

Carroll J B. A model of school learning. *Teach. Coll. Rec.* 64:723-33, 1963.  
[Harvard University, Cambridge, MA]

In giving a unified perspective on the variables, and their relationships, that affect a student's degree of achievement in school subjects, this paper pointed out that degree of learning is a function of the ratio of the time the student actually spends on learning to the time the student needs, both being in turn a function of aptitude and other variables. [The *Social Sciences Citation Index*® (SSCI®) indicates that this paper has been cited over 180 times since 1966.]

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"This paper was a spin-off—a 'think piece' rather than a real research report—from a project on the measurement of foreign language aptitude. A more technical account was given elsewhere.<sup>1</sup> I had noticed that different people could achieve the same level of success, but took different amounts of time. I therefore concluded that aptitude could be defined in terms of the amount of time needed to learn—low aptitude people requiring more time than those of high aptitude. But I needed other variables to explain all my results satisfactorily.

"Probably the article would never have been written had not E.J. Shoben, Jr., then editor of the *Teachers College Record*, encouraged me to present my ideas in a form that might generalize to many types of school learning. It seems to have received little attention until Benjamin Bloom used its ideas in formulating what he called 'mastery learning.'<sup>2</sup> While my paper provided a basic theory, Bloom did much more than I to put my notions into research and development.

"Whether as a result of the original publication, or of Bloom's use of it, it seems to have had a large impact on the conduct of education and of educational research in America and abroad. The 'model' is regularly treated in standard texts on educational psychology, and thousands of teachers and teacher trainees must have become acquainted with it. It stimulated a number of major projects designed to improve instruction at various levels, for example, the Beginning Teacher Evaluation Study.<sup>3</sup> The article may have been one basis for my receiving several awards, such as the Edward Lee Thorndike Award for Distinguished Psychological Contribution to Education given to me by the American Psychological Association in 1970.

"I have often wondered why my article has had such appeal. I considered this question—along with a review of most of the citations that I found in the *Social Sciences Citation Index*® (SSCI®)—in a paper now in press.<sup>4</sup> As I stated there: 'The idea that learning takes time is so obvious as to be almost trivial....' Of only slightly more novelty is the proposition that variations in aptitude can be correlated with variations in the amount of time a student needs to master a task: teachers have always recognized differences between 'fast' and 'slow' learners. Yet, the implication of this proposition, that students should be allowed to proceed at their own rate in order to take the amount of time they need, has been the linchpin for all sorts of applications and interpretations of the model. Perhaps the model's appeal to educators in general lies in its suggestion that a radical revision of customary school practices in this regard was needed. Bloom's mastery learning concept added the suggestion that if all the elements of the model were properly orchestrated, all or nearly all students could master almost any task demanded in the school curriculum."

1. Carroll J B. The prediction of success in intensive foreign language training. (Glaser R, ed.) *Training research and education*. Pittsburgh: University of Pittsburgh Press, 1962. p. 87-136.
2. Bloom B S. Learning for mastery. (Whole issue.) *Evaluation Comment* 1(2), 1968. 12 p.
3. Denham C & Lieberman A, eds. *Time to learn: a review of the Beginning Teacher Evaluation Study*. Washington, DC: US Government Printing Office, 1980. 246 p.
4. Carroll J B. The model of school learning: progress of an idea. (Fisher C W & Berliner D C, eds.) *Proceedings of a Conference on Instructional Time*. In press, 1982.