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# Applying total quality management to educational instruction

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instruction

## A case study from a US public university

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### Introduction

One service industry of paramount importance in the public sectors of nations is that of education. It is the quality of education that shapes the long-term prosperity and wellbeing of both nations and their people. The vast resources that governments allocate to this sector of the economy make it imperative for those who manage education to ensure that education is effectively imparted in schools, universities and institutions of learning. Given the crucial role of education in an increasingly competitive global environment, administrators and educators are constantly looking for ways to make educational instruction more effective and meaningful. We teach to educate people and, where people are involved, fundamental managerial concepts such as commitment, motivation, participation, and leadership play an important role in determining the effectiveness of processes used to shape and influence them.

How can educational instruction be made more effective? One of the emerging philosophies of management is that of total quality management. TQM has received wide acclaim as an effective approach for achieving quality and performance enhancements in industry[1-4]. With its recognition and acceptance increasing by the day in the private sector, academic institutions have started to explore the potential for applying the TQM philosophy to education[5-8]. Yet, just as managers who often buy the most advanced equipment fail to integrate it fully into production[9], many administrators and educators hear about, read, and identify with the TQM philosophy, but remain wanting of an understanding of how it can be applied to teaching. In an attempt to serve this end and present a process of learning about, teaching, doing, and evaluating TQM-oriented instruction, this article draws from the actual experience of a teacher at a US public university and presents a more general TQM-oriented instructional framework for possible institutional implementation by educational administrators and for use by educators[10]. It must be pointed out that the framework presented here does not constitute the *only* way of adapting elements of the TQM philosophy to teaching. Rather, it offers just one of possibly many ways in which educators and administrators can draw from the broader TQM philosophy and apply its essentials

to teaching. In scope, the focus is more on teaching practices in the context of a classroom.

Fundamentals of the framework this article presents and the instructional attributes it discusses can be applied to a wide-ranging context of educational instruction. It is important to note that they can be applied to teaching across levels – in schools and colleges – across disciplines, and, most importantly, across nations. The article shows how teachers, at any level, can draw from the TQM philosophy and apply its fundamental elements effectively to teaching in ways that facilitate student motivation, involvement, effort, learning, performance, and, most of all, their ability to contribute. It aims to accomplish this by:

- drawing attention to the stakes involved in public education and its administration;
- addressing what the role of teachers should be;
- establishing parallels between TQM as it applies to business on the one hand and to teaching on the other;
- defining TQM in the instructional context;
- identifying essential building blocks or attributes for TQM-oriented teaching;
- actually applying these attributes to teaching at both the undergraduate and graduate level; and
- establishing for educators and educational administrators what TQM can do for them by analysing data obtained as student feedback on course evaluations and on an educational questionnaire administered to students.

The cause of TQM implementation in academia in the USA received a significant boost when the chairmen of American Express, Ford, IBM, Motorola, Procter & Gamble, and Xerox, in their collective letter published in the *Harvard Business Review*, urged academic institutions to embrace TQM and offered millions of dollars in support of implementation efforts[11]. More importantly, this plea served as a catalyst in generating enthusiasm for TQM, and for TQM initiatives in institutions of learning. Only a few months earlier, Stone[12] had drawn attention to the dire implications of poor education for US competitiveness in a global environment and stressed the need for business to increase its stake in education.

In sharing the sentiments of Hechinger[13], while the often-found portrayals of dispirited teachers, disorderly classrooms and less-than-committed students that emerge from reports on American education can be disheartening, like the obituaries that have been written for many of our basic industries, any post mortems on the public schools are indeed premature. There is hope, and business leaders continue to play an important part in facilitating a much needed turnaround. While business leaders are doing their part, it is now time for sceptics who question the relevance of TQM in education to set aside their inhibitions and to embrace the TQM philosophy with an open mind. It is time for educational administrators and teachers to make the difference.

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**The role of teachers**

Teachers bear the responsibility of shaping the students' learning and, through them, the potential of the human resource as it contributes to competitiveness in today's globally competitive environment. It is teachers who, in numerous ways, provide leadership in education. As there are transformational leaders in business, surely, there can be transformational teachers in education who can accomplish more than what is customarily expected of them and contained in their job descriptions. Today, it is imperative for educators to do more than just convey information and impart knowledge. They must, among other things, be able to mobilize resources, mould their students, motivate them, and instil in them the commitment to a worthy cause. The TQM-oriented approach to teaching that this article presents may help instructors achieve this end.

In going beyond just conveying information to their students, teachers must ensure that their students also recognize and wholeheartedly accept that which is taught, so as to facilitate its actual transfer to practice[14]. Unless such transfer to actual practice is accomplished, the potential of our human resource to make a more meaningful contribution may remain untapped. The following simple example from business management serves to establish the basis for this argument. The profiles of a Theory X- and Theory Y-type manager, along with the pros and cons of each management style, are covered in management courses of just about every business programme world-wide[15-18]. Yet, the fact remains that this knowledge or information alone seems to exert little, if any, influence on the management style the student later adopts in his or her professional career. As such, we unfortunately find autocratic managers and administrators in US firms and institutions who, in a futile attempt to control others, indulge themselves in Theory X-driven YST (yell-scream-threaten) tactics in managing people[19].

