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ABSTRACT

This book shows how Deming's Total Quality Management (TQM) theory for organizational management can be integrated with the effective-schools literature. Part 1 compares the 14 principles of TQM with the tenets of effective-schools research. The second part develops a blueprint for creating the total quality effective school. The conceptual framework is based on four common places--the teacher, the learner, the subject, and the setting--which interact with instructional processes to produce student learning outcomes. Tools for implementing the total quality effective school are described in part 3, which include the following: restructuring yesterday's school; changing the locus of decision making; empowering teachers; aligning curriculum and instruction; using information-processing technology; identifying the best practices; applying statistical process controls; using student performance measures; and assessing correlates of effective schools. Finally, the implementation process follows five stages: clarify and codify goals; establish student-performance standards; operationalize performance measures; analyze quality; and implement solutions in a quality way. (Contains 21 references.) (LMI)

Creating the

Total Quality Effective School

Lawrence W. Lezotte

EFFECTIVE
SCHOOLS

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Part I

Integrating the Principles

Deming's 14 Points for Management and the Tenets of Effective Schools

The kinship between W. Edwards Deming's "operational philosophy of management — Total Quality Management (TQM)" — and the basic operational tenets of the effective schools movement is truly striking. Both represent a bundle of proven management principles and associated implementation processes which, when properly implemented, result in significant improvement in valued organizational aims. Both defy the typical textbook definition of a theory. Both have as their primary qualification that they *do* advance the organization's valued aims and goals. Finally, implementing either TQM or the effective schools process is simple; it's just not easy! And both are never ending!

This essay is presented in three parts. In this first part, the tenets of effective schools will be integrated with Deming's 14 points of Total Quality Management.[1] Part II presents an operational theory of management for developing the blueprint for Total Quality Management for Effective Schools, while Part III describes the comprehensive framework required for implementation. We hope that local educational leaders will be able to use this integration to help stakeholders both inside and outside of the schools see that they do really share a common vision and language for school reform.

Principle 1: *Create constancy of purpose toward improvement of product and service.*

Effective Schools Tenets: Two effective schools tenets capture the intent of Deming's first principle. First, the mission of the effective school is based on the fundamental belief that, "all children can learn," and each child enters the world and the school motivated to do so. Second, it follows that an improving school is one that can demonstrate in outcome terms, reflective of its learning for all

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1. The 14 Points for Total Quality Management presented here are taken from Deming's 1982 book, *Out of the Crisis*, and the Effective Schools Tenets are taken from several papers prepared by this author.

mission, the increasing presence (improvement over time) of equity and quality.

In order to install this principle successfully, a school must develop the operational indicators of quality learning outcomes, which form the conceptual framework for assessing equity in that setting, and the applied statistical tools for monitoring results. The effective schools framework has consistently advocated that schools regularly and frequently disaggregate their learning outcome data so as to be able to answer the question: "Who is profiting how much from our current program of curriculum and instruction?"

Principle 2: *Adopt the new philosophy that states that commonly accepted levels of mistakes, delays and defects will no longer be tolerated.*

Effective Schools Tenets: In the effective schools framework this principle is interpreted as follows: *Since all students can learn, what they learn in school depends on what the adults in the school do.* In a practical sense, this means that improved quality and equity in a school require all the adults in that school to monitor their individual and organizational behaviors and, where necessary, adjust that school's response to assure that all students *do* learn. A number of adjustments are available to the school: Abandon policies, procedures and practices that aren't working; install

those that are known to be effective; and, where appropriate, strive to perfect those that are currently working but not as well as they might. In this context, schools assume responsibility for students' learning the intended curriculum.

Principle 3: *Cease dependence on mass inspection. Require statistical evidence that quality is built in.*

Effective Schools Tenets: Most schools and teachers individually are not guilty of mass inspection. Most good teachers and schools *do* strive to view each learner as a worthy and unique individual. However, schools and teachers have great difficulty avoiding the concept of mass inspection because most state and federal accountability and assessment systems *are* mass inspection systems. Furthermore, most of these systems rest on the false assumption that learning is best monitored in an age- and grade-based system. Since resources are generally yoked to these assessment processes, schools find it difficult to avoid such mass inspections. It is hoped that state and federal policy makers will soon recognize that mass inspection of low-level skills is a big part of the problem and not a part of the solution.

Frequent monitoring of student learning, which is one of the correlates and characteristics of effective schools and effective teaching, represents a viable alternative to the current system of mass inspection.

The philosophy of effective schools holds that all the stakeholders in the school should monitor the data resulting from assessing the attributes of quality schools, instruction, and student learning. If this occurs and the schools adjust practices appropriately, then high quality programs that successfully meet the needs of all learners would result.

Principle 4: *End the practice of awarding business on the basis of price tag alone.*

Effective Schools Tenets: One of the basic tenets of the effective school is that the task of each teacher is to assure that students master the knowledge and skills that are essential prerequisites for success at the next level of schooling. This means that the long-term success of schools is based on the assumption that schools must "front-load" success. In other words, schools must allocate whatever resources are needed to make children's earliest school experiences successful. The practical implications of this tenet may be having much smaller classes in the early grades or having more support personnel to assist teachers in the early grades — in other words insuring that quality is installed every step along the way — regardless of the price tag!

Principle 5: *Improve constantly and forever the system of production and service.*

Effective Schools Tenets: The effective schools framework has long held that today's school structure was never designed to assure that all children learn and succeed. Sarason (1990) aptly characterized the situation when he said: "Today's schools are primarily organized for the delivery of instruction. Whether that translates into learning or not is left largely to chance." However, schools are now expected to assure that all children learn. Principals, central office staff, superintendents and teachers are going to have to redesign the school, and to do this, the various systems, practices and operational procedures will have to change. In the effective schools context, it's clear what an improved system means. It is also clear that individual teachers working alone at the classroom level do not have a large enough span of control to redesign the system. The management team must accept the primary responsibility for re-inventing the school as a place that assures learning.

Principle 6: *Institute modern methods of training on the job.*

Effective Schools Tenets: If one starts with the proposition that all children can learn, then we are duty bound to extend that proposition to the adults who work in schools as well. The effective schools

process starts with the assumption that teachers and administrators are already doing the best they know to do, given the context in which they find themselves. Therefore, if we want to change the outcomes of education, we must change what people know and the context in which they find themselves. For best results, we must do both in a coordinated way.

Staff development, especially in times of rapid and major transformation, must be a major priority for local school districts. Too often, school boards are reluctant to escalate their investment in the training and retraining of their people. But there are two points to remember here. First, as Kouzes and Posner (1988) have noted, leadership is a risk game and the leaders must ante up first. If we want schools to change, the first step will be to require their leaders to invest in staff development at a level that is unprecedented. Second, as Deal and Kennedy (1982) have stated, if people don't know what they are supposed to do in a new situation, they will do more of what they know to do. The result is likely to be no change in student learning.

Principle 7: *Adopt and institute leadership and get leaders to take responsibility for quality.*

Effective Schools Tenets: Two tenets of the effective schools framework are related to this principle. First, the effective schools framework

has always recognized the centrality of the principal as the instructional leader of the school. Many years ago, Ronald Edmonds noted that we have never found an effective school that did not have an instructional leader. That observation is still true today.

How do we get principals to take responsibility for quality in the school? First, the job description of the principal needs to be changed. Principals should not be expected to be simply efficient managers of process. They must see themselves as being accountable for producing student learning results. If principals analyze this new expectation, they will soon realize that they can succeed if their teachers are committed to quality learning outcomes. The principals must learn to manage teacher commitment, and this comes primarily through teacher involvement in the processes of problem solving and decision making. To realize the level of success that is possible, individual schools will have to have a much greater level of site-based autonomy than they now enjoy.

The second tenet has to do with the current systems of supervision that operate in most schools today. Most teacher evaluation systems and related supervision processes are based on a "sickness," rather than a "growth" or "wellness," model. Most managers agree that the current systems are not working. Schools need to "catch the wellness

wave" and fundamentally change the way the profession treats its colleagues. For example, within the context of continuous school improvement, school leaders ought to be able to establish a new cultural norm of striving for increased personal competence. This coupled with increased openness, collaboration and peer coaching will result in substantial instructional improvement.

Principle 8: *Drive out fear so that everyone may work effectively for the organization.*

Effective Schools Tenets: The education profession seems to be unusually fearful. Few educators are "fired for cause." Nevertheless, few topics drain productive psychic energy more quickly and completely than teacher and administrator evaluation. Clearly the data and the intensity of these feelings are not aligned. Perhaps this strange phenomenon occurs because teachers and administrators were once students themselves, and they can't overcome the realization that evaluations that occur in school tend to be arbitrary and unreliable, which in turn destroy the human spirit and desire to learn.

Those planning and implementing programs aimed at improving the schools' effectiveness must take into account this deep-seated fear in schools. First, local boards of education should establish policies

to assure every employee that no one is at risk of losing a job because of school improvement and restructuring. If an employee's current position is eliminated or substantially modified, the board should accept full responsibility for retraining the individual for an equivalent or better position. Second, schools should consider postponing formal evaluation in order to encourage staff to take risks and try new approaches to their work. Finally, the leadership needs to recognize and, when possible, celebrate the abandonment of those practices that have been determined to be ineffective. Currently, there is a prevailing fear that if bad practices are discovered the staff members associated with them will be punished.

Principle 9: *Break down barriers between departments.*

Effective Schools Tenets: In most schools today, the problem is even more basic than barriers between departments. Teachers in adjacent classrooms often do not talk to each other, especially about the problems associated with their professional practice. It has been reported that educators spend less time than members of any other profession in observing the practices of colleagues.

From the earliest efforts to promote school improvement based on effective schools research,

it was clear that the sociology of the organization had to change. Effective schools advocates hold that significant school improvement will not occur until teachers come to understand and accept the limitations on what they can accomplish if they persist in working alone. In other words, barriers exist at several levels in school organization, and these barriers must be eliminated for sustained improvement.

There are reasons to be hopeful. The current trends toward decentralization, site-based management, and teacher empowerment signal a new school organization. Once teachers have an opportunity to talk with one another and recognize that the problems they face individually are better described as problems of practice generally, the historical barriers will begin to fall. These problems of practice, entrenched as they may be, will be solved when teachers confront them together. The quality of school programs offered to current and future students will be significantly improved.

Principle 10: *Eliminate posters and slogans that ask staff for new levels of productivity without providing new methods.*

Effective Schools Tenets: Using the effective schools framework to plan and implement school improvement has consistently encouraged schools to take the time necessary to develop thoughtfully

the mission statement for the school. That process was never intended to be an end in itself but rather to create the basis for a sustained sense of mission in the school.

The effective schools process requires use of a collaborative process. The development of a school plan designed to specify the aims and goals of the school and identify improvement areas for the coming year must involve collaborative planning and problem solving. Schools are asked to focus major attention on the training, technical assistance, and support they will need to truly change professional practices in the school. Posters, slogans and other "quick fixes" are never encouraged as a substitute for quality staff development. One of the basic tenets of the effective schools process is that educational outcomes will not change unless the interactions between teachers and students change.

