The School as Learning Organization:
Validation of the DLOQ with School Staff

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Chapter One: Introduction

School psychology literature sometimes references organizational psychology when discussing models of indirect service, including collaborative problem solving, parent and teacher teams, administrative consultation, systems change, school reform and child study teams. What purports to be organizational school psychology consultation or systems change in school psychology literature differs substantially from the notion of "Learning Organization" within the literature of management scholarship. The landscape of school psychology that directly addresses systems management or systems change is mostly confined to subsystems smaller than the organization as a whole. School psychology literature has mostly focused upon micro, team-based processes as constructs of systems change within school environments (Sheridan & Gutkin, 2000).

Management scholarship refers to the academic business literature oriented toward variables relevant to the effectiveness of business organizations. An interesting subset of management scholarship is the body of theory and research on "organizational learning".

Organizational learning as it is defined in management scholarship literature differs from traditional school psychology literature targeting systems change. Typically, management scholarship and organizational learning embrace larger systemic processes that reflect a "macro" view of all the players in the system. Taking an organizational learning approach may offer another perspective on organizational psychology in the schools.

What may be referred to as organizational school psychology grows out of the consultation movement in school psychology. Consultation is an indirect approach to

service delivery that involves communication among teacher and parents, school psychologists, and child study teams as a way to indirectly benefit children by working directly with their caretakers. The hope is to in this way affect a broader range of children and to have a preventive as well as curative effect. At its broadest level, this involves using consultation as a means, a process, for implementing positive school change (reform) in the entire organization or, more typically, subsets of the organization (classrooms, teacher teams, special education committees, etc). In Caplan's (1970) model of mental health consultation, this function is embodied in Level III: Program Centered Administrative Consultation, and level IV: Consultee Centered Administrative Consultation. In Meyer's (1977) adaptation of Caplan's model, this is represented in Level III: Service to the System. Many scholars have addressed essential features of system wide consultation (Caplan & Caplan, 1993; Zins & Illback, 1995; Zins & Ponti, 1990; Truscott, S, Cosgrove, G., Meyers, J., & Eidle-Barkman, K., 2000), including some that resemble those of management scholarship (Illback & Zins, 1995; Myers, B., Valentinio, C.; Myers, J., Boretti, M., Brent, D., 1996; Caplan, G. & Caplan, R., 1993; Sheridan, S. & Gutkin, T., 2000; Myers, J., Myers, A., Grogg, K. 2004). Though there are some promising results of such endeavors, a clear and consistent effectiveness has not been reliably established for whole system school consultation efforts (Illback & Zins, 1995; Illback, R. & Zins, J. 1995; Meyer 1977). The essential aspect of assessing the organization, so important in other aspects of the role of school psychologists have received limited attention.

Management scholarship, looking at business organizations as systems, and especially the study of businesses as learning organizations, may be a more developed field, but it

has not been systematically adapted for use in educational and human service organizations. The concept of the learning organization has a relatively strong body of theory and research, including approaches and instruments for the use of assessing businesses as learning organizations. One step in bridging the divide between the two literatures would be to use well-developed approaches to assessing learning organizations in non-business environments, in this case with the public schools. The purpose of the present study is to adapt and evaluate one method of assessing learning organizations, the Dimensions of the Learning Organization Questionnaire, with public school employees as participants rather than employees of business organizations.

Correlates of effective schools have been identified within the literature and can be used as outcome measures associated with public school employees' perceptions of their schools.

Purpose of This Study

The purpose of this study is to begin the process of evaluating the usefulness of the concept of the 'learning organization' when applied to schools, rather than business organizations. This will be done by field testing one instrument for measuring learning organizations, The Dimensions of the Learning Organization Questionnaire (DLOQ), with school personnel as respondents. Secondly, the study will assess the relationship between participants' views of their schools as learning organizations and their perceptions of the effectiveness of their schools. Items to address school effectiveness will be drawn from correlates of effective schools demonstrated within the existing literature (Partin, R. 1995; Lezotte, L. 1999).

This comparison will be conducted by using the 21 items from the DLOQ with 14 additional correlates that purport to measure the outcome variable, effective schools. These items will comprise a single survey scale, called the DLOQ. The 21 items which measure learning organizations will remain the same as on the original DLOQ survey.

Research Questions

1. What is the factor structure of the DLOQ with school personnel as respondents?
2. How does this factor structure differ from that established in previous research using employees of businesses as respondents?
3. Do responses to the DLOQ provided by employees of a rural school yield a different factor structure than responses provided by employees of an urban school?
4. What is the relationship between staff perceptions of their schools as a learning organization and their perceptions of the effectiveness of their schools?

Chapter Two: Review of Literature

The goal of consultation is to minimize student problems and increase student academic and social performance. Consultation is defined as a collaborative endeavor between the school psychologist and consultee(s) oriented toward solving client (child) problems with learning and adjustment. It includes gathering diagnostic data, assessing teacher/team readiness for intervention, team problem solving for individual students, and establishing cooperative partnerships between teacher and consultant based upon the strong interpersonal skills of the consultant (Zins & Illback, 1995; 2007). The individual consultant must be interpersonally successful with teachers and team members in order to influence student outcomes. Generally, research using individual consultation and behavioral principles, data collection, and treatment integrity do not generalize to larger, natural settings but remain isolated from the bigger idea of organizational learning (Truscott et al, 2000).

Consultation is a form of indirect service delivery. The school psychologist does not directly work with students but offers the consultee (teacher, parent, team, or work group), feedback and strategies to help improve the student's performance. Effectiveness of consultation partly depends upon the amount of prior knowledge that teachers have before beginning an intervention (Wilson et al., 1998).

The notion of "teacher treatment accountability" is an important variable directly impacting the success of interventions. The lack of teacher treatment accountability can interfere with direct outcome measures regarding effectiveness of interventions through

school psychology consultation. Teacher knowledge of the intervention is units of measurement (Gutkin & Curtis, 1990; Sheridan, 1992; Wilson et al., 1998).

Social validity is the outcome measures (Welch, Brownelle, & Sheridan, 1999).

Individual School Psychologist Consultation

In addition to consultee variables researchers suggest different types of individual school psychologist consultation behaviors can be more effective than others. For instance, directive or non-directive verbalizations can be used to achieve teacher/consultant collaboration and treatment acceptability in the face of differing degrees of teacher experience (Erchul, 1993; Erchul, Hughes, Meyers, Hickman, & Braden 1992, Gutkin, 1996, Wilson, 1998). Methods of coding the relationship, as gleaned from verbal behavior of relational coding is used (Bergan's Consultation Analysis Record) which measures domineeringness (Erchul, Sheridan, Ryan, Grissom, Killough & Mettler, 1999).

Verbal dominance is considered an index of a consultant's directness or attempts to structure the relationships in consultation (Erchul et. al, 1999). "The Relational Communication Control Coding System" (FRCCCS), developed for use in conjoint behavioral consultation (Erchul et al; 1999), measures consultant communication with dyads such as parents and teachers or among members of small groups. The FRCCS: has not been routinely applied with large group consultation oriented toward total system change.

Behavioral consultation is targeted at reducing problem behaviors or academic difficulties in students. The term "behavioral consultation" refers more to a methodology than to categories of problems addressed. Studies using behavioral consultation have

included rigorous experimental and single subject designs and have reported more positive outcomes for this type of consultation (Sheridan, S. & Welch, M., 1996). Though single subject designs, data collection, experimental designs and objective decision making is needed to assess treatment effectiveness, the role of school psychologist as “the expert” is generally de-emphasized as is true with other consultation approaches.

All consultation is viewed as a collaborative partnership between consultant and consultees and is targeted toward individual and small group change. Behavioral consultation seldom addresses system outcome measures (Johnson, T., Stoner, G., & Green, S., 1996).

Though some behavioral consultants claim to adhere to the notion of non-hierarchical relationships between consultant and consultee, behavioral consultation demands more action from the school psychologist who helps the teacher or team identify problem behaviors in ways which can be measured (Sheridan, S. & Gutkin, T., 2000). Often a behavior plan or intervention plan is generated and the consultant collaborates in monitoring and managing the data to inform further interventions (Sheridan, S. & Gutkin, T., 2000). Despite a long history of generally reliable outcomes, more studies are needed to assess for the effects of social validity and treatment acceptability: and more attention needs to be paid to system changes and cost efficiency (Sheridan, S. & Welch, M., 1996).

Conjoint Consultation

Over the past decade, the behavioral consultation model developed a subcategory of consultation known as the Conjoint Behavioral Consultation Model (Sheridan, S. & Gutkin, T., 2000). This service delivery model expanded to include parents of students as well as teachers in a collaborative problem solving relationship. Some variation of the

problem solving model common to other consultation approaches is also used in conjoint consultation. The problem solving model involves the use of a sequential and recursive set of steps. An example might include: 1) problem identification, 2) problem analysis, 3) development of hypothesis and 4) intervention design; 5) intervention implementation; and 6) treatment evaluation (Sheridan, S. & Stick, M., 1995; Erchul, Sheridan, Ryan, Grissom, Killough, & Mettler, 1999).

Consultation that includes parents is seen as an expansion of the individual school psychologist's role and another form of indirect service delivery. Success of interventions depends upon the nature of the relationship between the consultant and consultee (parent). In common with all forms of consultation, the consultant is expected to implicitly negotiate the nature of the consultation contract in order so that all participants understand the consultation process (Knoff, H., Hines, J., & Kromrey, 1995). Problem solving skills as well as interpersonal skills are important for consultation to be perceived as effective (Knoff, H.; Hines, J.; & Kromrey, 1995).

Mental Health Consultation

Mental health consultation employs a more quasi-therapeutic role for the school psychologist (Sheridan, S, & Gutkin, T, 2000). The Mental health consultant assumes a reflective role, using techniques that are usually more indirect than the behavioral consultant, and seem to have a closer resemblance to counseling or psychotherapy. These characteristics stem from its origins in the work of Gerald Caplan (1970) from whose foundational text "The Theory and Practice of Mental Health Consultation" the name derives. Mental Health Consultation can be seen as an overarching term that includes other forms of consultation. Gutkin and Curtis, in "Consultation: The Science Delivery"

(1998) say it is the most comprehensive of models. The essence of the model is its four levels of classification of types of consultation. These include: (1) client centered case consultation; (2) consultee-centered case consultation; (3) program centered administrative consultation; and (4) consultee centered administrative consultation. Levels one and three involve a focus on a particular client or a program that affects clients, while levels two and four involve a focus on the consultee. These latter levels (two and four) have a more preventive emphasis. By changing consultees there is hypothesized to be a potential for broader change that goes beyond an individual case or program. It should be readily apparent that level one can subsume most forms of behavioral consultation in the schools, whether targeted toward academic or social-emotional issues. Caplan's third and fourth levels, targeted as they are beyond the individual, might subsume the kind of system or organizational change with which we are herein concerned. In Meyers et al. (1979) adaptation of Caplan's work more specifically to schools, he uses a three level model. Level One is Indirect Service to the Child; Level Two is Direct Service to the Teacher; and Level Three is Service to the System. It is this last level that is most relevant to the organizational change emphasis of this paper. Service to the system involves working beyond individuals to cause preventively oriented organizational change is the entire system or important sub-systems (Meyers et al., 1979).

Organizational and Systems Consultation

School consultation research and practice gradually moved to include as much of a systems as individual focus, particularly in regard to consulting with teams of school personnel (Knoff, Hines, & Kromrey, 1995) Studies often assess consultants' work to encourage cooperative and collaborative partnerships within teams (Erchul, Sheridan,

Ryan, Grissom, Killough, & Mettler, 1999). Teams consist of members from multiple disciplines as well as school psychologists. School psychologists are seen as changing service delivery systems through consultation to other professionals and teams who work with children. Currently, school psychologists seek to conceptualize an approach to system wide consultation that extends beyond child study teams (Zins & Ponti, 1990; Zins & Illback, 1995).

Zins and Ponti argue that consultation to referral teams provides assistance on a systemic basis and is a sound method for delivering services on a system-wide level (1990). However, little has been written about implementing consultation on a broader systems level. Zins & Ponti argue that little has been described around specific and effective ways to enable system wide consultation. They have outlined why organizational change efforts can fail. Often change efforts fail due to "insufficient clarification around the organization's needs, lack of preparation for change, poorly conceptualized intervention strategies, lack of involvement from the consultant within the change process, and lack of follow up from the consultant" (Zins & Ponti, 1990). In theory, if consultation were implemented to teams across a system simultaneously, systems change could occur (Zins & Ponti, 1990) because involving larger numbers of professionals can generate more options for change. Training other professionals can maximize change. Change is planned through the implementation of shared goals across disciplines targeting outcome measures directly related to program evaluation (Zins & Ponti, 1990). Zins and Ponti suggest that consultation on a systems wide basis is the bridge between traditional school psychology and organizational school psychology.