A teacher committed to the philosophy of TQM can, with a sincere effort, get students to really care about what is taught. It is only when students truly care that they later actually apply their learning in ways that enhance their organization's performance and, simultaneously, its ability to compete. A TQM-oriented approach to teaching can serve as a powerful model for enhancing student learning and in helping bring out the best in students as well as the teacher.

**Defining TQM in a class setting**

What is total quality management? Let us first reflect on TQM from a business perspective. The following definitions serve to communicate the essence of the TQM philosophy as it applies to the business context. The driving force behind total quality management is a relentless daily hunt for opportunities to improve quality and productivity. The concept of total quality improvement means getting every person in a company to evaluate continually and aggressively how every job, every system, and every product can be improved[20]. TQM is based on the participation of all members of an organization in improving processes, products, services, and the culture in which they work[21]. And finally, TQM is a way of doing business that must be instigated by top management and flow as a way of life throughout the organization, to focus on the customer and to strive to

improve the product, performance etc. continually, to ensure competitive advantage [22].

Key elements of the TQM philosophy as contained in the above definitions are:

- a relentless hunt for ways to improve quality;
- involvement of all employees;
- managerial leadership;
- corporate culture; and
- customer focus.

These apply just as much to the teaching context as they do to business. The difference lies only in that in the teaching context, “teacher” substitutes for “manager”, the “students and teacher” for “employees”, “class culture” for “corporate culture”, and the “student” for “customer” [23]. While not encompassing of the TQM philosophy in its entirety, these are the essential parallels drawn in applying the TQM philosophy to teaching. The following definitions guide the TQM-oriented teaching effort in a class setting:

- TQM in a class setting is a philosophy and a set of guiding principles and practices the instructor applies to teaching that represent the foundation for continuous learning and improvement on the part of the students and the instructor. It is the application of procedures related to instruction that improve the quality of education provided to the students and the degree to which the needs of the students and their employers are met, now and in the future.
- TQM in a class setting is a process that involves the instructor’s adopting a total quality approach to teaching (i.e. attempting to improve the quality of instruction and, in the process, the students’ meaningful learning in every possible way) so that the needs of the students and those of their employers are best served. It is the never-ending pursuit of continuous improvement in the quality of education provided to the student.

### **A methodological note**

The instructional framework presented in this article and the many specific practices outlined to illustrate ways in which some fundamental TQM concepts can be applied to teaching are based on a university professor’s (hereon referred to as “the instructor”) actual application of these concepts to teaching, the experience gained, and the feedback obtained from doing so.

#### *The instructional context*

The TQM-driven approach presented draws from the instructor’s teaching experience during the autumn semester of 1992, and the spring semesters of 1993 and 1994. The courses the instructor taught included two sections of an upper-level undergraduate business course, “Production and Operations Management (MANGT-421)”, one section of a course open to both undergraduate as well as

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graduate students, “Management of Services (MANGT-661)”, and one section of a graduate-level course, “International Operations Management (MANGT-892)”.

#### *The student evaluations*

The university where the instructor teaches, administers a teacher and course evaluation for every class at each semester’s end using the teacher evaluation (TEVAL) form. On this form are included 14 specific criteria/items for which students register their response on a five-point rating scale that ranges from “very low rating = 1” to “very high rating = 5”. The TEVAL form also provides the student with space for any additional comments.

#### *The educational survey*

In an attempt to gauge student perception of the TQM-driven instructional approach and to obtain feedback on the specific attributes constituting the approach, an educational survey was also administered to students in each class at the semester’s end. On this survey the students were asked to rate the instructor on the “kind of example” that he set for them on a number of issues using a scale ranging from “very bad example = -3” to “very good example = +3”. The sample size ( $N$ ) was 75 for the MANGT-421 course, 14 for MANGT-892, 21 for MANGT-661, and 110 overall for the three courses.

#### *Performance measures*

An important element of total quality management is to base decisions on data and performance measures[24]. Therefore, rather than simply describing the instructional approach, wherever possible, the feedback from students in the form of numerical ratings of performance on the TEVALs and the educational survey are also provided[25]. A hidden agenda behind the presentation of this instructional approach is the hope that educators will consider adopting elements of the TQM philosophy and also use the framework presented as one possible benchmark for, as Schonberger[26] points out, benchmarking is an essential element of a TQM process of improvement[27].

### **Building blocks of the TQM-oriented approach**

This section discusses the various elements of the instructional approach and proposes them as a set of guidelines for possible implementation. It presents some specific practices of the instructor in using this approach. Further, using student feedback obtained through course evaluations and the student educational survey, it attempts simultaneously to illustrate the effectiveness of a TQM-oriented approach to teaching.

#### *Communicate your teaching philosophy up-front*

The course syllabus is used as a vehicle to communicate to students the instructor’s TQM-oriented teaching philosophy the very first day of class. In going beyond the more typical “course objective”, a “teaching objective” is also included on the syllabus of every course. A clearly stated teaching objective serves as a first step

in creating a climate conducive to learning, involvement, and commitment on the part of students as well as the teacher.

