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ABSTRACT
        This paper focuses on the application of total
quality management (TQM) in human resources development. It analyzes
writings of five leading total quality authors from which four basic
principles, or pillars, are derived as the basis for the application
of total quality within the instructional setting. The pillars are:
(1) customer satisfaction; (2) continuous improvement; (3) speaking
with facts, i.e.. collecting data so that valid conclusions may be
drawn and decisions, including those made by management, may have a
basis in these same facts; and (4) respect for people, both learners
and instructional staff. Process strategies were developed for
actualizing the four pillars in an educational setting. They were
applied in two university courses, one an introductory course in
human resources development, and the other a course on implementing
TQM. A number of strategies, activities, forms and other documents
developed in the pilot efforts have been implemented in courses in
other settings. Implications of these pillars for human resources
development suggest that, once exposed to this approach, people who
may have thought of themselves in preservice training as employees or
learners, see themselves as customers with needs and desires to
satisfy, and that false expectations can be created if there is no
opportunity to change instruction during the course or if the
instructor does not have the ability to make the changes. Finally,
skill in managing small instructional groups is essential for
ensuring the success of experiential learning. (ND)

Building Training on the Pillars:
Applying Total Quality in the Classroom

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*The application of total quality management in human resource development is the focus of
this paper. An overview of five leading total quality writers is summarized, from which four
basic principles, or pillars, are derived and serve as the basis of the application of total quality
within the instructional setting. Examples of the relationship of the four pillars to instructional
delivery are then presented. Outcomes of these applications and their implications for training
conclude the paper.*

A major world wide force in both public and private organizational development is the total
quality movement or TQM (which herein includes total quality management and continuous quality
improvement). Launched initially in Japan, TQM is becoming an integral part of the lexicon of
organizational literature. Organizations are rapidly moving to implement total quality practices with many
highly successful attempts and some dismal failures.

A major chapter in many TQM success stories is the integration of training within the total quality
functions of the organization. Much has been written of the need for and importance of the human
resource development (HRD) program in playing a central role in any TQM effort. What has not been
emphasized as much is the need to assimilate within the HRD program the principles and practices of
TQM. The notion that the instruction itself should reflect and demonstrate the desired demeanor or
cultural behavior within the organization is lost on many HRD practitioners.

This paper addresses the issue of applying TQM in HRD. It begins first with an analysis of five
leading TQM authors, from which four basic principles, or pillars, are derived. These pillars then serve as
the basis for the application of total quality within the instructional setting. Examples are given to illustrate
the relationship of the four pillars to instructional delivery. The paper concludes with implications for
training gleaned from the application of the four pillars.

The Pillars of HRD Quality

The five most recognized gurus of TQM are, in alphabetical order, Philip B. Crosby, W. Edwards
Deming, Armand V. Feigenbaum, Kaoru Ishikawa, and Joseph M. Juran. Individually they have molded
the framework upon which present TQM practices are based. Some organizations have chosen to follow
the direction of one major author while others have blended components from several authors to create a
unique organizational approach. Building on the work of Voehl (1992), the authors of this paper analyzed
the writings of the five TQM authors (Crosby, 1979; Deming, in Walton, 1986; Feigenbaum, 1983;
Ishikawa, 1985; Juran, 1988) with the intent of identifying commonalities across authors that relate to adult
learning, transformative learning, and critical reflection (Mezirow, 1990). From this content analysis
emerged four common principles, or pillars of quality, which become the basis for integrating TQM with
the instructional products of HRD. The pillars are discussed herein within the context of their relationship
to the organization and their application in HRD.

Customer Satisfaction

One of the points on which all five TQM authors agree is that the core purpose of any quality
improvement process is to ensure that the needs and reasonable expectations of the customer are
identified and satisfied. The underlying assumption here is that any organization, public or private, service
or manufacturing, will prosper when this occurs. Serving the customer is as straightforward as answering
three important questions: Who are our customers, what do they want/need, and what must we do to meet
or even anticipate our customers' needs? After identifying the customers, an organization must
communicate with them to identify their needs and reasonable expectations that the organization can
possibly meet. The organization must then design work processes (or modify existing ones) that ensure that
these requirements are met.

To meet customers' expectations, some writers distinguish between the *internal customer*—the next
recipient, within the organization, of each unit's or team's service or product—and the *external
customer*—the ultimate recipient of the organization's service or product. Thus, while many individuals and

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departments do not directly serve the external customer, their attention to service of their internal customers ultimately assures high quality productivity throughout the organization. This attention also ensures delivery of high quality products and services to external customers.