School Psychology and Management Scholarship

Although a gap between the school consultation literature and that of management scholarship has yet to be systematically addressed some school psychologist literature does address management scholarship concepts, especially Mahler, Illback (1992) and Zins (1995) who developed a basic model of system change consisting of six core components: (1) established shared vision among members, (2) team building, (3) study of task/team process, (4) evaluation of facts by measurement, (5) trust and empowerment among teams, and (6) program evaluation (Zins & Illback, 1995).

Sheridan and Gutkin put forth an “ecological” theory which conceptualized human behavior as a function of ongoing interactions between individuals and environments (2000). The ecological theory mirrored some aspects of “learning organization” found within management scholarship. From the vantage of ecological theory, each student is seen as part of a social system. Student problems are viewed as discordance or lack of balance between a student’s ability and the demands from the environment (Sheridan & Gutkin, 2000). Ecological goals focus upon the manipulation of environmental demands and the re-alignment of demands to student abilities. Sheridan and Gutkin (2000) stated that student problems needed to be re-conceptualized to better inform systemic approaches to service delivery.

Maher and Illback (1982) have argued after several investigations that large scale organizational change is essential to success in school reform and that the relationships among parents, teachers and communities are important variables in that change. Schools are seen as organizations within communities (Zins & Illback, 1995; 2007). Even though schools are unable to hold responsibility for problems created by larger social dilemmas, the organizational school psychologist seeks membership in a larger social context,

conceptually integrating organizational, community, and school psychology (Truscott, Gosgrove, Meyers & Eidle-Barkmen, 2000).

Organizational School Psychologist

Organizational school psychologists (OSP) use data collection, diagnosis, consultation and feedback as part of a planned effort to address organizational change (Truscott, et, al, 2000). OSPs engage in planned change targeted at intervention acceptability (social validity) over time (Truscott, et, al, 2000).

Zins and Illback say that there are general phases or steps of the organizational change process. The organizational school psychologist must have good, cooperative partnerships among teams, positive interpersonal communication with consultees, and related knowledge of the change process. They must work towards establishing a shared vision among and between teams, examine the process of collaboration, evaluate facts through measurement and feedback, develop trust and empowerment, and put forth an action plan (Zins & Illback, 2008).

Maher (1993) stated that the mission of organizational school psychologist is to deliver appropriate services to all students. In order to improve the organization's policies regarding service delivery, procedures and programs may need to change. Change can be planned and directed by assessing school-wide needs. A school psychologist may conduct surveys of school and community members to better assess readiness for change. In addition to surveys and interviews, students work products help inform the direction of change related to targeted organizational outcomes measures. (Mayer & Illback, 1982).

Illback and Zins say that within the framework of educational settings a continuum exits for organizational change (1995). The first stage in the framework is diagnosis of

the organization and its environment. Data collection can include direct observations and interviews. Interventions may target working relationships among people and inter-group development. The use of feedback surveys will highlight issues of leadership, values, relationships, climate, and power (Illback & Zins, 1995). Climate descriptions such as the Organizational Climate Description Questionnaire by Halpin (1966) assesses the climate of schools with items that measure teacher interpersonal relationships, work load of teachers, socialization, intimacy, and administrative support. The Organizational Health Inventory by Hoy & Feldman (1999) and the American School Climate survey, measure aspects of school climate at both the school and staff levels (Bevans, K., Bradshae, D., Miech, Rl, & Leaf, P., 2007).

Diagnostic surveys and process interventions like in-service trainings can help modify the structure of educational programs and inform team leadership. Teams can be strengthened through structured group activities such as inter-group systems building. Members can develop an awareness of how they work together and facilitate conflict resolution. Policies, administrative procedures, reward systems, and technology strengthen leadership decisions around change (Illback & Zins, 1995).

However, no system wide feedback measure has been used to bridge the gap between school psychology consultation and school psychology organizational change. Climate surveys do not measure learning cultures. Learning organizations are cultural transformations. Thus, the literature informing school psychology consultation as practice for organizational change remains short of defining schools as learning organizations. Learning organizations are best understood as large scale feedback systems which create realignment strategies for mediating environmental stress and building adaptive power

through the process of choosing effective strategies based upon the organization's prior experience (Argyris & Schon, 1978).

From the perspective of learning organizations, individual consultation is a valued part of the learning process and structure, but learning organization outcomes can not be measured through the function of traditional consultation. Another way to look at schools as learning organization is to explore them in ways not done in the school psychology literature.

Despite the extensive work to develop an organizational school psychology, system wide assessments and feedback measures have not been used to bridge the gap between individual school psychology consultation and school psychology organizational change. Climate surveys do not measure learning cultures.

Management Scholarship: Learning Organizations and Other Understandings

From the perspective of learning organization, individual consultation is a valued part of the learning process and structure, but learning organization outcomes can not be measured through the function of traditional consultation. The understanding within school psychology which references organizational change emerges from consultation literature. The landscape of organizational change from the perspective of management scholarship is quite different. This perspective may be important to schools. This proposed study will investigate the feasibility for school psychology to use a management scholarship approach. The purpose of this study, at the most basic level, is to show what schools may gain from using large scale feedback tools that offer strategies for systemic change.

Ortenbald's Typology of Learning Organization

There is not yet a consensus defining the Learning Organization. Authors have attempted to add clarity through research and scholarly analysis of shared themes (Ortenbald, 2002). Anders Ortenbald, (2002) created a typology of Learning Organizations which concluded that although no linear or progressive hierarchy of learning organizations exists there is an overall, collective umbrella concept of Learning Organization.

In 1978, Argyris and Schon initiated the inquiry of organizational learning in their seminal work, *Organizational Learning*. Since then, many works have been published about organizational learning and this phenomenon is further categorized into two distinct subfields: 1) Learning Process (*Organizational Learning*) and, 2) Formal Organizational Structure (*Learning Organization*) (Ortenbald, 2002).

Generally, a rough distinction lies between learning process or *learning organization* as an "ideal" (Finger & Brand, 1999; Ortenbald, 2002) and *organizational learning* as an "action" directed at reaching the ideal (Ortenbald, p. 214, 2002).

Ortenbald's (2002) typology produced four understandings under the idea of Learning Organization: 1) Old Organizational Learning 2) Learning at Work 3) Learning Climate 4) Learning Structure.

Old organizational learning, written about extensively by Argyris and Schon (1978), assumes that individuals learn for the organization, store that knowledge in memory, and later use that knowledge for problem correction. Individual learning influences organizational performance on different levels (Argyris & Schon, 1979; Ortenbald, 2002; Zhang,et al, 2004).

The second understanding, learning at work assumes individual learning is a concrete application of techniques which occurs at the workplace. Examples include trainings and non-validated performance measures such as “Total Quality Management” (Ortenbald, 2002; Lynn & Osborn; 1991; Zhang, et al, 2004).

The third understanding is “learning climate” a perspective that creates a work environment where individuals are rewarded for learning. Opportunities for learning are created by employers for individuals to communicate, seek knowledge sharing, and contribute to the “climate” of learning (Ortenbald, 2002; Pedler & Aspinwall, 1998; Zhang, et al, 2004).

The fourth understanding, “learning structure”, is best represented by the research of Watkins and Marsick (1999; 2004) and Peter Senge (1990). This perspective, views learning as a flexible, embedded, and localized effort that ensures all individuals at the local level see the “big picture” of a unified and shared vision. Everyone has access to greater knowledge in order to assess individual and organizational needs (Ortenbald, 2002; Zhang, et al, 2004). Watkins and Marsick, (1993; 1999; Zang, Watkins & Marsick, 2004) created and validated the “Dimensions of the Learning Organization” scale to measure factors associated with Learning Organizations.

Learning Organizations

The original concept of organizational learning (Argyris & Schon, 1978) developed as authors’ researched ways to use this knowledge in a way that would generate data and inform the practice of organizational learning ideas (Ortenbald, 2002). Scholars and theorists, such as Argyris & Schon (1978); Garvin (1993); Marsick & Watkins (1993; 1999; 2004); Senge (1990); and Pedler, Boydell, & Burgoyne (1991; 1997) represent

different understandings of learning organizations and offer a cohesive alternative to the perspective of systems change found within the School Psychology literature.

The larger process of learning organizations as defined by management scholarship suggests that systems change comes through feedback systems, which foster adaptation to environmental stress. Organizations must change and reassess their purpose and re-adapt their goals to stay competitive for survival (Senge, 1990; Argyris & Schon, 1978). Public schools can benefit from assessing this type of responsive approach to stress. Pressures of survival can inform systemic renewal and foster growth. It is this reflection, this ability to summarize and organize patterns of past and collective efforts which defines the learning organization (Argyris & Schon, 1978). Learning subsumes practices of assessment, such as measurement, dissemination, and restructuring of routine behaviors during processes of growth and change (Argyris & Schon, 1978). Argyris and Schon defined organizational learning as accumulated experience of members, intellectual capital, and shared decisions held within the organization and greater than the total sum of individual participants.

Bell's Category of Organizational Learning

The definition of organizational learning changes over time from a theoretical and scholarly root to a more prescripted kind of action learning (Ortenbald, 2002).

Since Argyris and Schon's (1978), research and theory have informed new methods through which a culture of learning might be taught and embedded into existing organizations (learning organizations).

While Ortenblad deduced a typology of Learning Organizations (2002), Bell, Whitwell, and Lukas (2002) created categories of organizational learning, the process of

learning that leads to learning organizations. Both typologies attempt to distinguish an organized spectrum of theory. The process of organizational learning can be summarized into four schools of thought, none of which are summative, hierarchical, or 'ultra' in scope (Bell, Whitwell, and Lukas, 2002). The categories are: 1) Economic, 2) Developmental, 3) Managerial, and 4) Process Schools. A brief and simplified review follows.

The Economic School reflects a linear process of learning. Learning occurs as a direct response to problem solving around the repetition of similar demands. Mistakes or successes are separate from the value the task/demand holds within the context of the greater environment (Bell, Whitwell, & Lukas, 2002).

The Developmental School suggests that organizational learning occurs through a sequential process, stages of development, which lead to a higher learning. The stages are steps to evolution for the organization and cannot be accelerated through planned or managed circumstances (Bell, Whitwell, & Lukas, 2002).

The Managerial School model states organizational learning should be managed, planned and prescriptive (Senge, 1996). Peter Senge (1996) maintained learning can be created through interventions and scientific experimentation and only "learning" stored within the conceptual values of the organization will be learned. Managerial school theorists' purport organizational learning is measured through diagnostic checklists and rating scales which sample principles of behavioral science. *The Dimensions of the Learning Organization Questionnaire* is such a rating scale (Bell, Whitwell, & Lukas, 2002; Cyert & March; 1963; Watkins & Marsick, 2004). The DLOQ offers descriptive feedback measures that inform learning organization profiles, prescribes interventions for

improved learning, and compares an organizations' learning to performance outcome measures (Yang, Watkins & Marsick, 2004).

The Process School model represents the work of Argyris and Schon. This model suggests that organizational learning is inherent in all organizations, however latent. Organizations have the capacity to learn when needed and must balance the interests among sections within the organization who are competing for resources. Management is charged with implementing strategies for disseminating information and regulating communication among members. Learning happens as a result of interactions among members and relationships are key variables in the organizations' capacity to create learning and build knowledge. Learning also occurs across the organization through the process of alignment and regulation of communication, information, and behavior (Spender,1996; Bell, Witwell, & Lukas; 2002). The Process School offers the most flexible model of organizational learning within the context of interpersonal relationships. (Ramesh & Tiwanta,1999).

Organizational Learning Differentiated From Learning Organizations

Organizational learning is described within management science as a textured and complementary process given the leadership, structure, and mission of a specific organizational purpose (Argyris & Schon, 1978). Learning within an organization happens collectively and predictably. Typically, organizations are comprised of a collection of people who are connected through a process of decision making. Decisions are made through group dynamics. As individuals learn to effectively interact within the group in the service of the organizations' goals; the organization learns, develops, and changes (Argyris & Schon, 1978).

The organization exists as greater than the collection of individuals, decisions, and behaviors of members (Argyris & Schon, 1978). The process of learning enables the group decisions to be encoded in the memory, procedures, and programs of each organization (Argyris & Schon, 1978). Learning occurs through an increasingly efficient decision making process (Argyris & Schon, 1978). Old members stay active with new information and new members are selected into old systems in response to environmental changes, thus learning continues (Argyris & Schon, 1978).