It sets the stage by defining the respective roles of the student and the teacher, and the ultimate goal of the instructional approach – that students “grow from the overall learning experience” and “...adopt and operationalize that which is taught”. Moreover, the concepts of team work (which also includes the teacher as a team member), participation, and the desire to make a real difference through sincere commitment are all communicated and impressed on the student through the teaching objective. These concepts constitute the essence of the TQM philosophy in general. The following are excerpts from the teaching objective:

- To make the course a *real* learning experience, it is extremely important for you all to be *sincere* and *committed* as students. I look for you to not only learn from what is covered in the class but, in the end, *to grow* from the overall learning experience so that you are able to make a *real difference*. I strongly encourage each one of you to participate actively in class discussions, and hope that you enjoy doing so. I look for you to maintain a collegial and *healthy learning environment*. I am *always available for help* both in and outside of class. So please do your part, and I will *always* be there for you.
- You are *strongly encouraged* to ask questions and to make sure that you clearly understand the content as covered in class. Your objective as students should not be to just learn from the book, but rather, to think critically, understand the interrelationships and complexities from a systems perspective, and to make a true commitment so that you are able later to *adopt and operationalize* that which is taught.

Other comments included by the instructor are:

- Please maintain a healthy learning environment and recognize up-front that I am *not accommodating of disruptive behaviour* in class. If you are *sincere* and *fair* on your part, I will be more than happy to help you in *any way that I can* – and you can count on it!
- If for any reason you need help, *just ask!*, and I'll be glad to work with you and help you out.
- I hope you learn from and enjoy the course as much as I enjoy teaching it!

*Influence students by “setting a good example”*

If those who teach business expect their students to “manage by example” in their future role as professionals and managers then they, as their teachers, must “teach by example”. The most fundamental, yet significant, building block of the proposed TQM-oriented approach to teaching is the concept of “influencing by example”. As such, a strong and constant undercurrent of “teaching by example” is maintained in whatever the instructor does.

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The “example” that a teacher sets is bound to exert a significant influence on the students’ actions and performance. Moreover, the kind of “example” that a teacher sets essentially determines his or her personal power and, consequently, the ability to influence students through educational leadership in ways that would not be possible through the use of position power alone. Personal power, rather than position power, is often the differential between effective and ineffective leadership in influencing the behaviour of people in a normal context, be it in business or in education[28-30]. Teachers can cultivate the much needed personal power to affect student outcomes beyond what their position power alone could by “setting a good example”. A recent US television advertisement on drug abuse among teenagers provides a powerful reminder of just how great is the impact and how vital are the implications of “influencing by example”. The advertisement shows an infuriated father screaming at his son and enquiring “Where did you learn to do this from?” Though scared, the son honestly retaliates “I learned it from you, OK!”

To exert a greater influence through good example, teachers must truly believe in and themselves practice that what they expect their students to do. Unfortunately, as Davis[31] notes, often teachers do not themselves practise what they preach. Educators must feel passionately about the issues they address and the stakes that are involved. As Deming (in[32]), the recognized guru on quality, suggests, we must feel just as passionately about quality as we do about religion in order to make the implementation of quality efforts, such as through TQM, a success. As teachers, it becomes imperative for educators to set, through good personal example, a standard for their students to match. In every class, the instructor urges his students not only to expect him to match the very same standards that he expects of them but rather, in addition, to expect even more from him as their teacher. These expectations could pertain to involvement, effort, the level of caring, commitment, preparedness, knowledge, quality of work, neatness and organization, timeliness, enthusiasm, or any such attribute. The instructor assures his students that he will not let them down and asks them, in due course, to hold him responsible for any such assurances. This serves as a means for the instructor not only to motivate himself, but also to remain focused on the cause of his students and be driven to improve continuously in every way.

*Shape a climate for excellence and get the students to “stretch” their goals!*

It is important for educators and students to realize that often their individual potential remains unrealized simply because of the preconceived constraints they impose on themselves. An essential component of the TQM philosophy is the drive for continuous improvement, with no limits placed on what one can accomplish. The more goals are stretched, the greater is the likelihood of attaining higher performance plateaux through involvement, participation, commitment, and effort. In keeping with this, students are invariably asked to “stretch” their goals. For, if they make an unyielding commitment to a cause, be it what they want to learn, the grade they wish to earn, or what they want to accomplish as future managers, their potential is unlimited. Just as the students, the teacher must also

stretch his or her objectives. The students are reminded by the instructor that “we are all here to learn” (including the instructor) and, if we set our minds to it, then a lot more can be attained through the learning experience than we might have expected coming in.

Getting the students to take pride in higher performance constitutes not only a prerequisite, but also serves as a catalyst in getting them to stretch their goals. A primary objective is for students to get more out of the course than just the coverage of material from a text, and this is conveyed to them on the course syllabus itself, as demonstrated by the teaching objective.

High, yet clear, standards are set for student performance. Clearly stated requirements of organization, neatness, timeliness, responsibility, and even the stapling of assignment sheets on the course syllabus are all aimed at developing the students’ sensitivity towards positive attributes in general, while trying to change attitudes that may be perceived as negative. In a frank manner, the instructor explains to the students why it is so important for them to develop good habits, the benefits they can derive from these, and the pride they can take in the impression that high quality work conveys in life. In turn, the instructor recognizes that the students now expect the same from him and, as such, he must deliver in terms of the quality of his own work, be it related to the content of class lectures, how the assignments, handouts, transparencies etc. are prepared, the effort he puts in when grading, or the attention he gives students.

