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VISION STATEMENT: Shaping the Future Through Quality in Education and Professional Development

Message From the Chair

by Fernando F. Padró, Ph.D.

Time keeps marching on and so far this year, there have been some changes afoot that need acknowledgement and some that need further discussion.

First of all, a warm welcome to Jeanine Becker who is our new ASQ staff liaison. She has taken over the role from Linda Milanowski, who retired at the beginning of the year. We want to thank Linda for her unstinting and long-standing support of the Division and look forward to a fruitful working relationship with Jeanine to ensure that our members' needs are taken care of to the best of all our abilities.

Secondly, we also welcome Dr. Elizabeth Cudney who succeeded me as the new editor of our *Quality Approaches in Higher Education (QAHE)* journal. She is an associate professor in the Department of Engineering Management and Systems Engineering at Missouri University of Science & Technology and an ASQ Fellow, with an outstanding track record in STEM. Her efforts have already transformed and increased submissions for review. On a personal note, the main reason for my not remaining as *QAHE* editor is that I am now the editor in-chief of a five-year project with Springer Publications entailing a 25-volume handbook series with the overall title of *University Development and Administration*.

Thirdly, Jay Marino resigned as the NQEC committee chair and K-12 chair as he takes on a new position as the superintendent of Antioch School District 34 in the Chicago area. Congratulations and heartiest best wishes to him as he assumes this new position. Becky Martin has agreed to take on the K-12 Quality Tools chair role, and we want to thank her for her willingness to lead this effort. Norma Simons, our current Division secretary, has graciously accepted the role and responsibilities as the NQEC committee chair, a position that has now taken on a new dimension given the changes surrounding NQEC as indicated in the comments below.

Fourthly, most hearty congratulations to Dr. Julie Furst-Bowe, Chancellor of Southern Illinois University Edwardsville, on her appointment to the Baldrige Program's Board of Overseers. This is an important and prestigious position, especially given the new status of the Baldrige program. It is very good news for the Education Division to have this level of representation with what many consider the premier quality program in the world.

As the world keeps changing, many of us note the changes in the world of quality as it impacts education, particularly when it comes to primary/secondary and higher education. But for all of the changes, the basic issues remain the same: the balance between autonomy and oversight, cost efficiencies and effectiveness of learning programs, top-down institutional integration and horizontal subject-matter representation of needs/interests. I feel as if I am always talking about these balancing acts, but the dominant notion of quality in learning is the proxy for systemic stability (as a form of dynamic equilibrium, Pascale, 1999). What this means, particularly in the education sectors, is the need to identify the factors involved in shaping the dynamic equilibrium that defines quality and is defined by the outcome results.

For just one example of the fickle nature of the balancing acts mentioned, here in Australia, the higher education sector is seeing the balance between autonomy and oversight being recalibrated in this discussion over its recently established Tertiary Education and Quality Standards Agency (TEQSA). The prior quality audit structure (the Australian Universities Quality Agency [AUQA]) gave way to TEQSA because of the belief that it did not have the scope necessary to make the Australian higher education sector more diverse and demand-driven nor a discernible rigor or sanctioning capacity to ensure compliance (Bradley, Noonan, Nugent, & Scales, 2008). Now, TEQSA itself is seen as wanting because of over-reach.

While there is still support for a national regulator, TEQSA faces challenges that are a by-product of the higher education architecture, legislative underpinnings, and its regulatory approach (Dow & Braithwaite, 2013). Dow and Braitwaite's (2013) findings echo a number of the concerns identified in the Spelling's Commission Report in 2006 regarding the layering and overburdening of legislation/regulation affecting higher education (U.S. Department of Education, 2006; Padró, 2007), but it diverges from the Spelling's Commission in that the highly regulatory approach taken by TEQSA has created a mismatch between sector expectations and government action based on the proportionality of the burden higher education should bear in relation to its overall accountability and fiduciary responsibilities.

This balancing act has a counterpart in the United States with President Obama's interest in changing the accreditation process to make colleges and universities more accountable for cost, value, and quality by having new benchmarks incorporated into the accreditation process (Kelderman, 2013). While this is a public challenge to the higher education oversight process in the United States, there has been a backdoor attempt to propose a similar agenda through the National Advisory Committee on Institutional Quality and Improvement (NACIQI), which was included in the Higher Education Reauthorization Act from 1992 onward. "The Council on Higher Education Accreditation (CHEA) has been acting as a foil" (Padró, 2013, p. 28) to balance out the voices of internal (disciplines, professions, faculty, and administrators) and external stakeholders (government agencies and regulatory bodies, end users, other public interests, parents, and students) in its negotiations with

NACIQI over appropriate accreditation practice. Similar balancing acts are noticeable in other countries as well. The prevailing view is that "the traditional institutions for assuring academic standards in universities have proven ineffective or inadequate to cope with the new demands of systems of higher education and the rapidly changing environment of global academic competition" (Dill & Beerkens, 2010, p. 313). Thus, it is not surprising to see that the discussion in the United States echoes what is happening elsewhere in the world (Padró, 2013).

