



Diploma in \_\_\_\_\_  
**Managing Quality in Higher Education**

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## **THE SYSTEM OF HIGHER EDUCATION**

Over the years, a number of colleges and universities have made substantial commitments to the total quality effort. However, the percentage of higher educational institutions engaged in long term efforts to measure and improve quality seemed to be relatively small.<sup>165</sup> From 2001 to 2016, only three post-secondary institutions have received the Baldrige Award: University of Wisconsin-Stout (2001), Kenneth W. Monfort College of Business (2004), and Richland College (2005). It could be that educators, political groups, and even the public have often been slow to address the problem of educational decline on a systematic basis. Also, academia has seen many management fads come and go that it is not surprising for faculty and staff to be skeptical of any new management approach that crosses their paths.

Deming has lamented the “climate of competition that takes place between people, teams, departments, divisions, pupils, schools, universities”.<sup>166</sup> This situation still exists today. Contrary to popular opinion, competition as it exists in organisations and industries is destructive. The preferred environment is where everyone works together as a system to achieve the aim of that system. Furthermore, what is needed is collaboration and transformation towards a new style of management. The management and improvement of higher education can benefit from the application of the same principles that are used to improve any process in manufacturing or service sector.

## **A SYSTEM OF PROFOUND KNOWLEDGE FOR HIGHER EDUCATION**

The prevailing style of management in higher education must undergo transformation. This transformation means change of form, shape, or appearance. Perhaps a better word to use is the Greek word *metanoia* which means penitence, repentance, and reorientation of one’s life or spiritual conversion. This transformation requires an understanding of the system of profound knowledge and the application of its principles in every kind of relationship between individuals. Deming’s system of profound knowledge includes an appreciation for a system, knowledge about variation, theory of knowledge, and psychology.

### **Appreciation for a System**

A system is a network of interdependent components that work together to accomplish the aim of the system.<sup>168</sup> The apostle Paul in the Bible understands the meaning of a system. “For as the body is one and has many members, but all the members of that one body, being many, are one body...”<sup>169</sup> The systems view states that the quality of a product or service depends on the “interactions of several variables, such as machines, labour, procedures, planning, and management”.<sup>170</sup> The system cannot be managed well by simply managing the parts in isolation. Management should therefore “focus on the interactions of parts and of the system with other systems, rather than the action of parts taken separately”.<sup>171</sup>

## **Developing the Aim of the System**

A system must have an aim that is clear to everyone in the system. The absence of an aim precludes the existence of a system. An example of an aim is the institutional mission. With respect to the aim, Deming calls for a constancy of purpose toward improvement of product and service with the aim to become competitive, stay in business, and provide jobs.<sup>172</sup> When this constancy of purpose is understood, everybody gains, whether they are stockholders, employees, suppliers, customers, community, environment, etc. The aim of the system must also include plans for the future. The administration may alter the course of the institution in anticipation of the needs of customers for new products or services. The institution needs to continually scan the environment for innovation opportunities: new product, new service, or a better method. Where will the institution be five or ten years from now? The administration must be willing to commit resources over the long term to ensure that the quality job is completed. Preparing for the future also includes lifelong learning for employees since quality improvement will not happen overnight. It requires time to be effectively in place in the educational institution.

## **Collaboration and Aim Optimisation**

The management of the system requires knowledge of the interrelationships between all the components within the system and of the people that work in it. The obligation of every component is to help optimise the aim of the system. The efforts of all components of the higher educational system must be orchestrated or managed towards achieving its stated aim because, left to themselves, components tend to become selfish, competitive, independent profit centers. It is important for people within the college or university to know what their jobs are and how they should interact with one another as part of a system. It is important for them to see how their work fits in with the work of others in the system.

The greater the interdependence between components, the greater will be the need for communication and cooperation between them. It is important for the administration to recognise and manage the interdependence between these components. It is the responsibility of the administration to resolve conflicts and remove barriers to cooperation. Take for example the efforts of the various schools or faculties in a college or a university. These efforts are not additive but interdependent. One school, in order to achieve its goals (which may require a bigger slice of the institutional budget) may, left to itself, kill off another school. The obligation, therefore, of every component in the college or university is to contribute its best to the optimisation of the aim of the higher educational system. For example, when schools or departments plan for the next fiscal year and send in requests for budget allocations, they should take into account how their plans can help advance the mission of the college or the university as a whole instead of simply catering to the narrow interests of their respective units. Simply focusing on their own narrow interests (e.g. fighting for a bigger slice of the budgetary pie to support new programmes) can lead to in-fighting and result in eventual loss to all the components of the said institution.