The students seem not only to identify with the need to form good habits as a result but, even more importantly, to pick up on it. As an example, the instructor observed that the number of students missing assignments dropped significantly over time. In fact, during the summer of 1994, the instructor had the pleasure of teaching an undergraduate class of some 21 students in which not a single student taking the course for the first time missed even one of some eight assignments in the course – even though the weight the course placed on assignments was minimal. Simultaneously, a marked improvement was observed in the students’ effort, level of involvement, initiative, quality of content and their organization and presentation on assignments, reports, and even exams.

When individual students do exceptionally well, the instructor often displays their work to the class as an example of how one can excel and take pride in one’s work. Student comments on the TEVAL “I enjoy doing the work”, “He really made me want to do my very best in his class and I really felt I learned a lot from the class”, or “Very good teacher! But is a picky grader, I guess that will make us better students” convey the students’ feeling of pride in putting forth a sincere effort, and in performance, which seems to override possible tendencies of complacency and complaint.

Of importance in getting the students to stretch their goals is the shaping and providing of a culture for excellence. Culture is “...a combination of all the intangibles that powerfully direct behaviour” [33, p. 95]. If students are expected to excel, then the teacher must set a positive example for them and a standard to match. The teacher must be well prepared, have a strong interest in teaching, be enthusiastic about what he or she teaches and wants the student to learn, put

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in the best effort, be knowledgeable, pay attention to detail, have students participate and, most of all, show respect for the students so as to motivate and involve them. Of all the attributes that can possibly foster quality, what Peters[34] is most obsessed with is respect for people[35]. In teaching, it is respect for students! And, just how important are motivation and organizational culture? In a recent survey of 615 senior executives, when asked to rate the relative effectiveness of eight different methods of improving quality, the respondents placed the highest weight on employee motivation and the second highest weight on change in corporate culture[36].

On the TEVAL item which asks the students to rate the instructor on being "well prepared", the mean student ratings the instructor received on the five-point scale were 4.51 for MANGT-421, 4.46 for MANGT-892, and 4.57 for the MANGT-661 course. The mean student ratings the instructor received on the TEVAL item that rates the instructor on being "interested in teaching" were 4.65, 4.85, and 4.52 respectively for the three courses. On the educational survey, the mean student ratings of the example the instructor set on "enthusiasm, energy, and interest in the subject" on the scale ranging from "very bad example = -3" to "very good example = +3" were 2.89 for MANGT-421, a perfect 3.0 for MANGT-892, and 2.90 for MANGT-661.

Being involved with students, caring about them and how much they learn, maintaining an open-door policy, and always being there to help them in their effort to improve, all go a long way in establishing the instructor's commitment to students, in conveying this commitment, and in getting the students to put in their best. The note on "office hours" that the instructor posts on his door contains not only his schedule but also the statement "You are always welcome to stop by my office *any time* I am in." In an attempt to set an example for effort and timeliness, student assignments and exams are graded and invariably returned during the very next class meeting. What this does is help get the students to take on more responsibility themselves. As Ciampa[37] points out, in the drive to implement TQM, participants (in this case, the teacher and students) must welcome a new level of responsibility and fulfil its mandate. The priority the instructor places on setting an example of caring through timeliness and what extra effort it takes to do so, overrides any other demands placed on his time. It is imperative for educators not to compromise the student. The mean ratings the instructor received from students on the TEVAL item that measures the instructor's being "available for help" were 4.68, 4.62, and 4.62 respectively for the MANGT-421, MANGT-892, and MANGT-661 courses on the five-point scale.

Table I presents the educational survey items which directly or indirectly relate to instructional attributes that not only help shape a climate conducive to learning, but which also help get students to stretch their goals. It also presents, as an indicator of the students' perception of the example that the instructor set for them, the mean ratings the instructor received from his students on various instructional attributes for individual courses and overall on a scale ranging from "very bad example = -3" to "very good example = +3". These TQM-related attributes can exert a strong influence in any context. The following are comments

Educational survey item	Mean ratings			Overall N = 110
	MANGT-421 N = 75	MANGT-892 N = 14	MANGT-661 N = 21	
His enthusiasm, energy and interest in the subject	2.89	3.00	2.90	2.91
Practice of mutual respect	2.45	2.86	2.38	2.49
The way the instructor interacted with the students	1.99	2.50	2.43	2.14
Encouraging class participation	1.76	2.64	2.10	1.93
His knowledge of the subject	2.75	2.43	2.81	2.72
Not only wanting the student to learn but also willing to learn himself	2.04	2.71	2.10	2.14
His effort in attempting to teach effectively	2.47	2.79	2.48	2.51
Challenging the students to be creative think proactively and expand their conceptual horizons	1.76	2.57	2.24	1.95
The quality of work as reflected by content/presentation of material on the syllabus, tests, assignments etc.	2.25	2.43	2.10	2.25
Paying attention to detail (on the syllabus, course content, assignments, examinations, policies, evaluation, etc.)	2.47	2.71	2.62	2.53
His involvement with and personal attention given to the students	2.14	2.71	2.05	2.20
Willingness to help students and making himself available for help	2.58	2.79	2.67	2.62
Really caring that the students actually learn	2.65	2.71	2.57	2.65
Being frank, open and up-front about things	2.24	2.86	2.62	2.39
His teaching in a way that students may actually be able to enhance US competitiveness	2.01	2.36	2.19	2.09

