Assessing change: can organizational learning “work” for schools?
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**Abstract**

**Purpose** – The purpose of this paper is to measure the effectiveness and practical utility of an organizational learning intervention for an organization that was not progressive, was not specifically chartered as a learning organization, and was situated in an urban, culturally diverse, and under-privileged community.

**Design/methodology/approach** – In this empirical case study, employees were surveyed pre- and post-intervention on measures of organizational learning, school climate and morale. Archival data on turnover rates were also collected for the years bracketing the intervention (2003-2005).

**Findings** – Analyses show the center reduced turnover and improved in organizational learning, morale, and to a lesser degree, organizational climate. Analyses demonstrate relationships between change in organizational climate dimensions (e.g. supportive leadership, appraisal and recognition, goal congruence) and change toward organizational learning.

**Originality/value** – This research suggests that organizational learning – and the post-bureaucratic practices that characterize it – can be useful even in the most challenging of settings. Unlike previous research, this study specifically addresses organizational learning’s utility for under-privileged populations; it also examines how the more traditional measure of organizational climate is related to post-industrial notions of learning and business performance. It should be of value to academics and practitioners wishing to apply organizational learning to less-advantaged and change-averse organizations.

**Keywords** Learning organizations, Performance measures, Schools, Working practices, Leadership, United States of America

**Paper type** Research paper

It is now well recognized that business models produced by the industrial age are insufficient for thriving in our emerging, dynamic, and inter-dependent global economy. Notions of organizational learning have been posed by academics and practitioners as both a means for achieving success in turbulent times and as a goal – a hallmark of organizational self-actualization. The link between superior organizational performance and a company’s ability to continuously learn is no longer a theoretical supposition. In order to innovate and meet marketplace demands, companies must become more transparent, reduce hierarchy, distribute power, and integrate new knowledge from employees and customers into their core business processes. These demands constitute a paradigmatic shift, challenging organizations to flexibly navigate complex business environments. Likewise, post-industrialism challenges workers to develop new competencies including adaptability, systems thinking, sharing decision-making power, and openness to learning. These new skills require complex ways of knowing and interacting. Psychologists engaged in the study of social-cognition and identity development argue that these cultural shifts have affected
the very nature of “self” (Gergen, 2000; Kegan, 1994). If, as many predict (e.g. Senge, 1990), the global environment is to become more fluid and interconnected in the future, then it is critical to understand the characteristics of the evolving workplace and how to develop the social and intellectual competencies necessary for success. Yet, attending to the development of these competencies after employees join the workforce may be a belated effort. Rather, researchers and consultants could understand – and intervene with – those systems responsible for employees’ initial training in life; namely, schools and the teachers and administrators that formally steward the learning process.

Schools are challenged in ways that differentiate them from for-profit, private sector companies: lack of funding and other resources, historical entrenchment in “machine-age” thinking, and near debilitating teacher turnover rates all serve to make schools one of the least likely environments to adopt innovative administrative practices. Yet school systems represent society’s universal training ground for developing tomorrow’s workforce. Social and intellectual skills are systematically taught in preschool classrooms, and throughout development are modeled by teachers, reinforced through peer interactions, and codified through academic standardization. As Senge et al. argue (Senge et al., 2000), education systems today (i.e. what students learn and how they learn) are failing to teach the kinds of multiple intelligences demanded by post-industrial society. It is important, then, to figure out how to make the organizational learning paradigm “work” for schools.

Study aims and research objectives
This paper offers an empirical examination of one school’s attempt at developing into a learning organization. Our primary research objective was to assess change in organizational learning practices after an intensive, yearlong consulting intervention with school administrators. Additionally, we wished to examine more traditional notions of non-financial performance (i.e. standard leadership and management practices conceptualized as school “climate”) in relation to organizational learning. The hope, here, was twofold: to determine what traditional measures of organizational performance might be associated with improved organizational learning (and therefore offer practitioners more “familiar” and actionable measures), and to identify work environment characteristics particularly critical for supporting organizational learning in this setting.

Our third objective pertains particularly to the research setting, which was an early education and childcare center situated in an urban and economically depressed region of southern New England. The center served approximately 350 families, with the majority of families representing racial and ethnic minorities and over 90 percent receiving state assistance. Kindergarten class size at the center was as high as 25 students per room and teacher-student ratios were the maximum regulations would allow (1-to-13 for the Kindergarten age group). The center offered day-care services for children as young as six-weeks old and had both early morning and after school programs, which meant that many children remained at the center for up to 12 hours per day. Among center staff, formal education in early childhood education was rare, with the majority of classroom aides working for minimum wage and living below the poverty threshold, themselves. These facts are important to understand in relation to the aims of this research, as most studies of organizational learning in educational
settings have featured schools where quality standards and innovation were pre-established norms (e.g. Giles and Hargreaves, 2006; Johnston and Caldwell, 2001; Stevenson, 2001), and where fiscal constraints of this magnitude were not a predominating issue. As will be shown, our literature review failed to uncover any studies exploring how organizational learning might be helpful – or not – to schools serving socio-economically disadvantaged and at-risk populations; this research was designed, in part, to address this deficit.

Theoretical framework guiding the consulting and research processes

The focus of the consulting intervention was on introducing an organizational learning paradigm into an early education and childcare center, and the results of our initial needs assessment (27 confidential interviews with teachers and administrators; approximately 47 percent of all center employees) indicated that staff members at all levels wanted the center to improve along the dimensions of trust, respect, collaboration, teamwork, support and participative decision-making. These wishes were very much in line with the recent literature on teacher working conditions and organizational learning. Therefore, we sought to create a more positive work environment by focusing on those aspects of organizational learning most closely aligned with what we heard from the community, as well as developing more productive leadership and management practices (again, focusing on those characteristics staff members identified as “problematic”).