Principle 11: *Eliminate numerical quotas for the work force.*

Effective Schools Tenets: The effective schools process recognizes that if the outcomes of schooling are going to improve for all children, prescriptions for instructional processes must stop. In the place of such "success" formulas, teachers should know the research and be encouraged to adjust their classroom routines to meet the needs of their

students as they strive to master the intended curriculum. Classrooms that model such teacher practices are clearly not places where numerical quotas can play a positive role.

School leaders seem to recognize the futility of trying to develop numerical goals for classroom practice. However, many leaders want to quantify improvement goals in student outcome terms (e.g., a five-point increase in math scores). The effective schools process has discouraged this practice for several reasons. First, quantified goals tend to result in goal displacement, in that the stated increase in the goal becomes an end in itself, and school improvement gets lost in the test scores. Second, any quantified improvement goal is, at best, arbitrary and usually communicates unrealistically low expectations for what is possible. Finally, setting goals is discouraged because, no matter what the school leaders say, the goal is usually seen as the ceiling for school improvement rather than the floor.

Principle 12: *Remove barriers that rob people of pride of workmanship. Eliminate the annual rating or merit system.*

Effective Schools Tenets: Probably the greatest barrier that exists between teachers and pride of their workmanship has to do with how school and teacher effectiveness is assessed and celebrated.

Currently, most schools assess school effectiveness using standardized, paper-pencil tests, either commercially or state prepared. Teachers generally question, rather than embrace, the results of such tests because they are not aligned with what teachers teach on a daily basis in the local curriculum.

The effective schools process has advocated that assessment systems meet four criteria: standardized, locally generated, curriculum based, and criterion referenced. When local school districts move closer to assessment systems that are based on these criteria and developed with the help of the teachers, pride of workmanship increases dramatically.

Most of the teacher evaluation systems that are currently in operation are equally destructive of teachers' pride in their own workmanship. As previously noted, most of the models are based on a sickness (or "gotcha") model rather than a growth-oriented, wellness model. The current approach to teacher evaluation is slowly giving way to more productive models that include teacher self-evaluation, peer observations, and peer coaching.

The effective schools process has consistently held that teachers need to be freed from the fear of immediate negative evaluation if they are going to engage willingly in a change process designed to improve the quality of their professional work

The effective schools research, which states that teachers must have a high sense of efficacy regarding their work, would strongly support a moratorium on most of the unproductive evaluation models currently in use. It would be better to do nothing in the way of formal teacher evaluation than to use a model which tends to impede professional growth toward improved school quality.

Principle 13: *Institute a vigorous program of education and self-improvement for everyone.*

Effective Schools Tenets: Over two-thirds of the teachers and administrators who will receive a paycheck in the year 2000 are already on the payroll today. If we expect schools and teachers to demonstrate higher quality by the year 2000, we must be prepared to make a massive investment in the training and retraining of the work force. Effective schools advocates have recognized that change, if it occurs at all, occurs when schools invest in staff development and organizational development that changes the level of teacher involvement in decision making and problem solving.

Unfortunately, most local boards of education are reluctant to invest in teacher development. While private sector organizations are encouraged to spend about 7 to 10 percent of their resources on

renewal of their people, products, and services in order to stay competitive, it is the rare school district today that spends as much as 2 percent on renewal. Unless local and state policy leaders are willing to "stand and deliver" on the retraining investment, it is unlikely that improved school quality will occur. This is equally true for those districts that are restructuring. If the conditions of the workplace are changed and the teachers have not been retrained, then one can be sure that teachers will keep on doing what they know to do. In most cases, they were already doing what they knew to do in the old structure.

If a local board of education has the courage to invest 2 percent of its local budget to support a programmatic approach to training and retraining, then the school system and the community it serves can count on annual improvements in educational quality for as long as the staff development investment continues.

Principle 14: *Put everybody in the company to work to accomplish the transformation.*

Effective Schools Tenets: If we want to build top quality schools and districts that effectively serve all students, the primary criteria by which educational administrators are evaluated must change. School leaders at all levels must come to see that their first and overarching responsibility is

to produce high quality results as evidenced by student achievement.

One step in this direction is being tried in many districts currently implementing the effective schools process and site-based management. As these districts decentralize and provide the individual schools with more autonomy, the former functions of central office—compliance and control—are being eliminated, and a new role is emerging. The new role is that of "servant" to the school and its needs. This new role means that central office accountability will focus more directly on how well the schools perceive that their needs for information, technical assistance and support are being met. If everyone in the organization begins to see that the learning needs of the children and the instructional needs of the teacher must be met before high quality results can be realized, then the organization will be moving toward total quality management for effective schools.

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Total Quality Management and school improvement based on effective schools research have a great deal in common. Each has an accumulated history of successfully and significantly improving valued organizational aims. Neither can be thought of as a recipe for

guaranteed success. Both are powerful conceptual frameworks whose full implementation requires persistence and unwavering commitment to the organization's mission and aims.

The quality of education that children receive throughout their schooling is the result of a host of interacting variables, most of which are alterable at the school and classroom levels. An appropriate place to begin the process of total quality management would be to invite teachers, administrators, parents and business partners to implement the tenets of effective schools. It is unlikely that the schools will be able to manage the more lofty principles of TQM if they are unable to meet the challenge of successfully installing the tenets of effective schools.

Part II

Developing the Blueprint for the Total Quality Effective School

Total Quality Management is defined as "an operational theory of management and a set of process tools for implementation." Used in a sensible way, this theory of management can be deployed to produce high quality "widgets" or world class "wizards." The first step in developing a blueprint for a total quality effective school is the recognition that schools do not seek to produce either "widgets" or "wizards." *Schools have as their primary mission successful learning of all children.*

Deming's TQM theory, when applied to schools and schooling, is of little value unless these principles are wrapped around a solid educational framework that is comprehensive and aimed at the *learning for all* mission. Deming has said that managers must have a profound knowledge of

how their system works. Educational leaders at all levels of schooling must have the profound knowledge of how students learn and achieve at a high level. So the blueprint for creating the total quality effective school begins there.

Our business partners and educational policymakers must recognize that the proven practices of quality "widget" production cannot be simply overlaid onto the school and classroom. The blueprint for creating the total quality effective school starts with a solid foundation of the profound knowledge of learning and teaching, of education and schooling. Once this theoretical framework has been mastered, the crosswalks from the quality principles can be successfully transformed and appropriately transferred to the school. A solid, research-based, educational framework wrapped with the proven quality management principles will produce the total quality effective school.

The Four Common Places in Education

The endless journey to the total quality effective school begins with a comprehensive theory of how the educational system works. Our theory starts with a simple yet powerful statement made by J. J. Schwab, professor of educational philosophy, in his paper titled "The Concept of the Structure of a Discipline" (1962). In that article, Schwab stated

that any complete statement in education must include reference to four common places: 1 – someone (the teacher), 2 – teaching someone (the learner), 3 – something (subject matter), 4 – in some context (setting). Schwab's four common places serve as the conceptual foundation for the total quality effective school.

With this foundation, we offer the following theory of schooling: Assessed school-based student learning is the by-product of these four common places as they interact with one another during the schooling process. In the total quality effective school, the level of quality evidenced in each of the four common places (inputs) and their interactions during instruction (processes) are the primary predictors of student learning in school (outcomes). If one or more of the four common places is less than optimal, or if the planned interactions are less than optimal, the quality of the school's final outputs—student learning—is diminished accordingly.

If this theory of school learning is to serve as the *profound knowledge base* for the total quality effective school, three important questions must be addressed. First, "Is it possible to operationally define quality in each of the four input dimensions?" Second, "Do we have the empirical evidence to describe how these inputs should interact to assure attainment of the desired outcomes?" Finally,

"Can we reach sufficient agreement on the outcomes of schooling to permit the teaching- learning system to be focused on these valued outcomes?"

The answer to each of these questions is definitely "Yes." But building and maintaining such a system will be neither quick nor easy. Our educational research base does not provide all the answers at the level of detail we would like. Nevertheless, the knowledge emerging from educational research and descriptions of successful school practices identify enough of the critical attributes associated with each common place to help us begin the endless journey toward the total quality effective school.

Before proceeding to operationally define the common places, two cautions are in order. First, the critical attributes of each common place (i.e., the operational definition) may change as future research provides new insights or new ways of assessing each attribute. Second, this theoretical model is based on our best thinking at the moment. Like any working model, it is complex and multidimensional and will need to be continually adjusted as conditions in and around schooling change and as our knowledge base changes. If the theoretical framework remains fluid and is adjusted as conditions warrant, then our total quality effective school will continue to evolve as it should. Our use of this theoretical framework as the foundation for the total quality effective school

represents our effort to create benchmarks to which all schools can aspire if they want to become world class schools.

In this section the four common places will be operationally defined and illustrated. The most critical operational dimensions have been arbitrarily limited here to three critical attributes for each common place. Each of the three critical attributes associated with each common place was selected for inclusion because empirical research establishes its association with that common place as well as with student learning.

Some might argue that arbitrarily limiting the model to three attributes for each common place is too restrictive. Such a criticism may prove to be valid. However, there is something to be said for keeping the model simple and manageable, while at the same time assuring that it is also as comprehensive as possible. Generally, schools as organizations are truly novices in using any form of statistical process controls to inform decisions and make adjustments. Since building a total quality effective school is seen as an endless journey, we need to begin by helping all stakeholders to develop a comfort level with data-based decision making. Too much complexity too soon could result in the total abandonment of the principles of TQM in schools on the grounds that they represent more work for the teacher.

Critical Attributes of Each Common Place

Learner

The three attributes that a learner brings to the teaching/learning situation are predictive of how well the student will learn what is about to be taught. They are:

Parent and peer expectations, attitudes and values. If we know that the student is coming to the teaching/learning situation from a home environment that values education and expects and nurtures educational success, and if we know that the student's peer culture of significant others (especially for the older child) is neutral-to-positive about school success, then we can predict, other things being equal, that this student will be successful in producing quality learning.

Student self-esteem and sense of efficacy. Student achievement is significantly influenced by how students perceive their own ability to do what is being asked of them. Students who believe in themselves and their ability to do successfully what is expected of them are likely to experience greater success. The lack of a strong sense of self-confidence forms one of the most common barriers to successful learning.

Mastery of the prerequisites. Most of what teachers describe as differences in students' rates of learning (slow vs. fast) have little to do with actual learning rates. More often these differences reflect the degree to which students have mastered the prerequisites for the material the teacher is attempting to teach them. But knowing whether the prerequisites are in place requires two kinds of information generally not available to the classroom teacher. First, teachers need to have a clear understanding of what *are* the prerequisites for the concepts and principles they are about to teach. Most teachers do not have at hand the learning hierarchies and the knowledge maps that would permit them to place each student at an appropriate place on the map.

Second, teachers must be able to assess efficiently the presence or absence of the prerequisites for each learner. When teachers lack these vital quality tools they generally proceed in one of two directions, either of which compromises quality. Teachers assume that each learner has mastered the prerequisites, thus frustrating those who *haven't;* or they teach the prerequisites to all the students, thus frustrating those who *have* mastered the prerequisites.