*Notes:*  
Scale: very bad example = -3; very good example = +3  
All means are significantly non zero at  $p < 0.0001$

**Table I.**  
Students' rating of the instructor on instructional attributes that help shape a climate for learning and excellence, and which help get the students to "stretch" their goals

taken from the students' university-administered TEVALs on instructional attributes that contribute to a climate conducive to learning and excellence, and which help get the students to "stretch" their goals:

It is nice to see someone so eager to teach, and even learn himself. He has an enthusiasm that is contagious. It's very helpful in getting students motivated (myself anyway).

Not all teachers welcome questions and input as he does. He gets you excited about the material which makes you do better on exams. It has been a pleasure coming to class. Thanks Dr –.

His energy is well matched with his ability to transfer knowledge to the student. He makes the class very interesting and makes the student want to learn. I enjoy doing the work.

It is obvious that he enjoys teaching. He tried very hard to teach us to the best of his ability. I have enjoyed this class.

He explains the material/problems well. His tests make you study and think hard. You have to know the material and study hard to do well.

The bold facing etc. on the tests and homework do help. I have enjoyed this class and wish I could take other classes he teaches. He is a very good teacher who knows his subject well.

I have enjoyed taking this course a lot. It especially helped to have a teacher that was so willing to help in and out of class. It also helped that he was very sensitive to making things clear on the tests and lectures.

I have never had a teacher who cares about his students more. I think he understands what it is about being a teacher.

He frequently asked if students understood what he was doing on the board or what was being said. *He always* seems willing to help students with any questions they may have. He will slow down if students aren't comprehending the material, which is very nice. I appreciate his caring attitude. His effort as a teacher goes above and beyond the call of duty.

Professor – is very accommodating to students for any help. He is *always* willing to help outside class. He shows great concern in how much the students learn.

Dr – has wonderful teaching skills. He has the qualities of a "real" teacher.

I think he really put a lot of effort in preparing for the class. His knowledge on the subject and even general issues is commendable. He seems very interested in the subject matter.

He stimulates mental reasoning and you end up learning not only about the material in the course, but you also develop a very broad outlook to understand, grasp, and reason out a variety of problems (even related to day-to-day activities).

He set a positive example with his teaching through rapid return of graded assignments and exams at the next meeting.

These comments convey the students' impression of their teacher on a number of related TQM-oriented attributes. They also serve to reveal the extent to which students identify with and are affected by these same attributes.

It is not as though all student comments are complimentary. Student feedback that some may consider negative can in fact serve as a most useful learning tool for the instructor. In business, customer complaints are among the most valuable resource available to a firm. Information gained through customer complaints can provide some of the best insights. As Kinsely[38] and Flores[39] point out, the value of listening *carefully* to consumers – in our case, students – must be

emphasized. Educators should take this to heart if they wish to improve continuously – just as they expect their students to do. If educators sincerely apply TQM principles to their teaching, they can improve and, in the process, student complaints, if any, are bound to be few and far between. The following are students' comments from their TEVALs that helped the instructor re-evaluate and improve:

Intermix activities with lecture more.

Grading homework assignments: possibly allow for one low or missed assignment to be dropped as we can't always make it to class or get assignments done no matter how much we may want to.

Make sure that when class time is up that you let us out. It is very difficult to get to the next class sometimes without being late.

The amount of library time required for distant off-campus students was unreasonable.

Focus of course should include more about the service industry as well as manufacturing.

Maybe a little too attentive to minor detail.

Perhaps always give a week to do homework assignments as many are quite lengthy.

Sometimes he goes too fast. Also, overheads may be more helpful than writing on the board.

Sometimes Dr – can get longwinded in explaining subject matter.

*Motivate students through fairness, feedback and encouragement while instilling in them a deep sense of values and commitment*

Feedback plays an important role in individual behaviour and performance[40]. Be it positive or negative, it is inherently affective[41]. It plays a crucial role in the fostering of goals any TQM-driven effort might aim to achieve, be it in business or in education. Similarly, fairness and encouragement serve as powerful motivators in any such context. The level to which the teacher is perceived as being fair by the students can exert a strong influence on their level of motivation, involvement and effort. To ensure fairness to the best of his ability, the instructor grades all exams himself (instead of asking the assigned graduate teaching assistant to grade them for him) and always makes it a point to go over the exams very carefully during the class session in which they are handed back to the students. As part of the learning, realization, and acceptance process, the instructor considers it extremely important that every student knows exactly why points were lost on any question, what the answer should be and why, so that they feel comfortable, secure, and reassured of an objective and fair treatment.