HRD also has a number of customers for its two basic products: instructional programs and organizational development (see Table 1, p. 6). The internal customers of instructional programs are the learners (e.g., teams and individual employees) needing appropriate knowledge, skills, and attitudes; departments needing continuous improvement and information; and instructors and consultants needing continuous learning about both the product or service of the organization, and instructional development and delivery skills. The internal customers of organizational development are 1) the executive officers who need consultation on the maximum use of the organization's human resources, i.e., the HRD plan, and participation on the Quality Council (Lewis & Smith, 1994); and 2) the units of the organization that need assistance in the implementation of the HRD plan. Two external customers may exist for HRD: direct external customers needing training and education regarding the organization's product or service, i.e., client education, and indirect external customers seeking guidance and education on the services developed by the HRD unit (e.g., Disney seminars, Saturn programs, etc.)

Continuous Improvement

Continuous improvement is both a commitment (continuous quality improvement or CQI) and a process (continuous process improvement or CPI). The Japanese word for this second pillar is *kai-zen* and is, according to Imai (1986), the single most important concept in Japanese management. The commitment to quality is initiated with a statement of dedication to a shared mission and vision and the empowerment of everyone to incrementally move toward the vision. The process of improvement is through the initiation of small, short-term projects and tasks that collectively are driven by the achievement of the long term vision and mission.

The application of continuous improvement within HRD takes place in two ways. The first is when learners acquire and practice new behaviors, processes, and skills both within the instructional setting and back on the job. The second is when HRD personnel undertake to continually improve the design and delivery of instruction—to enhance the learning process. In other words, HRD helps its learner customers to acquire the skills and knowledge to continuously improve their own processes, and at the same time continuously improves its own processes.

The process for continuous improvement, first advanced many years ago by Shewhart and implemented by Deming, is plan, do, check, act (PDCA), a never-ending cycle that is used widely. The PDCA cycle can also be used in the development and delivery of instruction. Although there are no rigid rules for carrying out the process, the nature of each step in the context of instructional development can be described. *Plan* asks such key questions as what changes are needed, what are the needed results, what obstacles are to be overcome, what data are available, and what new information and skills are needed? In other words, what should the change look like? *Do* is the implementation of a small scale change based on the planning done in the previous step and done to provide data for answers about whether the change will, indeed, improve the situation. In training, an instructional program may be pilot tested to see if human performance is changed in the necessary direction. *Check* is the collection of data and the assessment of the effects of the small scale change or pilot test. *Act* first asks if the data confirm the intended plan, if there are other variables influencing the plan, and if the risks of going on are necessary and worthwhile. Then, based on the answers to these questions, the project is modified and moves into the *Plan* stage again, and the next iteration continues, expanding knowledge and implementing further learning. Ideally this process would continue indefinitely—in the case of HRD, during instruction and afterwards on the job. Some would argue that systematic instructional design models embody the PDCA cycle.

Speaking with Facts

The third pillar, speaking with facts, is somewhat misnamed because its application goes beyond just talking. We include here its corollary, management by fact, for the TQM authors give it two meanings. First, data must be collected so that valid conclusions may be drawn. Second, decisions, including those made by management, should be based on those same facts. The idea behind this is that "shooting from the hip", i.e., making decisions without information, or deciding on the basis of influence, hearsay, or preconceived notions is an undesirable state.

In HRD, speaking with facts consists of collecting data upon which HRD strategies are developed, and using factual information in the instructional process. Valid data are collected through various means before, during, and after the instructional intervention. While the need for data collection is usually acknowledged in HRD, the process is often short-circuited with, for example, programs being implemented with minimal justifiable needs analysis data. The implementation of continuous improvement is an appropriate framework within which ongoing data can be collected, however. Questionnaires, interviews, focus groups, validated scales, benchmarking, and environmental scanning are all appropriate means of collecting both qualitative and quantitative data. Effective tools for analyzing data are also available. Lewis and Smith (1994) identify 21 tools, including the original seven basic quality tools (fishbone diagram, checksheet, control chart, histogram, Pareto diagram, run chart, and scatter diagram).

Using factual information in the instructional process involves obtaining applicable data to determine the knowledge gained and skills learned and applied. These data should also be collected before, during, and after the instruction. Before each time the course or program is offered, specific data on needed knowledge, skills, and attitudes can be gathered through questionnaires and guided interviews with the targeted learners. During the training, data on both concepts learned and perceptions of the learning process should be periodically gathered and analyzed, then shared with the learners. Of critical importance is the need for flexibility within the instructional process to modify the content and delivery to accurately reflect the instruction needed and desired by the learners. Following the course, periodic data can be gathered back on the job to validate the instruction as a contribution to the learners' improved productivity and their positive attitudes about the organization, their work, and themselves. These data can also be used to further enhance the overall instructional program. Examples of some of these techniques are described in a later section of this paper.