Organizational learning was conceptualized as a cultural phenomenon by Argyris and Schon (1978). Layers within the overall system of organizational culture support a sub system of checks and balances aligned with functions of communication, information, and regulation of the organizational rules (Argyris & Schon, 1978). To the degree that organizations can correct errors in these three subsystems, the organization learns. The ability to self-regulate and align actions with plans gives the organization a meta-awareness and capacity to learn (Argyris & Schon, 1978). Interactions among the organizational community are meaningful and revolve around the common values and shared identities among members. When new members join, learning occurs as they align their behaviors with knowledge of the organizational rules and norms (Argyris & Schon, 1978). Thus, members contribute to learning when they detect errors between their behavior and their knowledge of organizational rules and norms (Argyris & Schon, 1978). Generally, the literature states that organizational learning is the *process* of learning in organizations and organizations can be matched against Bell's four categories of organizational learning which fall under Ortenblad's typology of learning organizations.

Constructs of Learning Organizations

In 1991, Huber portrayed four constructs of organizational learning: 1) knowledge acquisition, 2) information distribution, 3) information interpretation, and 4) organizational memory. Huber states: “An entity learns if, through processing of information, the range of its potential behaviors is changed” (1990, p. 89). From Huber’s work comes the notion that learning is planned and intentional given the organization can recognize information that is useful (Huber, 1991). Organizations develop ‘new’ information by piecing together bits of information from other parts of the organization and thus creating the potential for synergistic learning (Huber, 1991). Information builds meaning within an organization through the process of shared understandings and conceptual schemes (Huber, 1991; Daft & Weick, 1984). This is referred to as a cognitive map. Lastly, Huber stated, information needs to be stored in technology or another electronic method so that it may be accessed by others at any time to make decisions (Huber, 1991). The storage of information mirrors the notion of organizational memory first articulated by Argyris and Schon (1978). The organization begins to build trust among members, as trust develops, a high tolerance for mistakes ensues (Huber, 1991).

Learning Organizations

Both scholars and leaders of organizations have contributed to the concept of learning organizations. Learning is the process of encoding behaviors into routines, correcting errors, and repeating new learning through shared insight and mental models of what is efficient and beneficial to the organization (Garvin, 1993). Like consultation within traditional school psychology, organizational scholars put forth a process of problem solving: 1) problem identification, 2) problem analysis, 3) solution hypothesis 4) solution

implementation, 5) solution evaluation (Garvin, 1993). Garvin maintains that learning organizations can cultivate the “art of listening”, through a willingness to accept feedback such as surveys and interviews, and identify behaviors that can be measured as the outcome effects of change and experimentation (Garvin, 1993).

Measuring Learning Organizations

The most comprehensive and pragmatic practice of learning organization measurement comes from the work of Watkins and Marsick (1993; 1999; 2004). These authors explain: “In learning organizations, everyone has an idea of what the whole picture looks like, knows how to get something done in the organization, has a budget with which to take action, and has knowledge of how to influence or work with people (Ortenblad, 2002; Watkins & Marsick, 2004). Everyone has access to information about how to plan learning and how to assess their needs in relation to the needs of the organization; they also have access to data-based information on their desktop computer (Watkins & Marsick, 1993 p.17; Ortenblad, 2002). Internal technology, an example of organizational memory, can store the structure of routines and dialogue, embedded in culture and encoded into the values and “mental maps” for everyone who works within the organization (Argyris & Shon, 1978; Hedberg, 1981; Ortenblad, 2002). Learning organizations tend to foster loosely structured roles, in line with needs of important stakeholders, and in such a way to allow for growth and experiment (Pedler et al., 1991; Ortenblad, 2002). Learning takes places among individuals, teams, and groups and changes in knowledge, beliefs, and behaviors are natural outcomes (Watkins & Marsick, 1993; Ortenblad, 2002).

Watkins and Marsick are the only team of researchers who have blended all aspects of the research and bridged the concepts between Learning Organizations and Organizational Learning (Watkins & Marsick, 1993; 2004; Ortenblad, 2002). They developed an instrument to measure the *Constructs of Learning Organizations*.

Individual and Structural Levels of Learning Within the Learning Organization

Measuring organizational learning would seem a daunting task. The function of organizational learning exceeds the act of individuals learning for the organization (Templeton, Morris, Snyder, & Lewis, 2004). Connections between individual leaning and organizational learning can be explored and measured. Learning organizations do attempt to map theory onto the interactions between individual behaviors and organizational structure (Templeton, et al., 2004). Individual learning enhances organizational learning when individual behaviors serve the best interest of the organization (Templeton, et al. 2004). Cultural routines and shared visions of organizational members metamorphose into new cognitive strategies and behaviors when organizations adapt and make changes to meet environmental demands (Templeton, et al., 2004). Therefore, the variables measured must be easily observable and represent the theory of organizational learning. For instance, the variables must reflect the purpose of the organization, a high degree of adaptation, and be encoded into routines which can be measured (Templeton, et al., 2004; Watkins & Marsick, 2004). To ensure continuous learning, feedback from organizational members informs organization leaders of direction (Moilanen, 2005). A feedback measure, developed by Marsick and Watkins. The Dimensions of Learning Organization Questionnaire (DLOQ) is used to reflect upon

the processes and performance goals that organizations should maintain (Moilanen, 2005).

Performance goals of the organization must speak to the unique composite of people, structure and routine (Gephart, Marsick, Buren, & Spiro, 1996). Learning must be a directed effort at aligning members' behaviors with a shared vision and strategy that supports system level goals (Gephart, et. al., 1996). The vision and strategy of an organization's membership is fossilized within the memory of the organization at a systems level (Gephart, et al, 1996). Change can be prescriptive and strategic but organizations remain flexible in order to adapt to innovation and competition. The DLOQ measures learning on two factors: 1) individual, group, and 2) systems learning for the purpose of assessment and strategic change at the systems level (Gephart, et al, 1996). Individuals and teams are "change agents" for systems level learning which survives transient leadership and organizational membership (Gephart, et al, 1996). The organization strategically embraces problems and environmental conflict in ways which create a culture of "lessons learned". Thus, organizations become remarkable vessels for sustained and regenerative learning, pollinated (so to speak) by the transience of membership (Gephart, et al., 1996).

Seven Dimensions of Learning Organization

As organizations solve problems, they build a 'culture' that holds all of those lessons learned, the core competencies. (Gephart, Marsick, Buren, & Spiro, p. 43, 1996). Marsick and Watkin (1993; 1999; 2004) conceptualized seven dimensions, the core competencies, which allow members of an organization to measure the degree to which the organization practices learning behaviors (Ellinger, et al, 2002). Organizations that develop and

sustain actions associated with the seven dimensions of learning are reported to reach outcome standards consistent with organizational goals and visions (Ellinger, Alexander, Ellinger, Yang, & Howton, 2002). Most definitions of learning organizations focus upon transferring knowledge and modifying behaviors (Ellinger, et al, 2002). Watkins and Marsick build their conceptual framework upon three points: 1) learning is systems level and continuous, 2) systems level learning is created to manage knowledge outcomes, 3) which further improves the organizations performance and intellectual capital (Ellinger, et al, 2002). The seven dimensions identified as learning actions for the construct of learning organizations are: 1) continuous learning, continuous learning opportunities; 2) inquiry and dialogue, a culture of questions, feedback, experimentation; 3) team learning, collaboration and collaborative skills which support effective use of teams; 4) empowerment, the process to create and share a collective vision and get feedback from members regarding the difference between present and shared vision; 5) embedded system of collective efforts to establish and capture shared learning; 6); system connection which reflects global thinking and connects the organization to its external environment 7) strategic leadership to promote learning (Ellinger, et al, 2002; Yang, Watkins & Marsick, 2004).

When Yang, Watkins and Marsick, (2004) developed the measurement construct of the learning organization they differentiated between learning organizations and organizational learning. Learning organizations are defined as organic systems which have the capacity to learn, demonstrate these capacities and work to sustain them (Yang et al., p. 34, 2004). Organizational learning promotes collective learning experiences targeted at specific attainment of skills within the subsections of the organization (Yang,

Watkins & Marsick, 2004). This differentiation is measured at systems level initiatives (Yang, Watkins & Marsick, 2004).

Dimensions of the Learning Organization Questionnaire: The Measurement Survey

Watkins and Marsick (1993) developed an instrument based upon the conceptualization of the learning organization, the DLOQ. In 2004, Yang, Watkins and Marsick conducted a study to validate the survey instrument. The DLOQ measured seven dimensions of organizational learning, based upon learning behavior principles, and compared that relationship to other organizational variables (Yang, Watkins, & Marsick, 2004).

The seven dimensions of the DLOQ instrument are measured by forty-three items on a six-point Likert scale. Respondents are asked to assess the extent to which their organizations practiced learning organization principles from 1= almost never; to 6= almost always (Ellinger et al, 2002). The core constructs researched for the questionnaire supported the theory that learning activities of the group, rather than team processes, facilitated learning for all members and continuously transformed knowledge into strategic actions (Yang, Watkins & Marsick, 2004). Theory further stated that organizations possessed an adaptive and ‘generativity’ ability which creates alternative futures for organizations (Yang, Watkins, & Marsick, 2004, p. 32).

Clarity and support of a shared vision, leadership, experimentation, and transfer of knowledge among members are assessed, for instance, how well people align themselves around a common vision; and how well the organization fosters commitment rather than compliance. The DLOQ looks at learning organizations as organic agencies with the

capacity to teach and learn a competitive edge for the purpose of competition and renewal (Yang, Watkins & Marsick, 2004).

DLOQ Scale Design

Learning organizations are measured for their ability to display continuous learning characteristics and adaptive characteristics, and implement these characteristics at two different levels; 1) the individual/group level, and the 2) structural/systems level. Watkins and Marsick's measurement scale defines the learning organization construct, provides measurement of seven domains of the construct, at two levels (individual and systems) based upon the integration of accepted theory. No overall score is calculated. Although seven constructs or factors are designed for measurement, two core factors, provide leadership and systems' connection to environment, produce the strongest relationships and direct effects on outcome measures. The five other factors produce indirect effects on outcome measures (Yang, Watkings, & Marsick, 2004).

The original scale of forty-three items, measure the seven dimensions of the learning organization proposed by Watkins and Marsick (1993; 1999; 2004). A financial performance and knowledge performance subscale (consisting of 12 items) is constructed within the DLOQ to establish a net between learning behaviors (independent variable of 43 items) and outcomes measures (dependent variable of 12 items measuring financial and knowledge performance) (Yang et al, p. 40, 2004).

The authors used confirmatory factor analysis to examine the relationship between the seven constructs of learning organizations: 1) create continuous learning opportunities; 2) promote inquiry and dialogue; 3) encourage collaboration and team learning; 4) empower people toward a collective vision; 5) connect the organization to its environment; 6)

establish systems to capture and share learning; 7) provide strategic leadership for learning. A structural equation model analysis was performed to measure the constructs of the learning organization against the performance outcome measures: 1) gain of organizational knowledge and 2) increase of organization financial performance (Yang et al, p. 41, 2004).

The study findings suggest the seven-factor model with forty-three items is too lengthy and does not fit the data very well (Yang, et al, p. 46, 2004). Ideally, the fit of the measurement model improves when inadequate items are discarded from the scale while adequate items are retained (Yang et al, p. 47, 2004). In order to refine the instrument the authors conducted a series of confirmatory factor analysis (Yang et al, p. 47, 2004). The objective of the item deletion process was to retain a set of sample items (Yang et al, p. 47, 2004).

The original 43 item scale was reduced to 21 items to create a second scale. The 21 item scale has only recently been published. The refined item scale forms stronger relationship correlations among the seven dimensions.

The Structural Equation Model suggested that the 21 item scale model had a closer fit to the data than the 43 item scale (Yang et al., p. 47-49, 2004). The results of SEM showed that the seven dimensions of the learning organization had significant effects on organizational outcome variables, financial performance and knowledge performance (Yang et al., p. 50, 2004). The study showed an underlying structure existed which represented patterns of learning activities in organizations which related it to organizational outcome measures (Yang et al., 2004).

Prior Research Using the DLOQ

Ellinger, Ellinger, Yang, and Howton (2002) conducted an empirical study to examine the relationship between the learning organizational concept as defined by Yang, Watkins, and Marsick (2004) and a group of successful firms' financial performance indicators. These authors measured the relationship between the seven dimensions of the DLOQ instrument and two perceptual performance outcome measures (financial and knowledge performance). The authors also examined the relationship between the seven dimensions of the DLOQ and four, secondary objective financial outcome measures (Return on Investment; Return on Assets; Tobin's q; and Market Value Added, MVA) (Ellinger et al, 2002).