In order to motivate students, it is important for the teacher to communicate with them at an individual level. While teachers may not always be able to remember every student by name, they can easily refer to their students by name when communicating with them through comments they write in the process of grading their assignments and exams. The instructor addresses every student by name on any written feedback he provides. A student's sincere effort and commitment is recognized, and this recognition communicated to the student by the instructor through written comments such as "Excellent work and effort... I really appreciate your organization of the material, its presentation and neatness.

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You should take pride in the quality of your work...!", or "V. impressive work...! Effort such as this is what makes not only you but the teacher also proud. Must Keep up the good work! OK! To get those students who might not perform up to expectation to improve continually, the instructor provides feedback such as "A good attempt...but you can do much better. Make a commitment and please do not hesitate to come and see me if you have any questions or need any help at all. Do put in your very best from here on!". For students who show significant improvement on a following exam, the instructor's comments might read "Well done...Do keep up the effort. I know you can still do even better, so go for it!". Feedback can be used to open the channels of communication further, establish a closer bond with students, and to motivate them.

Furthering the cause of the organization one works for requires a strong foundation in commitment and ethics. As educators, teachers must go beyond covering the content from text books to helping instill in students the desire to make a real difference. Ethics play a crucial part in managerial performance, and the values of a company's leaders are evident in every strategic decision that they make[42]. It is in recognition of this that the Harvard Business School now requires its MBA students to take a module of classes dubbed "Decision making and ethical values" taught by some of Harvard's most seasoned professors[43]. A major cost that has, in part, contributed to the gradual erosion of US competitiveness in recent years is a direct consequence of the problem which can appropriately be labelled as "white collar crime". Examples abound, be they in the management of savings and loans institutions, in the practices of politicians, doctors, lawyers, and academicians, or CEOs and upper-management constantly on the look out for ways to gain – be it at the expense of the very organization for which they work.

A strong undercurrent of ethical values, team work and commitment is maintained throughout the courses taught and in whatever the instructor does and expects from his students. The students' sense of commitment is reinforced not only by the instructor's setting an example, but also by his sharing with students numerous business-related examples from which lessons can be drawn. The president of Hitachi (a giant \$62 billion Japanese company and a dominant global competitor) Tsutomu Kanai recently slashed his salary to an annual \$306,000 simultaneously with a 15 per cent cut in top executives' salaries. He did this so that managers at Hitachi shared equitably in the same pain that their hard-hit workers were experiencing[44]. Just think of the example this set for the employees!

When we contrast this with the ever-increasing compensations for CEOs and upper management in the USA who, in taking the easy way out, choose to lay off workers in order to cut costs rather than look into the mirror themselves, Kanai sets a good example of sincere commitment to one's organization and to its people. Rosenberg[45] notes that in order to improve performance, the work, the workplace, and/or the worker must be altered. Unfortunately, what limits the improvement potential is that we typically look to change others and not ourselves – forgetting that when we point a finger at someone else, three fingers point back

at us. One impediment to TQM implementation stems from the fact that “other than the baby with an uncomfortably dirty nappy, few people believe they themselves need changing”[46, p. 33]. If teachers expect their students to change, so should they themselves! While the average annual CEO compensation (which includes salary, bonus, and present value of long-term incentives) at the top 30 US companies was \$3,200,000 in 1992, in Japan it amounted to a paltry \$525,000[47].

Increasingly, business firms are urging schools to move away from a finance focus and instead focus on people skills that allow their students also to teach others to excel, not just to excel within themselves[48]. Many US managers continue to view employees as costs, and rarely share in any burden of pain the company faces, be it pay cuts or the like[49]. Moreover, many of them seem convinced that with adequate capital and good financial management, anything of value can be bought and any problem sold[50]. To such managers, commitment – to employees, customers, suppliers, even one’s fellow managers – is an impediment. This is not how students as future managers ought to be shaped. Having provided students with numerous such examples in attempting to encourage a more ethical conduct, a sense of stake, and the desire to make a real difference, the instructor follows up the discussion with “So please...when you go out in the real-world, do be sincere, set a good example, and make sure that you put to actual practice that which we just talked about (for example, Theory Y-type leadership, ethical conduct, non-discrimination, and caring etc.) – for only then would you truly have learned”.

On the educational survey item “commitment to the teaching profession”, the instructor received from his students mean ratings of 2.67, 3.0, and 2.76 respectively for the MANGT-421, MANGT-892, and MANGT-661 courses on the scale ranging from “very bad example = -3” to “very good example = +3”. Table II presents the mean ratings the instructor received from students on instructional attributes related to motivation, fairness, feedback, and ethical values and commitment on this same scale ranging from -3 to +3. The following are some student comments from their TEVALs that pertain to these same attributes:

He seems very concerned about getting us to think seriously about the future of our business environment. His intentions are good.

Dr – is a very fair person and gave everyone encouragement and feedback on homework and exams. The tests were also fair. I have learned a lot. You are very sincere. Good job Dr – !

Very good instructor. Always encouraging in order to increase our interest in the subject. Liked how he graded and enjoyed the course.

He has a passion for promoting learning which is very refreshing.

It is so refreshing to be in a class with a teacher who really cares and wants to make a difference and benefit society. He is an excellent teacher!

He understands what it is about being a teacher. He is always trying to help students improve.

