strength of the teacher's conviction as the acceptable norm, toward which the status study contributes very little.

The whole notion of need has no meaning without an established norm, and, therefore, it is impossible even to identify "needs" without it. As Archambault put it, "An objective need can be discovered, but only within a completely defined context in which the normal level of attainment can be clarified."¹⁷ Furthermore, even when a genuine need is identified, the role of the school as an institution for the remediation of that or other needs would have to be considered. Even the course that remediation should take once the need and the responsibility have been established is an open question. These serious value questions associated with the identification and remediation of needs make the concept a deceptively complex one whose advantages are more apparent than real. Komisar, for example, has described this double use of need, "one to report deficiencies and another to prescribe for their alleviation," as so vague and elusive as to constitute a "linguistic luxury."¹⁸

As already mentioned, Tyler is acutely aware of the difficulties of "deriving" educational objectives from studies of the child. His last word on the

subject in this study is to "try to use the data and then try using the data in this exercise in order to make this impossible comparison of the interpreted and the interpreted wonders whether formulating objectives in so far as available educational objectives disappear. As I 'need' is an attribute arguments about empirically determined judgments of 'without any' escaped."¹⁹

Studies of Curriculum

Tyler's section on objectives follows the role that studies of the child play in the practice of action one "divide life data of various illustrations is obtain[ed] from solve that involved suggested the which are considered arithmetic curriculum

Tyler tends to criticisms that pointed out the desirability or a given burglar question of whether other tradition of contemporary of course, the educational plan dependent on

subject in this section is to suggest to his students that they compile some data and then try using those data as the basis for formulating objectives. He suggests this exercise in part to illustrate the difficulty of the process. Given the almost impossible complexity of the procedure and the crucial but perhaps arbitrary role of the interpreter's value structure or "philosophy of life and of education," one wonders whether the concept of need deserves any place in the process of formulating objectives. Certainly, the concept of need turns out to be of no help in so far as avoiding central value decisions as the basis for the selection of educational objectives, and without that feature much of its appeal seems to disappear. As Dearden concluded in his analysis of the term: "the concept of 'need' is an attractive one in education because it seems to offer an escape from arguments about value by means of a straightforward appeal to the facts empirically determined by the expert. But . . . it is false to suppose that judgments of value can thus be escaped. Such judgments may be assumed without any awareness that assumptions are being made, but they are not escaped."¹⁹

Studies of Contemporary Life as a Source of Objectives

Tyler's section on studies of contemporary life as a source of curricular objectives follows the pattern set by the section on the learner. His conception of the role that such studies play in determining objectives is also similar in many respects to that of his spiritual ancestor, Franklin Bobbitt, who stimulated the practice of activity analysis in the curriculum field. Like Bobbitt, Tyler urges that one "divide life" into a set of manageable categories and then proceed to collect data of various kinds which may be fitted into these categories. One of Tyler's illustrations is especially reminiscent of Bobbitt: "Students in the school obtain[ed] from their parents for several days the problems they were having to solve that involved arithmetic. The collection and analysis of this set of problems suggested the arithmetic operations and the kinds of mathematical problems which are commonly encountered by adults, and became the basis of the arithmetic curriculum."²⁰

Tyler tends to be more explicitly aware than Bobbitt of the traditional criticisms that have been directed against this approach. Bode, for example, once pointed out that "no scientific analysis known to man can determine the desirability or the need of anything." The question of whether a community with a given burglary rate needs a larger police force or more burglars is entirely a question of what the community wants.²¹ Tyler's implicit response to this and other traditional criticism of this approach is to argue that in his rationale studies of contemporary life do not constitute the sole basis for deriving objectives, and, of course, that such studies have to be checked against "an acceptable educational philosophy."²² In this sense, the contemporary life source is just as dependent on the philosophical screen as is the learner source.

