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American Journal of Evaluation 1996; 17; 173

DOI: 10.1177/109821409601700210

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*Excerpts from Evaluation Research: Methods of Assessing Program Effectiveness*¹

CAROL H. WEISS

USING A MODEL

How do we decide which variables we are going to want to measure? One way is to construct a model of the intended processes of the program. We try to identify the means and the steps by which the program is intended to work. For example, a program of home visits by teachers is inaugurated with the ultimate objective of improving children's reading achievement. How are home visits expected to improve pupil performance? We might hypothesize the sequence of events shown in Figure 1.

The model indicates the kinds of effects that should be investigated. Once ways are found to measure each set of events and the measurements are made, it is possible to see what happens, what works and what doesn't, for whom it works and for whom it doesn't.² In our home visit program, it may turn out that teachers do indeed show enhanced understanding of the culture of pupils' homes, that they have more sympathy with the children, but that they continue teaching in the old traditional ways without attempting to suit instruction to the pupils' subculture. If the children's reading performance does not improve, we have some clue about the why of it. We can tell where the projected chain has broken down. Similarly, if some parents do learn about the school's expectations for their children's behavior and performance and do try to encourage them to do better homework and schoolwork, yet their children's work is no better done than that of other children, we have a place to look for further insight into the breakdown of the expected chain of events.

One of the side advantages of setting down the expected paths of change is that it sensitizes the evaluator to shifts in program strategy that make his evaluation design irrelevant. Suppose the home visit program has had difficulties in operation, and to overcome them the

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Evaluation Practice, Vol. 17, No. 2, 1996, pp. 173–175.
ISSN: 0886-1633

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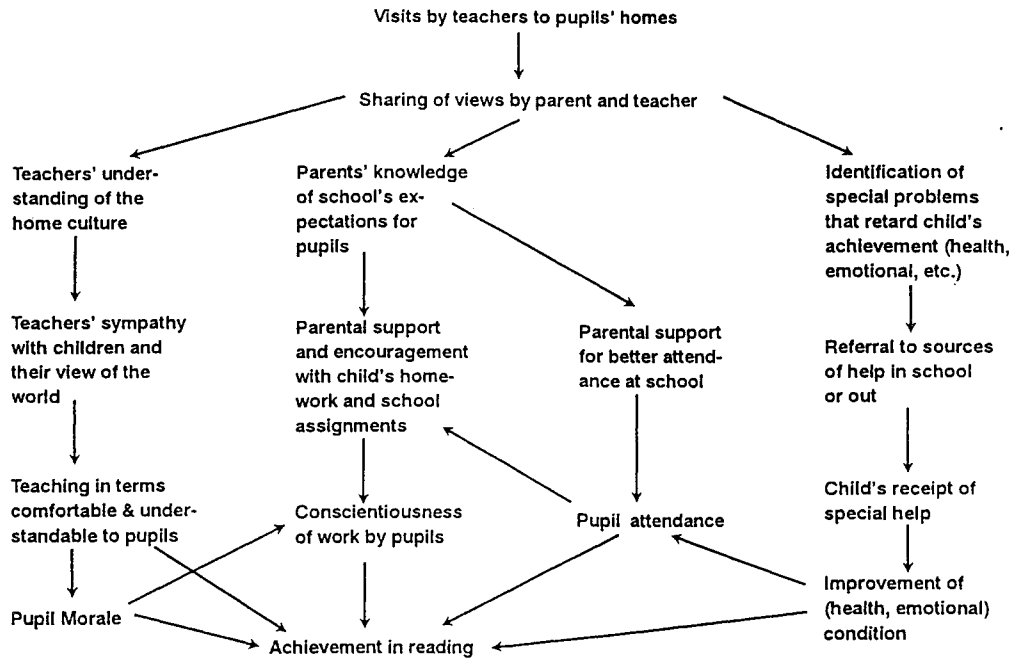


Figure 1. A Model of a Hypothetical Program

managers have shifted course. They have found that parents really want to talk about things other than home culture and school expectations. To maintain the parents' interest and cooperation, they have shifted to an emphasis on answering parental requests for information (about housing, health facilities, and so on). The original process model is obsolete and must be modified to reflect the new conditions. Some new processes are hypothesized and some old ones discarded; new items and directional lines are added and old ones dropped. The model is adapted to current realities, and measurements and analyses follow the new course. The evaluator, alerted early to the changes in program operations and assumptions, keeps his study flexible enough to be relevant.

The mere construction of such a model can be a useful exercise for program developers. Some of the assumptions that are implicit in the program are made explicit, and naive and simplistic expectations are subject to scrutiny. Do program developers, for example, believe that those parents who do not have the values, the background experience, or the skills to help their children with academic studies can be persuaded to do so by one or two visits by a teacher? Certainly, more must be built into a program with such great expectations—training for the teachers, for one thing, and reinforcements, rewards, and possibly skill training for the parents. The evaluation model can be a learning tool long before the evaluation begins, if program people will use it as such.

A model is not the only way to go about the delineation of necessary measures, but it is one way to clarify and systematize the factors that are worth examining. Suppose that after home visits, pupil reading achievement improves significantly more than that of the control group students who did not have the visits. The usual conclusion would be that the visits (and all the foggy assumptions and expectations surrounding them) were justified. But suppose

also that records of teachers' visits showed that all the measures of interaction, communication, and understanding between parent and teacher were at very low levels—the teachers and parents were really not communicating. The source of the children's improved reading ability must be sought elsewhere. (One explanation might be that the students misperceived the intent of the teachers' visits; they may have thought teachers were complaining about their work and trying to persuade parents to punish poor achievers. Improved school work was a response to the perceived threat.)

If the predicted sequence of events does not work out, further investigation is needed. But when the model proves to be a reasonable picture of how things happen, it gives some notion of the reasons why and may be worth further testing. Even with the best and most supportive data, of course, models are never "proved." At best, they are not "disconfirmed" by the data. There may be alternative models that would provide equally plausible or better interpretations of the available facts. Scientific generalizations are built up by developing hypotheses and then submitting them to successive tests in an effort to disprove them or find the limits of their applicability.

NOTES

1. Excerpted from Weiss (1972b, pp. 50–53, portions of footnotes deleted) and reprinted by permission of C. H. Weiss and Prentice Hall.

2. As the similarity between Figure 1 and a path diagram suggests, path analysis is a useful way of estimating the strength of the linkages. When the necessary conditions for path analysis are met, path coefficients will represent the magnitude of effect for each arrow.... It might be useful to posit some negative chains, too, and through path analysis find out the extent to which negative side effects are taking place.

Editor's Note: Although Weiss used the term "program model" to label her proposal, it was the clearest reference, to that date, of what has subsequently been called program theory by most writers in this area. A few years later, came the first full-blown description of theory-based evaluation by Fitz-Gibbon and Morris (1975), reprinted here in its entirety (except for deletion of dated examples not essential to the presentation).