Our approach – both in intervening and making sense of the research process and outcomes – was guided by three compatible frameworks in the business and social-psychological literature. First, we were cognizant of the risks inherent in our role as experts and the potentially disempowering effects of imposing a model from a position of privilege. In order to mitigate these effects we relied upon a model of process consultation (Schein, 1999) to engage the community in the work of identifying the problem and co-creating solutions. Second, we consciously adopted the roles of research-consultants and tried, wherever possible, to encourage center employees to engage with us in the research process (Argyris and Schön, 1996). In practical terms, this meant that our efforts were directed at those issues identified by the community as being important and needing improvement. It also meant that how we intervened was determined by what administrators and teachers said they wanted. For example, “innovation” did not emerge as a needs’ assessment theme and so – even though this idea is central to principles of organizational learning – it was not included as a topic for professional development workshops, facilitated meetings and other on-site support efforts. Rather, the tangible deliverables of the consulting intervention were based on input we received from stakeholders throughout the center. In this way, we hoped to elicit and integrate a fuller diversity of voices throughout the consulting and research process. Third, recent empirical work has shown that even under the most promising conditions an organization’s capacity to learn can be stymied without sufficient internal and external support. Thomas and Allen (2006) argue in their meta-analysis of the literature that learning organizations demand greater cognitive complexity of their participants. Climates that support critical inquiry, self-reflection and connection have been shown to be critical for the development of learning capacity. Because we consider organizational learning as conceptualized by Senge (1990) to be qualitatively more complex than traditional models of business performance, we
employed a constructive-developmental perspective (borrowed from social psychology: Gergen, 2000; Ivey, 1993; Kegan, 1982) in addition to the process consultation and action research approaches. Constructivist models of self-development recognize that qualitatively new orders of complexity arise in response to environmental challenges. When systems, organizations, or human beings are confronted with challenges that exceed their capacity then new, more adaptive structures and processes will emerge. This movement is contingent upon adequate support, however, and our approach was to provide an on-site, consistent, and nonjudgmental presence to offer support along whatever constituted employees' growing edge (Kegan, 1994).

Organizational learning

Organizational learning and organizational performance. Although the notion of organizational learning has become an increasingly popular concept, the field has not yet arrived at an agreed upon operational definition. Early critiques highlighted the apparent disagreement among practitioners and academics about what organizational learning means and how to go about creating it (Kim, 1993). Writing on organizational learning in previous decades was largely characterized by prescriptive advice based on anecdotal examples, and often written by and aimed at practitioners. For example, Senge's seminal work (Senge, 1990) identified five learning disciplines (including concepts of team learning, personal mastery and systems thinking). Other authors focused on practical advice for creating learning organizations, offering how-to guides for managers on such topics as creating “safe” spaces for thinking and risk taking, mapping out vision, and connecting systems (e.g. Kline and Saunders, 1998). Empirical work linking characteristics of learning organizations to tangible business results for companies, however, is minimal; and remains one of the most critical challenges today (Kiedrowski, 2006). Some early studies (Antonacopoulou, 1999; Edmondson, 1999) did indicate that characteristics associated with organizational learning were related to improved performance for companies. Early findings do appear to support the premise that empowerment, openness, team member dialogue, supportive risk-taking environments, appreciative inquiry and distributed leadership facilitate learning and contribute to business results.

Recent empirical work (López et al., 2005; Prieto and Revilla, 2006) has elaborated on these earlier findings, providing the field with more particular information on how to define organizational learning and how learning may be related to structures, processes, and specific kinds of results. For example, López et al. (2005) define organizational learning as consisting of four processes: knowledge acquisition, distribution, and interpretation, as well as organizational memory. In their survey of over 190 Spanish companies, these authors found that the four-process organizational learning model was positively related to innovation, competitiveness and economic results. Other studies, however, suggest that linkages between organizational learning and improved performance are still ambiguous. For example, Kiedrowski (2006) assessed change in bank employees' acceptance of Senge's (1990) principles: for the bank division that had undergone an organizational learning intervention, organizational learning appeared to be related to improved job satisfaction. However, analyses of a control group suggested that the observed improvements were not significantly different than general improvements observed across the organization.
Supporting the development of organizational learning. Other research has focused on articulating those factors and practices associated with the development of organizational learning. For example, Anderson and West (1998) examined collaborative behaviors underlying team innovation, such as: climate for excellence, vision, constructive controversy, and participative safety. Along similar lines, Edmondson (1999) explored the notion of psychological safety – a team’s ability to support interpersonal risk-taking – in relation to team learning. Jamali *et al.* (2006) in their recent review argue – as we do – that the learning organization is complex and indicative of an emergent, post-modern paradigm. Their review identifies characteristics of the post-bureaucratic organization that indirectly support the gradual development of organization learning: psychological commitment, empowerment, teamwork, trust and participation. These authors conclude that communication practices are the common thread and “connective tissue” among all five learning disciplines (Senge, 1990); practitioners wishing to create learning organizations must recognize that the process is gradual, and most likely to succeed in those organizations that have moved away from industrial age structures and practices. In their meta-analytic review of the literature, Thomas and Allen (2006) also recognize that organizational learning represents a greater order of complexity, making notions associated with it difficult to put into practice. Their review identifies a number of emergent themes in the literature and their analysis suggests that leadership – more than any other factor – is most clearly responsible for creating the necessary environment to nurture organizational learning. These authors conclude that, despite the preponderance of arguments that organizational learning should lead to increased performance, there is little evidence to support its practical utility.