THE PHILOSOPHICAL SCREEN

Tyler's treatment of the section on the learner and on contemporary life as sources of educational objectives are roughly parallel. In each case, Tyler is aware of the serious shortcomings of the source but assumes that they can be overcome, first, by not relying exclusively on any one of them—in a sense counting on his eclecticism to blunt the criticism. And second (and probably more important), he appeals to philosophy as the means for covering any deficiencies. This suggests that it is philosophy after all that is the source of Tyler's objectives and that the stipulated three sources are mere window dressing. It is Tyler's use of the concept of a philosophical screen, then, that is most crucial in understanding his rationale, at least in so far as stating the objectives is concerned.

Even if we were to grant that people go through life with some kind of primitive value structure spinning around in their heads, to say that educational objectives somehow flow out of such a value structure is to say practically nothing at all. Tyler's proposal that educational objectives be filtered through a philosophical screen is not so much demonstrably false as it is trivial, almost vacuous. It simply does not address itself in any significant sense to the question of which objectives we leave in and which we throw out once we have committed ourselves to the task of stating them. Filtering educational objectives through a philosophical screen is simply another way of saying that one is forced to make choices from among the thousands or perhaps millions of objectives that one can draw from the sources that Tyler cites. (The number of objectives is a function of the level of specificity.) Bobbitt was faced with the same predicament when he was engaged in his massive curriculum project in Los Angeles in 1921–23. Bobbitt's solution was to seek "the common judgment of thoughtful men and women,"²³ an appeal to consensus. Tyler's appeal is to divine philosophy, but the effect is equally arbitrary as long as we are still in the dark as to how one arrives at a philosophy and how one engages in the screening process.

Take, for example, one of Tyler's own illustrations of how a philosophy operates: "If the school believes that its primary function is to teach people to adjust to society it will strongly emphasize obedience to present authorities, loyalty to the present forms and traditions, skills in carrying on the present techniques of life; whereas if it emphasizes the revolutionary function of the school it will be more concerned with critical analysis, ability to meet new problems, independence and self-direction, freedom, and self-discipline. Again, it is clear that the nature of the philosophy of the school can affect the selection of educational objectives."²⁴ Although Tyler appears elsewhere to have a personal predilection for the latter philosophy, we really have no criterion to appeal to in making a choice. We are urged only to make our educational objectives consistent with our educational philosophy, and this makes the choice of objectives precisely as arbitrary as the choice of philosophy. One may, therefore,

express a philosophy and the function of the a fixed manner when a of objectives consistent the three sources), we rationale. The point is necessity of stating the all the difference in consistency can be as a guide for curriculum holds not only for science primarily, at high probability by experience. But a nothing or very little. of 'goodness'—it may Tyler's central hypothesis from a philosophy, will

SELECTION AND ORDER

Once the crucial first proceeds relentlessly learning experiences as in terms of those external connection with the curriculum. The problem is how curriculum maker where his environment. By function of the percept least this part of the learning select. While Tyler is teacher can control the environment in such a evoke the kind of behavior solution are not discussed

EVALUATION

"The process of evaluation of determining to what realized by the program statement of objectives organization of learning

express a philosophy that conceives of human beings as instruments of the state and the function of the schools as programming the youth of the nation to react in a fixed manner when appropriate stimuli are presented. As long as we derive a set of objectives consistent with this philosophy (and perhaps make a brief pass at the three sources), we have developed our objectives in line with the Tyler rationale. The point is that, given the notion of educational objectives and the necessity of stating them explicitly and consistently with a philosophy, it makes all the difference in the world *what* one's guiding philosophy is since that consistency can be as much a sin as a virtue. The rationale offers little by way of a guide for curriculum making because it excludes so little. Popper's dictum holds not only for science, but all intellectual endeavor: "*Science does not aim, primarily, at high probabilities. It aims at high informative content, well backed by experience. But a hypothesis may be very probable simply because it tells us nothing or very little.*" A high degree of probability is therefore not an indication of 'goodness'—it may be merely a symptom of low informative content."²⁵ Tyler's central hypothesis that a statement of objectives derives in some manner from a philosophy, while highly probable, tells us very little indeed.

