

STUDENT EVALUATION OF INSTRUCTORS AND
THE DISCONFIRMATION MODEL OF TEACHING QUALITY

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ABSTRACT

Recent developments in service theory contend that service quality is not due to performance alone, but to the difference between performance and expectations (the disconfirmation model of quality). This study evaluates that theory in the context of college teaching, empirically comparing the performance model of teaching quality with the disconfirmation model. Results support the continued use of existing evaluation methods based on performance alone.

Improving the quality of college teaching is heavily dependent on feedback from students, particularly in the form of end-of-semester written evaluations (e.g. Lowman 1984). The education literature has a substantial heritage of discussion of the design and use of these evaluations (e.g. Cohen 1981, Wilson 1982), where superior quality is indicated by high ratings on scaled measures of performance (e.g. Marsh 1982).

Within the last decade, the marketing discipline has become increasingly interested in quality, particularly service quality. As a service, teaching falls within the domain of service theory, including that pertaining to quality. In a recent seminal study, Parasuraman, Zeithaml and Berry (1985) proposed several service quality concepts relevant to college teaching theory. One of their concepts, in the teaching context, is the contention that student perceptions of teaching quality are formed by comparing the level of performance expected with the level of performance perceived; this will be referred to hereafter as the disconfirmation model of teaching quality.

If the contention of these respected researchers regarding the disconfirmation model is correct, then the usual measures of teaching quality have been misspecified. The usual instructor evaluation instrument contains no measure of expectations, only performance. To the extent that distortion occurs in the measurement of teaching quality, teaching improvement becomes much more difficult, as the true relationships between quality and instructor improvement efforts are masked. Given the importance of college teaching to the individual student, and to the competitiveness of our national economy, resolving these differences between theory and practice is urgent.

The purpose of this paper is to empirically compare the proposed disconfirmation model of teaching quality against the performance model currently used, i.e., teaching quality related directly to perceived teaching performance of the various class and instructor attributes. Additionally, this study will compare the somewhat overlapping concepts of quality, performance, and satisfaction.

LITERATURE REVIEW AND HYPOTHESES

The research by Parasuraman, et al. (1985) was a seminal conceptual study in the area of services quality, and introduced services marketing to three potentially important concepts. The pertinent concept here was the disconfirmation concept of quality, where quality was described as the difference between the expected and performed levels of service, as perceived by the consumer. Their conclusions were conceptual only, based on focus group information, and contained no empirical substantiation.

While little empirical verification of their hypotheses has yet appeared in the general marketing literature, some testing has, interestingly, been done in the college teaching industry and published in this conference. Orsini (1986) compared their ten perceived universal service attributes to an evaluation form developed in the college teaching industry, and found comparable levels of predictiveness of teaching performance. Orsini and Meyer (1987) compared the disconfirmation model with the model of performance alone and found the performance model substantially more predictive of overall teaching effectiveness than the disconfirmation model.

Subsequent to the design of the latter study, however, Parasuraman, et al. (1986) defined the expectation portion of their quality model so as to raise an alternative explanation concerning the findings of Orsini and Meyer (1987). The consumer satisfaction/dissatisfaction (CS/D) literature had long held that dissatisfaction was the result of disconfirmed expectations (e.g., Andreasen 1977), exactly matching the Parasuraman, et al. (1985) contention of the definition of quality. This apparent confusion between satisfaction and quality was explained by Parasuraman, et al. (1986) as follows:

"The term 'expectations' as used in the service quality literature differs from expectations as used in the satisfaction literature. Specifically, in the satisfaction literature, expectations are viewed as predictions made by customers... In contrast, in the service-quality literature, expectations are viewed as desires or wants of consumers, i.e., what they feel a service provider should offer rather than would offer." (p. 6).

Insofar as Orsini and Meyer (1987) had used the predictions formulation in their measures of expectation, one reason for their finding of superiority of the performance model is the misspecification of the definition of quality.

However, the CS/D literature is richer in its definition of expectations than indicated by Parasuraman, et al. (1986) above. Several types of expectation have been noted in the CS/D literature: anticipation; ideal; minimum acceptable;

and "equity" (e.g. Leichty and Churchill 1979, and Tse and Wilton 1988). The equity type of expectation is defined (Tse and Wilton 1988) as "... the level of performance the consumer ought to receive, or deserves, given a perceived set of costs..." (p. 205). Thus there appears to be little difference between the equity type of expectation in the CS/D literature and expectation in the service quality literature, as defined by Parasuraman, et al. (1986) above.