The particular case of organizational learning, schools, and students at-risk
Schools with at-risk students face particular challenges. It is even more difficult to determine how principles of organizational learning may benefit schools. Schools – especially those with a majority of at-risk students – are uniquely challenged in developing learning organizations on three fronts. First, modern educational institutions – the way they are structured and operated – are the direct product of the industrial age paradigm (Senge *et al.*, 2000). Therefore, schools face particular roadblocks in transitioning into post-bureaucratic organizations and adopting the flexibility and participation that characterize learning organizations. Indeed, a 2004 cross-state study conducted by the National Commission on Teaching and America’s Future (Carroll *et al.*, 2004) concluded that low-income students are disproportionately educated in “factory-era” schools that are failing to prepare poor, minority students for the twenty-first century job market. Second, educational systems are currently stressed due to the competing demands of being innovative while simultaneously adhering to greater standardization in terms of curriculum and student performance. State legislated reforms have increasingly pushed for greater standardization, yet universal notions of what to learn and how to learn, as well as the idea that children need to be corrected and controlled, undercut schools’ ability to provide innovative (Giles and Hargreaves, 2006), student-centered, and socially competent educational methods (Senge *et al.*, 2000). Schools situated in poor communities are under pressure to educate students to national standards, but have fewer resources to do so and are consistently underperforming (Carroll *et al.*, 2004; Finn *et al.*, 2005).
Third is the alarming state of learning conditions in low-income schools. Teacher turnover rates have become a situation that qualifies as a national “crisis” (e.g. Barnett, 2003; Brooks, 2003), and one that is particularly acute for schools in urban, poor settings (Kozol, 2005). There has been extensive research documenting and attempting to understand why it is that so many teachers leave the profession, and data suggest that individual (e.g. teacher burnout), organizational (e.g. poor working conditions), and societal factors (e.g. low stature and social standing of teachers, Phillips et al., 1992) all play a part in creating this problem. The national rate of teacher attrition was reported to be approximately 14 percent in the early 1990s (Kelly, 2004), and more recent findings have shown that more than 25 percent of beginning teachers resign during their first three years of teaching (Inman and Marlow, 2004). Hughes (2001) reported that for two teacher samples, 67 percent were considering leaving the profession, and less than half considered teaching to be their most preferred occupation; and teacher turnover rates are 50 percent higher for high-poverty schools (Loeb et al., 2005). Learning conditions are undermined when schools lack qualified teachers and when there are too few teachers and too many children per classroom. Research clearly demonstrates that high turnover rates, inexperienced teachers and large classroom sizes characterize low-income schools that serve at-risk students (Carroll et al., 2004; Finn et al., 2005) and that these qualities are associated with students disengaging from learning (Loeb et al., 2005). Studies also suggest (Houkes et al., 2001; Hughes, 2001) that when teachers do choose to remain, they may do so but with greater emotional detachment, greater stress (partly due to student discipline problems), insufficient social support, less personal investment in their work, reduced goals and standards, and increased isolation and alienation from other teachers and community members. Thus, not only are learning conditions poor in poor schools, but teaching conditions as well. These factors are particularly relevant for early education and childcare programs situated in poor communities. It is well documented that early education teachers and childcare workers leave centers and schools at a higher rate than teachers of older children. Barnett (2003) states that turnover rates for preschool teachers are commonly 25-50 percent annually, and specific studies of center-based childcare providers have reported staff turnover rates of 37 percent (Ceglowski and Davis, 2004) and 41 percent on average (Brooks, 2003).

As Thomas and Allen (2006) note, a dynamic and robust learning organization is highly dependent on retaining knowledge workers. In their review, Jamali et al. (2006) note that organizations are less able today to provide monetary incentives for employee trust, collaboration, empowerment, and participation. Financial constraints are a reality that all companies face, but high-risk schools are particularly challenged in this regard (Carroll et al., 2004; Kozol, 2005). For example, Carroll et al. (2004) found that teachers in high-risk schools got paid less but spent more money out-of-pocket to supplement classrooms with basic supplies than did teachers in wealthier, low-risk schools. In high-poverty schools, money that could be spent on improving facilities or rewarding teachers is funneled instead into costs associated with recruiting and training new, inexperienced teachers (Loeb et al., 2005). Given the combination of scarce resources, entrenchment in “machine-age” paradigms (Senge et al., 2000; Johnston and Caldwell, 2001), and the unstable nature of the teacher workforce, what chance is there of creating “schools that learn”?
Can organizational learning “work” for schools? There is some empirical evidence that demonstrates schools can develop features of a learning organization. For example, Johnston and Caldwell (2001) examined “world class” schools that had in place already “Senge-style” leadership practices and structures and found four dimensions of school operations that characterized organizational learning in this setting (inclusive and collaborative structures, effective communication channels, integrated and inclusive professional development, learning-focused leadership). However, their qualitative analyses of three exemplary schools (all of which demonstrated some elements of Senge’s five disciplines) revealed that school operations were not uniformly consistent with the Senge model. Giles and Hargreaves (2006) examined three “intentionally innovative” schools that had been expressly chartered as learning organizations. At start up these schools had visionary and supportive leadership, participatory management practices, teacher commitment, and district support – all of which seemed to contribute to their initial success. Analyzing progress over time, however, revealed that external pressures (in the form of increased standardization), changes in school leadership, and teacher attrition all contributed to the gradual loss of flexibility and classroom innovation. In a study of Hong Kong schools, Lam and Pang (2003) demonstrated that transformational styles of leadership (with supportive culture and flexible structures) were largely responsible for the development and sustainability of organizational learning. One finding consistent across studies is the critical importance of learning focused, transformational, distributive, and supportive leadership styles. These studies indicate that – though difficult – it is possible for some schools to develop into learning organizations. However, these success stories showcase what is possible for “exemplary” or “world class” schools that have external support, a strong – and shared – vision, and the resources to put theory into practice. These strengths are often absent in schools serving poor communities.