SELECTION AND ORGANIZATION OF LEARNING EXPERIENCES

Once the crucial first step of stating objectives is accomplished, the rationale proceeds relentlessly through the steps of the selection and organization of learning experiences as the means for achieving the ends and, finally, evaluating in terms of those ends. Typically, Tyler recognizes a crucial problem in connection with the concept of a learning experience but passes quickly over it: The problem is how can learning experiences be *selected* by a teacher or a curriculum maker when they are defined as the *interaction* between a student and his environment. By definition, then, the learning experience is in some part a function of the perceptions, interests, and previous experience of the student. At least this part of the learning experience is not within the power of the teacher to select. While Tyler is explicitly aware of this, he nevertheless maintains that the teacher can control the learning experience through the "manipulation of the environment in such a way as to set up stimulating situations—situations that will evoke the kind of behavior desired."²⁶ The Pavlovian overtones of such a solution are not discussed.

EVALUATION

"The process of evaluation," according to Tyler, "is essentially the process of determining to what extent the educational objectives are actually being realized by the program of curriculum and instruction."²⁷ In other words, the statement of objectives not only serves as the basis for the selection and organization of learning experiences, but the standard against which the program

is assessed. To Tyler, then, evaluation is a process by which one matches initial expectations in the form of behavioral objectives with outcomes. Such a conception has a certain commonsensical appeal, and, especially when fortified with models from industry and systems analysis, it seems like a supremely wise and practical way to appraise the success of a venture. Actually, curriculum evaluation as a kind of product control was set forth by Bobbitt as early as 1922,²⁸ but product control when applied to curriculum presents certain difficulties.

One of the difficulties lies in the nature of an aim or objective and whether it serves as the terminus for activity in the sense that the Tyler rationale implies. In other words, is an objective an end point or a turning point? Dewey argued for the latter: "Ends arise and function within action. They are not, as current theories too often imply, things lying outside activity at which the latter is directed. They are not ends or termini of action at all. They are terminals of deliberation, and so turning points *in* activity."²⁹ If ends arise only *within* activity it is not clear how one can state objectives before the activity (learning experience) begins. Dewey's position, then, has important consequences not just for Tyler's process of evaluation but for the rationale as a whole. It would mean, for example, that the starting point for a model of curriculum and instruction is not the statement of objectives but the activity (learning experience), and whatever objectives do appear will arise within that activity as a way of adding a new dimension to it. Under these circumstances, the process of evaluation would not be seen as one of matching anticipated consequences with actual outcomes, but as one of describing and of applying criteria of excellence to the activity itself. This view would recognize Dewey's claim that "even the most important among all the consequences of an act is not necessarily its aim,"³⁰ and it would be consistent with Merton's important distinction between manifest and latent functions.³¹

The importance of description as a key element in the process of evaluation has also been emphasized by Cronbach: "*When evaluation is carried out in the service of course improvement, the chief aim is to ascertain what effects the course has. . . . This is not to inquire merely whether the course is effective or ineffective. Outcomes of instruction are multidimensional, and a satisfactory investigation will map out the effects of the course along these dimensions separately.*"³² The most significant dimensions of an educational activity or any activity may be those that are completely unplanned and wholly unanticipated. An evaluation procedure that ignores this fact is plainly unsatisfactory.