Respect for People

Respect for people, the fourth pillar of TQM that applies to training, is the acknowledgement that, while people work *at* an organization, they work *for* themselves, trying to create a meaningful and satisfying life. Recognition of this by the organization results in a work atmosphere that includes, according to Lewis and Smith (1994):

a.   Creating a sense of purpose in the workplace so that people are motivated to do their best.

b.   Keeping people informed and involved, and showing them how they are a part of the bigger picture.

c.   Educating and developing people so that individuals are the best that they can be at what they do.

d.   Helping people communicate wei so they can do their jobs with peak effectiveness and efficiency.

e.   Delegating responsibility and authority downward so that people are not just doing what they are told, but are taking the initiative to try to make things work better.

In HRD, respect for people includes two groups of people—the learners (employees) and the instructional staff of the organization. While the learners are also recognized as customers, the respect, caring, and support described above also applies to them as learners. For example, creating an instructional environment that facilitates self-directed learning and risk-taking encourages respect for learners. Similarly, recognition and respect for the HRD staff can result in more effective learning experiences and enhanced productivity for the organization. Examples of this respect include the following: 1) HRD staff participation in the strategic planning process, 2) HRD staff formulation of an organizational HRD plan as part of the strategic plan, and 3) organizational support of the HRD plan with the necessary resources.

Classroom Application of the Pillars

A primary premise of this paper is that if an organization is incorporating the pillars of TQM, it must also implement within its HRD unit those same principles where relevant. Following the derivation of the four training pillars, the next task was to develop or identify existing process strategies for actualizing the pillars in training. Thus, the question can be asked, what examples or illustrations are there, if any, of the instructional application of the four pillars?

The first instructional applications were in two university courses taught by two of the authors. While the schedule followed a traditional pattern of 15 weeks with one class meeting each week for three hours, the content provided the opportunity to develop and apply the principles. One was an introductory

course in HRD and adult education; the other was a course on implementing TQM. In the pilot efforts a number of strategies, activities, forms, and other documents were introduced and refined and are now being implemented as instructional components in various organizations' HRD programs, e.g., a 20 session health care management course that is conducted in area hospitals. The ten components reflect one or more of the four pillars. They are listed below, using the following coding scheme: CS = customer satisfaction, CI = continuous improvement, SF = speak with facts, RP = respect for people. The components:

1. A complete *study guide* for the course is prepared listing the objectives, session outline and schedule, and related materials and readings by session. (CS)

2. A *background sheet* is completed by each learner, ideally prior to the first session or at the beginning of the first session. The information is summarized and an expanded class roster is distributed to the learners. (CS, RP)

3. A *bi-weekly feedback questionnaire* is administered to determine the learners' perspective of the process, content, and pace of the course. (CS, CI, RP)

4. A *Quality Council* is created, consisting of a representative from each of the small groups that are formed near the beginning of the course. The Council, which meets every two weeks, provides feedback from the bi-weekly questionnaires their group members completed. Based on their input, the course is modified to address areas of knowledge or skills not adequately covered, to slow or quicken the pace of delivery, and, in general, ensure that the needs of the learners are heard and acted upon. Membership on the Council is on a rotation basis with the order of representation determined by each group. This is done in order to have multiple representation on the Council and not overburden specific individuals with Council membership tasks throughout the course. (CI, SW)

5. In the first or second session each person is asked to complete an *Individual Strategic Plan for Personal Continuous Quality Improvement*, a three-page questionnaire asking individuals to 1) identify the kind of learning experience they like most/least, 2) prepare a personal mission and vision statement, and 3) describe how this course relates (or does not relate) to that statement. These plans are reviewed by the instructor(s) and the course is adjusted as much as reasonably possible to facilitate learner's realization of their stated visions. (CS, RP)

6. A variety of *small group activities* are done in the first three sessions. Some of these groups are formed by the participants and some by the instructor(s). Learner-formed groups are done to observe both the processes (ease of forming groups) and the products (e.g., do the same people always group together?). The instructor-formed groups are structured so that learners meet previously unknown people in the class. (RP)

7. After approximately three sessions, *permanent groups* are formed through a consensus process involving the learners and the instructor. During this process a major part of one session is devoted to the meaning and purpose of teams, the difference between groups and teams, and the intent that the groups being formed will develop into teams. (CS, RP)

8. Heavy emphasis throughout the course is placed of *experiential exercises* and participative activities through which the course content (knowledge) is examined and discussed, and desired skills are learned and practiced. For the most part, all exercises and activities are done within a small group format. (RP)