Regardless of how expectation is defined, the disconfirmation model of service quality appears to have some conceptual problems. For example, in using this definition to compare a new Mercedes with an old used car, if the Mercedes did not perform up to expectations it would be considered low quality, while if the old used car exceeded expectations it would be considered high quality. On the face of it, while one may be dissatisfied with the new Mercedes and satisfied with the old used car, contending that the older car is of superior quality to the new one would seem problematic.

The primary investigation of this study is a comparison of the prediction of overall teaching quality; the disconfirmation model, as formulated by Parasuraman, et al. (1986), will be compared with the more traditional performance model. As a secondary investigation, the relationship among the concepts of performance, quality and satisfaction will also be analyzed.

METHODOLOGY

This study will be a correlational design, utilizing student survey responses to measures of performance, quality, satisfaction, and expectation. The strength of predictiveness of the two models (disconfirmation and performance) will be the measure of superiority of the two approaches.

Instrument

The survey instrument for class/instructor evaluation was based on the Student Evaluation of Educational Quality (SEEQ) developed by Marsh (1982), and widely adopted by universities. His eight teaching performance categories were included, but only half of his questions for each category were utilized, as pretesting had indicated that his full instrument (31 questions) led to student fatigue in completing the three pages of this study's questionnaire.

The first page of this three page questionnaire consisted of fifteen class/instructor attributes and two overall teaching questions: overall teaching performance, and overall satisfaction with that performance. The second page consisted of several questions related to characteristics of the class situation, e.g. class size and time of day. These were intended to distract the student from the evaluation process so that two pertinent questions could be asked without being consecutive with the evaluation process: questions concerning the overall quality of instruction, and satisfaction with that quality.

Subsequent to the quality measures, several questions pertaining to student characteristics were asked, e.g. class standing, gender, number of courses taken. The third page of the instrument then repeated the 15 class/instructor characteristics, but asked the student to rate the appropriate level of those characteristics that should have been provided by the instructor. The form of these questions followed the recommendation of Parasuraman, et al. (1986) in that the perception and expectation questions were asked separately and overall teaching performance for the disconfirmation model was predicted by the computed differences between perceptions and expectations. The performance model was based on perceptions only.

Subjects

The subjects utilized in this study were students enrolled in several upper division business courses in a large western university. In order to not be course-specific, students were asked to evaluate the next class they had, in a type of "snowball" survey. While most of these courses were probably business courses, some were probably in other disciplines. Confidentiality precluded specific identification of the class/instructor evaluated; fortunately, the theory is applicable to any course or instructor.

Analysis

The empirical evaluation of the competing models was by multiple stepwise regression, using the coefficient of determination (adjusted R-squared) as the measure of comparison. Previous studies had indicated that the class/instructor characteristic items tended to be strongly correlated, i.e. instructors with high overall rating tended to be given high ratings on most of the characteristics, and vice versa for instructors with low overall rating. The specific attributes in any model were thus sensitive to the particular sample, and are not of concern in this study.

Relationships among the measures of performance, quality and satisfaction were measured by the Pearson product moment correlation. Correlation and stepwise regression are common methods used in the development of teaching evaluation instruments (e.g., Marsh 1982).

FINDINGS

The results of the stepwise regression of the disconfirmation and performance approaches to predicting performance, performance satisfaction, quality, and quality satisfaction are indicated by the coefficients of determination (adjusted R-squares) in Table 1. Testing for nonlinear forms of the models indicated no substantial improvement, hence the linear forms of the models were used.

The most important finding of Table 1 is that the models of performance alone are uniformly superior to the disconfirmation models in predicting the four criterion variables investigated; the difference in the coefficients of determination

is about 10%. This is consistent with the findings of Orsini and Meyer (1987) for the quality criterion, and Tse and Wilton (1988) for the performance satisfaction criterion.