SUMMARY AND CONCLUSION

The crucial first step in the Tyler rationale on which all else hinges is the statement of objectives. The objectives are to be drawn from three sources:

studies of the learners, studies of the specialists. Data from social and psychological research turns out to be no more than the other two. Standing as source of a curricular screen that delimits educational objectives that one must make one's value structure of objectives as to standing insistence that curriculum be the questionable whether allegedly reached way to conceive concept of a learning given. Finally, the objectives with our more significant learning and it minimizes the

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studies of the learner, studies of society, and suggestions from subject-matter specialists. Data drawn from these sources are to be filtered through philosophical and psychological screens. Upon examination, the last of the three sources turns out to be no source at all but a means of achieving objectives drawn from the other two. Studies of the learner and of society depend so heavily for their standing as sources on the philosophical screen that it is actually the philosophical screen that determines the nature and scope of the objectives. To say that educational objectives are drawn from one's philosophy, in turn, is only to say that one must make choices about educational objectives in some way related to one's value structure. This is to say so little about the process of selecting objectives as to be virtually meaningless. One wonders whether the longstanding insistence by curriculum theorists that the first step in making a curriculum be the specification of objectives has any merit whatsoever. It is even questionable whether stating objectives at all, when they represent external goals allegedly reached through the manipulation of learning experiences, is a fruitful way to conceive of the process of curriculum planning. Certainly, the whole concept of a learning experience requires much more analysis than it has been given. Finally, the simplistic notion that evaluation is a process of matching objectives with outcomes leaves much to be desired. It ignores what may be the more significant latent outcomes in favor of the manifest and anticipated ones, and it minimizes the vital relationship between ends and means.

One reason for the success of the Tyler rationale is its very rationality. It is an eminently reasonable framework for developing a curriculum; it duly compromises between warring extremes and skirts the pitfalls to which the doctrinaire are subject. In one sense, the Tyler rationale is imperishable. In some form, it will always stand as the model of curriculum development for those who conceive of the curriculum as a complex machinery for transforming the crude raw material that children bring with them to school into a finished and useful product. By definition, the production model of curriculum and instruction begins with a blueprint for how the student will turn out once we get through with him. Tyler's version of the model avoids the patent absurdity of, let us say, Mager's by drawing that blueprint in broad outline rather than in minute detail.³³

For his moderation and his wisdom as well as his impact, Ralph Tyler deserves to be enshrined in whatever hall of fame the field of curriculum may wish to establish. But the field of curriculum, in its turn, must recognize the Tyler rationale for what it is: Ralph Tyler's version of how a curriculum should be developed—not *the* universal model of curriculum development. Goodlad once claimed that "Tyler put the capstone on one epoch of curriculum inquiry."³⁴ The new epoch is long overdue.

