

Work in Progress - Innovation Using The Baldrige Process

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Abstract - Increasingly, it is evident that the Malcolm Baldrige National Quality Award (MBNQA) process is helping universities achieve their strategic planning goals. Yet, minimal attention in the engineering colleges has been given to the Baldrige criteria/process. This paper will address the successes of the Baldrige process for colleges and universities achieving academic achievement improvement. It will discuss the elements of the Baldrige criteria for higher education and identify three higher-level educational institutions that are MBNQA in Education winners and their successes. The use of the Baldrige criteria in engineering colleges will be discussed. This paper proposes that the Baldrige criteria could provide the framework for systematic thinking for leading innovation to current engineering education critical issues.

Index Terms – Baldrige criteria, innovation, student success.

INTRODUCTION

The Malcolm Baldrige National Quality Award (MBNQA) was launched twenty years ago to recognize organizational performance excellence and to share best practices for continuous improvement. [1] In 1999, a Baldrige criteria specific to educational organizations was initiated. The research question of interest is whether its implementation can benefit engineering colleges. Non-engineering colleges have demonstrated significant results in student success. For example, the University of Wisconsin – Stout was the first higher education winner of the MBNQA in Education in 2001. As discussed in *Quality and Performance Excellence in Higher Education*, the Baldrige criteria provided a framework for data-driven decisions and continuous improvement for the University of Wisconsin-Stout as an educational institution and in achieving student success in learning. [2] In addition, some regional college accreditations, including the alternative Academic Quality Improvement Program (AQIP) developed by the Higher Learning Commission of the North Central Association of Colleges and Schools are based on the Baldrige criteria. [3]

Little attention has been given to the Baldrige Criteria in engineering colleges. In this paper, an overview of the concepts and successes of the Baldrige framework in higher education colleges and universities will first be discussed, and then the advantage of implementing the Baldrige framework in engineering colleges will be discussed.

The Baldrige process is a systems approach that is both process-driven and outcomes-based. The concepts of Baldrige include:

- Visionary leadership
- Managing for innovation
- Learning-centered education
- Systems perspective
- Focus on Results
- Valuing faculty and staff
- Management by fact
- Planning for the future

[1]

It encompasses a leadership approach that promotes systematic thinking, strategic planning, and alignment of processes that can lead to college-level innovation and institutional effectiveness. It is hoped that this paper will start a dialogue about using the Baldrige framework for innovative thinking within engineering colleges.

BALDRIGE PROCESS IN COLLEGES

Three colleges have won the Malcolm Baldrige National Quality Award in Education. They are the Monfort College of Business at the University of Northern Colorado, University of Wisconsin-Stout and Richland College. All three of these MBNQA winners value using the Baldrige process as a journey in continuous improvement and improvement in student success. [4]

More colleges are deciding to participate in this institution-wide systematic thinking approach. As of February 2006, 99 higher education institutions have applied to compete in the MBNQA in Education. [5] The University of Missouri-Rolla and Iowa State University have won in state-level Baldrige-type competitions. Other universities are using a Baldrige framework as part of their quality management approach, including the University of Alabama, Rutgers University, Northwest Missouri State University and Western Wisconsin Technical College. [2, 6]

Some examples of using the Baldrige framework include the following successes. The Monfort College of Business reports an improvement in continuing student satisfaction levels from 80% in 2000 to 97% in 2006. Their student learning results increased from about the 80 percentile to the 95th percentile. Richland College reports “both increased enrollment and improved results in every key performance indicator including student retention and student learning outcomes” despite state funding dropping from 70% of

institutional costs to 30%. [4] The University of Alabama improved their billing, admissions, and the awarding of scholarships processes, including reducing the “initial scholarship response time to new freshmen from three months to two weeks.” [6]

THE BALDRIGE FRAMEWORK AS PART OF INNOVATION IN ENGINEERING COLLEGES

The engineering education research literature states the urgent need for innovation for continued engineering college excellence: the global competition for more engineers, the high dropout rate of engineering college students, and the need for more diversity in the student population. Furst-Bowe and Bauer discuss the role of the Baldrige criteria in managing innovation, as “Innovation is critical in higher education institutions for providing increasing educational value to students and improving the effectiveness of all learning-centered processes” and that the Baldrige criteria is a model for managing innovation by providing “a systemic process to drive and manage change” [7]. Yet, there is little evidence in the engineering research literature of the use of the Baldrige Criteria in Engineering and I know of no engineering college that is considering the Baldrige framework for continuous improvement.

A misunderstanding about the Baldrige framework may exist; the Baldrige criteria is probably perceived as being similar to ABET accreditation. ABET is an accreditation for a particular engineering program, focused on its curriculum. Consistent with the changes to ABET in the past five years, engineering colleges are taking a systems, outcomes-based approach to their engineering curriculum, which is producing improved curriculum planning. An example of this in the literature is the curricula integration efforts at the University of Wisconsin, College of Engineering (Madison). [8]

The Baldrige framework is not an accreditation system and is not in competition with ABET. Both the Baldrige framework and ABET accreditation are needed and have different strengths. Both ABET and Baldrige in Education are focused on continuous improvement and improved excellence. [5, 9] A significant difference is that the Baldrige criteria is a self-assessment (non-accreditation) of organizational effectiveness at the college or university level. Some regional college accreditation bodies have used the Baldrige framework as a basis for its accreditation system, but the Baldrige framework itself is a self-assessment, not an accreditation system. As a self-assessment at the college level, the Baldrige framework has the power to help engineering colleges integrate programs and innovate for the benefit of students and faculty. For example, consider improving the admissions process, the awarding of scholarships, student support services, housing quality services or career center operations; these processes probably would not be the focus of the ABET accreditation process but have been successfully improved by colleges using Baldrige.

The use of the Baldrige criteria by engineering colleges could add an overall framework for integration of systems thinking on student success at the engineering college level with continuous improvement of curricula provided by ABET at the individual engineering program level. One of the Baldrige criteria’s strengths is its alignment of functions within an organization for overall organizational effectiveness. All three of the Baldrige winners in Education have discussed their efforts at aligning the organization. [4] If we want to improve engineering student retention, we need to innovate and align the student support efforts with faculty teaching within an engineering college. At the engineering college level, the Baldrige framework could be used to improve and align the student learning processes and the ABET accreditation for continuous improvement in individual engineering programs.

The flexibility of the framework of the Baldrige process allows Baldrige to be successfully applied to both engineering and non-engineering colleges. Because of the record of accomplishment for significant improvement in processes and outcomes among the higher education MBNQA winners, engineering colleges should consider the Baldrige process.

The need for a systems-integrated approach to innovation is generally recognized in engineering colleges. It is possible that the Baldrige process has some of the answers and methodology we are looking for.

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