Special Section
Classroom Assessment Investigations

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Introduction

Although much discussion of approaches to research concentrates on the differences between qualitative and quantitative models, some thought has been given to using both in single studies, mostly in program evaluation. One way out of the dilemma would be to adopt a non-foundationalist stance where the argument, no matter how constructed, would be subjected to debate and analysis by competent, interested spectators. This is the position taken by the authors as they each report on their analysis of data emanating from a single study, which explored preservice teachers' behaviors and perceptions as they assessed the work of an imaginary student named Chris. Finally, a summary and analysis are provided of the effectiveness of the mixed-methods model as used in this study.

Même si beaucoup des discussions sur les approches à la recherche sont centrées sur les différences entre les modèles qualitatifs et les modèles quantitatifs, on a envisagé de combiner les deux dans une seule étude, surtout en ce qui concerne l'évaluation de programmes. Une manière d'escamoter le dilemme est d'adopter une position non-fondationaliste selon laquelle l'argument, peu importe la façon dont il est formulé, serait débattu et analysé par des observateurs compétents et intrigués. C'est en fait la position des chercheurs qui font part de leur analyse de données obtenues dans le cadre d'une seule étude qui examinait le comporte- ment et les perceptions de stagiaires pendant que ceux-ci évaluaient le travail d'un élève fictif nommé Chris. Pour conclure, on présente un résumé et une analyse de l'efficacité d'un modèle qui, comme celui de la présente étude, repose sur des méthodes mixtes.

Within the last two decades the so-called paradigm wars between quantitative and qualitative approaches have dominated much of the discussion of educational research practice (Smith, 1983). The disputes started in earnest when researchers began to probe such constructs as *teachers' conceptions of learning*. Here standard, quantitative approaches seemed remote. Understanding (it was argued) could only emerge from the meanings participants gave to their actions and not merely to those meanings imposed on events by the investigators. Furthermore, it was not possible to uncover these meanings without thoroughly comprehending the context in which they were situated. According to certain theorists in the approach (Lincoln & Guba, 1985), it was the social contexts, the meanings given to actions, and the language of the participants in context that inform most validly about the significance of the events that occur there.

Methodologically, qualitative researchers thus became involved in the particular more than in the general, and in reporting their observations in a way that respected the point of view of the participants whose experiences were

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being described. Interviewing, observing, and interacting with participants become favored techniques to accomplish these goals. Reports of these studies reflect these approaches by concentrating on the accurate collection and analysis of the data from the participants' point of view as reported by an involved participant researcher (Wolcott, 1994).

The quantitative view of educational research against which these newer methods were arrayed was adapted largely from natural science models (Kerlinger, 1973). Unlike the participant investigator, the observer in this model attempts to be anonymous and uninvolved in the scene. Most often objectively scored instruments are administered under standardized conditions to elicit results that can be generalized to other subjects and conditions like those being investigated. Although subjective accounts about the meanings that participants invest in the phenomena being investigated are sometimes collected, these are rarely given a prominent place in the reported results.

The methods developed under this approach use the model of the laboratory, a model that requires careful specifications of the setting with the aim of limiting, either through design or statistical control, possible alternative explanations of results (Campbell & Stanley, 1966). In addition, quantitative collection and analytic techniques allow for interactions and relationships to emerge that follow from mathematical assumptions about likely patterns. These are then reported in a manner that encourages careful testing in new settings (Pedhazur, 1982).

Although some writers on these topics see a dichotomy in approach that is so deeply felt as to be irreconcilable (Edelsky, 1990; McKenna, Robinson, & Miller, 1990), others see the differences as being largely due to different intentions of researchers (Phillips, 1992). As with most dichotomies, the lines between the categories are fuzzy at the edges. For example, modern physics, the preeminent hard science, has long held that the observer substantially affects what is observed—a key concern of qualitative approaches—and works that principle directly into its experimental work (Hanson, 1958). It is also the case that many branches of such fields as psychology have long ago dismissed strictly logical positivistic approaches in favor of more interactive types of studies. Similarly, many qualitative researchers routinely collect quantitative data on the frequency with which certain statements are made or behaviors taken (Wolcott, 1994).