The principle of a system calls for collaboration between people in the institution and between institutions. A system of education, for instance, may include pupils from pre-school on up to the university. Various groups in academia should work together to achieve its aim which is to help children grow and develop and prepare them to contribute to the prosperity of society. When institutions as well as institutional participants work together to optimise the aim of the system, everybody wins. The principle of a system also applies to joint efforts by competitors to expand the market and to provide better service to customers. When competitors, for instance, join hands to lower costs and to protect the environment, among others, everybody wins. If competitors expend their time and energy trying to expand the market (and not merely worrying about market share) by serving untapped segments or niches, they would all gain.

### **The Systems View of the Production Process**

The system of production can be viewed by the use of a simple flow diagram in Figure 5.1.<sup>173</sup> The flow diagram begins with predicting the need of the customer. This prediction leads to the design of the product or service then to actual production and then the observation of the use of the product in the hands of the customer. Feedback data obtained from this observation leads to redesign. The cycle goes on and on resulting in a process of continual learning and adjustment.







The flow diagram describes the flow of materials and information from the beginning of the system to the end where they emerge as a usable product or service. As they flow through the system, these materials and information must match the input requirements of the stages down the production line. The flow diagram shows how each one's work fits with the work of others in the system. It also shows how a proposed change in one or more components affects other parts of the system. In some cases, the effect of a proposed change may not be felt until months or years later. The immediate net effect may be zero or even negative. A good example would be training. Its cost immediately shows up in the ledger. Its benefits, however, may not be realised for some time in the future. Nevertheless, the organisation continues to invest in training because administrators believe that in the future the benefits will outweigh the costs. Management, in this case, is guided by theory, not by figures. Another example is the attempt to cut costs by unscrupulously firing employees. This action may immediately yield results in the positive direction by lowering costs but in the future, it may have adverse consequences such as low employee morale and lack of competent and experienced employees to take on new positions when the company is poised for expansion.

### **Destruction of a System**

If each component in Figure 5.1 becomes competitive with other components, the system will be ruined causing loss of unknowable magnitude to the entire system and subsequently to all the components that comprise it. Left to themselves, individual components will tend to advance their own interests at the expense of the entire system. To achieve its own goals, one department may, left to itself, ruin another department.

Table 5.1 shows how plans developed in one school may affect other schools and the entire college or university. Plans are developed without any regard to how they may affect other schools. Plans that are beneficial to one school may be detrimental to other schools. In this example, the net effect on the entire institution is negative.

| Schools and Their Plans     | Effect on School A | Effect on School B | Effect on School C | Net Effect on the Institution |
|-----------------------------|--------------------|--------------------|--------------------|-------------------------------|
| School A                    |                    |                    |                    |                               |
| Plan 1                      | +                  | -                  | -                  | -                             |
| Plan 2                      | +                  | -                  | +                  | +                             |
| Plan 3                      | +                  | -                  | -                  | -                             |
| School B                    |                    |                    |                    |                               |
| Plan 1                      | -                  | +                  | -                  | -                             |
| Plan 2                      | +                  | +                  | -                  | +                             |
| School C                    |                    |                    |                    |                               |
| Plan 1                      | +                  | -                  | +                  | +                             |
| Plan 2                      | -                  | -                  | +                  | -                             |
| Plan 3                      | -                  | -                  | +                  | -                             |
| Net Effect of Adopted Plans | ++                 | ----               | 0                  | --                            |
| Distribution of Benefits    | -0.67              | -0.67              | -0.67              | -2                            |

**Table 5.1** The Effect of Plans Developed in One School on Other Schools and the Entire Institution

This illustration shows a net effect on the entire institution of two negatives. If this is interpreted in monetary terms, this could represent, for example, a loss of \$2 million. If this amount were to be distributed equally, each school would suffer a loss of about \$670,000.