A substantial amount of research has been conducted on student self-concept and student

sense of efficacy. Two researchers come to mind immediately. Wilbur Brookover (1982) has published research on student academic self-concept and sense of efficacy, and his instruments are one possible tool for assessing these quality learner dimensions. In addition, the current writings of William Glasser, especially in his recent book *The Quality School* (1990), speak to related research and assessment strategies.

In summary, if we have observable, measurable evidence that these three interrelated and interdependent learner dimensions are present and strong, we can say that we have a quality learner as one important input to the total quality effective school. To install this quality dimension in the school, the administrators and teachers must agree on appropriate ways of assessing each dimension and then develop a student monitoring system to collect the data and make them available to the school staff.

This theory suggests that for any desired learning outcome, there is an optimal ecological balance among these learner attributes. The model further specifies that if one or more of these attributes is missing or weak, high levels of learning will not occur. Unless the shortcoming is remedied through an appropriate intervention or alteration in the delivery system for a particular child, or particular group of children, the learning will be diminished.

A school's willingness to adjust in the face of such needs is evidence of its desire to be a total quality effective school where all children learn. However, there are far too many instances today where schools and teachers believe that if the learner is not a "quality learner" it's the learner's fault, and it's not the responsibility of the school or teacher to adjust. Such a philosophy is clearly contrary to the basic principles of total quality organizations.

Teacher

Quality teaching and teachers bring several important attributes to the total quality effective school. As with the learner, our knowledge of the presence or absence of these teacher attributes strongly influences our predictions of how much the students will learn. The three most critical dimensions associated with the common place of the teacher include:

Teacher competence. Teacher competence is defined as the extent to which the teacher has the relevant subject matter and pedagogical expertise needed to teach the intended curriculum effectively. The external stakeholders to local schools may be surprised to learn that teachers are often asked to teach curricular content for which they lack the minimal levels of content knowledge. In considering the total quality effective school, we must ask whether we can expect teachers to teach

something that they don't know themselves, regardless of how good their pedagogical skills may be.

The total quality effective school must create an organizational/cultural norm that invites and rewards continuous lifelong learning on the part of all staff as well as students. Both initial teacher competence and increased levels of competence over time through staff development and continuing education must be constantly monitored and, where necessary, adjusted and, where appropriate, rewarded.

Sense of efficacy. Teacher sense of efficacy is defined as teachers' belief in their capacity to do what's expected of them—in this case teach so that all children can successfully learn. In today's schools, teachers are often asked to teach content they can't teach to learners they don't believe can or will learn in settings that impede successful teaching or learning. With an apparent lack of any sense of efficacy, is it any wonder that such schools and classrooms are best described as models of the self-fulfilling prophecy where low expectations for self and students are the norm? Furthermore, is it any wonder that the results are low student achievement?

Enthusiasm. A teacher must know the content to be taught and must possess the pedagogy

appropriate to teach it in order to have a high sense of efficacy about his/her ability to teach. But this is not enough. For successful learning to occur, the teacher must teach with a high level of enthusiasm. Students generally get caught up in the spirit of the classroom, and even when they don't see the immediate relevance of the curriculum, they will continue to make a good effort if the teacher seems excited about the content and, even more important, is excited about having the students master it.

The recent work of the late Susan Rosenholtz published in her book *Teachers' Workplace: The Social Organization of Schools* (1991) provides the empirical rationale, operational definition, and ways of assessing each of these dimensions in the teacher common place. In addition, a review of the relevant research on teaching provides additional knowledge about the important dynamics related to each of these dimensions. Research by Ashton and Webb (1986) offers further insights into the teacher efficacy construct. Without becoming unnecessarily prescriptive, it is sufficient to recognize that empirical data in support of these dimensions do exist and should be included in the data-based system aimed at creating the total quality effective school. At this time, most schools and school systems do not have the capacity to gather and analyze systematically the kinds of data described above.

In summary, teachers who are competent, confident, and excited can assure quality instruction in a total quality effective school. In its quest to recruit and maintain a competent school staff, the school's management must be vigilant about each of these critical variables. School leaders must use the information from the teacher common place as a major source of useful knowledge on which to base decisions regarding staff development and inservice training for teachers.

Subject matter

One vision for the total quality effective school is a place where all the children master the intended curriculum. But, "What do we want our students to know, to be able to do, and to be inclined to do when they complete their formal schooling?" That question is uppermost in the minds of many teachers. It may surprise many nonschool people to realize that there is little consensus among educators on the question of what's worth knowing. In fact, one of the major problems that confront our schools has to do with what children *should* learn in school, rather than what they *fail* to learn in school.

For example, when critics cite low math performance as a problem, they seem to believe that all children have been taught the appropriate

math, and the observed low performance occurs because the students did not learn what they were taught. But in fact, the low performance is mostly the result of students' not being taught the content on which they are tested.

One of the best kept secrets in public education is that children *do* tend to learn what it is that they are taught in school. Therefore, it is incumbent upon parents and educators to be thoughtful about the issues of curricular content. If the school's "product" is student learning, then it becomes clear that the curricular aims and goals of the school must be treated very seriously. Glasser (1990) has noted that much of what students are taught in school is in the nature of "throw away information," that is, information that won't be retained for very long and probably doesn't have to be retained, because either it will not be needed in the first place, or could be easily accessed if needed later.

Having raised the issue of the importance of valued learner outcomes from schooling, how should those striving to create the total quality effective school begin to address this common place? The following three dimensions are suggested:

Relevant. One of the critical questions that a quality effective school must constantly monitor is the extent to which the curriculum as delivered to the students in the instructional program is

perceived as relevant to those students. The call for relevance here is more than a request to have the curriculum presented in such a way that the students enjoy their lessons—although that's probably not a bad standard to use until something better comes along. However, in this case, *relevant content* means that the students are able to make appropriate connections between what the teacher is teaching and their own referent system. Learning seems to occur most efficiently when the learner is able to make the connections between the new content and past experiences and learnings.

The word "educate" is derived from a Latin word meaning "bring forth," not "pour in." If we reflect on this distinction, we realize that quality education occurs when the learner is able to make the important connections between his/her frame of reference and what the teacher is teaching. Without such connections it is unlikely that much of the learning would be retained for very long.

Coherent. Over the last quarter century or so, curriculum developers have reduced the curriculum to smaller and smaller learning units, thus splintering skills. From the learner's point of view, such instruction seemed to lack any sense of unity and wholeness. We have splintered the skills of reading to such a degree that students spend a great deal of time mastering these skills; yet in the end, they can not comprehend the meaning in what

they read. In recent years this reductionist approach has begun to be reversed. Keeping up to date with the emerging research of cognitive psychology will prove to be critical for those who seek to create the total quality effective school with a coherent curriculum. The quality effective school needs to monitor the curriculum and instructional programs and assist teachers to be sure that the learning program is perceived by learners as being coherent.

Efficient. In today's fast changing world, schools are faced with the dilemma of too much to teach and not enough time to teach it—at least so that students *do* learn it. There are several approaches to solving this problem. First, we need to be more thoughtful regarding what we want students to learn. Second, we need to abandon the parts of the program that are essentially superfluous. Finally, we must take all reasonable steps to assure that what is taught is presented in the most efficient way possible. Efficient instruction will likely be more integrated, interdisciplinary instruction.

The implications of the efficiency dimension are potentially far reaching. We may find we have gone too far with the discipline-based school because it makes learning more complex than it needs to be. We may need to rethink the number of programs that we offer in elementary school, since they tend to promote an approach to schooling that becomes "a mile wide and an inch deep."

In summary, the quality dimensions associated with the common place of subject matter are important, and they do not lend themselves to easy monitoring. Educational leaders are going to have to incorporate several creative checks and balances into the school's operations to be sure that the subject matter achieves and maintains the standards of relevance, coherence and efficiency. The quality school cannot ignore this important domain. Schools sometimes want to leave to others (e.g., central office, textbook publishers) the task of assuring that these important standards are in place. This "not-my-job" approach is part of the reason why schools face the problem of too much to teach and not enough time to teach it to mastery.

Setting

The twenty-five years of research and related practices that make up the effective schools/school improvement framework provide a rich data base to address the relevant dimensions of Schwab's common place called "setting." The correlates of effective schools describe the school and classroom settings that make successful learning for all possible. In reviewing the other three common places and relevant dimensions associated with each, it is clear that several of the correlates of the effective school are embedded in the other common places as well. In this section, the emphasis is on

those dimensions of the setting that are not specifically associated with the other common places. The three presented here are:

Orderly. For a variety of reasons, schools as places of learning need to be perceived as safe and orderly by both students and teachers. The construct of "safe and orderly" should not be interpreted to mean that the school has to be oppressive and rigid. One of the major arguments for establishing and maintaining a safe, orderly environment comes from recent findings in brain research: if the learner does not perceive him or herself to be in a safe place, the higher centers of the brain won't function; indeed, they *can*'t function.

Principals must concern themselves with the disciplinary climate of the school for an additional reason that has to do with teacher perceptions. The research suggests that unless the principal can create a safe, orderly learning environment, teachers do not respect the principal's curriculum and instructional knowledge. From the teacher's point of view, the first test of school leadership is to create a disciplinary climate in the school that is conducive to teaching and learning. Once that climate is in place, the principal and teachers can move forward to install the other dimensions of the total quality effective school.

Expectant. Yesterday's schools were never designed to successfully teach all children. The past training of yesterday's educators, together with the policies and structures of their schools, told them it was unreasonable to expect all students to learn. This resulted in a self-fulfilling prophecy. Today the school's mission has changed. Schools must be reorganized in such a way that all children *do* learn. The restructuring of the school begins with a new belief about the educability of the children.

The total quality effective school expects that all children can learn; the school must adjust what it does and how it does it until students meet its stated expectations. Schools as organizations exemplify the statement: "In life we may not get all that we want, but more often than not we get what we expect!" Let us hope that there are enough people in society willing to give political support to school leaders who are committed to educating *all* children. Let's hope that they will stand up to those who don't want schools to improve — if improvement means teaching all the children. It is still not clear whether school leaders have the political support necessary to restructure for this mission.

Dynamic. Schools as cultural organizations have a reputation for sameness when it comes to their day-to-day operations. One of the problems of

managing change in schools occurs because adults (both educators and parents) expect today's schools to function much as they did when the adults themselves were students. If schools are going to successfully teach all children, they must become much more fluid, flexible, and dynamic. The premium that schools place on routines must give way to placing a higher premium on having all children master the intended curriculum. If that requires time structures to change for some students in order to assure *their* mastery of the curriculum, so be it. Currently, time is used to define the structure of schools and schooling. Tomorrow's total quality effective school must see time as a valuable and flexible resource—an ally, not an enemy, of learning.

In summary, the four common places—learner, teacher, subject matter and setting—all interact and have an impact on what students learn in school. The total quality effective school develops data-gathering systems for constantly monitoring the presence or absence, strength or weakness, of each of the critical dimensions in the common places. These systems must be used to give the school staff the necessary information in a timely fashion so that they can adjust their practices and move constantly toward the total quality effective school where all children learn.