The study examined the overall correlation between the forty-three items measuring the seven constructs of learning organization. As outlined above, Yang, Watkins & Marsick (2004) conducted a series of factor analysis on the forty-three item scale representing the seven dimensions. The authors created a more parsimonious twenty-one items scale, seven-construct model which yielded a moderate fit (Yang et al., 2004). Based on these findings, Ellinger et al., examined the two measurement models (forty-three and twenty-one) to assess the applicability of the DLOQ (Ellinger et al., 2002). A comparison of fit indices for the two measurements indicated a moderate fit for the seven dimension factor, forty-three item scale whereas the reduced seven dimension factor, twenty-one item model yielded a reasonable measurement fit (Ellinger et al., p. 15, 2002). Results from this study suggest a significant relationship between the seven dimensions and two perceptual measures and four secondary, objective financial measures (Ellinger et al., 2002).

Zhang, Zhang and Yang (2004) examined the applicability of the DLOQ in a Chinese business context. A confirmatory factor analysis was used to assess the internal consistency for each of the seven dimensions of the learning organization in a Chinese business context. Each of the items included in the Chinese DLOQ was examined in terms of its correlation with the proposed dimension (Zhang et al., p. 262, 2004). Results suggested the factor structure fitted the data reasonably well. Nearly 90 percent of item variance and covariance was explained by the seven-dimension factor structure (Zhang et al., p. 276, 2004). Results indicated a statistically significant relationship between the learning behaviors and practices measured on the seven dimensions of the DLOQ and the two perceptual measures of organizational performance (Zhang et al., p. 267, 2004).

Additional studies using the DLOQ assessed the performance of Lebanese, Spanish, and American firms. The findings suggest positive and significant relationships between learning organization behaviors and business performance (Davis & Daley, 2008; Hernandez & Watkins, 2003; Jamali & Sidani, 2008).

Conclusions and Statement of the Problem

School psychology literature mostly references organizational psychology when discussing models of teacher consultation, collaborative problem solving, and pre-referral child study teams as strategies for systems change. Consultation to referral teams provides assistance and is a sound method for delivering system level services. Learning outcome measures from indirect school psychology consultation focus upon individual student problems and are influenced by the social validity of the problem solving intervention and skill acquisition of the teacher responsible for implementing the intervention.

Management scholarship differs from traditional school psychology in ways which organizational change can be implemented and measured. Organizational change is implemented through the creation of a learning organization. From the perspective of learning organizations, individual consultation is a valued part of the learning process and structure, but learning outcomes are not measured through the function of individual consultation. Another way to look at schools is to look at them as 'learning organizations' and explore them through the lens of 'learning organization' using a large scale feedback tool such as the DLOQ, which measures the culture of learning (Yang, 2003). The Dimensions of the Learning Organization Questionnaire, the measurement survey, can be used to assess learning activities within schools and explore the relationship between the proposed seven constructs of the learning organization to a school specific outcome measure like the seven attributes of effective schools (SEM). The seven reoccurring attributes of effective schools are appropriate large scale outcome measures (Partin, R. 1995; Lezotte, L., 1999).

The seven attributes are: 1) clear school mission and commitment to instructional goals, 2) high expectations for success and belief that all students can attain mastery, 3) instructional leadership and effective management of instructional program, 4) frequent monitoring of student progress used to improve individual student performance, 5) opportunity to learn and student time on task in whole, large group settings, 6) safe and orderly environments conducive to teaching and learning, 7) positive home-school relationships (Partin, R., 1995; Lezotte, L. 1999).

Although abstract, there is behavioral evidence indicating learning cultures exist, to varying degrees within organizations. Theories of learning organization have emphasized

that the organization needs to work with people at the individual and group level first. As people are empowered, they create learning structures within the structure of the organization. System connections, embedded systems, and leadership are the mediators between individual-level learning activities and system structural level activities.

Organizations that learn show systems-level changes that are measurable. Learning must be systems level and continuous, and deliberately created for the purpose of performance outcome measures which further improve the organization's value and intellectual capital. Learning organizations will show improvement in the organization's performance (Yang, B, Watkins, K., & Marsick, V., 2004).

In learning organizations, the essential construct of observable behaviors form measures, latent variables. These theoretical constructs at the individual level and structural level have been measured with the DLOQ (Yang, B., Watkins, K., & Marsick, V., 2004). Schools that promote learning culture behaviors that can be observed and measured will also be effective schools as measured by the 21 item DLOQ and the 14 item School Effectiveness Measure Scale combined to create the DLOQ for this study.

Chapter Three: Method

Sample and Participants

The primary sample used for instrument validation comes from a non-random sample of two school districts in Maine. Approximately 500 DLOQ and Effective School Measurement surveys were distributed to regular education teachers, special education teachers, specialists/therapists and building administrators within two school districts. One school district was urban the other school district was rural. The school districts were 30 miles apart.

The urban school district has 20 schools, approximately 6,900 students and 850 teachers. Out of the 20 urban schools, 6 schools expressed interest in participating in the survey and a total of 92 participants identified their home schools.

The rural district has 5 schools, approximately 2,500 students and 230 teachers. All of the rural school buildings participated in the study. A total of 93 participants identified their home schools. The overall total participant participation for both districts was 196.

Overall, 61 males and 126 females were identified as respondents A total of 8 administrators, 32 specialists/therapists, 130 regular education teachers, and 22 special education teachers were identified as respondents to the DLOQ and Effective School Measurement survey in both districts. Additional information gathered from participants

included level of education and years of experience within their respective school buildings.

Procedure

The researcher and administrators of both districts reviewed all survey items. The researcher sought the assistance of principle teams and superintendents to help distribute the survey. The surveys were available online. Respondents were anonymous.

A letter of introduction, informed consent, and purpose of the study accompanied the survey. Participation was voluntary. A short 'debriefing' letter will be sent to participants following the completion of the study.

Design and Data Analysis

The design is a cross section study looking at respondents' perceptions of their schools at one point in time. The design asks for results only once of the DLOQ questionnaire and researcher-made measurement, Effective Schools Measurement. The study does not measure effectiveness of schools but measures respondent's perceptions of schools. The main purpose of the study is to see if scores on the DLOQ can predict scores on the School Effectiveness Measurement.

The DLOQ has been used in previous work. The 21 item scale and subsequent factor loadings were identified in Marsick and Watkins (2003) *Demonstrating the Value of an Organization's Learning Culture: The Dimensions of the Learning Organization*

Questionnaire. Factor loadings for the 21 DLOQ were taken from the original 43 item scale. The factor loadings on the 21 item scale are: 1) create continuous learning opportunities, (individual level items -1, 2, 3); 2) promote inquiry and dialogue, (individual level items- 4, 5, 6); 3) encourage collaboration and team learning, (team level items -7, 8, 9); 4) create systems to capture and share learning (systems level items -10, 11, 12); 5) empower people toward a collective vision (systems level items -13, 14, 15); 6) connect the organization to its environment (systems level items -16, 17, 18); 7) provide strategic leadership for learning (systems level items -19, 20, 21). When used in a business setting, the alpha coefficients for each learning organization scale were: continuous learning (.81), empowerment (.84), system connection (.80) and provide leadership (.87).

The correlates of the criterion variable (the response variable, Effective School Measurement) are: 1) clear school mission, 2) effective instructional leadership, 3) high expectations, 4) safe, orderly, and positive environment, 5) ongoing curriculum improvement, 6) maximum use of instructional time, 7) frequent monitoring of student progress, and 8) positive home-school relationships.

Both instruments were distributed to see if they might work together in school districts.

Analysis of Research Questions

1) What is the factor structure of the DLOQ with school personnel as respondents?

The first analysis will be a Cronbach's Alpha. Cronbach's Alpha measures how well a set of items measures a single scale or latent construct. It is a measure of reliability and consistency. Cronbach's Alpha will be performed for the total scale,

total scale with rural population, total scale with urban population, and separately for each of the seven dimensions in order to see if scale constructs from businesses are usable in schools. A Cronbach's Alpha will be conducted for the School Effectiveness Measurement. If this scale has more than 1 dimension than more than one analysis will be conducted. Only 1 independent variable can be considered during each analysis. An Exploratory Factor Analysis will be conducted to see if the same factor structure emerges within the school population. An Exploratory Factor Analysis is used to detect patterns within the data and reduce items to those that confirm a hypothesis or factor structure.

2) How does this factor structure differ from that established in previous research using employees of businesses as respondents?

A Confirmatory Factor Analysis will be conducted to compare results from EFA of the DLOQ used in schools to results found in the literature using the DLOQ in businesses.

3) Do responses to the DLOQ provided by employees of a rural school yield a different factor structure than responses provided by employees of an urban school?

A Cronbach's Alpha will be conducted to measure internal validity within the scales and reliability coefficients among the correlations when used in an urban setting and used in a rural setting. Exploratory factor analysis will be conducted, one for rural school and one for urban school.

4) What is the relationship between staff perceptions of their schools as a learning organization and their perceptions of the effectiveness of their schools?

A multiple regression will be conducted to assess if items on the DLOQ, the independent variable can predict School Effectiveness Measurement, the criterion variable.

Data Analysis

Data analysis will consist of Cronbach's Alpha to determine correlation coefficients among the DLOQ and School Effectiveness Scales. An exploratory factor analysis will determine if any dimensions or theoretical constructs exist within each scale. An exploratory factor analysis will be conducted for research question #1. A multiple regression will be conducted for research question #4 in order to see if the DLOQ is predictive of respondents' perception of their schools on the School Effectiveness Measure (SEM). The study will explore the possibility that the DLOQ holds predictive validity for the criterion variable, School Effectiveness Measure. If the hypothesized relations among the proposed 7 constructs of the DLOQ are found to be significant in the direction of educational outcomes, School Effectiveness Measure, then there will be a significant relationship between the proposed seven dimensions and perceived outcome measure, school effectiveness.

Use and Care Of Results:

All completed surveys will be maintained on a fireproof computer with protected password at MSAD 71 and Alfred University. Upon completion of data collection, the surveys will be deleted from MSAD71 computers. The data analysis will be entered into an SPSS/AMOS file and secured on a fireproof computer with protected password at Alfred University and MSAD71.

Informed Consent Form: The researcher will obtain informed consent from each

participant by the act of survey completion.

Chapter 4: Results

Research Question 1) The researcher's first question was: What is the factor structure of the DLOQ with school personal as respondents?" In order to answer this question, a reliability analysis and exploratory factor analysis were performed on the DLOQ and school effectiveness measure (SEM) (Table 1). The Cronbach's Alpha for the total DLOQ 21 item scale was .958. This indicates high reliability and suggests that all 21 items measure the same construct, or latent variable. Next, Cronbach's alphas were computed for all seven dimensions hypothesized to exist in a business setting context by Marsick, Watkins, and Yang (2004). All dimensional scales exhibited good reliability. The highest Cronbach's Alpha was for Dimension 7 (.867) and the lowest was for Dimension 1 (.786). Although all the dimensional scales appear to have acceptable reliability, they do not represent a real advantage over a unitary measure of the DLOQ, as this simple scale actually has a higher reliability than the more complex 7 dimensional model.

In order to address the factor structure of the DLOQ, an exploratory factor analysis was conducted to see what factors would emerge from the 21 items that constitute the DLOQ. The purpose of the exploratory factor analysis was to reduce the set of observable items and identify the latent variables which determine the value of the observable variables. Exploratory factor analysis assumes no preconceived theory exits concerning

the underlying constructs (latent variables) of the DLOQ. For this exploratory factor analysis, principle component analysis was used with a varimax rotation. Learning Organization is conceptualized as a global concept and only common factors assume commonality. Principle factors were extracted and one factor emerged; all 21 items had high loading on this factor. This suggests that the DLOQ is best interpreted as a one factor scale.

Eigenvalues represent the amount of variance in the data that is explained by the factor which it is associated. The eigenvalue for the total DLOQ (11.443) represents 54% of variance of the total scale. The eigenvalue for the DLOQ total scale when used with a rural population (9.88) represents 47.048% of the variance of the first factor. The eigenvalue for the Total DLOQ when the scale was used with urban respondents (12.417) represents 59% of the variance associated with the first factor.

Communalities represent the extent to which an item correlates with the latent variable, a factor. All communalities for the DLOQ 21 item scale are high, all above .556 and below .803. No item was unrelated to the single factor.

In order to explore the factor structure of the school effectiveness measure, an exploratory factor analysis was conducted which further examined the assumption that the school effective measure is a 14 variable scale, measuring each one of the 14 items constituting the school effectiveness measure. The first factor had the highest eigenvalue (98.132) and explained 58% of the variance. Taken together, the SEM scale is best interpreted as having one factor, which can safely be called school effectiveness.

The communalities show that the 14 items of the school effectiveness measure load well for the most part with the exception of the item DLOQ 3111 (communality = .418).