Table 5.2 illustrates how a college or university can maximise benefit to itself by acting only on those plans that have predicted positive impact on the institution as a whole. In this case, everybody wins including schools that take a loss for the benefit of the whole institution. Of course, this requires enlightened top administration. In Table 5.2, the net effect on the whole institution is three positives. This can translate to a net benefit of \$3 million for the institution. Assuming that the benefits are distributed equally, each school would receive a benefit of \$1 million. Table 5.2 shows that some schools can operate at a loss to themselves in order to optimise the aim of the entire institution, including the schools that take a loss. This requires collaboration among schools.

| Schools and Their Plans     | Effect on School A | Effect on School B | Effect on School C | Net Effect on the Institution |
|-----------------------------|--------------------|--------------------|--------------------|-------------------------------|
| School A                    |                    |                    |                    |                               |
| Plan 1                      | +                  | -                  | -                  | -                             |
| Plan 2                      | +                  | -                  | +                  | +                             |
| Plan 3                      | +                  | -                  | -                  | -                             |
| School B                    |                    |                    |                    |                               |
| Plan 1                      | -                  | +                  | -                  | -                             |
| Plan 2                      | +                  | +                  | -                  | +                             |
| School C                    |                    |                    |                    |                               |
| Plan 1                      | +                  | -                  | +                  | +                             |
| Plan 2                      | -                  | -                  | +                  | -                             |
| Plan 3                      | -                  | -                  | +                  | -                             |
| Net Effect of Adopted Plans | +++                | -                  | +                  | +++                           |
| Distribution of Benefits    | 1                  | 1                  | 1                  | 3                             |

**Table 5.2** The Effect of Plans Developed in One School on Other Schools and the Entire Institution under Enlightened Administration

### Knowledge about Variation

There will always be variation between people, in output, in service, and in product. It is important to understand what the variation is telling about the process and about the people that work in it. In fact, life is variation. All educational work occurs within a system of interconnected processes, which contain many sources of variation. Variation means the extent to which or the range within which a thing or a process varies. For example, the professors working at a school have different upbringing, educational backgrounds, and working experiences, which makes each one unique in terms of personality and values. They work with different students, each with a unique personality. They interact with various individuals (other professors, administrators, and staff) on campus. They perform different kinds of tasks. They often utilise a variety of resources (e.g., textbooks, reference books, notes, writing instruments). Their work involves the use of different kinds of equipment, with varying features, capability, and performance. They work under different supervisors, who may have a variety of management styles. They are also affected by many environmental conditions that exist at home, in their classrooms and laboratories, and within the institution as a whole (e.g., family relationships, noise level, the collegiality of the work environment, morale level, weather patterns, etc.).



The complex interactions of these variations are not easily understood. Variation due to these sources occurs randomly. However, their combined effect is presumed to be stable and predictable. The factors that are present as a natural part of the process are referred to as *chance* or *common causes of variation*.<sup>174</sup> Thus, a process that is being affected by this type of variation is said to be a stable process (which should not be tampered with) and is referred to as being *in control*. Common-cause variation comes as a result of the design of the system. It is inherent in a process and generally accounts for about 80 to 95 percent of the observed variation in the outcome of that process. It is important to note that even in a stable process, quality improvement can still be undertaken to reduce the variation that arises from common causes.

The other type of variation that may exist in an educational process results from *special causes*. Special causes can be attributed to external sources that are not inherent in a process. They produce unnatural variation that disrupts the random pattern of common causes. Thus, they tend to be readily detectable and, with foresight and commitment, can be prevented or corrected. When special-cause variations are present, the process is said to be *unstable* or *out of control*. Some examples of special-cause variations in education that could affect the performance of professors are the hiring of unqualified, incompetent, or untrained administrators, faculty, or staff; the admission of students who are unprepared to do college/university work; malfunctioning equipment; inadequately equipped laboratories and libraries; dysfunctional interpersonal relationships; management by fear; a professor's serious illness or accident; excessively warm or cold classroom temperatures; a food poisoning episode in the cafeteria; campus crime or civil unrest; extreme climactic changes; flooding, fire, or natural disaster; and many others. In general, these special-cause variations have an unpredictable effect on the outcome of teaching and learning and can seriously affect the educational system as a whole. Therefore, whenever possible, they must be identified and prevented, remedied, or resolved in a timely manner.