To begin the process of building the system the school must identify assessment tools for

monitoring these critical dimensions. Several instruments have been developed and are widely used. With some adjustment, these instruments can be adapted and incorporated into the data base of the total quality effective school.

Throughout the history of the effective schools movement, schools have been creative in identifying ways of assessing the characteristics of school effectiveness. There is reason to hope that the expanding concept of the total quality effective school will stimulate dedicated educators to continue this creativity. With the challenge of creating the total quality effective school, more new and inventive procedures will be developed.

Finally, the common places, when combined, define the critical educational inputs of the place called school. Taken together, they create an educational environment that either enhances or impedes the learning goals that the school has for its students. In the past, schools were not expected to successfully teach all children, and school policies, patterns, and practices reflected that set of expectations. Now that success for all children is a societal must, we have to rethink our images of the school and restructure the "way we do things here" in order to support those new images with the highest quality educational programs possible.

The redesign of the American public school is made more difficult because, before they became adult stakeholders in the school, teachers, administrators and parents were students in school. Old, time-worn processes are deeply ingrained in the psyches of these adults who must change. Schools are not the creations of children; they are the invention of adults. Schools would probably be better places for learning if we had the courage to allow the children to re-invent the school, and redesign the setting.

Instructional Processes for the Total Quality Effective School

The concept of the profound knowledge of education has been presented in three parts—inputs, processes and outcomes. The common places provide a comprehensive foundation for monitoring the relevant inputs of the profound knowledge of education. We now turn to the question, "How does the total quality effective school address the instructional processes in the profound knowledge base of education?" The answer to this question could quickly become unnecessarily complex and contentious. The experience from the effective schools movement over the years provides a means for avoiding both the complexity and tensions, while still being

certain that the instructional process dimensions of a school are given the attention they deserve in the discourse on total quality. In fact, if school improvement strategies do not alter the nature of the transactions between teachers and learners, student outcomes will not change significantly.

If the aspiring total quality effective school is guided by the following basic beliefs, most of the potential problems can be minimized, if not eliminated.

1. *The primary evidence of quality teaching is demonstrated student learning.* Acceptance of this basic belief allows the school district to avoid the problem of mandating a one "best model" of teaching, with the expectation that it would be used in all situations and across all content areas and grade levels. If the intended outcomes are in evidence, then the school district should avoid prescribing a one-best-way approach. When school districts place all their instructional eggs in one basket, they find themselves trying to defend that decision rather than improving the quality of instruction. Districts which choose one model as their model of instruction tend to confuse uniform instruction with quality instruction. When instruction is judged first by the observed learning outcomes, it has the effect of releasing, rather than stifling, the artistry in teaching. A

results orientation encourages diversity, rather than uniformity, in classroom instruction.

2. *Instructional strategies should build on the knowledge base of effective teaching and the laws of learning.* Each instance of quality instruction, though unique, still builds upon the laws of learning and the cumulated knowledge that comes from the science of teaching. The following example serves to make the point. Assume that good teaching is like good golfing. Does every professional golfer's swing look alike? No, each world-class golfer has a unique swing. On the other hand, if we study world-class golfers, we see that there are many laws of golfing that are shared among golfers. We conclude that certain processes, when mastered and implemented, seem to produce the best results or outcomes. The same is true of good teaching. The goal, then, for a school district aiming to achieve total quality status is to celebrate diversity when it succeeds, while at the same time assuring that every teacher has the knowledge base that reflects the science of effective instruction.

3. *Repeating practices that don't work cannot be justified.* Teachers come to classroom instruction having been trained to think about instruction in one or, at most, a few different

ways. Teachers deserve the right to implement those models of instruction for which they have been trained. The role of the leader at this point is to make absolutely clear what student outcomes are expected from that teacher and support the teacher by providing whatever assistance is wanted or needed to achieve success with that teacher's chosen approach. If the desired student outcomes are forthcoming, the leader's job would be to recognize and celebrate the teacher's success. In addition, a good leader would encourage the teacher to become even more of a "master craftsman" in that particular approach to instruction.

On the other hand, if the expected student outcomes are not forthcoming, the leader has the responsibility to help the teacher find an instructional delivery system that will produce the desired results. In this role, school leaders must be guided by the question: "How can you morally justify allowing teachers to do again what they just did, if what they just did didn't work?" On behalf of the children, the leader must intervene.

We must conclude that effective instruction does not conform to a strict formula but is really a blend of artistry with science. We now turn to a second important instructional issue that centers itself around the question: "To what extent is the science

of good instruction dependent upon the age of the learner and nature of the content to be learned?" We have already said that all teachers need not teach in the same way. We now go further in saying that different essential student learnings call for different instructional strategies—even from the same teacher. Teachers must have enough knowledge of teaching strategies to be able to adjust the strategy to fit both the instructional objective and the nature of the learners. Some skills learning is most effectively taught using one instructional strategy, while problem solving requires a different instructional approach. One of the defining qualities of any professional is his/her ability to adjust to the needs of the client in any given situation.

Three conclusions should be drawn from these observations about the instructional processes in the total quality effective school. First, the instructional strategy most appropriate for any given situation is in part conditioned by the nature of what the teacher wants the students to learn and by the students themselves. Second, any attempt to mandate uniformity of instruction is really a move toward mediocrity and not representative of the total quality effective school. Third, educational leaders and school-level managers must accept responsibility for assuring that every teacher in the system has state-of-the-art knowledge about best practices. Teachers must accept responsibility for

seeking the best practice for every situation and learner.

To bring the level of instructional processes of the total quality school up to world class, school leaders must provide every teacher with three kinds of information. First, every teacher needs to know what the school district wants the students to know, do, and be disposed to do when they finish their schooling and how the district will assess these learnings. Without this information, teachers cannot function as top quality professionals in a total quality school system.

Second, school leaders must provide every teacher with models of success for every major teaching strategy that enjoys some use in their district. Third, school leaders must help teachers align the best strategy of instruction with their personal-best style and the strategy that works best for the kind of content and the specific students being taught.

If school leaders are able to provide these services to the teachers, and if the spirit of quality is alive in the district, the teachers will adjust what they do, as needed, to assure that all children successfully master the intended learnings. This process will assure that the school is moving toward the total quality effective school.

Student Outcomes in the Total Quality Effective School

Formal schooling should begin with the end in mind. But in American public education today there is no consensus about the end we have in mind. The total quality effective school begins with the difficult task of building a consensus around these two questions: First, what do we want our students to know, do, and be disposed to do at the end of their formal public schooling? Second, what evidence should be used to determine whether the students know what we want them to know?

If we assume that the local school district is just beginning the process of building such a consensus, how would it be encouraged to proceed? First, the district would be encouraged to identify all the stakeholder groups who can claim a legitimate interest in the outcomes of public education—parents, educators, employers, higher education leaders, political and religious leaders, and the students themselves. Second, these groups would be invited to engage in educational discourse, the outcome of which would be the answer to the two questions raised above. This process could take a long time, depending on the size of the groups, the level of detailed information they want, and the degree to which there is some initial agreement.

This process can be described as an attempt to create a community of shared values around the aims and purposes of public education. The total quality effective school cannot be developed unless we grapple with these difficult questions. It is interesting to note that many of the schools in other countries to which our schools are compared have a much narrower mission and a much greater consensus on the mission of the school.

In the United States we have chosen, as a matter of public policy, to use the schools as an instrument for a variety of social aims and purposes beyond simply teaching the children. Such broad organizational aims and purposes are not successfully achieved without some cost to society. The process of seeking a consensus regarding the valued outcomes of public schooling represents an attempt to focus the schools around a manageable agenda and move away from the schools being seen as all things to all people.

The task of setting the long-term educational aims and goals for the local school system may appear overwhelming. However, it is necessary, and it may not be as difficult as it first appears. For instance, many educational scholars have written thoughtful descriptions of what they consider to be the aims of education, and this can be used as a starting point of our discussions. Similarly, virtually every professional group, political task

force, or self-appointed blue-ribbon committee has set forth statements as to what the aims of education ought to be. The challenge at the local level is to have the stakeholders understand the options that are available to them, so they can choose from the various competing valued aims and goals that will come to define the local schools and their educational priorities.

Assuming that the process proceeds as suggested above, the next step would be to relate student outcome evidence to the valued aims and goals. For example, let us imagine that the local stakeholders reach a consensus that students, by the time they graduate from high school, should demonstrate social responsibility. What evidence should the schools use to operationally define the concept of social responsibility? One possible source of evidence would be a demonstration that the young people vote regularly once they reach legal age. Would our stakeholders agree that this is at least one valued measure of social responsibility? What other authentic assessment of our valued outcomes should the schools monitor to determine how well the school system is doing?

Imagine that the process of answering the two questions raised earlier has been successfully completed, and we now have a relatively clear and precise statement that describes that community's vision of the educated person. How does that help

the educational system to know what to do next? This description of the school's valued aims and goals is like the architect's rendering of the home we wish to have built. As in home building, we must begin with the end in mind. The next step would be to develop the detailed blueprints that can guide the construction process.

In education we begin with the end in mind, and the blueprints are developed through the process of backward mapping. First, we start with the description of the valued exit outcomes, and then we ask, "What do the students need to learn in Grade 12 to insure mastery of the valued outcomes?" Once this is answered, we would next ask, "What do the students need to learn in Grade 11 so that they would be prepared to learn what we want them to learn in Grade 12?" In this sense, one operational aim of the total quality effective school is to prepare students for success at the next level of schooling. When this aim is achieved, the students will have learned what we want them to know, do, and be disposed to do. The agreed-upon social contract in that local setting would be successfully completed. When this occurs, the schools would reap the benefits of customer satisfaction and would stay in business indefinitely—two valued goals of Deming's Total Quality Organization!

Part III

Implementing the Blueprint for the Total Quality Effective School

The concept of creating the total quality effective school is based on applying the profound knowledge of education as illustrated by Schwab's common places of education discussed in Part II. Our theory hypothesizes that at any given moment in the schooling of a child, there is a set of optimal conditions that must exist in each common place if that student's learning is going to be of the highest quality. In reality, these optimal conditions are seldom fully realized for all students. Therefore, the organizational aim of "endless improvement" accurately describes one of the critical cultural norms that must be present in the total quality effective school.

There is no magic formula for quickly creating the total quality effective school. As Deming has suggested, the aim must be to seek, always to *seek*, total quality. Paradoxically, even if the total quality school did exist, it would do so only for a fleeting moment and would again disappear, because the world in which our schools and children exist is rapidly changing. Thus, the faculty of a school must constantly monitor its inputs, processes and results and constantly recreate itself as a total quality effective school every day—day in and day out. The process of recreation must be accomplished in a way that reflects that school's unique needs and takes into account that school's unique circumstances.

Tools Needed for Implementation

There is no one best way to pursue the total quality effective school. This section will suggest a set of tools that have proven to be useful, and they can contribute significantly to the quest for the total quality effective school. The analogy of total quality tools is apt for two reasons: First, many tools are needed to create the total quality effective school. Like the tools in a workman's tool box, each one has a special use; no one would try using all of them at the same time. Second, since each tool has a special use, the true craftsman uses each tool for the particular job for which it was intended.