Although this score is above .40, it suggests that this item ("In my school, students are engaged in whole class or large group, teacher directed-planned learning activities") may not fit into the scale as well as the other items. All other items communalities ranged between .597. and .805, suggesting that these items contribute to the single factor school effectiveness (Table 2).

Research Question 2) The researcher's second research question: "How does this factor structure differ from that established in previous research using employees of businesses as respondents?" required a Confirmatory Factor Analysis for the DLOQ total scale, first with one factor and second with the seven factors dimensions hypothesized to exist in a business setting context by Marsick et al. (2004). In order to conduct Confirmatory Factor Analysis it was necessary to use the Amos (Analysis of Moment Structures) program. Amos is a path analysis program used for analyzing continuous and categorical variables (Keith, 2006). Amos is able to use graphics to assist in the analysis of observable and latent variables. The graphics program uses rectangles to represent measured (observable) variables and ovals to represent latent variables and circles to represent disturbances. Straight arrows represent paths or presumed causal influences and curved lines represent correlations (Keith, 2006). The unmeasured variables (latent) have no natural scale so they are assigned a variance value of 1.0; the disturbances are also assigned a variance value of 1.0. This is referred to as a constraint. Amos attempts to map out a theoretical model or confirmatory factor analysis and provides matrices of the data based upon paths drawn from the observable variable to the latent variable (First Order and Second Order Diagram).

Fit statistics determine which model is the most parsimonious or best fit. The Chi Square is a fit statistic that is very sensitive to the size of sample, therefore it can be significant due to sample size, the larger the sample the larger the X^2. Even though X^2 is statistically significant for both one and seven factor models, researchers still use the model due to known influences associated with sample size. Ideally, the Chi Square should be small but not significant. The CFI (Comparative Fit Index) and the TLI (Tucker-Lewis Index) are relatively unaffected by sample size (Keith, 2006). RMSEA (Root Mean Square of Approximation) is another commonly used fit model.

The first model with one factor (Table 5) showed a good fit (X^2=222.664; df = 156; p <.000; CFI=.975; TLI=.964; RMSEA=.047). Results are good because, even though X^2 is significant, the CFI exceeds the generally accepted cutoff of .95; TLI is at .96; and the RMSEA is below .05 (First Order Diagram). The second order model with seven factors (Table 5) also showed a good fit (X^2 226.400; df =151; p=.000) CFI=.972; TLI=.957; RMSEA=.051). Given that the DLOQ is best understood as a single factor model, it is important to note that the betas for all 21 items on the DLOQ scale have coefficients ranging from .817 to .587 (Table 3). The seven betas to the seven dimensions from the DLOQ in the second order factor model were also strong and ranged from .638 to .888 (Table 4).

In this case, the two models fit the data but the first model explains the data better because it is a simpler model. Keith states that the model with the fewer free or estimated parameters will have the most degrees of freedom and degrees of freedom measure the model's parsimony. These results differ from the findings of Watkins, Marsick, and Yang (2004) whose research supported a seven factor DLOQ over a one factor and null model.

Results from their validation study of the DLOQ confirmed the existence of seven factors in a business context.

Research Question 3) The researcher's third question: "Do responses to the DLOQ provided by employees of a rural school yield a different factor structure than responses provided by the employees of an urban school?" required Cronbach's alphas for the total DLOQ scale when used with rural respondents and when used with urban respondents and than exploratory factor analysis.

In order to determine whether the DLOQ is equally reliable for individuals in rural school settings, Cronbach's alphas were computed separately for rural and urban schools. Cronbach's Alpha for the total 21 item DLOQ when used with a rural population was .943. This suggests that, when used with a rural population, the DLOQ holds together as a unified scale and reliability remains strong. However, as was the case when reliability was examined for population as a whole, the seven dimension scale model does not represent advantage over a unitary scale (Table 1).

Likewise, Cronbach's Alpha for the total 21 items DLOQ when used with an urban population was .965. This also suggests that when used with an urban population, the DLOQ holds together well, reliability remains strong. When Cronbach's alphas were completed separately for the 7 dimensional scale reliability remained strong, as was the case when reliability was examined for population as a whole. However, again as was the case when reliability was examined for population as a whole, the seven dimension scale model does not represent advantage over a unitary scale (Table 1).

Exploratory factor analysis subsequent results suggest that when the DLOQ was used only with rural respondents, one factor emerged. All 21 items had high loadings on this

factor, which accounts for 47.048% of the variation among the 21 items. When the DLOQ was used with urban respondents, one factor emerged. All 21 items had high loadings on this factor which accounts for 59.128% of the variation among the 21 items (Table 2).

Thus, responses from employees from rural school districts do not yield different factor structures from employees of urban school districts on the DLOQ or the SEM scales.

Research Question 4) The researcher's fourth question was: "What is the relationship between staff perceptions of their schools as learning organizations and their perceptions of the effectiveness of their schools?" This question required the author to conduct a block entry multiple regression with the school effectiveness measure as the criterion variable and the DLOQ as the key explanatory variable. DLOQ was entered in Block 1 and the control variables (gender, experience, rural, special educator, and level of education) were entered in Block 2 (Table 6). First, in order to determine whether the DLOQ or learning organization behaviors influenced respondents' perceptions of their school's effectiveness, the criterion variable, SEM was regressed onto the DLOQ. The overall direct effect of the DLOQ was statistically significant ($F [1, 144] = 228.993$, $p<.000$). The DLOQ accounted for 61% of the variance in the SEM ($R^2=.614$). A beta of .784 indicates that DLOQ is strongly associated with SEM.

Next, a second block of variables (gender, experience, rural, special educator, and level of education) were entered to see if the effect of DLOQ remained when control variables were added. The model was statistically significant ($F [6,139] = 47.920$, $p<.000$). This model explains 67% of the variance ($R^2=.674$). Even with gender,

experience, rural, special educator, and level of education controlled statistically the DLOQ had a significant effect on respondents' perceptions of their schools' effectiveness. The DLOQ (beta=.748) retained its large effect on SEM. The variable "rural district" (beta=.407) also influenced the respondents' perceptions of their schools (Table 6).

An interesting statistical anomaly is that, when SEM is regressed on DLOQ, b's and betas are virtually identical; b=.783 and beta=.784 in the first model, and b=.748 and beta=.748 in the second model. This happened because SEM and the DLOQ are scales which used the same metric (both the DLOQ and the SEM used a 6 point Likert scale and their standard deviations are equal). The b is the unstandardized regression coefficient and the Beta is the standardized regression coefficient, so if the standard error and x and y are the same, b and beta will be identical. Given their high correlations and similar standard deviations, it appears possible that DLOQ and SEM are both measuring the same construct. In other words, respondents who observed learning organization behaviors in their schools also observed their schools to be effective schools where children learned. However, it may be impossible to argue that DLOQ caused SEM since these are highly correlated measures with similar measurement properties which were assessed at the same time.

Table 1

Cronbach's Alpha

Reliability Analysis.

Total	**Cronbach's Alpha**	**Rural**	**Cronbach's Alpha**	**Urban**	**Cronbach's Alpha**
DLOQ	0.958	DLOQ	0.943	DLOQ	0.965
Dimension 1	0.786	Dimension 1	0.718	Dimension 1	0.831
Dimension 2	0.869	Dimension 2	0.871	Dimension 2	0.862
Dimension 3	0.851	Dimension 3	0.803	Dimension 3	0.871
Dimension 4	0.802	Dimension 4	0.758	Dimension 4	0.835
Dimension 5	0.865	Dimension 5	0.763	Dimension 5	0.918
Dimension 6	0.793	Dimension 6	0.716	Dimension 6	0.824
Dimension 7	0.876	Dimension 7	0.836	Dimension 7	0.894
SES 14 Item Scale	0.943	SES 14 Item Scale	0.927	SES 14 Item Scale	0.942

Table 2

Summary of Exploratory Factor Analysis Results for DLOQ and School Effectiveness Measure (N=194)

Factor Loadings for Exploratory Factor Analysis.

DLOQ	**Total**	**Rural**	**Urban**	**SES**	**Total**	**Rural**	**Urban**
DLOQ111	**0.711**	**0.679**	**0.727**	DLOQ2281	**0.811**	**0.812**	**0.777**
DLOQ211	**0.611**	**0.587**	**0.633**	DLOQ2381	**0.855**	**0.855**	**0.832**
DLOQ311	**0.703**	**0.7**	**0.741**	DLOQ2481	**0.799**	**0.810**	**0.772**
DLOQ421	**0.734**	**0.738**	**0.729**	DLOQ2581	**0.780**	**0.758**	**0.757**
DLOQ521	**0.743**	**0.679**	**0.78**	DLOQ2611	**0.725**	**0.687**	**0.761**
DLOQ621	**0.8**	**0.765**	**0.825**	DLOQ2711	**0.756**	**0.782**	**0.752**
DLOQ731	**0.713**	**0.619**	**0.757**	DLOQ2711	**0.789**	**0.784**	**0.780**
DLOQ831	**0.76**	**0.726**	**0.773**	DLOQ2811	**0.796**	**0.868**	**0.727**
DLOQ931	**0.782**	**0.69**	**0.83**	DLOQ2911	**0.777**	**0.757**	**0.811**
DLOQ1041	**0.712**	**0.629**	**0.753**	DLOQ3011	**0.634**	**0.570**	**0.655**
DLOQ1141	**0.717**	**0.643**	**0.773**	DLOQ3111	**0.706**	**0.559**	**0.702**
DLOQ1241	**0.647**	**0.638**	**0.663**	DLOQ3211	**0.766**	**0.646**	**0.779**
DLOQ1352	**0.797**	**0.692**	**0.862**	DLOQ3411	**0.759**	**0.633**	**0.761**
DLOQ1452	**0.729**	**0.617**	**0.787**	DLOQ3511	**0.690**	**0.481**	**0.735**
DLOQ1552	**0.781**	**0.729**	**0.815**				
DLOQ1662	**0.736**	**0.731**	**0.728**				
DLOQ1762	**0.69**	**0.623**	**0.725**				
DLOQ1862	**0.746**	**0.694**	**0.767**				
DLOQ1972	**0.81**	**0.739**	**0.848**				
DLOQ2072	**0.78**	**0.745**	**0.799**				
DLOQ2172	**0.767**	**0.703**	**0.79**				
Eigenvalues	11.443	9.88	12.417		8.132	7.333	8.046
% of variance exp	54.49	47.048	59.128		58.084	52.376	57.475

Note: Factor loadings over .40 appear in bold.

Table 3

Unstandardized Loadings (Standard Errors) and Standardized Loadings for 1 Factor, First Order Factor Confirmatory Model of DLOQ (N=194)

Item	Unstandardized B	SE	Standardized Beta	P
DLOQ111 .	1		0.704	***
DLOQ211	0.929	0.107	0.587	***
DLOQ311	1.161	0.115	0.661	***
DLOQ421	1.107	0.099	0.714	***
DLOQ521	1.145	0.111	0.776	***
DLOQ621	1.289	0.119	0.817	***
DLOQ721	1.159	0.121	0.724	***
DLOQ831	1.19	0.116	0.771	***
DLOQ931	1.17	0.126	0.787	***
DLOQ1041	1.075	0.115	0.706	***
DLOQ1141	1.149	0.121	0.722	***
DLOQ1241	1.05	0.117	0.678	***
DLOQ1341	1.405	0.134	0.79	***
DLOQ1452	1.123	0.124	0.683	***
DLOQ1552	1.215	0.123	0.744	***
DLOQ1662	1.093	0.12	0.683	***
DLOQ1762	1.012	0.111	0.685	***
DLOQ1862	1.166	0.123	0.714	***
DLOQ1972	1.375	0.129	0.807	***
DLOQ2072	1.267	0.122	0.784	***
DLOQ2172	1.326	0.129	0.778	***

Table 4
Unstandardized Loadings (Standard Errors) and Standardized Loadings for 7 Order Factor Model of DLOQ (N=194)

Item	Unstand-ardized B	Standard-ardized SE	Beta	P
Dimensions				
Dimension 1				
DLOQ111	1		0.707	
DLOQ211	0.841	0.078	0.638	***
DLOQ311	1.047	0.081	0.706	***
Dimension 2				
DLOQ421	1		0.787	
DLOQ521	1.021	0.075	0.864	***
DLOQ621	1.127	0.081	0.888	***
Dimension 3				
DLOQ731	1		0.777	
DLOQ831	1.033	0.073	0.826	***
DLOQ931	1.012	0.083	0.835	***
Dimension 4				
DLOQ1041	1		0.783	
DLOQ1141	1.088	0.097	0.81	***
DLOQ1241	0.974	0.094	0.751	***
Dimension 5				
DLOQ1352	1		0.876	
DLOQ1452	0.805	0.06	0.774	***
DLOQ1552	0.88	0.06	0.843	***
Dimension 6				
DLOQ1662	1		0.739	
DLOQ1762	0.924	0.086	0.738	***
DLOQ1862	1.056	0.102	0.762	***
Dimension 7				
DLOQ1972	1		0.829	
DLOQ2072	0.933	0.059	0.812	***
DLOQ2172	0.96	0.074	0.749	***