*Be sensitive to the many other aspects of the TQM philosophy*

There is so much more that teachers can do and accomplish by drawing from the broader TQM philosophy and applying it to teaching. Total quality initiatives

Educational survey item	Mean ratings			
	MANGT-421 <i>N</i> = 75	MANGT-892 <i>N</i> = 14	MANGT-661 <i>N</i> = 21	Overall <i>N</i> = 110
Fairness in the treatment of students	2.41	2.71	2.29	2.43
Fairness in grading and evaluating performance	2.40	2.64	2.05	2.36
The feedback provided (the type/nature of feedback, e.g. whether encouraging or discouraging and its usefulness)	2.19	2.36	2.29	2.23
Encouraging and supporting your effort in any way so as to improve your learning and performance continuously in this class	2.21	2.50	2.33	2.28
The values he communicated and displayed	2.10	2.36	2.57	2.23
Ethical values and the practice of such values	2.05	2.57	2.43	2.19
His commitment to the teaching profession	2.67	3.00	2.76	2.73
His commitment to shaping students into better and more committed managers	2.35	2.86	2.52	2.45
His practising what he preaches	2.31	2.64	2.52	2.39
Teaching the subject and material as is best for the student rather than what suits him best	2.13	1.92	2.05	2.09
Promoting a sincere commitment to the organization for which one works	2.20	2.43	2.04	2.20

*Notes.*  
Scale: very bad example = -3; very good example = +3  
All means are significantly non zero at  $p < 0.0001$

**Table II.**  
Students' rating of the instructor and comments on teaching attributes related to motivation, fairness, feedback, ethical values and commitment

require a total effort, a can do attitude and, most of all, total involvement. Empowerment, teamwork, reward systems that encourage continuous improvement efforts while eliminating fear of failure, effective and open communication, and the sharing of common goals are just some of the attributes the TQM philosophy encompasses. The mean student ratings of the example that the instructor set for them on the items of the educational survey that relate to the TQM attributes just discussed are presented in Table III. These student ratings are on a scale ranging from "very bad example = -3" to "very good example = +3".

In order to gauge student perception of the extent to which the instructor is a TQM-oriented teacher, an item to this effect was included on the educational

Educational survey item	Mean ratings			Overall N = 110
	MANGT-421 N = 75	MANGT-892 N = 14	MANGT-661 N = 21	
Challenging the students to be creative and not be bogged down by traditionally held views and perceived constraints	1.76	2.50	2.24	1.95
Promoting a "can do" attitude by encouraging and assuring the students that even objectives and goals that may seem "stretched" and "out of reach" can in fact be attained	1.93	2.29	2.19	2.03
Encouraging student involvement in ways that help improve learning and performance	1.61	2.21	2.00	1.76
Encouraging the student to expect and demand more in terms of quality of education from their professors and the university	1.95	2.71	2.19	2.09
Encouraging the student to expect more of themselves in terms of what they can do and how they can make a difference as managers	1.99	2.50	2.29	2.11
Putting "the ball in the students' court" in that through sincere effort the students are actually able to shape their learning and determine their performance	1.91	2.36	1.86	1.95
Rewarding the student in proportion to effort	2.00	2.36	1.81	2.01
Stating and abiding by the statement that it takes team work (both on the part of the teacher and the student – a two way street) to facilitate learning	2.12	2.36	2.14	2.15
Using various means to facilitate effective communication between the teacher and the student so that the expectations on both sides are clearly understood	1.92	2.14	2.10	1.98
Rewarding sincere effort over and above merely right answers	2.15	2.36	1.86	2.12
Not establishing and believing in numerical quotas for grades (grading) in such a manner or adjusting the distribution etc.) but rather, encouraging improved performance of all	1.91	2.29	1.86	1.95

**Table III.**  
Students' rating of the instructor on some "other" TQM-related instructional attributes

*Notes:*  
Scale: very bad example = -3; very good example = +3  
All means are significantly non zero at  $p < 0.0001$

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survey. The students were provided with the two definitions of TQM as it applies to teaching (the same two presented earlier in this article) and asked to rate the instructor on “being a TQM-oriented teacher”, keeping the definitions in mind. These definitions along with this survey item were placed at the very end of the survey. This was done so that the students should not be made aware of and, as such, not be influenced by these definitions when responding to the other items contained on the questionnaire. The mean student ratings the instructor received on the extent to which he was a TQM-oriented teacher were 2.22 for MANGT-421, 2.39 for MANGT-892, and 2.52 for the MANGT-661 course on a scale ranging from “very low = -3” to “very high = +3”.

### Discussion

While some aspects of its influence on students have been enumerated thus far, the issue of how students view the level of teaching effectiveness of an instructor who uses such a TQM-oriented approach to teaching has not been addressed. On the TEVAL evaluations, the instructor received average student ratings of 4.72 and 4.65 on “Overall teacher effectiveness” respectively for the two sections of MANGT-421, 4.47 for MANGT-892, and 4.28 for MANGT-661 on the five-point scale ranging from “very low rating = 1” to “very high rating = 5”. In more recent classes taught, the instructor has received average student ratings as high as 4.84 and even a perfect 5.0 (in a class of 21 students) on overall teacher effectiveness on the same five-point scale.