Similarly, the true craftsman of the total quality effective school uses the right tools in the correct way to advance the mission of the school—successful learning for all students.

Restructuring yesterday's school

In most cases, creating the total quality effective school means redesigning a school that already exists, which has an established culture and a purpose different from that of the total quality effective school. It is generally agreed that today's public schools were never designed to successfully teach all children. Now, with that as their new aim, schools have a different purpose, and they will require different means to achieve it.

Few educational leaders will ever enjoy the luxury of designing, building, staffing and programming a brand new school. Therefore, the first two critical steps in creating the total quality effective school are:

1. Develop a clear vision of the total quality effective school.

2. Assess the existing school to determine what patterns, practices and operating procedures serve to enhance or impede the vision.

By analogy, if you have ever remodeled an existing home you know that the remodeling begins with a clear plan and a series of decisions as to what goes and what stays. It certainly would be folly to repaint walls scheduled for removal and then remove them! Extending the remodeling analogy further may help us to see how we can get from yesterday's school to tomorrow's total quality effective school, while keeping the inevitable chaos and confusion manageable. Contractors would advise us to build the new structures essentially over the old structures and only then remove those parts of the old structure that must be removed. How does this concept work in redesigning schools? Many school reforms have been successful because they first implemented a pilot project in a single school or even a small portion of a school (they built the new structure first), got the "bugs" out, and then installed the innovation schoolwide or districtwide. (Finally, they removed those parts of the old structure that remained as impediments to the new design.)

The effective schools concept rests on the belief that all children can learn, and it is the responsibility of the school to successfully teach all children. This vision for the total quality effective school represents a radical departure from the primary vision of yesterday's schools, where attendance was mandatory but learning was optional. Tomorrow's schools will be places where all

children's mastery of the intended curriculum will no longer be optional.

In order to create such a school, several old, time-worn, but firmly entrenched, paradigms must change. If we attempt to implement a total quality effective school based on our profound knowledge of education without seriously confronting the needed paradigm changes, we will be frustrated and will experience limited success—at best. Twelve different paradigms are listed below. This list does not exhaust all the aspects of yesterday's schools that must change. But there is a general consensus that as long as these paradigms remain unchanged they represent major barriers to creating schools where all children learn and experience educational success.

Learning for all. The notion that all children can learn and come to school motivated to do so is a relatively new, and not widely accepted, educational paradigm. Nevertheless, until schools see the educational success of every child as their primary responsibility, they will not come to terms with the organizational and procedural changes that are suggested here. On the other hand, once schools accept as their mission the educational success of all children, schools will quickly realize that they can only be successful when some of their basic school structures change.

Schools designed to assure learning. Sarason (1990) has observed that today's schools are primarily organized around the *delivery of instruction*. The changing paradigm implied in the total quality effective school states that schools need to be restructured so that they are organized around *student learning*. This will require teachers and administrators to think differently about such issues as calendar, schedules, class structures and the like.

Judging schools by student learning results. Historically, schools and school systems would be re-accredited and even receive public acclaim if they had the appropriate mix of inputs (books in the library) and curricular offerings (advanced math courses). Unfortunately, these input assessments never addressed the question of how much students were actually learning at the school. Now as the schools are being held more accountable, the public wants evidence that learning is occurring. This change represents a fundamental shift in how teachers think about their work.

School districts must see themselves as 12 to K rather than K to 12. In an outcomes-oriented school, the development of curriculum and instructional programs must begin with the end in mind. Since the western mind is trained to function from left to right, when we think "K- 12," we think

that we should *plan* from K to 12. But, educators interested in designing a quality effective school must begin planning the curriculum and instructional program with the end (high school graduation) in mind. This will require teachers to reorient their thinking about what is taught, how it is taught, and in what sequence.

Using time as a resource for learning, not as the basis for structuring the school. Yesterday's schools were organized around rigid calendars and class schedules with bells. If schools are going to make significant progress toward the successful learning for all mission, then they must make it possible to expand or contract school time as students' learning needs dictate. This is already being tried in some interesting pilot projects. For example, reform legislation in Kentucky requires the creation of ungraded primary units in elementary school. This creates the flexibility and structure needed to use time as a resource for student learning.

School success derives from effort and performance rather than innate ability. In too many instances, educators view students in schools as coming from one of two groups. One group is perceived as having the ability to succeed in school, while the other group is seen as those unfortunate students who are not going to succeed. These designations (viewed as accidents of birth) are

assigned to young children early in their schooling experience, and from then on the self-fulfilling prophecy takes over.

Our nation is at risk if our schools teach that ability, not effort and performance, is the key to future educational success. This is especially tragic because we know that the designation of "low ability" has been disproportionately assigned to the very population groups which are growing most rapidly in our society—namely minority children and the children of the poor.

Learning is a social as well as a psychological phenomenon. In the past, schools saw themselves as teaching individual students and therefore looked to the discipline of psychology for the knowledge base on how to deliver instruction. Now, we are beginning to recognize that while it's true that schools teach individuals, teaching occurs in group settings. The added realization of the group setting suggests that we should pay more attention to the lessons that can be learned from the discipline of sociology. As we study sociology in search of some answers, we will see why cooperative student learning and faculty collaboration make so much sense in school reform discussions.

Schools must abandon age-grade placements and place students in appropriate achievement-centered settings. Generally speaking, learning

does not have much to do with chronological age. It has much more to do with readiness, mastery of essential prerequisites, and other indicators of learner maturity. But, more often than not, students are placed in classrooms on the basis of their age at their last birthday. Teaching for learning is much easier for teachers if they safely assume that the particular students in front of them are prepared at that moment to learn what is about to be taught. If we could begin to structure schools with two simple guidelines in mind, we would be much more successful with many more children. First, always strive to place students in learning situations that are at an appropriate level of difficulty for them. Second, we should keep them at that level long enough for them to experience success—neither too long nor too short.

Student learners should be active rather than passive in the classroom. Learning seems to be most successful when the learner is actively involved in the teaching/learning process. All too often, students are expected to remain at their desks, silent and poised for the teacher's message. As a result, students quickly come to conclude that school is "boring." When students seem to be excited by what they are doing in school, they are usually active participants in their own learning, rather than passive onlookers of the teacher.

All human beings are motivated to learn and come to school prepared to do so. The most frequent complaint from educators regarding the learning for all mission is that it can't succeed because some students are not motivated to learn. Such educators would have the mission of the school changed to: "Learning for all who are motivated to learn." It's difficult for them to realize that it might be possible to motivate such students to learn — but not what the teacher wants to teach them at that time or under those conditions. For example, one school was having little success getting its Chapter 1 children to do well on the state assessment tests in reading. Then the school changed its teaching strategy, encouraged students to read books that interested them, and provided time for the students to talk about the meaning they were getting from what they were reading. It should come as no surprise that this new strategy created a renewed excitement for reading (motivation) that even resulted in better performance on the "deadly" state assessment tests in reading.

Students tend to learn those things they are taught. One of the best kept secrets in education is that students *do* tend to learn those things they are taught. This is especially true if they are taught well. Thus, teachers and school leaders must pay closer attention to the actual alignment between the intended, taught, and assessed curriculum.

Schools serving large populations of poor and economically disadvantaged children must be especially sensitive to the issue of alignment. In academic areas, disadvantaged children, far more than other children, are more dependent on the school as their source for learning. If you want the performance of these children to look bad, teach them one thing and test them on another. The tragedy is that we do this all the time—and we wonder why such students get discouraged and lose their motivation for learning.

Today's students tend to be information rich but experience poor. In earlier times, our society's children could be described as experience rich and information poor; thus the role of the school was to provide the needed information. With the coming of the high-tech information age, today's children can be more accurately described as information rich but experience poor; thus the role of the schools is to meet the experience needs of children. This shift in emphasis is consistent with much of what has already been said. It is unlikely that the typical teacher can compete with video technology as a provider of information. On the other hand, it's unlikely that video technology can do as good a job as the well-prepared teacher in helping the students draw meaning from the information that has been presented through the medium of audio or video technology.

In summary, this list of twelve different paradigms is not meant to exhaust all possible changes that may be required. These issues represent some of the more immediate and obvious barriers to the total quality effective school in which all students successfully learn. As we proceed to work through the strategies that will be required to manage these changes in our schooling paradigms, new obstacles will surely emerge. When they do, we will have to make the decision as to whether they "go" or "stay," based on whether they enhance or impede the school's mission.

Changing the locus of decision making

In American public education, we have been centralizing decision-making in education for the past seventy-five years or so. By centralization, we mean that more and more of the decisions intended to have an impact on children in the classroom have been moving further and further from classrooms and teachers. As a result, many schools and classrooms are no longer responsive to the learning goals for their children. More and more of today's classroom activities are influenced by the desire of the teacher and principal to be in compliance with established policy — even when the policy diminishes students' learning.

Even more tragic for teachers and local administrators are the long-term consequences of

being led from afar. Receiving one's marching orders from a distant commander, marching as ordered, and then realizing the orders were unworkable—all this undermines confidence in the system and leads to increased cynicism. This type of leadership promotes a sense of powerlessness and learned helplessness among the school-based staff.

Is there a way of again empowering the school and reversing this dismal scenario? The answer is "yes," and the tools are *decentralization, site-based management* and *staff participation in decision-making*. Site-based management, in the context of creating the total quality effective school, requires that the local school district move toward maximum, feasible decentralization of decision-making to the school level. It assumes that the local board of education will provide each operational school unit in the school system with a clear set of organizational aims and goals along with a clear description of what evidence the board of education will use to assess whether those aims and goals have been accomplished. In return, each school would have maximum feasible control over the processes they would design and implement to accomplish the established organizational aims. The total quality effective school encourages variation in the processes of instruction in order to assure uniformly high quality performance outcomes for all students.

Site-based management, as that tool is being recommended here, simply locates where the decision on organizational goals is to be made. It does not specify who will participate in making the decisions. In fact, as local districts move toward the implementation of site-based management, they need to develop a decision-making chart. The chart would identify which decisions would be made where under their site-based strategy. The chart should be organized in at least three columns. Column One would list those decisions that will be made above the individual school level (district office or state level). Column Two would list those decisions that henceforth will be made at the school level. Column Three would list those decisions that will be made below the school level (individual teachers or departments). Past experience verifies that the restructuring of decision making by means of such a chart can save a local district endless hours of heated debate and untold amounts of individual and organizational anxiety.

Leaders of change in any organization must anticipate that the following question will be asked about any change that is being proposed: "To what problem is the proposed change supposed to be a solution?" In the case of site-based management, the problems to be solved are powerlessness, learned helplessness and rampant cynicism, and inappropriate solutions to local problems.

Empowering teachers

Locating more of the decisions at the school site level is a necessary, but not sufficient, condition for solving the problems listed above. For example, decision making could be moved from under the tyranny of central office and placed under the control of a tyrannical principal. If this happened, the condition of being site based would have been satisfied, but the problem of powerlessness would have been largely ignored. As we create the total quality effective school, the tool of teacher empowerment through involvement and collaboration must be added.