DLOQ Total	Unstand-ardized B	Standard-ardized SE	Beta	P
Dimension 1	1		1	
Dimension 2	0.952	0.068	0.923	***
Dimension 3	0.977	0.078	0.958	***
Dimension 4	0.891	0.075	0.917	***
Dimension 5	1.122	0.082	0.935	***
Dimension 6	0.24	0.125	0.969	***
Dimension 7	1.177	0.078	1.000	***

Table 5

Goodness-of-Fit Indicators of Models for First and Second Factor Orders of the DLOQ (N=194)

Model	X^2	df	CFI	TLI	RMSEA
Single Factor	222.664***	156	.975	.964	.047
Seven Factor	226.400***	151	.972	.957	.051

***p<.000.

Table 6

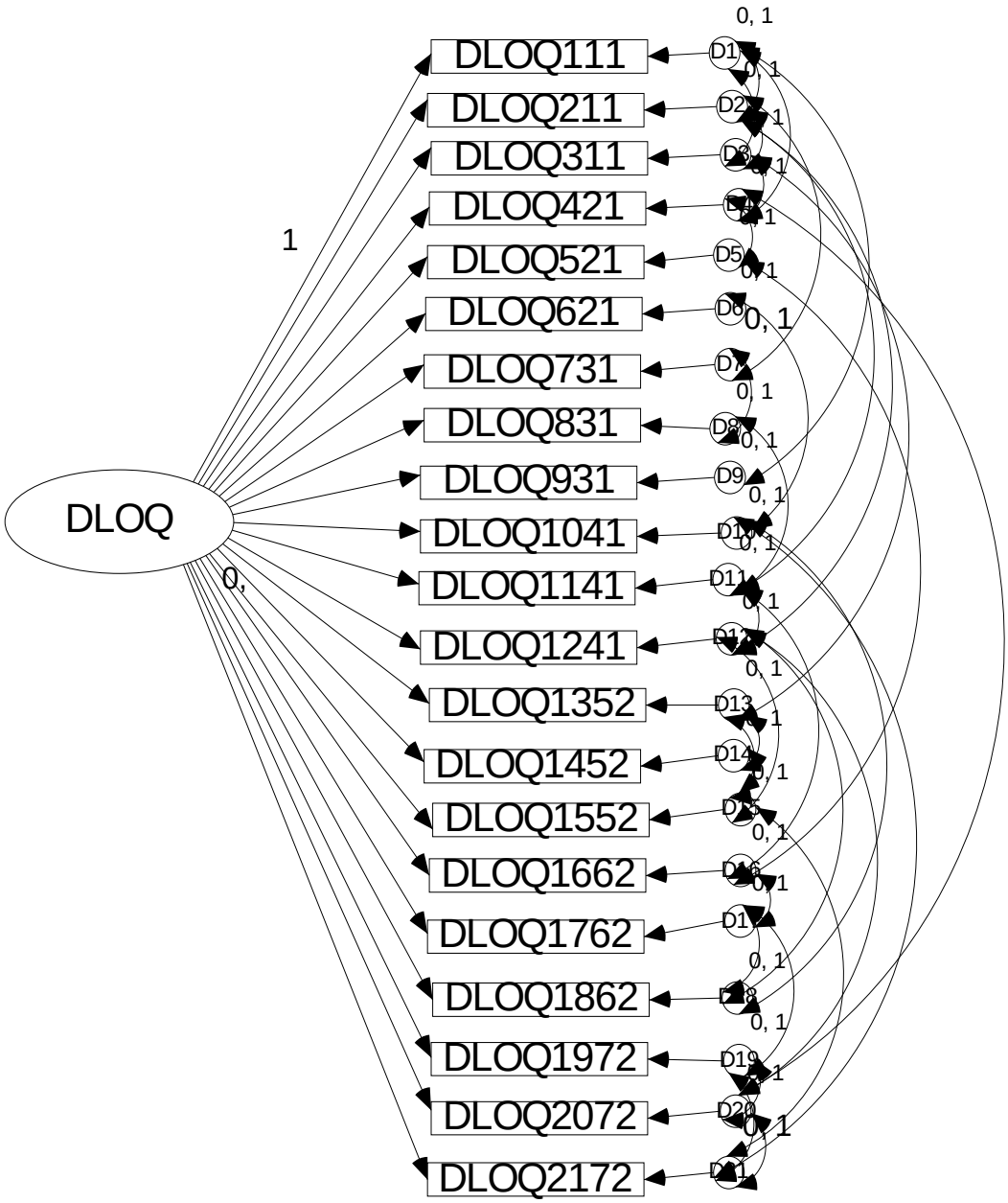
Summary of Regression Analysis for Variables Predicting School Effectiveness Measure (N=194)

	Model 1			Model 2		
Variable	B	SE B	*B*	B	SE B	*B*
Constant	1.503	0.201	***			
DLOQ	0.783	0.052	0.784***			
DLOQ				0.748	0.050	0.748***
Gender				-0.013	0.038	-0.017
Experience				0.021	0.027	0.038*
Rural				0.407	0.088	0.236***
Special				-0.018	0.096	-0.010
EdLevel 2				-0.050	0.086	-0.029
R^2		.614			.674	
F		222.993***			47.920***	

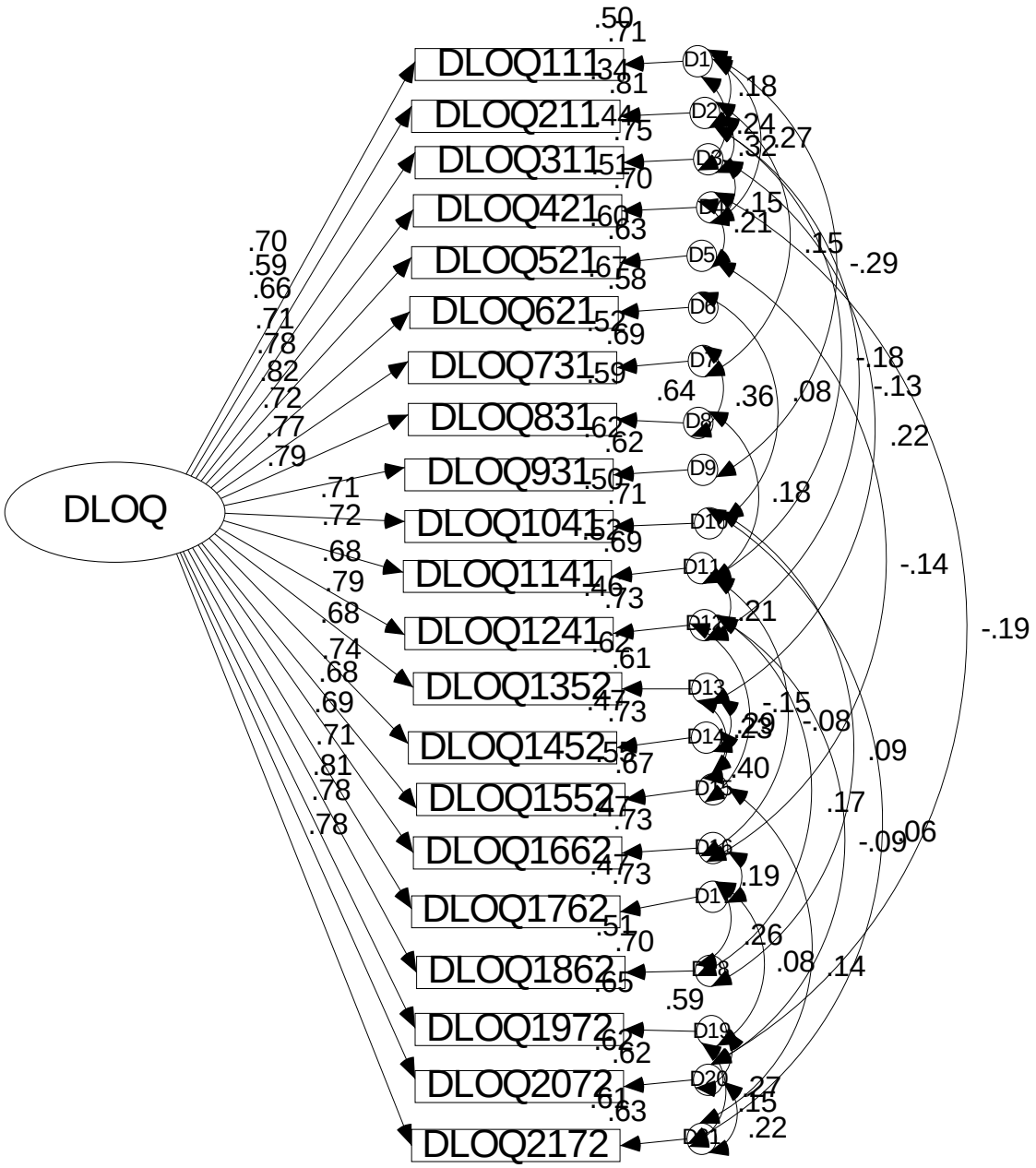
p <.05 **p <.01 * <.000.

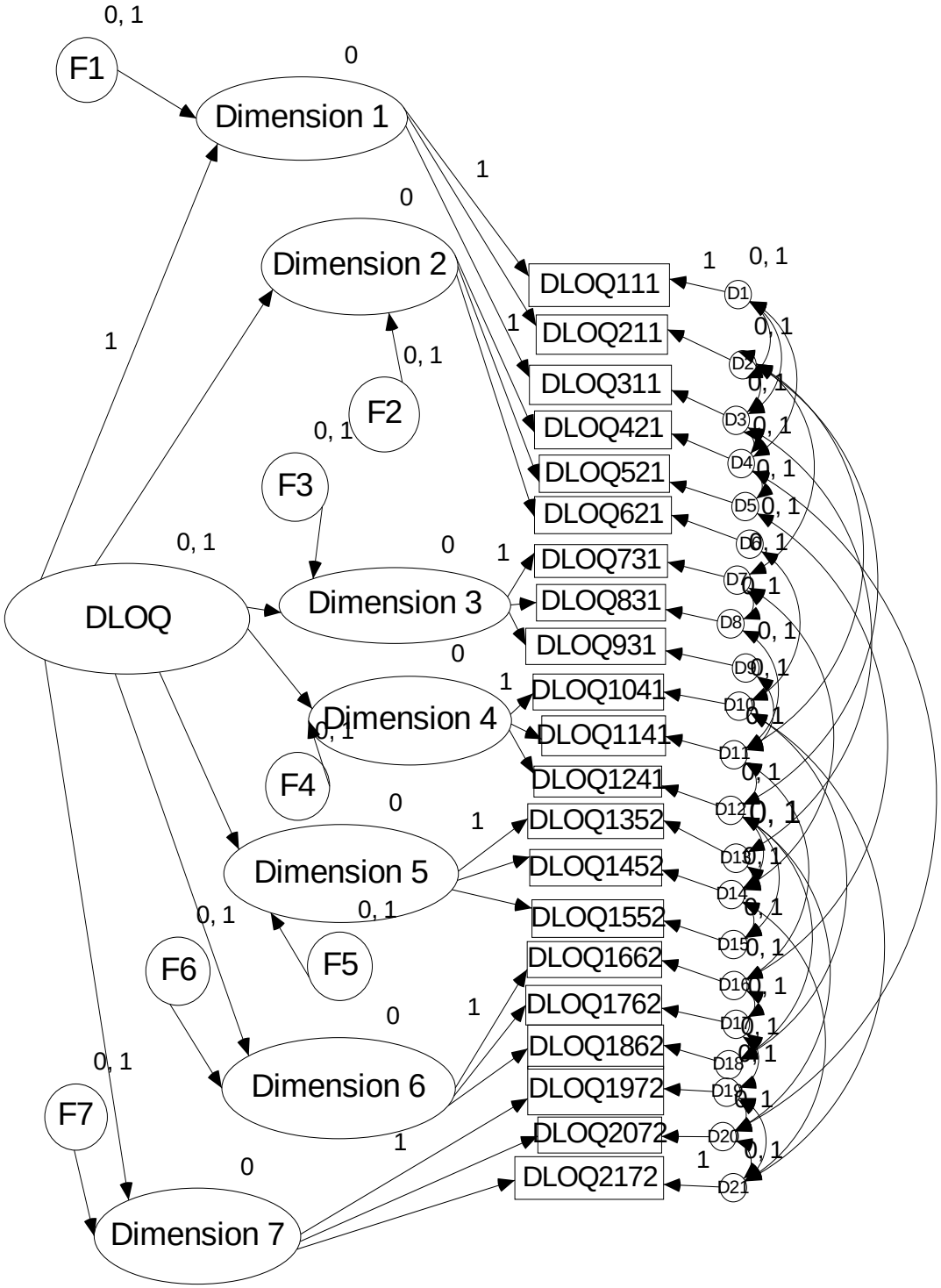
Table 6. Regression of School Effectiveness Scale on DLOQ.