There are more examples of this in the primary/secondary school sectors about the balance between autonomy and oversight, especially in relation to federal versus state and/or local control of schools as well as many more instances of the other balances which will have to await another time. The issues surrounding training and development are just as complicated, especially as the distinction between education and training becomes more diffuse and the needs of the workforce require more of both in terms of critical thinking and specific disciplinary or professional skills, not to mention more specific proprietary skills and who is best equipped to do that preparation. ASQ's Education Division is well placed to discuss all of these issues at the national and international levels because of our members and their interest and passion for education. Our goal is to be a contributor to all these discussions, provide suggestions for improvement, and to help different stakeholders consider what quality means in terms of practice and learning.

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Note From the Acting Editor
by Belinda Chavez, MBA

As with most years, this has been a very exciting and eventful year for the Division. I'm filling in for Mandy Ellis, division newsletter editor, for this edition of the *QEDNews* because of the expansion of Mandy's family. On June 21, 2014, Mandy sent me this message: Lauren Claire Ellis was born at 4:14 a.m. weighing 8 pounds and 14.5 ounces....We are both doing well.

Below is a more recent picture of the lovely Lauren Claire.

Due to Mandy's absence, but for a wonderful cause, we got off to a slow start and apologize for providing only one *QEDNews* publication this year. We will be back on our normal two editions per year schedule beginning in the Spring of 2015.

Going forward, as we prepare for this year's annual National Quality Education Conference (NQEC), it is good to note that ASQ is working closely with the Education Division's NQEC chair, Norma Simons, and her committee. We hope to see many Education Division members in attendance at the November 15-17 NQEC participating in the workshops, educational sessions, and networking sessions to learn about process improvements in various educational institutions and to network with the Education Division leadership team.

Also of note, ASQ announced that it is working to rebrand NQEC as ASQ's Quality Education Conference. According to ASQ staff member, Laura Kalinosky-Sanchez, "This change has been under discussion for the past year or so and reflects our increasingly global audience and membership. It is important to recognize that this change is coming at the request of international members and customers who asked if they would be able to attend NQEC due to the 'National' label." We hope to see you at the 2014 NQEC. Register at http://asq.org/nqec/.

INNOVATION FOR SYSTEM-WIDE IMPROVEMENT AND BEYOND

NATIONAL QUALITY EDUCATION CONFERENCE
November 16 – 17, 2014 | Milwaukee, WI

2014 National Quality Education Conference

by Norma Simons, M.S.

The theme for the 2014 ASQ National Quality Education Conference (NQEC) is "Innovation for System-Wide Improvement and Beyond." The annual education conference will be held in Milwaukee on November 16-17, 2014.

With the challenges being faced in education, the NQEC provides a tremendous opportunity for participants to gain insights into current practices and innovative methods to address those challenges. Unlike other education conferences, this event provides attendees with access to tools that can be implemented right after the conference. Through access to the presentations as well as formal and informal discussions with keynote speakers and other presenters, attendees will gain an understanding of how to customize tools and techniques to school districts and institutions.

We invite educators, administrators, school board members, ASQ members, and anyone who is interested in improving the education system to attend this conference. Attendees will receive insights on how to improve student learning and achievement. The conference includes:

Half-day, pre-conference workshops which highlight:

• The application of quality concepts in education.

• Tools and techniques for closing the achievement gap.

• Guidelines for using the Baldrige Criteria to address the common core standards in the classroom.

Sessions on the following focus areas:

• Adopting systems thinking for system-wide innovation.

• Using the Baldrige Criteria to improve learning and systems.

• Changing the school culture to close the achievement gap.

• Using continuous improvement for advanced practitioners.

• Implementing common core standards and assessment.

Networking Opportunities

There will be multiple informal networking opportunities that will enable participants to meet and share experiences with others in their field. Attendees will be given an opportunity to give ideas on the impact of quality in education and provide ideas for the conference in 2015.

Renowned Keynote Speakers and Team Awards

This year we will have the honor to hear keynote speakers who will address the value of continuous improvement in education and the power of encouraging and sustaining stakeholder involvement in education. Also, the Education Team Excellence Recognition awards will be presented to recognize team efforts for improving their schools and demonstrating their dedication to excellence.

For more information on the event and to register please see http://asq.org/nqec/. Additional links of interest are provided below.