Organizational leaders are finally beginning to recognize that workers must feel some sense of ownership of and commitment to their work and to the organization if their effort is to be of the highest quality possible. One of the first steps that must be taken is to involve workers in the planning and problem solving of the organization, generally, and their own immediate work environment, specifically. Experience suggests that a school's teachers may resist this invitation to empowerment, at least initially. The resistance comes from the fear that, if they take responsibility for their own actions and what they do doesn't work, they will be sanctioned. The justification for this fear can be traced to schools' former practice of playing the "gotcha" game, with those who are the risk-takers

in the organization. The only way to overcome this long-standing problem is to live Deming's notion that the school is not out to fix blame. Rather, the goal is to fix the system, and that will require daring, risk-taking, and change.

One concrete step that a district should take en route to creating the total quality effective school is to make a further addition to the decision chart described in the previous section. Each of the three columns of decisions (made above the school level, at it, or below it) should be further divided into two parts. The first part of each column would contain a listing of all the decisions in that column that are expected to be made primarily by administrators working alone. The second part of each column would contain a listing of those decisions expected to be shared by the staff and administration.

One additional thought about the importance of teacher collaboration. Schools have been described as places where teachers tend to work in isolation from other teachers—and even other adults for that matter. As a result, when a teacher encounters a problem in the classroom the teacher is likely to conclude that the problem is unique to that teacher: if it became widely known, his/her competence would be called into question. As a result, the teacher is most likely to retreat further into isolation and become even more frustrated.

When schools create truly collaborative environments, several good things happen. First, teachers share problems and find that, more often than not, they are not the only ones, with that problem. That's reassuring. Second, sharing the problem in a school that values collaboration is likely to bring forth possible solutions to that problem from other colleagues. Third, when common problems get discussed, the staff and administration realize that most of them are systems problems, and they seek to respond with systemic solutions. Finally, collaborative schools foster the realization that teachers can accomplish much if they work together, but they are limited if they insist on working alone.

Remember most of our teacher preparation programs have taught teachers how to teach in a classroom—not in a school. Once they recognize the power that can come from using the school organization to help accomplish valued aims and goals, teachers' resistance to empowerment will disappear quickly. As this happens, the tool of involvement and collaboration will increase in its potency. Many years ago Ron Edmonds said that school improvement will not occur until teachers realize and accept the limitations of what they can do if they work alone. He further stated that it's only then that we will be able to talk to teachers about what they could do if they decided to work together.

Curriculum and instructional alignment

Currently there are three curriculum and instructional systems operating in most schools. One system is the intended curriculum—the one approved by the board of education after hundreds of hours of committee meetings by dozens of teachers, administrators, and parents. The second is the taught curriculum—the one that students actually experience in day-to-day classroom instruction. Finally, there is the tested curriculum—the one for which the students, teachers and principals are held accountable through the assessment and accountability program. Wouldn't it be great if all three were aligned so that the intended, taught, and tested curricula were indistinguishable? The students would find such curricular coherence both refreshing and useful because it would take the guesswork out of what to study.

If we are to have any hope of creating the quality effective school, the intended, taught, and tested curricula must be as congruent as is possible. Virtually every intervention that a school's staff implements for the purpose of improving student learning presumes that there *is* alignment between the curriculum that is taught and that which is tested. School districts which choose to leave the continuous monitoring of curriculum and

instructional alignment to chance do so at their own peril. Furthermore, no school could claim that it is practicing the principles of total quality management if it continues to ignore the central issue of curriculum alignment. Here again Deming's dictum is most appropriate. He says that when you have a problem—in this case low student learning—don't try to fix blame, fix the system.

A word of caution is in order: It is perfectly all right to teach students curricula over which they will not be tested, but in this day of accountability for results, it's foolhardy to test students on curricula they have not been taught and taught to mastery. Teaching one thing and testing another tends to discriminate against the socioeconomically poor and disadvantaged students, since they are the most dependent on the school as the source for their academic learnings.

Several processes have been developed by various researchers for conducting curriculum audits and assessing curriculum alignment. Some of these procedures are very elaborate and sophisticated; others are less so. Obviously the total quality school would go to whatever lengths required to assure that the necessary alignment exists. The total quality effective school believes deeply that all students can learn and will learn what they are taught—if it is taught well.

Information processing technology

The total quality effective school is probably unattainable (or even unapproachable) without a major commitment to the use of computers and other related information-processing technologies. The technology tool is critical if the quality school is going to be able to engage in the self-monitoring and adjustment processes that are a part of a dynamic and responsive organization. The first tools of technology being recommended should focus on how the adults in the school can develop and maintain information (a data base) around each common place for each student, teacher, essential learning domain and classroom setting. Such information systems are essential if school leaders are going to be able to monitor the instructional system and make appropriate adjustments in a timely fashion. Most schools have only begun to realize the power of the computer as a tool of instructional delivery. Even fewer schools have recognized its potential as a management tool.

Some school systems currently collect large amounts of data on their students, teachers, curricula and school settings. However, only a small amount of data is actually used to make decisions regarding improved quality. It's always exciting to watch the enthusiasm that comes over

a school staff when they learn to use data in a way that gives them a sense of understanding about their school and its students. Few strategies are as empowering as that of having a staff decide what is important for students to learn; for the staff to teach it well and have observable, measurable evidence that the students learned it.

In the past, school principals probably had a reasonable excuse for failing to make use of information systems. Much of the earlier technology was cumbersome and required a significant amount of training and constant attention by staff who were already overextended. Today, however, any excuse that it is not feasible to build such systems because of time, cost or complexity of programs is no longer reasonable. Principals should be required to come to the principalship computer literate, or to become so as a condition of continuing in that leadership role.

In the total quality effective school, a new staff role is emerging, however slowly. Tomorrow's total quality effective school will need someone who can work as a data clerk and be of general assistance to teachers and principals by making sure that all the data are entered in the system accurately and in a timely fashion. This same individual should be able to prepare various statistical analyses and accompanying reports so that staff are always current regarding the

curriculum and instructional program and its impact on each student's learning. As the staff of the school begin to take charge of the school and move toward the total quality effective school, they will demand that new data be collected and current data looked at in new ways

Identifying best practices

The profound knowledge of effective schooling is expanding and being refined constantly. The most recent additions to the knowledge base seem to come from two main sources: recent research and descriptions of practices that work elsewhere. Most school systems do a very poor job of designing and implementing a system that assures that the front-line workers in school are up to date on the benchmarks of effective practice.

Unfortunately, keeping current either on valid research or successful practices is not easy. First, school districts, as a rule, have done a poor job of developing information systems which provide principals and teachers with new knowledge in a timely fashion and in a form that makes sense to the school-based practitioner. Second, much of the research that is published in the professional research journals is not written for the typical school-based professionals. As a result, busy teachers and principals are less than excited about reading it. Third, descriptions of effective practices

are often hard to locate because, until recently, educators have done a poor job of trying to capture the wisdom of the practitioner. Finally, much of the published research does not directly address teaching and learning strategies. School-level professionals who read it often cannot tell whether implementing the research findings would have a large or small impact on student learning.

To overcome these problems, the total quality effective school must implement the following: First a system that assures a steady flow of research regarding high yield strategies needs to be developed for every school in a school system.[2] Second, school leaders must create opportunities for teachers, administrators, and others to reflect on the recent additions to the profound knowledge base of effective schooling. The major barrier to school improvement cited by teachers and administrators is that they do not have time to meet and discuss school improvement.

Third, school-based plans for school improvement must revolve around strategies for improvement that are data based and results driven. Yesterday's

2. Many school districts currently use *Effective Schools Research Abstracts* (Effective Schools Products, Ltd., Okemos, MI) as one source of helpful and up-to-date research information. Other similar systems and services can be easily accessed by school districts today.

schools too often selected instructional materials and procedures for their activity value, rather than for their probable contribution to learning outcomes. The evidence suggests that planning and delivering lessons according to research and best practices can be as interesting and as exciting to the students as lessons that ignore these practices.

In summary, if we assume that teachers and administrators are already doing the best they know to do, and if we empower them to take greater control of the decisions that will have an impact on the quality of the school and classroom, some steps must be taken to expand the profound knowledge base that will inform those decisions. If this issue is ignored, tomorrow's schools will be places where people are more committed to doing what they are doing, even if what they are doing does not reflect the best we know to do. The total quality effective school must work to prevent this situation from occurring.

* * * * * *

Six tools critical to the successful implementation of the total quality effective school have been suggested. This list should not be interpreted to mean that no other tools are needed or wanted. This list was specifically suggested because, in the past, schools generally have not used these tools as effectively as they might have. If your school staff

are already accomplished in the use of any of these tools, you should consider this listing as a form of validation and celebration that you are already on the right track. Remember, the list of the tools does not imply that you only need to select one or two. All six tools (and probably many more), will be required to implement successfully all the changes required to create and sustain the total quality effective school.

Applying Statistical Process Controls

The principles of Total Quality Management, as described by W. Edwards Deming, are dependent on an organizational leader's ability and willingness to collect and analyze pertinent information so as to make informed decisions about quality and quality improvements. The concept of statistical process controls, when used appropriately, allows organizational leaders, at all levels, to monitor and adjust the organization's processes, procedures, and systems to assure total quality.

Initially, school teachers and administrators will have difficulty with the concept of statistical process controls because they have a deep-seated mistrust of data as a basis for informed decision making. On the journey to the total quality effective school, educators will have to overcome this mistrust.

Part of the educator's mistrust about data is rational. In the past, educators and the schools in which they worked were evaluated by test scores that had little to do with what the schools taught and the students learned. However, another part of the educator's mistrust is more emotional than rational and must be addressed in a sensible way. Many educators believe that the lofty business of educating children is trivialized when we try to reduce evidence of their learning to assessment scores contained in a school's data base.

The issues pertaining to collecting and analyzing data in order to create the total quality effective school will be presented here as part of the larger discussion of statistical process controls. Integrating the discussion of the statistical tools with their appropriate use should serve to reduce both the rational and irrational fears of the educator.

The overwhelming majority of local school districts in the United States are not prepared to implement most of the statistical process control tools suggested by the TQM framework. In fact, it is probably safe to say that most organizations (public or private) are not prepared to perform the recommended statistical analyses on a regular basis and in a timely fashion. Deming makes the point that if an organization's goal is total quality management, the first person who ought to be identified is a top-level statistical analyst. But if

we look at the current capacity of local school districts we will quickly find that the measurement, research and evaluation office is generally understaffed—or even nonexistent. Without that support capability, implementation of the total quality effective school would be virtually impossible. Therefore, when a district is getting ready to use statistical process controls appropriately, it must have the capacity to support school-based and district-level statistical analyses. If the capacity is lacking, district leaders should develop a plan for establishing that capability—and soon.

In addition to being certain that a district has the required person power, district leaders must assess its technical capability to collect, analyze and report data to the various stakeholders in a timely fashion. A total quality effective school must be well prepared and ready to act on information—*if* it's relevant and useful.

We start with an example of poor use of data: Statewide assessments of every pupil in selected grades and subjects were mandated by an East Coast state. The tests were administered in the spring and sent off to be scored. The schools were told that the results would not be back at the school until early in the next school year after all the students had moved on to the next grade and a new teacher. When these data finally arrived back at

the school, they were about as interesting and useful to the teachers and administrators as last week's weather forecast!