Other authors argue that there is insufficient empirical support to recommend organizational learning as a viable solution for all kinds of organizations (Thomas and Allen, 2006). Even for the most sophisticated and forward-thinking schools, the practical utility of organizational learning is still unclear and may have a more limited application in educational settings than is generally assumed (Johnston and Caldwell, 2001). Imants (2003) concludes in his review that not only may schools be unlikely to become learning organizations, but that school improvement has not been shown to be a guaranteed outcome of organizational learning efforts. He argues that schools, in fact, may realize negative performance and reduced teacher learning as a result of their attempts to become learning organizations. He cautions the field to question the general assumption that organizational learning is necessarily related to improved work environments in schools and states that more empirical work is needed in this area. We would agree with Imants’ argument here – organizational learning is potentially disruptive and overwhelming. Consultants wishing to create learning organizations in already challenged settings should monitor and assess the extent to which interventions improved or eroded morale and workplace performance.

A review of the literature on schoolwork environment highlights a number of factors that are critical for teacher morale, retention, and overall school performance. Among the most widely studied are the general outcomes of increased morale and job satisfaction, both of which are positively related to teachers’ quality of work life and
teacher retention (Hart et al., 2000). Many researchers have applied the construct of organizational climate (how an organization is a “psychologically meaningful environment for individual organization members” (Toulson and Smith, 1994, p. 454) to educational settings. The benefit of this approach is two-fold: climate measures provide insight into those aspects of work-life that are most meaningful to employees; and, because climate has been shown to directly link leadership behavior to bottom line performance (Stringer, 2002) it provides concrete and behavioral suggestions for improving organizational effectiveness. Research in the area of climate and school performance is extensive. For example, Hart et al. (2000) developed a measure of school organizational health containing 11 climate dimensions (such as student discipline, curriculum coordination, and supportive leadership) and a scale for teacher morale (as a key outcome). Other research is very much in line with Hart et al.’s conceptualization. For example, recent writing suggests positive school outcomes are associated with: manageable workloads, teacher autonomy and social support (Hart et al., 2000; Houkes et al., 2001); recognition and rewards, organizational commitment and high standards (Stringer, 2002); administrative support, effective student discipline and influence in decision-making (Ingersoll and Smith, 2003); opportunities for collaboration, sense of community; warm interpersonal relationships and participatory, low-conflict atmospheres (Pang, 2003; Inman and Marlow, 2004).

Research questions

It would seem, then, that organizational learning efforts in schools should be associated with organizational climate in order to be deemed “effective”, yet these two models may not be entirely compatible. For example, participatory environments require more time from employees to take part in meetings and other discussions. Time away from the classroom and additional administrative responsibilities could be perceived by teachers as adding to an already too-steep workload (Houkes et al., 2001). Similarly, collaboration often requires integrating and negotiating a diversity of perspectives, which may actually surface teacher conflicts (Achinstein, 2002) and thus could potentially threaten the supportive interpersonal relationships valued by teachers (Pang, 2003; Inman and Marlow, 2004). And finally, it is unclear how viable the learning organization model is for schools that are not exemplary, world class, or innovative (e.g. Giles and Hargreaves, 2006; Johnston and Caldwell, 2001), as we found no examples in the literature featuring high-risk or socio-economically disadvantaged schools.

For these reasons we seriously considered Imants’ (2003) critique when shaping our research questions. We recognized that schools – where the overarching goal is to promote learning – may be one of the most intractable settings in which to create organizational learning, and that the center participating in this research might be less likely than other schools to adopt post-bureaucratic practices. Our research questions, then, were exploratory in nature, examining how organizational learning was achieved – or not – in conjunction with other aspects of school performance and generally assessing the extent of change realized over the course of the intervention period:

RQ1. To what extent did employees perceive the center to be more of a learning organization post intervention?

RQ2. Did critical “outcomes” for the center – such as morale and turnover rates – improve or deteriorate over the course of the intervention?
RQ3. How did employees’ perceptions of various climate dimensions (such as supportive leadership and participative decision making) change?

RQ4. To what extent were changes in organizational learning and morale associated with changes in school climate?

It should be noted that the method, results and discussion that follow describe this research in terms of observed outcomes and thus present an artificially narrow picture of the consulting engagement. This research is the first in a series of papers, and future analyses will focus on other aspects of the consultation process (such as conflict negotiation practices among center administrators as well as an evaluation of consultants’ behavior and method throughout the intervention).

Method

Participants
The total number of center employees that participated in this study was 61; six male and 55 female adults with the mean age being 35 years (range was 20-66 years). The Center represented a diverse and multi-cultural community: 23 participants identified themselves as Caucasian or European (37.7 percent); 14 indicated they were of Latin American or Hispanic descent (23.0 percent); eight participants were either African American or Cape Verdian (13.1 percent); two participants were Asian (3.2 percent); and 16 participants declined to disclose their ethnicity (26 percent). Data were collected at two times – pre- and post-intervention – and participation rates were similarly high on both accounts: 44 employees participated pre-intervention (69.8 percent or the entire organization) and 45 participated post-intervention (71.4 percent), with 28 employees participating pre- and post-intervention.

Design and procedure
The larger intervention. The current study was grounded in a larger, four-year consulting intervention (2001-2005). The collaboration was initiated by the Executive Director of a New England early education and childcare center in southern New England when she invited local university faculty and students to consult and conduct research on a volunteer basis. An initial needs’ assessment was conducted with teachers, parents and administrators; and the first phase of the intervention targeted teacher-child and teacher-teacher conflict resolution within the center’s preschool classrooms (see Doppler et al., n.d.). Upon completion of the first intervention phase, teachers involved with the training and research on conflict resolution stated that their willingness to carry on the effort would be contingent upon administrators’ ability to support them and, in particular, to take ownership of the initiative. Center administrators, however, stated that they did not want to lead this effort, but wanted instead to focus on creating consistent policies and procedures. In this way it became clear that the consulting intervention (and research effort) would need to move to the administrative level in order to achieve meaningful and lasting change.