• College Tours Demystify Campus Life for Parents New to Higher Ed
  nbcnews.com, April 2014

• Cleveland Administrator Launches College Tours for Parents
  Education Week, March 2014

• CMSD's 'Parent University' inspires parents, offers free bus tours to colleges
  The Collinwood Observer, April 2013

• http://videos.asq.org/giving-students-permission-to-forget
  Lee Jenkins, Permission to Forget Interview

Division Leaders Honored at World Conference

Two of our Education Division member leaders were honored as new ASQ Fellows at the 2014 World Conference for Quality and Improvement (WCQI).

Belinda Chavez, Education Division Chair Elect, Honeywell Technical Solutions Inc., Columbia, MD. Chavez was honored for meritorious contributions in quality management and assurance activities that include requirements development and acceptance of compliant products in multinational environments; for devoted member unit leadership, management, education and mentoring; and for professional competence in continuous improvement activities.

Steven Hacker, ASQ Chair, and Belinda Chavez

Elizabeth A. Cudney, Education Division *Quality Approaches for Higher Education* journal editor, Missouri University of Science and Technology, Rolla, MO. Cudney was recognized for outstanding leadership, professionalism, and exceptional contributions to the advancement of quality and lean in education and the manufacturing industry through the structure and development, design of course content, publication of many papers, and editing of the *Quality Management Forum*.

Steven Hacker, ASQ Chair, and Elizabeth Cudney

QAHE's Best Paper Award

The editors of the Education Division's journal *Quality Approaches in Higher Education* are pleased to announce that the journal's 2013 Best Paper Award was awarded to the research team of Dr. Theodore T. Allen, Dr. Sharnnia Artis, Dr. Anthony Afful-Dadzie, and Dr. Yosef Allam for their paper "Case Study: Application of Blended Learning for an Engineering Simulation Course." This paper documented a case study of the implementation of a blended-learning method to teach a discrete-event simulation course at The Ohio State University. It supports the use of blended learning to assure quality course outcomes.

This new award goes to the article that made the largest single contribution to the development or application of quality approaches in higher education and was published in 2013 in *Quality Approaches in Higher Education*.

To read this and other articles published in *Quality Approaches in Higher Education*, please visit: http://asq.org/edu/quality-information/journals/.

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Seek to Understand:
What Adults Said Influenced Their Science Career Choice

by Victoria Fawcett-Adams, Ed.D.

Science, technology, engineering, and math (STEM) education is an issue of great concern for the United States because STEM career choices will sustain an educated, skilled scientific workforce that is in high demand. Many people fear that these jobs will go unfilled with a projected deficit of 2.5 million workers by 2020 (Base, 2012). How do we mitigate this concern, and what questions should be asked to address these concerns? I contend that we must seek to understand the mindset or motivation of adults who chose science careers before we are able to move forward. My recent doctoral research took this approach.

My empirical study explored the science career choice from an adult perspective and the environmental influences that motivated, influenced, and shaped the participants' science career choices. The methodology used was qualitative research with interviews, observations, and field notes, and the report was written using a narrative style. This method allowed me to delve into the past to understand the present. Science careers in agriculture, healthcare, and higher education were the focus of the study and offered invaluable insights. Participants shared many lively, colorful, anecdotal stories about their childhoods or school days that sparked an interest in their science careers. Interestingly, the women in the study defined and explored science career choices much earlier than the men. There were many more similarities, however, among participants than there were differences.

Four themes dominated the findings: people, identity, beliefs and attitudes, and feelings. There were definite sub-themes such as positivity, curiosity, leadership, and helpfulness. The study showed that family members and teachers were most influential in forming identity as well as shaping beliefs and attitudes and feelings about science career choice.

Why is this important? Because there are definitely some things we should know, some things we can say, and some things we can do to help solve this puzzling dilemma of not knowing how to address the STEM workforce problem.

For example, during the interviews, the expression of feelings was a major theme. How people felt about life, goals, and people lead to goal setting. Feelings were developed within the home, school, or college environment and motivated career choice. Commonly shared feelings were that of "being helpful, and doing good for others in society" (Fawcett-Adams, 2014). Science career choices tied to feelings sustain the participants' current employment goals. Intentional dedication tied to career interests, supported by feelings was a result of character and motivation. This is called planned helpfulness because a person can look inward, plan a career where he or she can be helpful based on personal feelings, and this mindfulness sustains a lifelong science career.

To this end, being appreciative and expressing gratitude toward others for their contributions—not taking all the credit—was common with all participants. Parents surfaced as the most influential but others, especially middle school teachers for girls and high school or college professors for boys, helped determine career choice. Influence came in various forms but it ranged from supportive career talks, outings to museums, or visits to the parents' job site, all of which left lasting memories into adulthood. One of the problems participants encountered was how little adults knew about science careers. It is key that parents and teachers encourage a child's natural interests and curiosity in science by supporting career interests with reliable information. Participants recalled people in their lives who were informed about careers, and they emphasized the impact it had on them as a child and how it may have influenced their career choice.