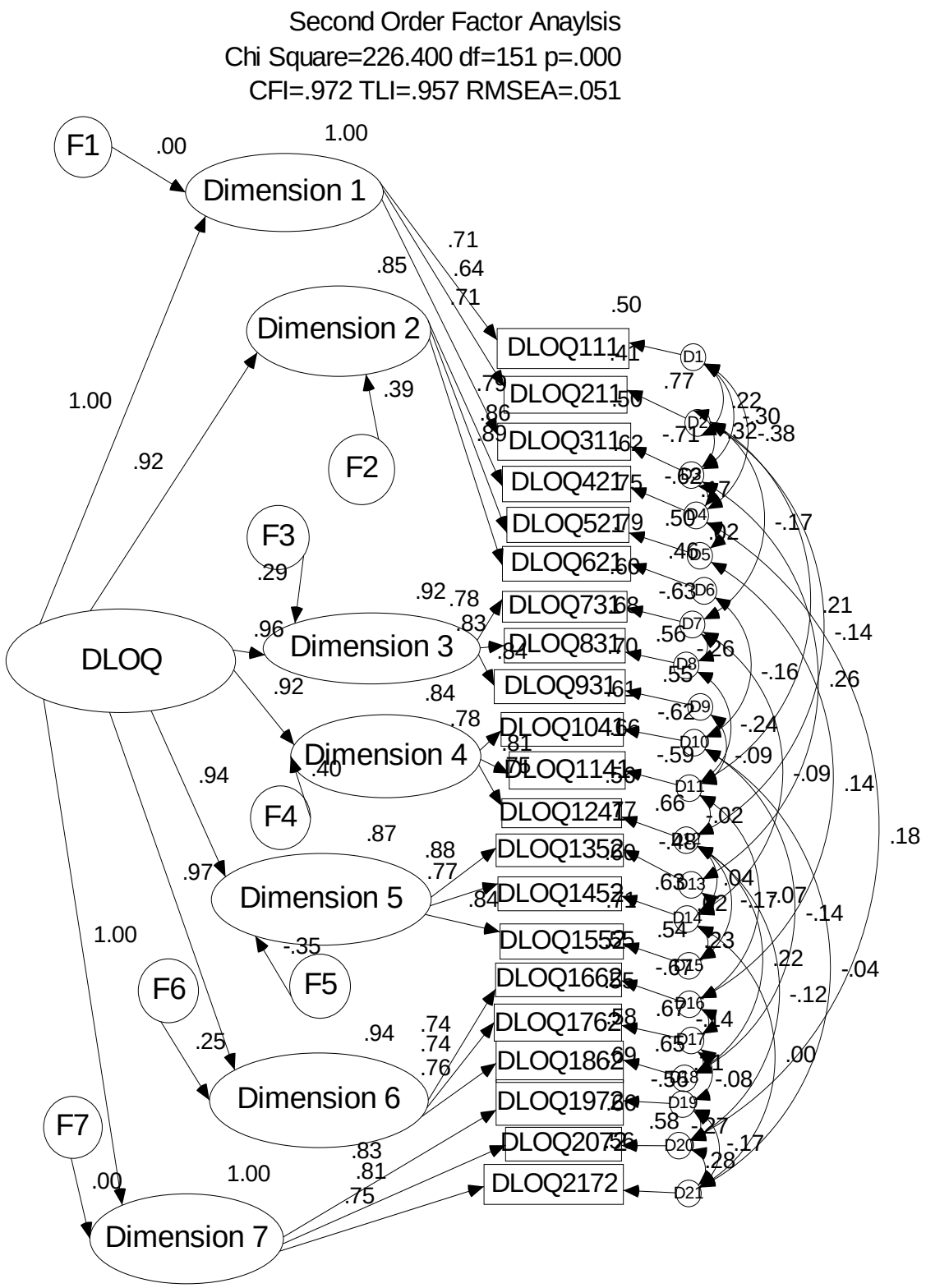
Model		B	S.E	Beta	T	Sig.
1	(Constant)	1.503	0.201		7.478	0.000
	DLOQ	0.783	0.052	0.784	15.133	0.000
2	(Constant)	1.445	0.260		5.563	0.000
	DLOQ	0.748	0.050	0.748	14.966	0.000
	GENDER	-0.013	0.038	-0.017	-0.346	0.730
	EXPERIENCE	0.021	0.027	0.038	0.761	0.448
	Rural	0.407	0.088	0.236	4.641	0.000
	Special	-0.018	0.096	-0.010	-0.192	0.848
	EdLevel2	-0.050	0.086	-0.029	-0.583	0.561


DLOQ
1
0,
DLOQ111
DLOQ211
DLOQ311
DLOQ421
DLOQ521
DLOQ621
DLOQ731
DLOQ831
DLOQ931
DLOQ1041
DLOQ1141
DLOQ1241
DLOQ1352
DLOQ1452
DLOQ1552
DLOQ1662
DLOQ1762
DLOQ1862
DLOQ1972
DLOQ2072
DLOQ2172
0, 1

First Order Factor Anaylsis
Chi Square=222.664 df=156 p=.000
CFI=.975 TLI=.964 RMSEA=.047




F1
Dimension 1
Dimension 2
F2
F3
DLOQ
Dimension 3
Dimension 4
F4
Dimension 5
F5
F6
Dimension 6
F7
Dimension 7
DLOQ111
DLOQ211
DLOQ311
DLOQ421
DLOQ521
DLOQ621
DLOQ731
DLOQ831
DLOQ931
DLOQ1041
DLOQ1141
DLOQ1241
DLOQ1352
DLOQ1452
DLOQ1552
DLOQ1662
DLOQ1762
DLOQ1862
DLOQ1972
DLOQ2072
DLOQ2172
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D17
D18
D19
D20
D21


Second Order Factor Anaylsis
Chi Square=226.400 df=151 p=.000
CFI=.972 TLI=.957 RMSEA=.051
DLOQ
Dimension 1
Dimension 2
Dimension 3
Dimension 4
Dimension 5
Dimension 6
Dimension 7
F1
F2
F3
F4
F5
F6
F7
DLOQ1111
DLOQ2111
DLOQ3111
DLOQ4217
DLOQ5217
DLOQ6217
DLOQ7316
DLOQ8317
DLOQ9316
DLOQ1041
DLOQ1141
DLOQ1241
DLOQ1352
DLOQ1452
DLOQ1552
DLOQ1662
DLOQ1762
DLOQ1862
DLOQ1972
DLOQ2072
DLOQ2172

Chapter 5 Discussion

School psychology literature draws upon organizational psychology when referencing systems change. Scholars such as Caplan (1993), Zins & Illback (1995), Meyers, Meyers, & Grogg (2004) have addressed essential features of system wide consultation but through the lens of indirect consultation. Organizational school psychology differs from the practice of "learning organizations" as defined in the literature of management scholarship. School psychology literature mostly focuses upon micro processes of the individual school psychologist that might extend to whole systems change within the school environments (Sheridan & Gutkin, 2000). The link between individual school psychologist and systems change has not been clearly defined. The essential aspect of assessing the school as learning organization has yet to be realized using a valid feedback measure. Typically, management scholarship targets larger systemic processes that reflect a macro view. This view integrates individual level learning with whole systems learning which translates into a measure for systems change. School psychologists and child study teams may benefit from perspectives offered by management scholarship. The study of learning organizations may be more developed than organizational school psychology but not yet adapted for use in educational settings. The purpose of this study is to adapt and evaluate one method of assessing learning organizations, The Dimensions of the Learning Organization Questionnaire, within the public school settings. This was done by field testing the DLOQ with school personal as respondents. The study assesses the relationship between these participants' views of their schools as learning organizations and their perceptions of the effectiveness of their schools.

Outcome measures, the seven correlates of effective schools are taken from existing literature. It is hypothesized that respondents who observe high levels of learning organization behaviors in their schools will also perceive their schools as effective. The comparison used the DLOQ 21 item scale and the self-made, School Effectiveness Measure 14 item scale which purports to measure the outcome criterion variable. The items comprise a single survey called the DLOQ 35 item scale. The four research questions asked are:

1) What is the factor structure of the DLOQ with school personnel as respondents?
2) How does this factor structure differ from that established in previous research using employees of businesses as respondents?
3) Do responses to the DLOQ provided by employees of a rural school yield a different factor structure than responses provided by employees of an urban school?
4) What is the relationship between staff perceptions of their schools as a learning organization and their perceptions of the effectiveness of their schools?

This study was a non-experimental study seeking to field test an instrument in a new environment and cross validate the instrument with prior studies. Results suggest that the DLOQ is a good scale when used in schools. The scale shows good reliability when used with total, rural, and urban populations and good reliability shows on all the dimensional scales. Results from exploratory factor analysis explained 54% of the variance. Results from exploratory factor analysis for the SEM scale explained 58% of the variance.

Confirmatory factor analysis suggests that a one factor model is an adequate fit. The first confirmatory factor analysis suggests that all DLOQ items regressed onto one latent variable. The second confirmatory factor analysis is also a good fit but did not produce a

statistically significant better fit than the single order model. Because the one factor model is a good fit, there is no cause to use the seven factor model.

The results from this study suggest that the one factor DLOQ explains most of the variance, every single factor loads well on the scale, and the scale does not need to be seven dimensions for use in schools. Fit statistics are good for both models but the one factor is proved more parsimonious. The one factor model works well for both rural and urban populations. All the factors of the DLOQ load well onto one factor when the scale is used within public school setting. Important factors such as continuous learning opportunities, empowerment, system connection, and leadership appear to be highly correlated in schools. These factors are the most heavily weighed factors when the DLOQ is used within business settings.

Comparison of Factor Structures

Watkins, Marsick, & Yang (2004) found a seven factor model best fit the data when the DLOQ was used in businesses. Watkins, Marsick, and Yang, (2004) conducted the original study which validated the DLOQ. They field tested a 7 factor structure of the dimensions of the learning organization and confirmed that the learning organization within a business setting is a multi-dimensional construct. The seven-factor structure provided a useful framework for subsequent studies, all of which confirmed the seven-factor structure of learning organizations within businesses (Marsick, Watkins, & Yang, 2004). Constructing a valid instrument is ongoing and this study cross-validated the instrument within a new organizational culture, public schools.

This factor structure differs from that established in previous research using employees of businesses as respondents. The original researchers, Watkins, Marsick,

and Yang (2004) began construct validity of the measurement by first examining the null model, where no common latent variable was assumed. This exploratory baseline model assumed no common concept called learning organization and resulted in a shorter version of the model. The second model assumed that one factor model accounted for the observed variables explained within the learning organization construct. The third model, 7 factors was seen as the best fit for the data.

The focus of the confirmatory factor analysis is to discover the theoretical relations among the concepts of the learning organization. Watkins, Marsick, and Yang's (2004) hypothesized that learning organization behaviors need to be implemented at both an individual and systems level. They confirmed their hypothesis. However, the current study suggests that when the DLOQ is used in schools, systems level and individual level learning is more integrated than in business cultures. It may be that principles seek to support and put forth the perspectives of teachers in schools while managers seek to prescribe and direct employee behaviors within business settings. Within schools there exits a more unified and global perspective of learning organization behaviors than were reported in business cultures. The partnership between principles/administrators and teachers informs the DLOQ dimension factor loadings differently than in businesses, creating one factor in schools compared to seven factors in businesses.

Rural and Urban Respondents

The DLOQ was developed and validated within school culture. The 21 item scale is a unitary scale and holds together just as well when used with rural or urban school respondents. Cronbach's alphas all were reliable. Exploratory factor analysis results

suggest 47% of the variance is explained when the scale is used with rural respondents and 59% of the variance is explained when used with urban respondents. Respondents from rural settings perceived their schools as more effective than urban respondents. Respondents with higher levels of education perceived their schools as somewhat more effective.

Relationship between Staff Perceptions of Their School and DLOQ

Results from this study suggest very high correlations between the DLOQ and the SEM. It appears that teachers and administrators who view their school positively will report observed learning behaviors and relate those behaviors to effective school correlates: clear school mission and commitment to instructional goals; high expectations for success; instructional leadership; effective management of instructional programs; frequent progress monitoring; opportunities for whole group learning; and safe orderly environments.