The current study. The current research pertains to the second phase of the intervention, which was primarily concerned with the administrative team and assessing change across the entire organization. A second needs’ assessment was completed by the primary researcher in order to hear how teachers and administrators understood the current “problems” at the center and to solicit their ideas on what kinds
of changes were desirable at that point in time. All interviews were audio-taped and thematically analyzed by the primary researcher and other university students on the research team. With the consent of the management team and staff, surveys that reflected the needs' assessment themes were developed and distributed for completion before the second phase of the intervention began. The consulting engagement itself was multi-faceted, interpersonally-focused, largely process-driven, and dynamic. It included a series of workshops on communication and conflict resolution (topics selected by the administrators and teachers), team-building sessions with the management team (including the MBTI), individual coaching sessions and “check-in” interviews throughout the intervention, and regular attendance of weekly management meetings by the primary researcher (a time commitment of approximately 16 hours/week). Post-intervention surveys were completed after all identified consultation activities had been accomplished, and aggregated results of the survey research were presented to center employees as part of the termination process.

Measures

Organizational learning. Three measures of organizational learning were used to assess change pre- and post-intervention: two scales from the Team Climate Index (TCI), participative safety and task orientation (Anderson and West, 1998); and the Learning Organization Assessment (LOA, Kline and Saunders, 1998). The TCI is a five-factor model of work group climate supporting innovation – a critical behavior of organizations that learn (Senge, 1990) and one that is challenging for schools to sustain (Giles and Hargreaves, 2006). Choosing among the five scales of the TCI was necessary to minimize the length of the overall survey, so only those factors that closely reflected what was heard in the needs’ assessment were chosen for inclusion in the current research. TCI participative safety measures the extent to which the interpersonal atmosphere is non-threatening, is characterized by trust and support, and motivates and reinforces involvement in decision making (Anderson and West, 1998). TCI participative safety is comprised of eight items on a five-point scale (1 = strongly disagree, 5 = strongly agree; \( \alpha = 0.89 \)) (Anderson and West, 1998, p. 240).

TCI task orientation measures the extent to which work groups share a “commitment to excellence in task performance coupled with a climate which supports the adoption of improvements to established policies, procedures, and methods”. It captures people’s willingness to be accountable and hold others accountable, as well as a group’s ability to be direct, question assumptions and voice opposing opinions. TCI task orientation is comprised of seven items with a five-point rating scale (1 = to a very little extent, 5 = to a very great extent; \( \alpha = 0.92 \)) (Anderson and West, 1998). The remaining three TCI factors – vision, support for innovation and interaction frequency – were not included in the current research.

In addition to the TCI scales, the Learning Organization Assessment (LOA) (Kline and Saunders, 1998) was included, which is a 36-item self-report survey employing a five-point rating scale (1 = Not at all, 5 = To a very great extent). The psychometric properties of this measure have not been examined in previous research, but it is one of many practitioner-generated instruments published in the business press. The LOA was included in this study for two reasons: it offers a more global approach to assessing the extent to which workplaces behave as learning organizations; and because it is widely accessible to managers, its inclusion here may extend the practical
utility of the current research. One drawback to the LOA was that the items as published were clearly intended for sophisticated business audiences (the Flesch-Kincaid grade level was 12.0 for the survey as a whole). To compensate for this, the survey was revised so that each item was readable at the ninth grade level (each item was edited and then checked for readability using the grammar function in Microsoft Word). For example, “Mistakes made by individuals or departments are turned into constructive learning experiences” was re-written to read “Mistakes made by individuals or departments are used to help everyone learn” and “There is a general feeling that it’s always possible to find a better way to do something”, was changed to “At the center, it is always possible to find a better way to do something”.

Organizational performance. Change in organizational performance was assessed in two ways: turnover and morale. Turnover was measured using archival data from the centers’ employee termination database and the formula that was employed was derived from Ceglowski and Davis (2004). The number of people employed by the center was calculated for the first day of each calendar year relevant to the administrative-level intervention (2003-2005); number of terminations for each calendar year was calculated as well. Turnover rate, then, was the percentage of staff members that had left over the course of any given year. In addition to center-wide turnover rates, additional calculations were made for specific job categories (teacher, teacher aide, administrative team member, and service) in order to observe change for key employee groups.

The morale scale from the School Organizational Health Questionnaire (SOHQ, Hart et al., 2000) climate instrument was used to assess the extent to which employees felt there were good team spirit, enthusiasm, pride and energy at the center. Morale is incorporated in this measure because it has been shown to be critical for overall quality of work life and teacher retention (SOHQ, Hart et al., 2000). This scale has five items using a five-point Likert-type scale (1 = strongly disagree, 5 = strongly agree) and the internal consistency is reported to be 0.86 (Hart et al., 2000).

Organizational climate. The School Organizational Health Questionnaire (SOHQ) (Hart et al., 2000, p. 212), is a measure of teacher morale and school organizational climate that assesses a “range of important organizational behavior and human resource management issues” particular to schools. In addition to morale, the SOHQ consists of 11 other scales (ranging from three to seven items) tapping into facets of organizational climate: appraisal and recognition, curriculum coordination, effective discipline policies, excessive work demands, goal congruence, participative decision making, professional growth, professional interaction, role clarity, student orientation, and supportive leadership. All items were rated using a five-point response scale (1 = strongly disagree, 5 = strongly agree). Alpha coefficients for all 12 scales of the SOHQ range between 0.71 and 0.90, making it one of the strongest measures of organizational climate in the literature.

Results
This study set out to explore the extent to which an early education and child-care center was able to develop the climate and behaviors associated with organizational learning and to ascertain any parallel improvements in organizational performance. Analyses assessed observed change in organizational learning, organizational
performance (morale, turnover) and climate, as well as exploring change in organizational learning behavior in relation to change in school climate.

**Observed change in organizational learning**
Change in the three organizational learning variables was assessed using Wilcoxon signed rank tests and positive change was observed for the global Learning Organization Assessment measure \( Z = 2.50, n = 28, p < 0.01 \), as well as for the Team Climate Index scales of task orientation \( Z = 2.64, n = 27, p < 0.01 \) and participative safety \( Z = 1.87, n = 28, p < 0.05 \). These findings suggest that center employees did perceive the organization to increase its capacity for organizational learning pre- and post-intervention. Additionally, these results indicate that center employees perceived positive changes in everyone’s ability to maintain standards of excellence and to create a safe environment for participation.