### **Theory of Knowledge**

Managers and leaders of colleges and universities need to understand how things work and why decisions that affect the future of their respective institutions should be effective. Any plan, no matter how simple, requires prediction concerning conditions, behaviour, and comparison of performance. Such predictions should be grounded in theory. For example, if the university raises its tuition fees for the next academic year, how much should the fees be raised? How will it impact the financial condition of the university? This requires a theory of cause and effect. According to Deming, knowledge is not possible without theory and experience alone does not establish a theory.<sup>175</sup> Deming further states that rational prediction requires theory and builds knowledge through systematic revision and extension of theory based on comparison of prediction with observation.<sup>176</sup> Theory helps one to understand cause-and-effect relationships that can be used for prediction and rational management decisions. Without theory, experience teaches nothing. Without theory, there are no questions to ask. Therefore, without theory, there is no learning.

## **Psychology**

Psychology helps us to understand people, interaction between people and circumstances, interaction between customer and supplier, interaction between teacher and student, interaction between a manager and his people and any system of management. Much of Deming's work focuses on understanding human behavior and treating people fairly. A true leader recognises that people differ from one another and learn in different ways and at different speeds. He also understands that people are born with a need for love and esteem in their relationships with other people. Deming argues that fear does not motivate people. This fear can be manifested in various ways: fear of reprisal, fear of failure, fear of the unknown, fear of relinquishing control, and fear of change. Workers may refuse to report quality problems because they might be blamed for problems in the system. If people in the organisation do not enjoy their work, they cannot be productive as they should be.

## **IMPLICATIONS FOR HIGHER EDUCATION**

Deming believes that an understanding of his "profound knowledge" will result in the transformation of management in an organisation. Such transformation, however, requires leadership in colleges and universities. This means having the knowledge, the personality, and the persuasive power to influence administrators, faculty, and staff to accept the proposed change and to make it happen. Everybody in the college or university needs to understand that the efforts of schools, faculties, departments, and units are not additive but interdependent. In view of this, each part of the institution has an obligation to contribute its best to optimise the aim of the system. Simply doing the best for individual components amounts to sub-optimisation and results in losses to everybody in the system. A well-optimised institution is like a good orchestra which is judged not so much by how many brilliant players it has but by the way the players work together. All the institutional members are there to support each other to deliver quality products and services to its constituents. Pitting individuals or schools or departments in the college/university against each other for resources is self-destructive to the institution because the individuals or departments involved will simply strive to maximise their own expected gain at the expense of the entire institution. Optimising the aim of the college or university requires internal cooperation of all its components.

Managing the institution of higher education requires knowledge about the interaction of forces (individuals, schools, departments, units, etc.) within the system. This knowledge comes from theory as discussed earlier in the chapter. Good management also requires an understanding of how the system affects individual performance. For example, many factors in an educational system affect the individual teacher's performance.

These include the training each one has received, the amount of work and nature of tasks performed, the information and resources provided, the type and number of students taught, the type and number of people worked with, the leadership exhibited by supervisors and administrators, everyday disruptions on the job, the fairness of management policies and practices, and other environmental conditions (e.g., noise, low morale, poor food in the school cafeteria). Few performance evaluations recognise such factors, often placing the blame on individuals who have little control over their environment. Pitting individuals or departments or schools against each other for resources or for rewards is destructive for an educational institution, as it encourages people to focus on maximising their own expected gain, not the betterment of the institution. In such a stress-filled environment, performance targets or arbitrary cost-reduction goals will not motivate anyone to improve the system or customer satisfaction; these employees will act only to meet their own goals or targets at the expense of the institution.

It is important to recognise that people are different from one another. They learn in different ways and at different paces. They respond differently to intrinsic and extrinsic sources of motivation. Administrators and supervisors, therefore, must be aware of these differences in helping their employees boost their individual capabilities and work productivity. Thus performance evaluations that serve to rank people are deeply flawed. When individuals in a group are ranked, one will always be at the top and another one will always be at the bottom. The same is true with ranking departments. What does it mean to be an above-average, average, or below-average worker? What do these differences mean? They may not mean anything at all. Evaluating these differences requires knowledge which includes a deep understanding of the institution as a system, the interaction of various components, and the existence of variation in different processes.