Research shows that class evaluations are higher in classes where higher grades are given to the students, and that grades explain anywhere from 6 [51] to 8 or 9 per cent [52] of the variance in the students’ evaluation of the class. In order to address this possible concern, it seems pertinent to point out that the average grade the students earn in the classes the instructor teaches happen to be significantly below the average grade they earn in classes taught by other faculty in the department. This is the case because the courses the instructor teaches in the area of operations management have a substantial quantitative component (traditionally a “problem” area for US students) and are quite demanding. Yet, in using the framework presented, the student evaluations the instructor receives are consistently among the highest, if not the highest received by any faculty member in the department or within the college [53].

The TQM-oriented framework is presented here more to serve as a kind of a “good practice” approach to educational instruction. The aim is to share ideas, experiences, and information available so as to generate a greater enthusiasm for creative ways by which student outcomes can be favourably influenced. No attempt is made to “prove” that TQM-oriented instruction is necessarily more effective. To try to do so would require the instructor to teach a number of classes the non-TQM way deliberately, simply to generate a control group for possible comparison while holding the “instructor” constant. Doing so would just not be fair to these students. TQM is a fairly encompassing philosophy and, in scope, the framework presented does not cover all aspects of TQM implementation. For

example, no surveys or other methods are used to measure the satisfaction of employers (the second-level customers) of our students.

### Conclusion

The teaching philosophy an instructor adopts and the example that he or she sets has a profound influence on students. Educators who set a good example as teachers are more likely to make a real difference by being able to communicate more effectively what they “profess” in that students are more likely to accept, adopt, and later transfer to practice that which is taught.

Commitment, honesty, openness and high ethics are essential prerequisites to adopting the TQM philosophy. Any inherent contradictions visible to the student in what the instructor preaches on the one hand and practices on the other invariably create barriers to the student’s acceptance of what is communicated by the instructor. As Axline[54, p. 64] succinctly puts it: “When organizations say one thing but do another, a significant credibility gap occurs that does not foster commitment to TQM.”

The stakes involved in education are enormous, making it imperative for educators to provide as good an education as possible. Can teachers continuously improve and more effectively, educate, train, and influence our human resource? Yes, and TQM can guide such effort. Teachers must be open to ideas, constantly evaluate the processes they use, and innovatively apply TQM elements to their own teaching, for TQM, basically “...stresses improvement in work processes” [55, p. 129]. In the words of Cohen and Eimicke[56, p. 451], “A key point is that at its core, TQM is the continuous and rapid revision, implementation, and evaluation of an organization’s standard operating procedures. With TQM, the organization is placing itself in the position of being constantly open to, and striving towards, new learning”. What holds for the organization in their perspective, also holds for the teacher in ours.

Public educational administrators and teachers can benchmark and draw from the instructional approach presented. If they take to heart the essentials of the TQM philosophy and apply them creatively to management and teaching, they can not only positively influence the outcomes of their students, but also their own.

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15. Douglas McGregor proposed two alternative sets of assumptions on the basis of which people can be managed at work. These assumptions made by managers or leaders serve as the foundations for his Theory X and Theory Y. Theory X management is based on notions such as people are lazy and unambitious, they dislike work, lack initiative and creativity, and must be controlled and directed. The more often prescribed Theory Y on the other hand takes a more optimistic view of human nature, that people do take responsibility, are motivated, and can self-direct when proper rewards and motivation are provided. For additional reading on Theory X and Y refer to[16].
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23. Just as a manager needs to motivate employees, keep them focused and committed, have them participate and contribute, train them, reward them, provide them with feedback, and lead by example, teachers must do the same for their students. A slight caution though is warranted in the use of the term "customers" for "students". Students are like customers in that they pay for the educational services rendered to them. On the other hand, they are also like a product itself – being shaped and reshaped through the educational process. Further,

while in business the service provider might go to extreme lengths simply to delight the customer, in education, for example, giving all students A grades simply to delight them may not be advisable.

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26. Schonberger, R.J., "Total quality management cuts a broad swath – through manufacturing and beyond", *Organizational Dynamics*, Vol. 20 No. 4, 1992, pp. 16-28.
27. Benchmarking is a term used for the process of undertaking a careful analysis of a process or product (in business, typically that of a dominant competitor) by disintegrating it into its component parts, studying these parts, and then redesigning and reassembling them in a way that can help shape and improve one's own process or product. It must also be recognized that the specific practices presented in the TQM-driven instructional approach here may be transferable in varying degrees across educational disciplines (for example, business, liberal arts, or science education) and levels. Yet the fundamental concepts that shape such TQM-oriented practices are more easily transferable. Educators across disciplines and levels can and should tailor the application of the basic TQM concepts as appropriate for their own context.
28. Power is simply the capacity to influence other people's behaviour[29].
29. Salancik, G.R. and Pfeffer, J., "Who gets power – and how they hold on to it", *Organizational Dynamics*, Vol. 5 No. 3, 1977, pp. 3-21. Power provides the resource that forms the basis for leadership. While power is essential to a leader, this does not mean that managers or leaders have to carry a big club[30].
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