Limitations of the Study

This strong correlation between the DLOQ and the outcome measure SEM suggests that this may not be the most appropriate outcome measure of school effectiveness. This study asks participants at one point in time to assess learning behaviors in schools while reporting upon their perceptions of their school's effectiveness. Given the nature of the survey, all 21 items of the DLOQ and the 14 item correlates of effective schools on the SEM are contained in one instrument, using one common Likert scale. It is plausible to conclude that respondents who feel positive have a global sense that their schools are doing well. Further studies may wish to change the common Likert scale.

This study was a cross-section study that explored employee perceptions at one point in time. A follow-up longitudinal study may wish to look at employee perceptions over time, parent perceptions over time, and compare that with school outcome measures such as grade level assessments (MEA, GLE) and state wide assessments (NWEA, MHSA, & SAT). Student performance scores may contain compelling outcome data and resemble prior studies using the DLOQ using financial variables, Return on Investment, Return on Assets, Tobin's q, and Market Added (Ellinger, et. al., 2002). Looking at concrete school building data and employee perceptions may provide more definitive results that suggest the DLOQ can predict high scores on outcome measures for schools.

Further research may benefit from a different school effectiveness measure than the one used in this study, School Effectiveness Measure. An additional study using the 21 DLOQ item scale and concrete school data such as grade level and state wide assessments may suggest a stronger relationship between the DLOQ and the criterion variable, school effectiveness.

An item analysis of the DLOQ may inform consultant based interventions despite a possible strong prediction of DLOQ on outcome measures. Judith O'Neil's *Participant's Guide for Interpreting Results of the Dimensions of the Learning Organization Questionnaire* (2003) offers helpful advice about improving scores on the DLOQ and thereby creating a stronger learning organization culture.

Results from the present DLOQ study suggest high scores on the DLOQ which reflect very positive school employees' perceptions. Variables such as gender, role, and home school are needed for initial collection of data. Given that the DLOQ explains

most of the variance in the criterion variable when these variables are controlled, further studies may wish to eliminate collection of this data in the hope that more employees will respond to the questionnaire. Identifying information may inhibit responses of employees who do not hold such positive perceptions of their schools.

Contributions to the Field

School psychology literature has contributed to the field of organizational psychology by exploring the impact individual school psychologists have upon whole system change. Organizational school psychology may be the functional outcome of indirect school psychologist consultation in the future. School psychology consultation is a sound method for delivering system level services. The DLOQ is an indirect approach that involves communication among teachers and school administrators. It can be used very well in schools and serve as a link between the individual school psychologist consultant and large scale system change. This broader scope can benefit children by supporting positive school reforms.

Using the DLOQ to bridge the gap between individual consultation and systems change may help move individual consultants into positions of leadership and power. Theories of learning organization have emphasized that organizations need to work with people at the individual/group level first. As people are empowered, they create learning structures within the organization. System connections, embedded systems, and leadership are the mediators between individual level learning activities and structural level activities. These activities appear to be present and less segregated in schools while still measurable at a systems level.

Like business organizations, schools that show systems-level changes demonstrate behaviors which can be measured. Learning in schools is systems level, continuous and engineered for the purpose of performance outcome measures. The essential construct of observable behaviors form a culture and are measurable on the DLOQ. Systems change can be implemented in schools through interventions that support learning organization behaviors. From the perspective of school psychology, individual consultation is a valued part of the learning process. From the perspective of learning organizations, empowered individual school psychologists can connect to embedded collective efforts and participate in the power structure of the school and inform change. As leaders, school psychologist consultants can further promote learning organization behaviors within schools by supporting and putting forth the needs of their teams. It is not enough to take the role of indirect consultant and hope to influence change indirectly, school psychologists need to represent the needs of their teams and buildings much like administrators/principals and demonstrate leadership abilities that promote systems change in an effort to better serve children, families, and teachers.

Appendices

Dimensions of the Learning School Questionnaire

In this questionnaire, you are asked to think about how your school supports and uses learning at an individual, team, and school/district level. Please respond to each of the following items. For each item, determine the degree to which this is something that is or is not true of your school. If the item refers to a practice which rarely or never occurs, score it a one (1). If it is almost always true of your department or team, school, score the item a six (6).
Example: In this example, if you believe that leaders often look for opportunities to learn, you might score this as a four (4) by clicking in the 4.

Question	**Almost Never**					**Almost Always**
In my school, leaders continually look for opportunities to learn	1	2	3	4	5	6

1. In my school, people help each other learn. 1 2 3 4 5 6

2. In my school, people are given time to support learning. 1 2 3 4 5 6

3. In my school, people are rewarded for learning. 1 2 3 4 5 6

4. In my school, people are give open and honest feedback to each other 1 2 3 4 5 6

5. In my school, whenever people state their view they also ask what others think 1 2 3 4 5 6

6. In my school, people spend time building trust with each other. 1 2 3 4 5 6

7. In my school, teams/groups have the freedom to adapt their goals as needed 1 2 3 4 5 6

8. In my school, people revise their thinking as a result of group discussion or information collected 1 2 3 4 5 6

9. In my school, teams/groups are confident that the organization will act on their recommendations. 1 2 3 4 5 6

10. My school creates systems to measure gaps between current and expected performance 1 2 3 4 5 6

11. My school makes its lessons learned available to all employees 1 2 3 4 5 6

12. My school measures the results of the time and resources spent on training 1 2 3 4 5 6

13. My school recognizes people for taking initiative. 1 2 3 4 5 6

14. My school gives people control over the resources they need to accomplish their work. 1 2 3 4 5 6

15. My school supports employees who take calculated risks 1 2 3 4 5 6

16. My school encourages people to think from a global perspective 1 2 3 4 5 6

17. My school works together with the outside community to meet mutual needs 1 2 3 4 5 6

18. My school encourages people to get answers from across the district when solving problems 1 2 3 4 5 6

19. In my school, leaders mentor and coach those they lead 1 2 3 4 5 6

20. In my school, leaders continually look for opportunities to learn 1 2 3 4 5 6

21. In my school, leaders ensure that the organization's actions are consistent with its values 1 2 3 4 5 6

22) In my school, there is a clearly articulated school mission through which the staff shares an understanding of and commitment to instructional goals, priorities, assessment procedures and accountability 1 2 3 4 5 6

23) In my school, staff accepts responsibility for students' learning of our school's essential curricular goals 1 2 3 4 5 6

24) In my school, there is a climate of expectation in which the staff believe and demonstrate that all students can attain mastery of essential content and school skills 1 2 3 4 5 6

25) In my school, staff believe that they have the capability to help all students achieve mastery of essential content and school skills 1 2 3 4 5 6

26) In my school, the principal acts as an instructional leader and effectively and persistently communicates that mission to the staff, parents, and students. 1 2 3 4 5 6

27) In my school, the principal understands and applies the characteristics of instructional effectiveness in the management of the instructional program. 1 2 3 4 5 6

28) In my school, student progress is frequently monitored using a variety of assessments. 1 2 3 4 5 6

29) In my school, the results of assessments are used to improve individual student performance and also to improve instructional programs. 1 2 3 4 5 6

30) In my school, teachers allocate a significant amount of classroom time to instruction in the essential content and skills. 1 2 3 4 5 6

31) In my school, students are engaged in whole class or large group, teacher-directed,

planned learning activities. 1 2 3 4 5 6

32) In my school, there is an orderly, purposeful, businesslike atmosphere which is free from the threat of physical harm. 1 2 3 4 5 6

33) In my school, the climate is not oppressive and is conducive to teaching and learning 1 2 3 4 5 6

34) In my school, parents understand and support the school's basic mission. 1 2 3 4 5 6

35) In my school, parents are given the opportunity to play an important role in helping the school to achieve that mission. 1 2 3 4 5 6

36) What is your role?

1) District Administrator
2) Building Administrator
3) Specialist/Therapist
4) Teacher/Regular Education
5) Special Education Teacher

37) What is your level of education?

1) Bachelor's Degree
2) Master's Degree
3) Master's Plus 30
4) CAS
5) Doctorate Degree

38) What is your gender?

1) Male
2) Female

39) How long have you been in your position?

1) Less than two years
2) Three to five years
3) Six to ten years
4) Eleven to 20 years
5) Twenty-one years or more

40)What is your home school?

Deering High School
Portland High School
PATHS

CBHS
Portland Adult Education
Kennebunk High School
King Middle School
Lincoln Middle School
Middle School of the Kennebunks
Moore Middle School
Sea Road School
Cliff Island School
Clifford School
East End Community School
Hall School
Longfellow School
Lyseth School
Peaks Island School
Presumpscot School
Reiche School
Riverton School
Kennebunkport Consolidated School
Kennebunk Elementary School

Codebook

Donna Benjamin: Dissertation

Coding the DLOQ Survey for EXCEL and SPSS

Questions on the Survey:

DLOQ: Factor; Level, so (first question, first factor, first level)

DLOQ 1 1 1 : In my school, people help each other learn
DLOQ 2 1 1: In my school, people are given time to support learning
DLOQ 3 1 1: In my school, people are rewarded learning
DLOQ 4 2 1 In my school, people are given open and honest feedback to each other
DLOQ 5 2 1 In my school, whenever people state their view they also ask what others think
DLOQ 6 2 1 In my school, people spend time building trust with each other
DLOQ 7 3 1 In my school, teams/groups have the freedom to adapt their goals as needed
DLOQ 8 3 1 In my school, people revise their thinking as a result of group discussion or information collected
DLOQ 9 3 1 In my school, teams/groups are confident that the organization will act on their recommendations
DLOQ 10 4 1 My school creates systems to measure gaps between current and expected performance
DLOQ 11 41 My school makes its lessons learned available to all employees
DLOQ 12 4 1 My school measures the results of the time and resources spent on training
DLOQ 13 5 2 My school recognizes people for taking initiative
DLOQ 14 5 2 My school gives people control over resources they need to accomplish their work
DLOQ 15 5 2 My school supports employees who take calculated risks
DLOQ 16 6 2 My school encourages people to think from a global perspective
DLOQ 17 6 2 My school works together with the outside community to meet mutual needs
DLOQ 18 6 2 My school encourages people to get answers from across the district when solving problems
DLOQ 19 7 2 In my school, leaders mentor and coach those they lead
DLOQ 20 7 2 In my school, leaders continually look for opportunities to learn
DLOQ 21 7 2 In my school, leaders ensure that the organization's actions are consistent with its values
DLOQ 22 8 1 In my school, there is a clearly articulated school mission through which staff shares an understanding of and commitment to instructional goals, priorities, assessment procedures and accountability
DLOQ 23 8 1 In my school, there is a climate of expectation in which the staff believe And demonstrate that all students can attain mastery of essential content And school skills

DLOQ 24 8 1 In my school, there s a climate of expectation in which the staff believe And demonstrate that all students can attain mastery of essential content And school skills
DLOQ 25 8 1 In my school, staff believe that they have the capability to help all students Achieve mastery of essential content and school skills
DLOQ 26 11 In my school, the principal acts as an instructional leader and effectively And persistently communicates that mission
DLOQ 27 11 In my school, the principal understands and applies the characteristics of Instructional effectiveness in the management of the instructional program
DLOQ 28 11 In my school, student progress is frequently monitored using a variety of Assessments
DLOQ 29 11 In my school, the results of assessment are used to improve individual Student performance and also to improve instructional programs
DLOQ 30 11 In my school, teachers allocate a significant amount of classroom time To instruction in the essential content and skills
DLOQ 31 11 In my school, students are engaged in whole class or large group teacher Directed, planned learning activities
DLOQ 32 11 In my school, there is an orderly purposeful business like atmosphere which is free from the threat of physical harm
DLOQ 33 1 1 In my school, the climate is not oppressive and is conducive to teaching and learning
DLOQ 34 11 In my school, parents understand and support the schools basic mission
DLOQ 35 11 In my school, parents are given the opportunity to play an important role In helping the school to achieve that mission

Demographics:

What is your role? = Role
Building Administrator = 1
Specialist/Therapist =2
Teacher/ Regular Education = 3
Special Education Teacher = 4

What is your level of education? = EDLEVEL
Bachelor's Degress = 1
Master's Degree = 2
Master's Plus 30 = 3
CAS = 4
Doctoral Degree = 5

Gender
Male = 1
Female = 2

Experience
Less than 2 years = 1

3 to 5 years = 2
6 to 10 years = 3
11 to 20 years = 4
21 years or more = 5

Please select your primary work location = School

Kennebunk High School = 1
Middle School of the Kennebunks = 2
Kennebunkport Consolidated School = 3
Sea Road School = 4
Kennebunk Elementary School = 5
Deering High School = 6
Casco Bay High School = 7
Lincoln Middle School = 8
Longfellow School = 9
Peaks Island = 10
Clifford School = 11

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