The measurement of quality management culture in schools: development and validation of the SQMCS

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Abstract

This paper reports on the development and validation of a survey instrument for measuring the culture of Quality Management (QM) in K-12 educational settings. The intent was to develop an instrument that would tap both the behavioral norms and the underlying values and beliefs associated with a Quality culture. The process used in the development and honing of this measurement instrument included theory review, qualitative data analysis, practitioner input, and both exploratory and confirmatory factor analytic techniques. Measures of fit and interpretability as well as reliability and validity evidence suggest the iteratively derived survey largely achieves the goal of providing verified scales for evaluating multiple aspects of a school’s Quality culture.

1. Introduction

Following a decade of Total Quality Management (TQM) adoption by US corporations, a number of K-12 school administrators began championing the Quality paradigm as a model for systemic school improvement in the late 1980s and early 1990s. Although variations abound (including many efforts to translate the concepts and make them more educator-friendly, e.g. Jenkins (1997) and Schmoker and Wilson (1993)), Quality Management (QM) in education generally builds from the pioneering ideas of Deming (1986), Juran (1988), and other industrial TQM gurus. It includes the practices and philosophy of continuous improvement, customer focus, data-based decision-making, studying and evaluating processes, systems thinking, and employee learning. Hundreds of school districts around the country report engagement in some type of improvement effort based on these principles (Horine et al., 1993). However, with the exception of two Education Baldrige winners in 2001, preliminary systematic research on these early implementation efforts suggests that QM programs are failing to achieve widespread acceptance and use by those at the core of schooling—teachers (Detert et al., 2000a). One tentative explanation for the limited results to date has been that the existing “culture” of these schools, and that called for by QM, are inconsistent and that these inconsistencies are at the root of limited implementation. Unfortunately, there has been no extant comprehensive model of an “ideal-type culture for TQM,” and consequently no measurement instrument that has sufficiently operationalized the relevant constructs of QM-related
culture in K-12 school environments. Thus, researchers were thwarted in their ability to rigorously investigate or explain the relations between school cultures and the success or failure of QM implementation.

The purpose of this paper is to describe a comprehensive effort undertaken to fill this void. Specifically, the iterative development and validation of The School Quality Management Culture Survey (SQMCS) is described in detail. The scales of the SQMCS were designed to assess a comprehensive framework of QM culture for K-12 schools that was developed through an exhaustive process of literature review and expert and practitioner input. Designed to tap the key constructs of QM behavioral norms and values in K-12 schools, the instrument provided here can help schools evaluate their cultural alignment with quality management concepts, practices and principles. In addition to the substantive contribution of the paper, the multi-stage, multiple technique approach to new framework and instrument development and validation outlined herein illustrates a research process that may be of value to others undertaking similar efforts.

We proceed as follows: in Section 2, we provide a brief introduction to the theory upon which the instrument is based. First, we describe the concept of culture as used in this paper. Next, we briefly discuss existing measurement instruments for either culture or QM, and why none were judged to be sufficient as a comprehensive measurement of QM culture in K-12 schools. Finally, we introduce the model of “QM Culture for Schools” that we derived through a synthesis of extant theory and expert input. In Section 3, the first two iterations in the development and validation of the measurement instrument are described. These theory-driven, yet partially inductive, phases led to a successive honing in on the final model, which is discussed in Sections 4 and 5. Finally, in Section 6 we discuss the strengths and limitations of the final model, as well as opportunities for further research.

2. Developing an operational framework of school QM culture

2.1. Culture

While the culture concept has become ubiquitous in discussions of organizations, there is by no means agreement on the appropriate definition or measurement of the concept. After reviewing the literature, Jepperson and Swidler (1994) suggested that the meta-concept of culture seems to be comprised of at least four major sub-concepts or elements: values (choice statements that rank behavior or goals), beliefs (existential statements about how the world operates that often serve to justify values and norms), norms (specifications of values relating to behavior in interaction), and expressive symbols (all material aspects or artifacts of culture) (see also Hofstede et al., 1990; Peterson, 1979; Pettigrew, 1990; Schein, 1992).

A view of culture as comprised of these four elements takes into account the ideational (values and beliefs), behavioral (norms), and material (expressive symbols) aspects of culture (Hall and Neitz, 1993). This view avoids the criticisms directed towards Parsons and others who have claimed with limited empirical evidence that culture is comprised of only one of these elements (e.g. Goffman, 1959; Wuthnow and Witten, 1988).

The position taken in this paper is consistent with this view of culture as a multi-faceted concept, for which at present there is little empirical evidence to be used in adjudicating which of the components are most important for understanding a given aspect of organizational functioning and performance. As such, a comprehensive approach to cultural research requires several measurement strategies to tap the differentiated entities and processes of culture. Thus, the survey to be described in this paper can be usefully employed to tap important aspects of culture, but a comprehensive picture requires supplemental measurement approaches. For example, our survey instrument does not attempt to measure symbols or material artifacts. Furthermore, our instrument cannot by itself address legitimate concerns that the values and beliefs espoused on a survey instrument do not in fact represent the values-in-use in the organization (Argyris and Schon, 1974). However, as discussed later, the results from our survey do allow for an explicit post hoc examination of the gaps between what is espoused as desired and what actually is.

Following from the above discussion, the survey development described in this paper builds on O’Reilly and Chatman (1996) definition of culture as “a system of shared values defining what is important, and norms, defining appropriate attitudes and behaviors,
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