One field where a combination of approaches has seemed particularly relevant is that of program evaluation. Because of the practical and divergent goals such investigations typically entail, the use of mixed methods has been difficult to resist. The case is made for combining methods on the grounds that both paradigms have legitimacy in uncovering knowledge that could be useful to clients, and that using both approaches holds the promise of deeper and more comprehensive understandings of the phenomena being investigated for the decisions clients wish to make (Greene & Caracelli, 1997). Extending this argument to other types of studies seems sensible to consider as well, especially given the applied nature of much educational research.

Such integrative work (of which the following articles provide one example) would also be consistent with understandings generated in the so-called non-foundationalist view of science (Popper, 1976) where the crucial distinction lies,

not so much in assumptions and beliefs that give investigations shape, but in the ability of any work to withstand detailed analysis. In this view, it is less important whether the work is qualitative or quantitative than whether it was subjected to critical scrutiny by those capable of providing it (Phillips, 1992).

The work reported in the following three articles illustrates what happens when the two paradigms are combined in a single investigation. The view that shaped our work was not only that each paradigm could produce understandings that the other would find difficult if not impossible to produce—and therefore add something to the general understanding of the phenomena—but that the combination itself would contribute to new understandings that would not be possible unless both were used concurrently.

The Study

The purpose of the study was to explore preservice teachers' behaviors and perceptions as they went about the task of assessing the work of one of their students. A collection of evaluation materials in language arts was prepared for this study. All these materials were used to track the progress of an imaginary grade 8 student named Chris. The scenario held that Chris already had a teacher, but she was interested in having a teacher candidate shadow Chris and give impressions about Chris's progress from another viewpoint.

The participants in the study were 147 Bachelor of Education teacher candidates attending an eastern Canadian university's Faculty of Education program. During the first week of the study, these participants were provided with background information about Chris (e.g., family situation, a short essay Chris had written, number of schools attended). In subsequent weeks the participants were given more data: information about the classroom and the school Chris attended, copies of Chris's production in language arts, and other routine school artifacts.

Each week the participants read Chris's work and provided the teacher with their views of Chris's progress. They listened to Chris read, learned about his parents' visit to the school (if they came), marked various short-answer and longer productions by Chris, graded a final examination, and finally, provided a report card grade they would give Chris had they been Chris's real teacher.

The participants' tasks were divided into two categories. In the first was the requirement that they help Chris's regular teacher with marking and grading Chris's work that term in language arts. In the second category was the requirement that the participants comment on the processes they were using and how they felt about the tasks they were given. The data that emerged from these categories were both quantitative and qualitative in nature.

The Reports

The first article in this series (Wilson & Martinussen) reports on the quantitative data, largely in a descriptive way. The design was set up as a multi-way ANOVA study with different levels of expectations, growth, gender, and parental involvement systematically varied in a randomized way. This article summarizes the characteristics of the distributions of scores awarded the various marked assignments and tests. It then uses correlational, principal components and regression approaches to examine possible relationships that

might exist across the scoring processes and between these processes and various background characteristics of Chris and his marker.

The second article (Anderson) develops a model from logical deduction and previous research and tests that model against the quantitative data actually obtained. Structural equation modeling is an approach used to evaluate a model when the conditions under which the data are collected do not allow for the traditional comparison groups approach. It posits certain relationships that would seem to hold theoretically or plausibly and tests the actual data against those predictions to determine the degree to which the theoretical ones hold.

At the end of the study the participants were asked to comment on their reactions to the tasks presented to them. In addition, many commented spontaneously on Chris's productions, an unexpected but rich contribution to the study overall. These data along with the more purposely elicited reactions to portfolio assessment resulted in a third article (Shulha) that examines all these statements, using content analysis and dendrogram displays, to elicit themes in these participants' approaches to the demands of assessment.

The final contribution (Shulha, Wilson, & Anderson) describes what differentiates the approaches used in the various articles, what common elements emerged from their use, and what additional insights were gained by combining methods in this way. Specifically, this article examines the effect of the approach on the development of the research questions, design, data collection and analysis, and subsequent use.

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