Sometimes goal setting and career choice are direct results of a critical incident, as was the case with all study participants. A critical incident is defined as one episode in life that affected career choice. This resembles a turning point, whether it was an incident, an adventure, or a spoken word. Notably, most participants did not easily remember these moments, and it was only through the interview process and subsequent meetings that they experienced an "aha!" My interviews were even credited with dredging up some memories long since forgotten. Weick, Sutcliffe, and Obstfeld (2005) stated just because an incident is small doesn't mean it is insignificant in trying to understand an event. This is something to remember when dealing with America's youth in terms of workforce readiness.

Finally, this research pointed to personality traits that every participant had in common. These traits included: leadership ability, communication skills, intelligence, positivity, curiosity, problem solving, and lifelong learning. Roe (1953) agreed that scientists have a unique combination of traits that allow them to persist in science careers. I believe that when students self-identify their combination of strengths it will help them with identity issues related to science career choice.

While this article did not cover every aspect of my research it does offer three suggestions:

• Parents and teachers should build relationships with students to specifically foster science careers.

- Parents and teachers should increase their knowledge and awareness of science careers and be attuned to student potential.

- Schools and workplaces should provide support and training for soft skills—helpfulness, curiosity, leadership, positivity—necessary for a sustained science career.

These strategies can then be developed into a more informed conversation when discussing career objectives with students. There are not one but many reasons adults choose science careers but we must try to understand why. If we seek to understand what it takes to succeed in a sustained science career, we are one step closer to securing a future scientific workforce.

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About the author

Vicki Fawcett-Adams, Ed.D., recently earned her doctorate in education from Shenandoah University in Winchester, VA. Her dissertation focused on the motivation and influences on science career choice from the adult perspective. She has presented her empirical research at more than 15 state, regional, and international conferences and is continuing to present her significant findings at conferences nationwide. She is a frequent contributor to ASQ Education Division newsletters. As a team leader for ASQ's Education Division, she also monitors the Division's Twitter page and other social media platforms. Contact her at vfawcett08@su.edu.

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http://asq.org/edu/interaction/getinvolved-edu.html

Lean Six Sigma in the Classroom

by Norma Simons, M.S.

Introduction

A report from the Program for International Student Assessment (PISA) shows that 15-year-olds in the United States continue to turn in flat results in a test that measures students' proficiency in reading, math, and science worldwide, failing to crack the global top 20. U.S. Secretary of Education, Arne Duncan, responded, "The problem is not that our 15-year-olds are performing worse today than before ... the problem, instead, is that they are simply not making progress. Yet, students in many other nations ... are advancing, instead of standing still."

So how do we get better? How do we improve?

In today's environment there are several challenges facing the education of our students. In a recent discussion on U.S. manufacturing and the engineering workforce, guests on Diane Rehm's National Public Radio show outlined some of the challenges as follows:

- Students in the United States are falling behind in math and science as compared with other students around the world.

- The gap is growing between applicants' skills and the new requirements for available jobs as the United States moves from a country that is less dependent on manufacturing jobs.

- This gap will widen as older, more qualified workers retire.

Other challenges involve limited state funding, increased government regulation, etc. In many cases there is enough blame to go around—sometimes it is the schools not doing their jobs, lack of parental support, poor standards of students, too much government intervention, etc. In all cases, the demise of our education system can be traced to viewing this issue in pieces. Instead of simply identifying poor performance and finding areas to lay the blame, we need to apply other concepts and approaches.

Our schools today are not performing, and there is concern of how the future generation will take its place in the world. Our education system has a strong focus on results and has not understood the need for processes. Poor results are due to poorly designed and managed processes. If improvement is essential, processes need to be designed, managed, and implemented to ensure the required results can be sustained.

A new approach is needed. Education reform needs to take place district by district and in every school within the district and every classroom within the school. The strategy should be one of inclusion and collaboration, which involves all employees, teachers, students, parents, and the community. Lean Six Sigma is a methodology that has been successfully used in the business

environment and one that can provide a template for making the necessary changes in education.

What is Lean Six Sigma?

Simply put, Lean Six Sigma is a philosophy currently embraced by businesses which provides a guide to how business should be run. Lean Six Sigma evolved from the concepts of lean manufacturing (waste reduction and value creation) and Six Sigma (customer focus and variability reduction). Initially, educational professionals were reluctant to embrace these concepts broadly because they believed that "education is not a business." As challenges intensify, however, and there are more budget cuts and layoffs, it is important to look at other methods for improving efficiency within a school system as well as enhancing the overall educational performance. Figure 1 shows a summary of both lean and Six Sigma. The concepts are designed to improve efficiency and effectiveness and have been applied both to the administrative areas of school districts as well as academic areas.