Now here is an illustration of good use of data: Suppose schools had information that allowed them to know by the end of October which students were failing to make adequate progress, and the school responded by making some adjustment in students' instructional program at that time, rather than waiting until the end of the school year. Unfortunately, many schools allow such students to flounder until spring and then recommend retention. If they wait for the data until it's too late and then expect the retention strategy to work, it is bound to fail. This, essentially, is what the research on retention has found.

The total quality effective school assumes that the decision makers *are* knowledgeable in the appropriate use of statistical tools to inform school-level decisions and that decision makers design strategies that advance school quality. Thus, the district must offer training, technical assistance, and ongoing support for the school-level decision makers regarding the appropriate use of statistical tools and statistical data.

Assuming that the technical and human capabilities are in place and the school leaders have the prerequisite knowledge and skills, where do a

district and its schools begin to build the data base for the total quality effective school? The remainder of this section will describe the application of statistical process tools. They may be applied either to student learning and performance measures (evidence of organizational aims and quality outcomes) or to operational measures of the quality process dimensions of the school associated with each of the four common places.

Student performance measures

The central question for the total quality effective school is: "Do we have credible evidence that our students learned what we taught them in our program of curriculum and instruction?" Most schools cannot answer this question with credible evidence to back their claim. (Incidentally, the critics of public education generally don't have credible evidence that their criticisms are valid.) Schools today often face an additional problem because even if a school could answer this question in the affirmative, the external "customers" of the school still may not be satisfied with the quality of the school. Most of the time when this situation occurs, the problem turns out to be that students are being taught and are learning something different from what these external critics believe ought to be taught. For example, elementary teachers spend a great deal of instructional time teaching children basic skills in reading and math.

The students ultimately graduate from high school and get a job. Their employers express disappointment because, once on the job, the students lack good work habits and proper attitudes. But, in this case the students had learned what was expected of them. Perhaps they either were taught the wrong curriculum or, more likely, the curriculum omitted valued learnings. What we need is alignment between the curricula that are intended, taught, and tested in school. The problem here is one of nonalignment between the aims and expectations of the internal and external customers of public schools. This problem may be more accurately described as one of political alignment, and it requires more discussion before proceeding.

Many public school critics blame classroom teachers and school administrators when such political nonalignment occurs. If the total quality effective school were in the business of fixing blame rather than fixing the system, it would be appropriate to direct the blame at the individual state departments of education, higher education, local boards of education, or textbook publishers, because these influential external groups actually decide what the students will be taught in the public school classrooms throughout the United States.

For example, public schools have been criticized for "dumbing down" the curriculum. Much of this can be attributed to statewide assessment tests that

ask students to demonstrate proficiency mostly on low-level skills. Knowing that the statewide test results are widely publicized in the local media, teachers align their classroom efforts accordingly. Any teacher who ignores the power of the media to make life in the school and classroom difficult is in for a rude awakening. The press for accountability, for credible evidence of student learning, is not going to diminish in the future; in fact, unless the problem is addressed, it surely will intensify over time. While it may be unfair to blame the educators at the local level when political alignment problems arise, they must be held accountable for solving this problem at the local level.

A second related problem with school outcomes has to do with the schools' deliberate avoidance of teaching (or at least emphasizing) many of the value and character dimensions that the external stakeholders look for in their employees. For example, employers want employees who evidence self-discipline and proper attitudes; who respect themselves, others, and the company itself. When schools talk about teaching such values, vocal segments of the public accuse them of exceeding their authority and encroaching on the role of the family as "the appropriate teacher of values." These critics are quick to warn the educators that teaching values is not the school's role. Unfortunately, when students graduate from college and move to the workplace without demonstrating

character dimensions that reflect these values, employers don't blame the parents or the churches—they blame the schools and the teachers!

At the moment we don't have an established social/political mechanism for helping schools and the communities they serve to develop anything approaching a consensus about what schools should teach. However, several of the statistical techniques and applied research strategies associated with the TQM literature can help the local school district address this problem.

As a start, a local school system should undertake to build an information base for the total quality effective school by engaging in a process designed to answer these three questions:

1. Who has a right to define the aims and ends of public education at the local level? In other words, who are our customers?

2. What do our customers want our students to know, do and be inclined to do when they graduate from our schools?

3. What credible evidence (standards) should be used to determine whether all our students know those things?

Let's begin with the first question: Before a school system can begin to bring together its various internal and external customers to ask them what the focus of the curriculum and instruction program ought to be, those customers must be identified. Currently, two customer groups seem to be providing most of the expressed criticism of public schools—the business community and the political community. These groups are legitimate and should be listened to closely, but they are not the only legitimate stakeholders for public education.

Who else ought to be invited to the discussions? Clearly, members of the education profession itself ought to be included. This means that local teachers, administrators, and support groups must participate in the process of defining the aims and ends of public education. One group that greatly influences what schools teach includes the educators in institutions of higher learning, but in many places they have decided to stay with the status quo curriculum. Somehow every state must find a way to get its institutions of higher education to be more forthright regarding the curriculum of the 21st-century.

Each district must identify the internal and external customers of its public schools and take steps to include them in the discussion toward building a consensus around the aims and goals of the local

school system.[3] Two strategies seem to work in helping reach this consensus. Many districts use the process called *focused forum* to discuss the aims and ends of public education. The focused forum methodology convenes small groups of individuals to talk in depth about their vision for education. A second, frequently used methodology is the public opinion survey, in which broad, cross-sectional groups of citizens are asked to react to a survey designed to determine their priorities for public education. Both methodologies are useful and can be used to complement one another very effectively.

Assuming that the stakeholders have been identified, two questions remain and must be answered before the student performance standards and operational measurements can be developed and the associated statistical process tools can be appropriately deployed. The two questions are: "How do the stakeholders decide what it is that we want students to know, do, and be disposed to do as a result of their schooling?" and "What should the stakeholders accept as credible evidence that the students have mastered these expected learnings?" When we have acceptable answers to

3. One of the interesting observations regarding the cross-cultural comparisons of our schools with those of other countries is that virtually all of these countries have highly centralized education systems. The issue of what should be

these two questions, we will have met the prerequisite conditions for monitoring student performance through the deployment of appropriate statistical process tools.

At the moment there is a national debate under way regarding what standards ought to be used to assess the effectiveness of our nation's schools. It is not at all clear that this debate will yield the answers school people need to build the total quality effective school because the debate is being led by what many people believe to be a partisan political group destined to produce only partisan political solutions. But national debate on world class standards notwithstanding, in the end the agreed-upon standards and the associated student performance measurement systems (whether national, state or local) must incorporate these five elements.

Standardized assessments of student learning. If the public is going to make decisions about whether the students have learned to an acceptable level of mastery what we want them to know, we must have a system of measurement that is fair to all students. Assessment systems must be

taught and learned in the public schools is addressed centrally. When education is centralized, the local schools know what they are to teach, and the professionals can spend their time perfecting their instructional delivery system.

standardized and must conform to the rules of fairness from place to place, time to time, and group to group. The use of standardized assessments in no way restricts the measurement systems to paper-pencil or multiple-choice type assessments. It simply means that all students who are assessed will be assessed under similar conditions, time frames, prompts, and the like. Currently, much of the testing in the schools does not meet the standardization criteria called for here. For example, test situations exist where whole classes of students are herded into the cafeteria and expected to focus on the test in spite of the noisy testing conditions. At the same time, in a school down the street, the testing conditions are appropriately quiet, orderly, and generally more conducive to the task at hand. Setting aside any questions regarding the appropriateness of what the test measures, such variations in the testing conditions raise serious questions about the validity and reliability of the results.

Curricular-based assessments of student learning. As previously mentioned, the total quality effective school is a place where all the students successfully master the intended curriculum. This being so, the most important assessments that a school uses should be designed to assess whether the students have learned what they were taught in the curriculum. One reason that teachers have such disdain for student

achievement test data is that teachers labor long and hard to teach the intended curriculum, and then their students take norm-referenced tests which measure something quite different. Not only are such practices psychometrically questionable, they tend to destroy students' motivation for learning and, in time, teachers' motivation for teaching.

School districts should strive to meet the following standard when developing appropriate student performance measures. Teachers must believe deeply that, if they teach the intended curriculum and the students learn what they have been taught, then the students will do well on the measurements of student performance. This standard clearly implies that the performance assessments should be curricular based. They may be paper-pencil tests (where appropriate), products of student work, portfolios; but whatever their form, they must be curricular based.

Criterion-referenced assessments. The total quality effective school starts with the belief that all children can learn. Thus, the school ought to assess student progress toward that mission using an assessment system that is philosophically consistent with that belief. The measurement system must allow for the possibility that all children *did* learn. The primary conceptual limitation of the current norm-referenced tests is that they are based on the belief that the attributes

being tested are distributed in the population along the bell curve. Scores on such tests tell us where a child's performance stands relative to other children but fails to tell us anything about the adequacy of the overall level of student performance. Norm-referenced tests would be declared "defective" or "faulty" if too many children score too well on the test. Criterion-referenced assessments are common practice in the fields of law, medicine, and accounting where important professional or career decisions regarding licensing are concerned.

The process of developing psychometrically valid, criterion-referenced assessments at the appropriate level of difficulty that adequately sample the valued knowledge domain is very demanding. This requires subject-matter expertise and an understanding of the critical dimensions of the knowledge domains that are to be assessed. Most teachers probably do not have the needed information to make such decisions without adequate training and technical support, as well as central office support.

Locally generated assessments of student performance. Large testing companies make millions of dollars every year selling tests and testing services to local school districts. Generally speaking, such tests meet the usual specifications for a quality test, such as reliability and validity.

Unfortunately, these commercially prepared, off-the-shelf tests have drawbacks that raise serious questions about their usefulness in contributing to the total quality effective school. First, most teachers show little or no ownership of them, since decisions about their purchase and use are generally made by others, and the teachers are not involved. Furthermore, teachers do not evidence much ownership of the students' results on these tests. If quality management requires workers to adjust what they do in the face of data that indicate that such adjustment is needed, they must feel ownership and responsibility for those data. The problem of creating a sense of ownership is answered, at least in part, when the design, development, and deployment of student assessments involve the teachers and local administrators. In the past, the school districts which developed their own criterion-referenced testing program at the local level achieved the best results because staff both understood and had a sense of ownership over the tests and the results they yield.

Nationally validated assessments of student learning. We advocate locally-developed student assessments. But given the mobility of our population, we also realize that parents and students need some assurance that their local standards do not become too localized. It would be most unfortunate if successful students were to find

themselves to be at risk upon moving to another district or state because local standards were too low or off target. In a mobile society like ours, we must have assurance that if a school system in one part of the country says that a student is literate, that student will not find himself or herself at a serious academic disadvantage as a result of moving to another area.

There are many ways to meet a nationally validated standard. For example, a local district could include assessment items that have known performance distribution properties associated with national assessment items. If the performance of local students is similar to the known national sample, it's probably safe to assume that the local standards and assessments are generally in the national mainstream.