**Observed change in organizational performance**
**Morale and turnover.** A Wilcoxon signed rank test indicated that employee morale (SOHQ) showed significant improvement \( Z = 2.16, n = 27, p < 0.05 \), suggesting that teachers and administrators felt more energy and enthusiasm for their work – and took more pride in the center – post-intervention. Change in turnover rates pre- and post-intervention were assessed descriptively, and showed positive increases over the three years spanning the administrative-level intervention. The pre-intervention (2003) center-wide turnover rate was calculated to be 69.8 percent (44 terminations divided by the total number of employees, \( n = 63 \)). Comparatively, the turnover rate post-intervention (2005) was 38.1 percent (24 terminations and 63 center employees). See Figure 1 for a breakdown and comparison of turnover rates by year and job category.

**School climate.** Wilcoxon signed rank tests were used to assess the extent to which change was observed in SOHQ climate. Results for the climate variables were more equivocal than those obtained for organizational learning. In particular, positive change was observed for professional interaction \( Z = 2.46, n = 28, p < 0.01 \), suggesting that center staff felt communication had improved and that they perceived their environment to be more supportive, accepting and cooperative post-intervention.

![Figure 1. Turnover rates center-wide and by job category](image-url)
Additionally, supportive leadership showed significant improvement ($Z = 2.07$, $n = 28$, $p < 0.05$), suggesting that administrators were seen as more in tune with and supportive of teachers’ challenges, as well as more reliable and better communicators post intervention. Some positive change at the trend level was observed post intervention for the climate scales of participative decision making, school role clarity, and curriculum coordination ($Z = 1.04$, $n = 28$, $p = 0.08$; $Z = 1.74$, $n = 28$, $p = 0.08$; and $Z = 1.92$, $n = 26$, $p = 0.06$ respectively), suggesting that improvements in employee voice and collaboration across roles were minimal at best. And no significant change was observed for other dimensions of SOHQ climate, suggesting that the center did not improve its performance in regard to goal congruence, reducing work demands, effective discipline policies, student orientation, appraisal and recognition, and professional growth.

Relationship between change in organizational learning and change in climate and morale

Spearman correlations were conducted to explore how change in organizational learning was related to change in dimensions of school climate and morale (see Table I).

Analyses revealed that professional interaction, goal congruence, appraisal and recognition and supportive leadership were positively associated with all three measures of organizational learning, suggesting that organizational learning was strongly associated with supportive administrators, respectful staff interactions, employee recognition, and consistent school goals and vision. Additionally, positive change in participative safety was shown to be associated with increases in participative decision making and decreases in excessive work demands. This suggests that an “interpersonally non-threatening” environment (characterized by trust and support) was related to greater participation in decisions by center employees and more manageable workloads. Lastly, change in morale pre- and post-intervention was shown to be highly correlated with change in participative safety, and more weakly associated with the other two organizational learning measures. This suggests

<table>
<thead>
<tr>
<th>School climate dimensions (SOHQ)</th>
<th>Learning organization assessment (LOA)</th>
<th>Task orientation (TCI)</th>
<th>Participative safety (TCI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participative decision making</td>
<td>0.21</td>
<td>0.38*</td>
<td>0.43**</td>
</tr>
<tr>
<td>Professional interaction</td>
<td>0.44**</td>
<td>0.56***</td>
<td>0.61***</td>
</tr>
<tr>
<td>Goal congruence</td>
<td>0.56***</td>
<td>0.42***</td>
<td>0.63***</td>
</tr>
<tr>
<td>Role clarity</td>
<td>0.28</td>
<td>−0.03</td>
<td>0.37*</td>
</tr>
<tr>
<td>Appraisal and recognition</td>
<td>0.45**</td>
<td>0.38**</td>
<td>0.45**</td>
</tr>
<tr>
<td>Professional growth</td>
<td>0.18</td>
<td>0.14</td>
<td>0.27</td>
</tr>
<tr>
<td>Supportive leadership</td>
<td>0.54***</td>
<td>0.46***</td>
<td>0.65***</td>
</tr>
<tr>
<td>Effective discipline policies</td>
<td>0.08</td>
<td>0.08</td>
<td>0.26</td>
</tr>
<tr>
<td>Curriculum coordination</td>
<td>0.17</td>
<td>0.18</td>
<td>0.26</td>
</tr>
<tr>
<td>Student orientation</td>
<td>0.36*</td>
<td>0.20</td>
<td>0.32</td>
</tr>
<tr>
<td>Excessive work demands</td>
<td>−0.08</td>
<td>−0.21</td>
<td>−0.43**</td>
</tr>
<tr>
<td>Morale</td>
<td>0.36*</td>
<td>0.36*</td>
<td>0.74***</td>
</tr>
</tbody>
</table>

Notes: *$p < 0.05$; **$p < 0.01$; ***$p < 0.01$
that teachers reporting higher morale post intervention also perceived the center to have become a “safer” interpersonal environment for participation, and to a lesser degree, saw the center elevate its standards of excellence and orientation to learning overall.

Discussion

The objective of this research was to assess the extent to which one early education and childcare center was able to develop organizational learning practices. It should be noted that as researcher-consultants we had a vested interest in the outcomes we were hoping to observe; we remind the reader of this as a way to preface the discussion, which reflects our assessment of the intervention and its impact on the center. Despite this bias, we did attempt to privilege employee voices; the organizational change assessment and results do reflect employees’ perspectives on center improvements (rather than our own). In particular, this assessment explored how center employees perceived change pre- and post-intervention on measures of organizational learning, key indicators of organizational performance (employee morale and retention), and school climate. Previous research has suggested that organizational learning may succeed in some schools (Giles and Hargreaves, 2006; Johnston and Caldwell, 2001), but there is also evidence that instituting post-bureaucratic practices (Jamali et al., 2006) can undermine school performance and work environment (Imants, 2003). One explicit objective, then, was to test the practical utility of organizational learning in an economically challenged and ethnically diverse setting. We were particularly interested in discerning which aspects of school performance would improve (or not) in conjunction with organizational learning.