Figure 1: Defining Lean and Six Sigma Objectives
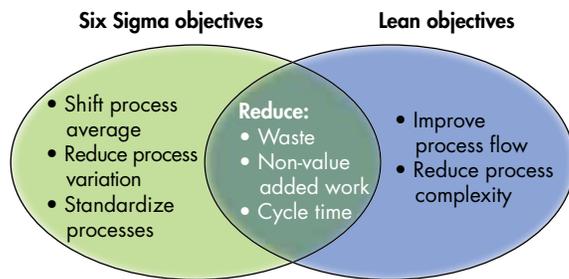
Lean Six Sigma is being used to address the major issues in the education system. As a structured methodology that focuses on cause and effect, it enables educators as well as administrators to resolve the issues they encounter instead of randomly applying solutions and hoping for results. A structured problem-solving methodology could help to resolve issues such as discipline, poor attendance, and poor graduation rates, to name a few. In every case:

- Problem resolution would begin with data to understand the current situation.

- A structured process such as the Define, Measure, Analyze, Improve, and Control (DMAIC) method that helps achieve results will be used.

- Both teachers and students would be involved in problem solving.

- Stakeholders, including parents, community, and school administration, would be encouraged to participate.

- The focus is on the "how," e.g. a process that achieves results.

The Advantage of the Process Approach

The process approach facilitates a school district's ability to:

- Understand the learning process.

- Enable administrative services to provide the right support for the academic environment.

- Optimize the interdependences between functional areas.

- Observe and understand how processes and activities are connected.

- Use visual tools to enhance communication.

- Focus on systemic issues and move away from blaming individuals or departments.

Figure 2 shows an outline of the DMAIC process that would be applied. This is a structured methodology geared toward problem solving and the use of data.

Why Lean Six Sigma is Useful in the Classroom

School districts find that Lean Six Sigma is useful in classroom settings for the following reasons:

- It requires data-based decision making to drive improvement in the classroom.

- Lean Six Sigma uses a robust process that promotes problem solving.

- A formal environment for creating for continuous improvement will be developed at the lowest level.

- A process for identifying root causes and appropriate solutions will be developed.

- Lean Six Sigma would create a template to promote critical thinking concepts.

Figure 2: Lean Six Sigma Breakthrough Methodology
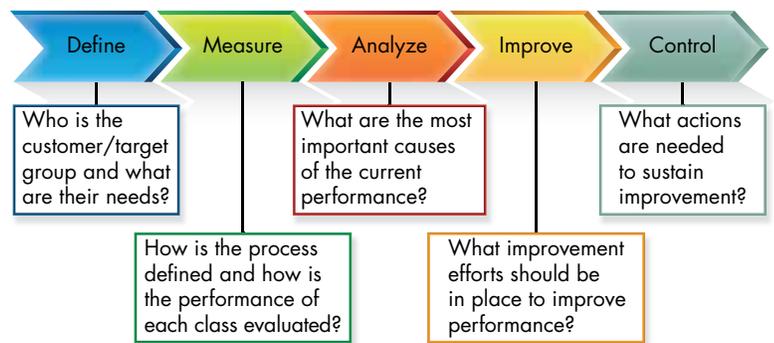
- It promotes collaboration among teachers by encouraging teachers to work together and be innovative in their approaches to problem resolution.

- It provides the use of a methodology that holds all stakeholders responsible for the final result.

Example of Lean Six Sigma in the Classroom

The purpose of Lean Six Sigma is to improve a school district's performance by ensuring that the concepts are introduced in every grade and every subject. For example, if the goal is to improve math scores in third grade, then the process would begin by assessing the performance of students in third grade over a three- to four-year period. This would be accomplished by using control charts to determine whether or not student performance is not improving, getting better, or remaining stable. Based on the statistical data, the overall capability of the third grade students could be determined, and predictions could be made regarding student performance. Table 1 provides a brief overview of how the DMAIC method can be used to address the issue of math performance in the third grade.