9. Use of *case studies*, both published (e.g., Lost on the Moon) and those drawn from the organization's experience are an integral part of the course to provide more realistic performance assessments, and assessments of learners' skills and knowledge (hopefully improved) back of the job by their supervisors. All case studies are done in the small group format. (CI, SW)

10. *Feedback* to each person and each team is provided throughout the course by other learners and by the instructor(s). This is provided as written and oral feedback and informal encouraging and supportive comments. An example is the videotaping of key presentations of the teams and feedback on performance by the participants and the instructor(s). (CI, SF)

Conclusions and Implications

It is the authors' experience that when learning is built upon these four quality pillars, four outcomes consistently occur. First, the entire course is highly experiential and interactive. The learners are engaged in prepared instructional activities and they are asked to bring their experiences to bear on the

content at hand. Adjustments are made to the course content and delivery is based on the participants' collective input.

Second, the content of the course is continuously focused on performance outcomes. The content determines the specificity of the behavioral performance following any learning experience. For example, specific performance is more readily observed for a technical course such as computer skills, than for a broader, less technical course such as health care management. Nevertheless, many students try to apply the skills and knowledge learned even as the course progresses. Thus, more data, upon which are made course improvement decisions, are available to the instructor more often.

A third result of this entire process is that no two human resource development programs/activities are exactly the same. With the implementation of these four pillars, the resulting instructional program reflects both the immediate needs and the dynamics of the group which is comprised of unique human beings at a unique point in time. Directly replicable instruction is neither desirable nor achievable in this case.

Fourth, this approach, when applied within organizations is not viewed as a separate entity, but within the systemic framework of the organization. The TQM that is taught to employees and management is also practiced within the HRD unit. While the content (knowledge and skills) may be established at times, the determination of its delivery and the selection of the learners must be done within an overall plan (the HRD plan) that complements the mission and vision of the organization. Performance technology and TQM are co-advocates of "just-in-time" training to assure that training is both needed, optimally received, and applied back on the job.

The implementation of these pillars has consequences and implications for the HRD unit which it must be prepared to deal with if it is to be implemented successfully. The first implication regards data collection and use. Once they have been exposed to this approach, people who may have thought of themselves in previous training as employees or learners, now see themselves as customers with needs and desires to satisfy. Learners thus articulate their requirements with the expectation that these will be met sometime during the training. If the instructor has no intention of using these requirements and subsequent data regarding their satisfaction, then more harm than good may be done by asking learners for their input. A corollary to this is for the instructor to ask only for the type and amount of data as he or she can reasonably use during the course. For example, the authors had originally thought that feedback questionnaires on a weekly basis would be optimum. It was quickly realized that this would not work for two reasons. First, two sessions provided a more complete chunk of instruction to reflect upon. Second, the authors wanted to emphasize quality over quantity and did not want the questionnaire to become mundane—something learners felt they had to fill out so they could leave the room at the end of class.

The second implication involves modification of course content and activities. False expectations can be created if there is no opportunity to change instruction during the course or the instructor does not have the ability to make the changes. Instructors must be able to think on their feet during sessions as well as between sessions to make appropriate course adjustments implied by the data. Thinking on one's feet is facilitated by adequate feedback sources. With them, the instructor pays attention to the learners' actual concerns, not what he or she thinks they might be by reading facial expressions in sessions.

Third, skill in managing small instructional groups is essential for ensuring the success of experiential learning for much of it is done in teams of four to eight people. Instructors who are used to lecturing to or demonstrating skills in front of a large group and instructors who work mostly one-on-one may be less than effective unless they consider and acquire the instructional skills necessary to manage small learning groups.

TQM has impact on training beyond the mere increase of courses and workshops to prepare a workforce for the quality journey. It can change the way design and delivery of instruction are viewed and carried out. Certainly there are more ways of incorporating the four training quality pillars in the HRD process. These ways will be increased and refined as more HRD units accept the challenge.

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Table 1.
The Customers of Human Resource Development.

Customers	Needs
Internal Customers — **Instructional Development:**	
Learners (teams and individuals)	Knowledge, skills, and attitudes for organizational and personal goals; joy in learning.
Programs/departments	Continuous improvement; information exchange (input/output); cooperation; collaboration.
Instructors/consultants	Continuous learning about the product/service; competence in instructional design and delivery.
Internal Customers — **Organizational Development:**	
Executive officers	Consultation and advisement; integration of HRD plan with strategic plan; participation on Quality Council.
Units/departments, divisions	Consultation and advisement; implementation of HRD plan; information exchange (input/output); cooperation; collaboration.
External Customers - Direct	
Customers/clients	Training and education in using product or service.
External Customers - Indirect	
HRD customers	Education on the HRD products and/or services developed by the HRD unit.