In summary, if a consensus is achieved on what a local community values relative to the outcomes of schooling, and if student assessments are designed to measure student learning, the vision of the total quality effective school becomes clear.

Types of performance measures

Two basic beliefs guide the total quality effective school: Schools must be effective in terms of both *quality* and *equity*. Evidence of school effectiveness must be demonstrated through

assessed student achievement and other student outcome measures. Baseline student achievement data provide the benchmark by which a school can judge the impact of its improvement efforts (McCue, 1987). One of the most important aspects of the total quality effective school is the type of student achievement data schools and districts choose to collect. Also critically important is the manner in which the schools publicly report those data and take responsibility for the results they observe.

Three kinds of student outcome data may be incorporated in the performance assessment information system for the total quality effective school. The following description assumes that some individual, or, better yet, some group has already checked to be sure that the selected data sources are closely aligned with the identified essential learner outcomes for that school and local district.

Tests. Most local school districts have procedures and processes for choosing various commercially prepared tests to assess student achievement. They may be standardized, norm-referenced or criterion-referenced tests. Many districts develop their own local criterion-referenced testing program, and some districts use teacher-made tests. Most schools and districts use a combination of achievement assessment tools. Each type of test has certain

advantages, but also certain limitations. Finally, any student testing is probably excessive if it is not going to be used to improve the quality of education for all the students in the school.

Other academic measures. In addition to tests, some schools find it useful to incorporate other types of outcome measures in the student achievement data base to obtain useful information about the quality of the school's instructional program. Some schools analyze the letter-grade distributions for students in certain classes, grade levels, and subject matter areas. Other important indicators that schools find useful as feedback include retention rates, grade-point averages, and course selections by certain groups of students.

There is virtually no limit to the kinds of student academic achievement data that a school might choose to monitor as part of its commitment to total quality. What guidelines can be offered to assist schools with their selection? First, it is better to have fewer variables and have students and teachers own them and pay attention to them than it is to have a large number of achievement variables that are ignored. If feedback is to be useful in reinforcing positive behavior or discouraging negative behaviors, the nature of the feedback must be important to the learners. For example, threatening a student with a failing grade only works for high-performing students. A threat of a

failing grade for a student who already sees himself as a failure is not useful

Student affective data. Teachers generally believe that too much emphasis is currently placed on measures of cognitive outcomes of education and not enough attention is paid to the affective dimensions of the student. Some schools address this issue by incorporating affective data into the student data profile. Such data may include, but need not be limited to, student conduct reports, attendance, homework completion, and receipt of student awards. Like the cognitive measures, the possibilities in the affective domain are virtually limitless. Just select a few areas that most people value and pay attention to them, if you wish to realize the benefits of monitoring data to improve quality.

In beginning a discussion of which outcomes to monitor, the leadership team should ask the various stakeholder groups the following questions: "What specific knowledge, skills and behaviors would we like to see in all our students? What specific behaviors would we like to see less of in all our students?" For example, regarding the question of social responsibility, the leadership team must press for answers to the question: "What observable or measurable behaviors would be acceptable as evidence that students are being more socially responsible?" Once such questions have been answered, the total quality school would develop a

process by which the agreed-upon indicator data would be collected, incorporated into the data base and regularly analyzed to assure movement toward quality.

Analyzing student performance data

The original effective schools research studies by Edmonds, Frederiksen, Brookover, Lezotte, and others sought to dispel the belief that schools did not and could not make a difference in the education of children from educationally disadvantaged homes. In order to find schools that were successful in teaching all children, the researchers had to find a way to determine which children came from what type of socioeconomic background. Generally, the educationally disadvantaged home tends to be one which is also economically disadvantaged. The researchers identified several strong predictors of socioeconomic status (SES), such as parents' education, race, and level of income.

By indexing students according to their socioeconomic status, the researchers were able to analyze student achievement by group membership (e.g., economically disadvantaged vs. advantaged). This process has since been called *disaggregating* student outcome data. When done appropriately over time, with the results made public to the school staff and parent community, disaggregation

has proven to be a very powerful force for positive change in most schools.[4] It is axiomatic that the total quality effective school disaggregates its valued student outcome data and makes the results public—at least to parents and the school staff.

The purpose for disaggregating student outcome data is to give the district and the individual schools a vehicle for evaluating their own effectiveness and quality improvements. The process seeks to identify the percentage of students in various subsets who achieve mastery of the essential learnings at each grade level by program, course, school, etc. Through this and similar analyses, a local school district and its individual buildings can monitor whether students from all socioeconomic levels, different races, and both genders are mastering the essential student outcomes. Past experience verifies that such an analysis is one of the most critical steps in getting staff to see the need for change. This analysis clearly demonstrates whether the curriculum is being learned equally by all students.

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4. For a step-by-step account of the process of disaggregation, together with specific examples, please see Lawrence W. Lezotte and Barbara C. Jacoby. *Sustainable School Reform: The District Context.* Effective Schools Products, Ltd., Okemos, MI, 1992. It also discusses some of the specific questions educators frequently ask concerning the disaggregation process.

Aggregated data indicate whether a total student population have mastered the essential curriculum but can mask the fact that certain groups of students have or have not mastered the essential learnings. Disaggregation of these data indicates how well certain subsets (identified by SES, gender, race, etc.) of the total student population have met and/or surpassed an identified standard. Disaggregation is a practical, hands-on process that allows a school's faculty to answer the two critical questions: "Effective at what? Effective for whom?" It is not a problem-*solving* process but a problem-*finding* process.

Assessing the Correlates of Effective Schools

Those familiar with school improvement based on the effective schools research framework know that instruments have been developed to assess the presence or absence, strength or weakness, of the effective schools correlates in individual schools. Leaders of school quality teams need to study these instruments to determine which can be used to assess the most important variables associated with the common place *setting*.

Other instruments and assessment procedures have been developed for the other variables associated with each common place and should also be

reviewed by the quality teams. Teams must remember that the goal is to assess those variables which, when taken together, will provide the information needed to produce the total quality effective school. Local districts should plan to build an archive of useful instruments, along with needed documentation, to assure their appropriate use in monitoring the instructional delivery systems in their individual schools.

In creating the total quality effective school, data must be collected and analyzed at three different levels. First, the total quality school must have a measurement system that allows the teachers and administrators to know which students are mastering the intended curriculum and at what level of mastery. Second, the total quality school must know the status of each of the four common places in the production system of learning. Finally, the total quality school must have monitoring systems that enable the school leaders to see how the common places interact with one another to produce the observed learning outcomes.

This model for the total quality effective school assumes that it is possible for each common place to be strong; however, discord may occur when the common places interact, and, as a result, student learning outcomes are reduced. Transactional variables can reduce the learning outcomes, even though we have good students, good teachers, a good

curriculum, and a positive setting. Let us consider, for example, the use of time in a classroom.

We know from various cross-cultural studies that the Japanese classrooms make more efficient use of time than their counterparts in the United States. In Japan, researchers report that students are academically engaged in instruction 90 percent of the time. In the United States, researchers using the same instruments and procedures find that U.S. children are academically engaged about 70 percent of the time. This difference of 20 percent may not seem very large until you realize that this means a student in the United States is engaged in learning twelve fewer minutes every hour of every day, of every week of every school year—for twelve years!

A relatively low-cost way of significantly increasing student learning would be to increase the academic engagement rates in every classroom in every school in the United States. This would require quality teams to collect data in their classrooms in order to determine what factors contribute to this reduced academic engagement rate. Actual observational data would be necessary because self-reports from teachers tend to be wrong. Research has found that if you ask a teacher how he/she intends to use a period of time, then observe how time was actually spent, and finally ask the teacher to reconstruct how the time went on a given day, all three profiles will be different.

Let us take the academic engagement rate one step further, suppose an observational study were conducted and the findings revealed that the students were academically engaged only 70 percent of the available time. The quality team's next question would be: "When students are not academically engaged in the classroom, what are they actually doing?" Here, again, published research provides us some clues. The researchers find that, contrary to the popular belief which holds that students are misbehaving when they are off task, students are actually spending that time simply waiting for directions from the teacher! Thus, in the quest for total quality in the classroom, these research findings move the spotlight from focusing on a student problem (misbehaving) to focusing on a teacher or a systems problem. As their next question, the quality team should ask: "What are teachers doing while students are waiting for directions from them, and are those teacher activities more important than classroom instruction that leads to improved student learning?"

This single example of how time is productively used or wasted in classrooms reveals how the principles of total quality management can be applied to the school setting and how statistical processes can be appropriately deployed for problem analysis and problem solving. This example also shows how the actual interactions

among the elements in the common places must be monitored along with the quality dimensions in each common place. For example, when we study what teachers are doing while students are waiting for something to happen, we may find that the paperwork demands of a complex attendance record system (an aspect of the setting) are preventing the teacher from getting on with the important work of teaching and learning.

This example also serves to illustrate why the members of the leadership team in a school seeking to establish itself as a total quality effective school must be committed to lifelong learning around the profound knowledge of education. The ever-expanding research from the effective schools and effective teaching can significantly enhance the quality of schooling for all children in the United States—if we are willing to apply it.

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When the profound knowledge of education is joined with the principles of total quality management, and when statistical process controls are appropriately deployed in pursuit of the mission of successful learning for all, the quality of American public education will increase dramatically. Unfortunately, most schools are currently not equipped to implement the total quality processes quickly.

Schools seeking to begin the endless journey toward the total quality effective school must undertake the following steps. First, the aims and goals of these schools need to be clarified and codified. Second, these aims and goals must be translated into a set of student performance standards and indicators that can be measured and frequently monitored. Third, these measures need to be operationalized so school leaders can determine in a timely fashion which students have been successful and which still need more instruction. Fourth, once the school has a clear framework for looking at student learning and performance, its leaders will have the basis for looking closely at the operational dimensions of the four common places of education and their interactions. This will allow the quality teams to determine where quality is present and where it is absent. Finally, if and when problems are found and thoughtful solutions developed and implemented in a quality way, then the total quality effective school will be significantly closer to becoming reality. And the American Dream will move substantially closer to reality for all our children.

The concept of the total quality effective school is simple—it's just not easy! Creating the total quality effective school will require time, commitment, substantial investment in training, and technical assistance. Moreover our best political minds must agree on a shared vision of

the quality school—one that truly serves the needs of all students. The integration of the concepts of TQM with the profound knowledge of what works in effective schools represents an exciting set of new challenges for the 21st century.

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About the Author

Lawrence W. Lezotte has long been recognized as the pre-eminent spokesperson for effective schools research and implementation. As a member of the original team of researchers, Dr. Lezotte, together with Ronald Edmonds and Wilbur Brookover, conducted many of the initial studies of effective schools — schools where all students can achieve academic success.

Effective schools describes a school improvement process that is data based and data driven, with effectiveness measured in terms of both quality and equity. These criteria assure a high standard of achievement that does not vary significantly across the subsets of a school's student population.

Since receiving his Ph.D. from Michigan State University in 1969, Dr. Lezotte has worked actively with school districts and practitioners around the nation to implement school improvement programs based on the premises of effective schools research.

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