TABLE 1
Predictiveness* of Alternative Model Configurations

Criterion	Model	
	Disconfirmation**	Performance
Overall Performance	70.4	80.0
Overall Performance Satisfaction	70.0	79.5
Overall Quality	64.6	71.2
Overall Quality Satisfaction	60.0	72.1

* Coefficients of Determination (adjusted R-squared); $p < .0001$

** Computed as: Performance Rating minus Equity Expectation

It will also be noted in Table 1 that the models related to performance are more highly predictive than the models related to quality. This result may be an artifact of the questionnaire construction, as both the performance and satisfaction with performance measures were on the same page as the individual measures of performance characteristics, while the quality related measures were on the following page. Alternatively, it may also be that the construct of quality is not as firmly established in respondents' minds as is the construct of performance, resulting in higher respondent variance; the higher variance would thereby cause the lower predictiveness.

The relationships among performance, quality, and their respective satisfactions are indicated in Table 2. It will be noted that all four constructs are highly related, the strongest association being between performance and performance satisfaction. Closely following the strength of this relationship is that of the two satisfactions, then quality with quality satisfaction.

While the high correlations of performance and quality with their respective satisfactions may be a questionnaire construction artifact of adjacent scales, as discussed above, the performance and quality measures do not have this artifact. As indicated above, the performance and quality measures were on separate pages, with intervening questions asked to reduce the effects of memory.

TABLE 2
Correlations Among Criterion Measures

	Overall Performance	Overall Performance Satisfaction	Overall Quality
Overall Performance Satisfaction	.92	-	
Overall Quality	.84	.86	-
Overall Quality Satisfaction	.82	.89	.88

Note: All correlations significant at $p < .0001$

CONCLUSIONS

The purpose of this study was to examine the contention, developed in services theory, that teaching quality was a function of the difference between perceived performance and expected performance, rather than perceived performance alone. Substantiation of this theory would have broad ramifications for college teaching. A secondary purpose was to explore relationships among the concepts of quality, performance and satisfaction.

The results of the correlation design employed in this study supported the superiority of the performance model of teaching quality over the disconfirmation model. These results, employing the disconfirmation model configuration recommended by the originators of the theory, were similar to previous investigation which used a slightly different configuration.

The finding of the performance model superiority does not mean that the disconfirmation theory is incorrect. The usual cautions applicable to correlation designs involving convenience samples are certainly pertinent in this case. While it is quite possible that sample selection or uncontrolled variables led to the results, there are, as yet, no existing empirical results which are contradictory to these findings.

These results differing from the proposed theory may be due to their specific applicability to college teaching, i.e. there may be product-specific contingent conditions which mitigate the disconfirmation theory. In the related area of consumer satisfaction, Churchill and Surprenant (1982) found, in an experimental design involving two products, that the disconfirmation model was superior for one product, but the performance model was superior for the other product. Thus, by analogy, the college teaching industry, which was not one of those evaluated by Parasuraman, et al. (1985), may be a product class where performance is a better predictor than disconfirmation.

A second area of investigation in this study was an exploratory look at associations among the concepts of satisfaction, quality, and performance. Again noting the cautions of this research design, the associations were quite strong, explaining two-thirds or more of the variance. While questionnaire construction may be part of the explanation for the high association, another possibility is that the concepts are, in fact, strongly related in the consumer's mind. Evidence of the consumer association of satisfaction, quality and performance comes from several sources, as follows.

In marketing, Churchill and Surprenant (1982) and Tse and Wilton (1988) both found strong association between performance of product features and satisfaction. In the quality industry literature, a subdiscipline of production, while quality was originally defined as conformance to specifications (e.g. Feigenbaum 1961), in the last dozen or so years it has been defined in terms of consumer satisfaction (e.g., Alexander 1988). That is, high product quality is defined (in very general terms) as one with high customer satisfaction. It thus appears, *prima facie*, that the concepts are strongly related, although not necessarily exactly the same.

From the perspective of concerns within the college teaching industry, the evidence supports continuation of using the performance model of teaching quality rather than changing to the disconfirmation model. Given the uncertainties existing in the fields of consumer satisfaction and product quality, the evidence at this point does not appear to warrant any fundamental change. Given the possibility of contingent conditions which may effect the suitability of either model, the education industry should continue to monitor developments in the service quality area.

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