The findings presented here do suggest that schools with few resources may benefit from organizational learning interventions, as positive change was observed on the global organizational learning measure (LOA, Kline and Saunders, 1998) as well as on the specific measures of task orientation and participative safety (TCI, Anderson and West, 1998). Additionally, morale was shown to improve over the course of the intervention (SOHQ, Hart et al., 2000) and turnover was reduced center-wide by 32 percent. The most impressive reduction in turnover rates was realized in the classroom aide population (from 97 percent in 2003 to 49 percent in 2005); this group comprised the majority of center employees and represents – on a national level – one of the most underpaid and hardest to retain job categories (Barnett, 2003). This suggests – that for one school at least – principles of organizational learning were implemented without detracting from employee morale and retention and lends support to the claim that organizational learning can be practically useful for schools. It is noteworthy that classroom aides received the least direct intervention in this research (as the majority of consulting efforts were directed toward the administrative team). These findings demonstrate what has been found elsewhere in the climate literature (Stringer, 2002) – change in leadership behavior can leverage change across multiple organizational levels. School administrators wanting to affect change, then, might be advised to conserve time and resources – and achieve results – by focusing, first, on their own behavior and management practices.

Some improvements were also observed in regard to schoolwork environment, although not with the consistency shown for organizational learning variables. Most significantly, school climate (SOHQ, Hart et al., 2000) improved along the dimensions of
respectful, professional communication and supportive leadership. Previous research has identified effective communication and supportive and inclusive leadership as critical factors for promoting organizational learning in schools (Johnston and Caldwell, 2001; Lam and Pang, 2003). The results reported here provide additional support for these earlier studies. They also extend the field’s knowledge in that these patterns were shown to emerge in a school that was not “world class” or historically innovative. Participative decision-making and curriculum coordination, which capture employee voice and collaborative behavior, did not show dramatic improvement, however. Achinstein (2002) has argued that collaboration among teachers can be challenging due to the potential for interpersonal conflict that arises when multiple – and potentially contradictory viewpoints – are openly expressed. As noted earlier, interpersonal conflict with colleagues can particularly jeopardize teachers’ perceptions of their work environment (Pang, 2003; Inman and Marlow, 2004). In the case of this school, then, general improvements in communication and support did not significantly translate into corresponding behavioral change in how teachers shared ideas or influenced school policy decisions. It is possible that we did not observe greater change in participative decision making because data collection captured only one year; this may have been insufficient time to build the interpersonal trust needed for constructive voicing of diverse opinions and conflict resolution (Lencioni, 2002). It is noteworthy, however, that although the magnitude of change was modest for some variables, analyses did show that only positive changes in climate were observed. This suggests (in response to Imants’ (2003) critique that schoolwork environment did not deteriorate as a result of organizational learning development.

Despite the general improvements observed in organizational learning practices and some dimensions of work environment, further analyses demonstrated that positive change realized over the course of the intervention was not uniform. For example, results reported in Table I indicate that certain aspects of school climate may have a particular impact on – or be more critically affected by – organizational learning development. For example, changes in the climate dimensions of greater goal congruence and appraisal and recognition (SOHQ, Hart et al., 2000) were shown to be positively related to increased organizational learning, excellence orientation, and participative safety. This suggests that employees who perceived the center to be more of a learning organization post-intervention also perceived the center to improve its ability to link daily work to an aligned and comprehensible vision and to provide meaningful and consistent recognition for a job well done. Group difference tests pre- and post-intervention, however, showed the center did not improve overall along these dimensions. This suggests that only a sub-set of employees felt they were recognized for their work and understood how their work contributed to larger goals – the same sub-set of employees who perceived the greatest change in the center’s ability to behave as a learning organization. These results underscore the importance of creating a shared vision (Senge, 1990) that is actionable for all employees and commensurately rewarded. Successful implementation of organizational learning practices in challenging settings may be particularly dependent upon creating such a vision and frequently recognizing employees’ contributions. In retrospect, these results suggest that the research-consultant team was not entirely successful in helping center administrators inclusively create and communicate a shared vision. Nor, according to this evidence, were we successful in co-designing processes to recognize everyone’s
performance and celebrate successes. Future endeavors, then, should take heed of this deficit to: monitor strength of shared vision during the intervention; and frequently recognize all employees throughout the process.

Additionally, positive change in participative safety (TCI, Anderson and West, 1998) was shown to be related to improvement on more than half of the school climate dimensions. Employees that perceived improvement in their ability to participate – and have their voices heard by supportive colleagues – also perceived their work environment to improve along the dimensions of participative decision making, professional interaction, goal congruence, appraisal and recognition, supportive leadership, more reasonable work demands, and morale. This suggests that creating a “safe” and non-threatening interpersonal environment – one that is characterized by trust and support, and one that allows for a diversity of voices to be heard – was a critical factor in promoting positive work environment at this center. Change in TCI participative safety was the only organizational learning variable significantly related to change in SOHQ participative decision making (the extent to which employees felt they “had a say” in decisions and could affect change in school policies), and the group difference analyses demonstrated that participative decision making did not significantly change center-wide. Together these findings suggest that those who perceived the interpersonal environment to be safe also felt they had more opportunity to affect decisions post-intervention; conversely, those that did not feel “safe” interpersonally did not increase their participation in decisions. Teacher autonomy has been shown to be a key factor in retention (Ingersoll and Smith, 2003) and morale (Houkes et al., 2001), and is the closest variable in this study to a measure of empowerment. Schools wishing to implement participatory leadership practices and promote teacher empowerment, then, may first need to address the underlying issues of trust and interpersonal support that facilitate collaboration (Achinstein, 2002; Lencioni, 2002).