NOTES

1. Ralph W. Tyler, *Basic Principles of Curriculum and Instruction* (Chicago: University of Chicago Press, 1950). Note differences in pagination in 1969 printing.
2. John I. Goodlad, "Curriculum: State of the Field," *Review of Educational Research* 39 (1969):374.
3. Tyler, pp. 1-2.
4. I have argued elsewhere that the characteristic mode of thought associated with the field of curriculum frequently manifests itself in enumeration and particularization as a response to highly complex questions. Herbert M. Kliebard, "The Curriculum Field in Retrospect," in Paul W. F. Witt (ed.), *Technology and the Curriculum* (New York: Teachers College Press, 1968), pp. 69-84.
5. Tyler, p. 3.
6. John Dewey, "The Child and the Curriculum," in Reginald D. Archambault (ed.), *John Dewey on Education* (New York: Random House, 1964), pp. 339-40. (Originally published by University of Chicago Press in 1902.)
7. Tyler, p. 17.
8. National Education Association, *Report of the Committee on Secondary School Studies* (Washington, D.C.: Government Printing Office, 1893), p. 6.
9. *Ibid.*, p. 203.
10. *Ibid.*, p. 165.
11. Tyler, p. 4.
12. *Ibid.*, pp. 4-5.
13. See, e.g., H. H. Giles, S. P. McCutchen, and A. N. Zechiel, *Exploring the Curriculum* (New York: Harper & Bros., 1942); V. T. Thayer, Caroline B. Zachry, and Ruth Kotinsky, *Reorganizing Secondary Education* (New York: Appleton Century, 1939). The former work was one of the volumes to come out of the Progressive Education Association's Eight-Year Study. Tyler was closely associated with that research. The latter volume was published under the auspices of the Progressive Education Association's Commission on Secondary School Curriculum. Tyler was also a member of the committee that prepared the NSSE yearbook on needs. Nelson B. Henry (ed.), *Adapting the Secondary School Program to the Needs of Youth*, Fifty-second Yearbook of the National Society for the Study of Education. Part I (Chicago: University of Chicago Press, 1953). An early statement of needs in relation to curriculum organization appeared in *The Development of the High-School Curriculum*, Sixth Yearbook of the Department of Superintendence (Washington, D.C.: Department of Superintendence, 1928). Needs as the basis for the curriculum in English was mentioned by E. L. Miller as early as 1922. North Central Association of Colleges and Secondary Schools, *Proceedings of the Twenty-seventh Annual Meeting of the North Central Association of Colleges and Secondary Schools* (Cedar Rapids, Iowa: Torch Press, 1922), p. 103.
14. Tyler, p. 6.
15. Franklin Bobbitt, *The Curriculum* (Boston: Houghton Mifflin Co., 1918), p. 45 ff.
16. Tyler, p. 10.
17. Reginald D. Archambault, *Aspects of Educational Research* (New York: Macmillan, 1961).
18. B. Paul Komisar, Robert H. Ennis (eds.), *Curriculum: A Review of the Literature* (New York: Macmillan & Co., 1961), p. 37.
19. R. F. Dearden, "Curriculum: A Review of the Literature," *Curriculum Perspectives* 14 (1966):17.
20. Tyler, pp. 16-17.
21. Boyd H. Bode, "The Curriculum Field in Retrospect," in Paul W. F. Witt (ed.), *Technology and the Curriculum* (New York: Teachers College Press, 1968), pp. 80-81.
22. Tyler, p. 13.
23. Franklin Bobbitt, *Curriculum: A Review of the Literature* (New York: Macmillan, 1918), International Monographs No. 1.
24. Tyler, p. 23.
25. Karl Popper, "The Logic of Scientific Discovery," *Philosophy of Science* 6 (1955):146-159.
26. Tyler, p. 42.
27. *Ibid.*, p. 69.
28. Franklin Bobbitt, *Curriculum: A Review of the Literature* (New York: Macmillan, 1918), International Monographs No. 1, pp. 738-49.
29. John Dewey, *Human Nature and Conduct* (New York: Macmillan, 1922), p. 223. (Originally published by University of Chicago Press in 1902.)
30. *Ibid.*, p. 227.
31. Robert K. Merton, *Social Structure and Social Theory* (Glencoe, Ill.: Free Press, 1936).
32. Lee J. Cronbach, *Essentials of Psychological Testing* (New York: Harper & Bros., 1951), (ed.), *New Curricula* (New York: Macmillan, 1962).
33. Robert F. Mager, *Curriculum: A Review of the Literature* (New York: Macmillan, 1962).
34. John I. Goodlad, *Problems of Curriculum and Instruction* (New York: Office of Educational Research, Institute for the Development of Educational Research, 1962).

17. Reginald D. Archambault, "The Concept of Need and Its Relation to Certain Aspects of Educational Theory," *Harvard Educational Review* 27 (1957):51.
18. B. Paul Komisar, "'Need' and the Needs Curriculum," in B. O. Smith and Robert H. Ennis (eds.), *Language and Concepts in Education* (Chicago: Rand McNally & Co., 1961), p. 37.
19. R. F. Dearden, "'Needs' in Education," *British Journal of Educational Studies* 14 (1966):17.
20. Tyler, pp. 16-17.
21. Boyd H. Bode, *Modern Educational Theories* (New York: Macmillan Co., 1927), pp. 80-81.
22. Tyler, p. 13.
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24. Tyler, p. 23.
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