The concepts of Lean Six Sigma would not negate the ideas, concepts, and educational methodologies used to teach a subject. Instead, the use of

Table 1: Using the DMAIC Method to Achieve Improvement in Third Grade Math

Phases	Interpretation	Application
Define	Outline the scope of the project	• Identify the students • List the stakeholders • Interview stakeholders and students regarding performance in math
Measure	Establish baseline measures	• Define performance measures • Establish plan for data collection • Establish baseline performance
Analyze	Find root causes of current performance	• Brainstorm with teachers, students, and other stakeholders to identify potential causes of the performance • Use statistical analysis to select the top three issues to address
Improve	Develop solutions	• Brainstorm with stakeholders, students, and parents for solutions to address the top three issues identified • Establish priorities for implementation • Establish a plan for implementing each solution • Use data to evaluate the impact of each solution
Control	Establish actions to sustain performance	• Collect data to evaluate and monitor performance • Obtain involvement of parents and students to review and evaluate performance

the ideas would enhance the teachers' skills in utilizing data to make decisions on the type of strategy to employ to improve performance. The ideas can be incorporated as a methodology for any area within the school system.

Another value of this approach is that it promotes collaboration and builds relationships in the following ways:

- *Between teachers:* Teachers within a certain grade can work as a team to ensure overall high performance of students within the grade.

- *Between teachers and students:* Students can assume a higher level of responsibility for their performance and become more proactive in getting assistance from teachers for resolving their problems.

- *Between parents and the school system:* Parents and other stakeholders actively participate in the students' progress.

Conclusion

As challenges in the educational system become more visible and pronounced, it is important to search for alternative approaches and ideas to help resolve issues that are critical to the success of the future generation. Lean Six Sigma is a methodology that is able to achieve this objective. The use of such a structured concept enables teachers and administrators to think differently about how they achieve results. It is important to focus on processes and results and to balance the two. Only in doing so are we able to ensure more efficient operations in a school district, better support for the academic areas, and overall improvement in student performance.

About the author

Norma S. Simons, M.S. is a Lean Six Sigma Consultant and Master Black Belt. For more than 20 years Simons has been committed to providing companies with customized performance solutions that yield bottom-line results. Her success can be contributed to her unique integration of performance improvement systems such as lean, Six Sigma, and Design for Six Sigma, quality management systems, business operating systems, and balanced scorecards that enable the effective execution of organizational strategy. Simons is a certified Six Sigma Black Belt, Certified Quality Engineer, and Reliability Engineer through the American Society of Quality and is also a Fellow of the American Society of Quality. She serves as secretary on the leadership team of ASQ's Education Division. Contact Simons at norma@performance-innovations.com.

ASQ World Conference Wrap-Up

The 2014 ASQ World Conference on Quality and Improvement (WCQI) was held May 5-7, 2014, at the Hilton Anatole in Dallas, TX. The theme of the conference was "The Global Impact of Quality" and the emphasis was on customer relationships, risk management, how to build and sustain a quality culture, lessons on making the case for quality, and quality fundamentals. Concurrent sessions, workshops, flip sessions, and after-five sessions were offered to allow attendees a wide array of topics from which to choose and included introductory, mid-level, and expert-level presentations.

Globalization was very evident as attendees networked with participants from all over the world. This year a chartered team worked diligently on an initiative to increase participation of ASQ student members. The effort was successful in that the number of student members who participated in the WCQI increased from 16 last year to 69 participants in 2014. In addition to ASQ's WCQI budgetary support, financial support was provided by individuals, sections, divisions, and the Section Affairs Council. Divisions offered student member mentoring, and one of our Education Division student members volunteered his time in our exhibit hall booth. Testimonials from several students were received indicating the initiative was very beneficial to all and will be a continuing effort.

Members of the Education Division leadership team conducted a strategic planning meeting on Monday, May 5 to share ideas for increasing membership, improving member leader engagement, reviving the *Workforce Development Brief*, and developing marketing plans for the next *Quality Approaches in Higher Education* journal.

Congratulations to the three WCQI participants whose names were drawn at the Education Division booth during the exhibit hall extravaganza. **Argenis Osorio** of Calgary, Canada won the $100 Visa gift card and **Erika Vergara** of Pearland, TX, won a copy of *Permission to Forget and Nine Other Root Causes of America's Frustration with Education*, written by Lee Jenkins. We apologize that the recipient of *Advancing the Stem Agenda, Quality Improvement Supports STEM*, editors Cindy Veenstra, Fernando F. Padro, and Julie A. Furst-Bowe, pictured at right, got away with his business card that was drawn at the booth. So, if this lucky fellow identifies himself and provides his name and a photo, we will reward him with a copy of *Permission to Forget*. If anyone else can identify him and provide his name and a photo, we will reward them with a copy of *Advancing the Stem Agenda, Quality Improvement Supports STEM* (if multiple submissions are received, we'll hold a drawing). Thank you to all who visited our booth and chatted with us!

Pictured left to right at the Education Division exhibit hall booth: Ardith Beitel, Division Treasurer; Benito Flores, Division Membership Chair; and Belinda Chavez, Division Chair Elect.

Argenis Osorio, winner of the $100 Visa gift card.

Erika Vergara, winner of Permission to Forget.