Finally, it is noteworthy that positive change was observed in all three measures of organizational learning despite the fact that teachers and administrators did not identify employee “learning” or center “innovation” as a need pre-intervention. The increases in organizational learning as measured by the LOA (Kline and Saunders, 1998) and TCI participative safety and task orientation (Anderson and West, 1998) suggest that people did become more receptive to learning from their mistakes, challenging each other, sharing ideas across functions, and holding each other to higher standards. Our consulting approach, however, was to develop training and other on-site interventions that closely aligned with what teachers and administrators said they wanted – “better” communication, more respect and understanding from everyone, and greater support (especially from “higher-ups”). We were obliged to take this approach given our intent to follow a process-consultation model (Schein, 1999). We tried to help the center community define the “problem” and devise solutions, and we wanted to mitigate the disempowering effects of imposing our post-bureaucratic notions. It may be that this approach was perceived by teachers and administrators as modeling the kinds of improvements they wanted to realize – it respected their wishes, allowed them to have a voice and communicate with each other, and was intentionally supportive of their perspective and goals. The improvements realized here might be instructive to academics and practitioners wishing to affect change with other populations or organizations entrenched in industrial-age, “bureaucratic” paradigms.
(Jamali et al., 2006; Senge et al., 2000). Rather than challenge those already overwhelmed with the mandate to “innovate,” these findings suggest that listening to the community, providing support for people’s stated goals, and focusing on the “basic” interpersonal processes of trust-building, respectfulness and mutual understanding may be a necessary precursor for more ambitious change.

**Limitations and directions for further research**

There are a number of limitations that need to be considered when evaluating the results of this study. First, as researcher-consultants we were in the dual role of conducting and evaluating this intervention, and so we recognize that our interpretation of findings is not truly objective. Additionally, our work with center employees occurred over several years, and this paper attempts to report on only one aspect of the consulting intervention; future papers will explore the management team’s change process, and insight into teachers’ experience of the intervention can be found in Doppler’s work (Doppler et al., n.d.). We also recognize that it would be shortsighted to attribute all positive change in center learning, turnover and morale to the intervention alone. This is due in part to the complex and holistic nature of learning, and many other variables may be at play that helped – or hindered – the center’s progress toward organizational learning; it is also an unfortunate artifact (but a necessary one in this case due to page-limit constraints of journal articles) of assessing change from a purely quantitative standpoint.

Second, this is a case study of one organization and documents in which ways it succeeded in implementing practices associated with organizational learning. It is difficult to say that the results obtained here could be generalized to other kinds of schools with different demographics or in other geographic areas. Because of the nature of the consulting engagement – an action-research model based entirely on research-consultants’ ability to volunteer their time – it was not feasible to include a control group, or to attempt a parallel project in a different setting. Future research efforts then could attempt to replicate these findings in other kinds of schools, and if possible, include a control group in the project to assess the extent to which change was unique to the intervention (as did Kiedrowski, 2006, in his comparative study set in the financial services industry).

Similarly, action-research projects of this nature are inherently time-consuming and labor-intensive, and the current research was conducted without grant support or University funding. It is possible that, with financial backing, more resources could have been committed, and greater (and more consistent) change realized. Likewise, center leadership was constrained in its ability to provide material support to employees throughout this process. This center operated with the minimum of “basic” resources; for example, there was no money to purchase new books, and the center relied heavily on charitable donations from local libraries and other community businesses to provide equipment, food, and toys for students. Center employees frequently received state assistance and were living in poverty, themselves. It is hard to say what kinds of changes might have been observed had there been more funds available – not only to reward performance – but to provide teachers and classrooms with basic sustenance. School administrators, academics, consultants, and other would-be change agents may be more successful in these kinds of efforts if they can provide material support as an integral aspect of their interventions.
Additionally, the method and ensuing analytical approach used in this research was somewhat constrained by the study design and sample size. The needs’ assessment shaping this research was conducted in 2003, and organizational learning measures were identified for inclusion at this time. Additionally, due to turnover rates and the size of the center (60 employees), only 28 staff members participated pre- and post-intervention. This small sample ruled out many of the analytical techniques that have been developed to show directionality of and mediating forces in hypothesized relationships (e.g. Prieto and Revilla, 2006). Given these constraints, we elected to include readily available measures, such as the LOA (Kline and Saunders, 1998). The benefit, here, is that this measure is available through the business press, and is therefore readily accessible to a wider audience. Future research would add value to the field if it included a greater range of measures – those most often used by managers and consultants – in combination with the most current empirical measures and analytical models stemming from academic research.

Conclusion
This research offers evidence that practices associated with organizational learning may positively benefit even the most challenged school settings. We have argued (along with Senge et al., 2000) that today’s students are being systematically underserved by outmoded models of learning, which will fail to prepare them for emerging workplace demands. This is particularly the case for those students in poorer, urban settings. As Kozol (2005) describes, today’s inequality across schools is likely to result in bleak consequences for the nation. Standardized notions of what to learn and how to learn, coupled with the paucity of funding and resources available to inner-city (and non-White) children means we are failing to provide this country with a future workforce capable of the global understanding and complex thinking needed to thrive in the post-industrial world. This research has shown that it is possible to cultivate post-bureaucratic practices – in the form of organizational learning – under adverse conditions. We argue that these kinds of efforts are critically important. The high-performing learning organizations of tomorrow require a diverse workforce – workers that represent multiple races, perspectives, intelligences, and knowledge. Additionally, tomorrow’s learning organizations will need employees socially and cognitively adept at navigating relationship, complexity, diversity, and dynamic marketplace demands. It is necessary, then, to transfer knowledge from the business world to those settings that are the greatest sources for diversity, but are often the most “behind”, and to figure out how organizational learning can “work” for schools.

References


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