Belinda Chavez congratulates the winner of the Advancing the Stem Agenda, Quality Improvement Supports STEM *book. Please help us identify this gentleman so he can receive his prize.*

A Process for Strategic Management

Linking the Balanced Scorecard With Hoshin Kanri for Institutional Alignment: A Higher Education Example

by Norma Simons, M.S.

Challenges often faced by businesses and institutions of higher education involve establishing a clear strategy, developing systems for executing the strategy, using measurement systems to evaluate performance, and reviewing progress to assess the effectiveness of the strategy and results. Every institution performs these activities; however, it is often fragmented and may result in poor alignment of the day-to-day activities with the vision and strategy.

Often organizations and institutions have strategies, but no established process to drive the strategy. Included in this article is an overview of the components that ensure activities are aligned with the direction of the institution and a system to ensure that strategic initiatives are executed. This involves responding to the following questions:

• Where are we going and what do we want to achieve? *A review of the institutional strategy.*

• How will we get there? *Hoshin kanri.*

• How will we know if we are effective? *A measurement system— the balanced scorecard to evaluate performance gaps.*

This article describes the use of two tools: the balanced scorecard and hoshin kanri (policy deployment) to deploy strategic initiatives to the operational level. The project described in this article was performed at Cleary University in Ann Arbor, MI, and was commissioned based on feedback on their systems portfolio from the Higher Learning Commission.

The Balanced Scorecard

The current economic climate has caused organizations to pay closer attention to performance in order to meet certain financial targets. In 1992, Robert Kaplan and David Norton (Kaplan & Norton, 1992) introduced the concept of a scorecard in the *Harvard Business Review* article, "The Balanced Scorecard—Measures that Drive Performance." The article focused on the fact that managers need a set of measures, both financial and non-financial, to evaluate the performance and health of their companies.

The purpose of the balanced scorecard is to identify key measures that will drive the performance of the university. Hoshin kanri (policy deployment) is a process that helps managers or process owners identify metrics that are tied to the scorecard and strategic plan and put in place activities that will close any performance gaps. Together, the components facilitate the translation of the strategic initiatives to daily activities.

The balanced scorecard outlines four areas as the drivers of an organization's future performance, as follows:

• Financial perspective

• Customer satisfaction

• Internal processes

• Learning and growth

Figure 1 shows the drivers of the scorecard in relation to the strategy. The balanced scorecard overcomes the limitations of financial metrics alone by creating a balanced set of indicators that link the desired performance results with the operational activities which drive these results. In the model by Kaplan and Norton (Kaplan & Norton, 1996) an organization will use a balanced portfolio of measures categorized along four dimensions or perspectives. The first two (finance and customer) perspectives are primarily results, or lagging indicators, while the last two (internal business processes as well as learning and growth) perspectives are primarily leading indicators or drivers of company performance.

Although the balanced scorecard is used primarily in large manufacturing and service companies, the concepts have spread to other profit and non-profit organizations. Educational institutions have started to use the balanced scorecard to evaluate the performance of a district or a post-secondary institution as communities, states, and government have begun to request information on performance indicators.

In general, a scorecard is not static and should be viewed as a process in which the measures need to be reviewed and refined to reflect changes in the external environment and the strategic plan.

Hoshin Kanri (Policy Deployment)

The hoshin kanri process ensures that the strategy is linked to the balanced scorecard, action projects, and processes at all levels of the institution. With this tool, managers can develop effective planning techniques and communicate the concepts to those in their department and throughout the university.

Hoshin kanri was developed in Japan and is based on the concept of management by objectives, which is more typically used in the United States. Toyota is one company that

Figure 1: The Balanced Scorecard
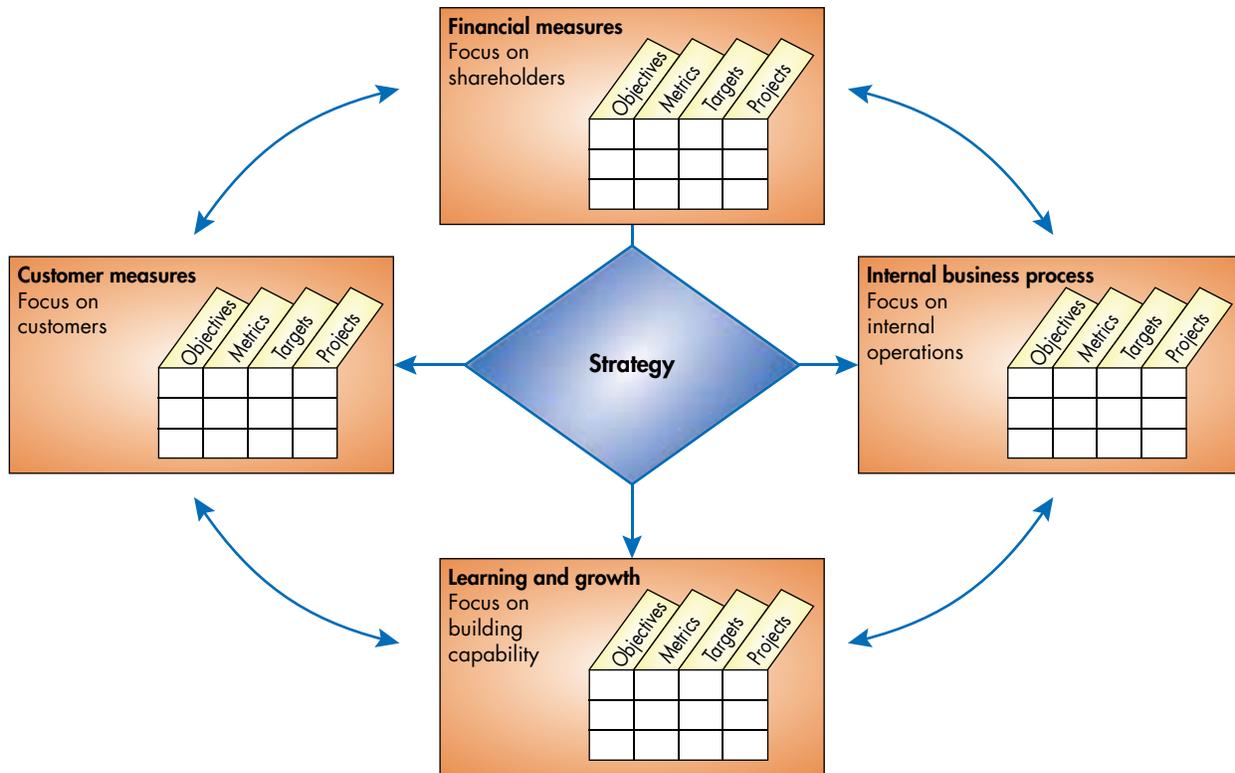
effectively uses this process. A critical component of hoshin kanri is the use of a problem-solving methodology such as Plan, Do, Check, Act (PDCA). Another methodology, DMAIC (Design, Measure, Analyze, Improve, and Control) is also used. The use of the methodology will depend on the scope of the problem being resolved. In any case, it is important to evaluate the performance of a particular area and use a problem-solving methodology to close the performance gaps that are evident.

The benefits of hoshin kanri are as follows:

• Provides a focus for the institution.

• Demonstrates the connections between various areas. In so doing, it helps to provide a systems perspective instead of allowing the institution to operate in silos.

• Increases accountability for the performance of the institution.

• Increases buy-in at all levels as the process encourages total participation and involvement.

• Provides a means to communicate to all individuals on current performance as well as any changes in strategy that may be necessary.

A major tool used in the hoshin kanri process is the deployment matrix, which is shown as a connection for a number of matrices. This is a one-page document that serves as the primary means of communicating at all levels.

Figure 2 is a diagram of the deployment matrix for Cleary University. This type of matrix can be extensive, depending on the size of the institution. With just one page, however, it shows the connection among the strategy, balanced scorecard, key processes, action projects, process owners, and areas of accountability.

The areas of the matrix are as follows:

1. **The strategic plan:** The primary strategic initiatives.

2. **The balanced scorecard:** The measures used to evaluate the performance of the institution.

3. **Correlation matrix:** Outlines the relationship between the strategy and the balanced scorecard.

4. **Action projects:** The main action projects that are currently being executed.

5. **Key processes:** A list of the high-level processes in the institution.

6. **A second correlation matrix:** Evaluates the relationships between the action project and the strategy.

7. **A third correlation matrix:** Identifies the action projects and the connection to high-level processes.

8. **A fourth correlation matrix:** Shows the relationship between the processes and the scorecard.

9. **Metric owners:** A list of individuals who have been assigned to a key metric on the balanced scorecard.

10. **Accountability:** A checkmark shows the individuals who have been assigned to a specific metric on the balanced scorecard.

The deployment matrix forms a communication tool that is used and understood throughout the institution. The purpose of the correlation area of the matrix is to ensure that all activities are clearly aligned with the strategic objectives and the scorecard.

The Journey of Strategic Management

Review

The project began by reviewing the current strategic plan to ensure proper understanding of the overall direction of the institution. This was followed by a review of the balanced scorecard. In this review, it was found that some of the measures should be at the operational level as opposed to the cabinet level.

Figure 2: A Deployment Matrix From Cleary University

Deployment Matrix

Legend
● Strong correlation
◑ Medium correlation
○ Weak or no correlation
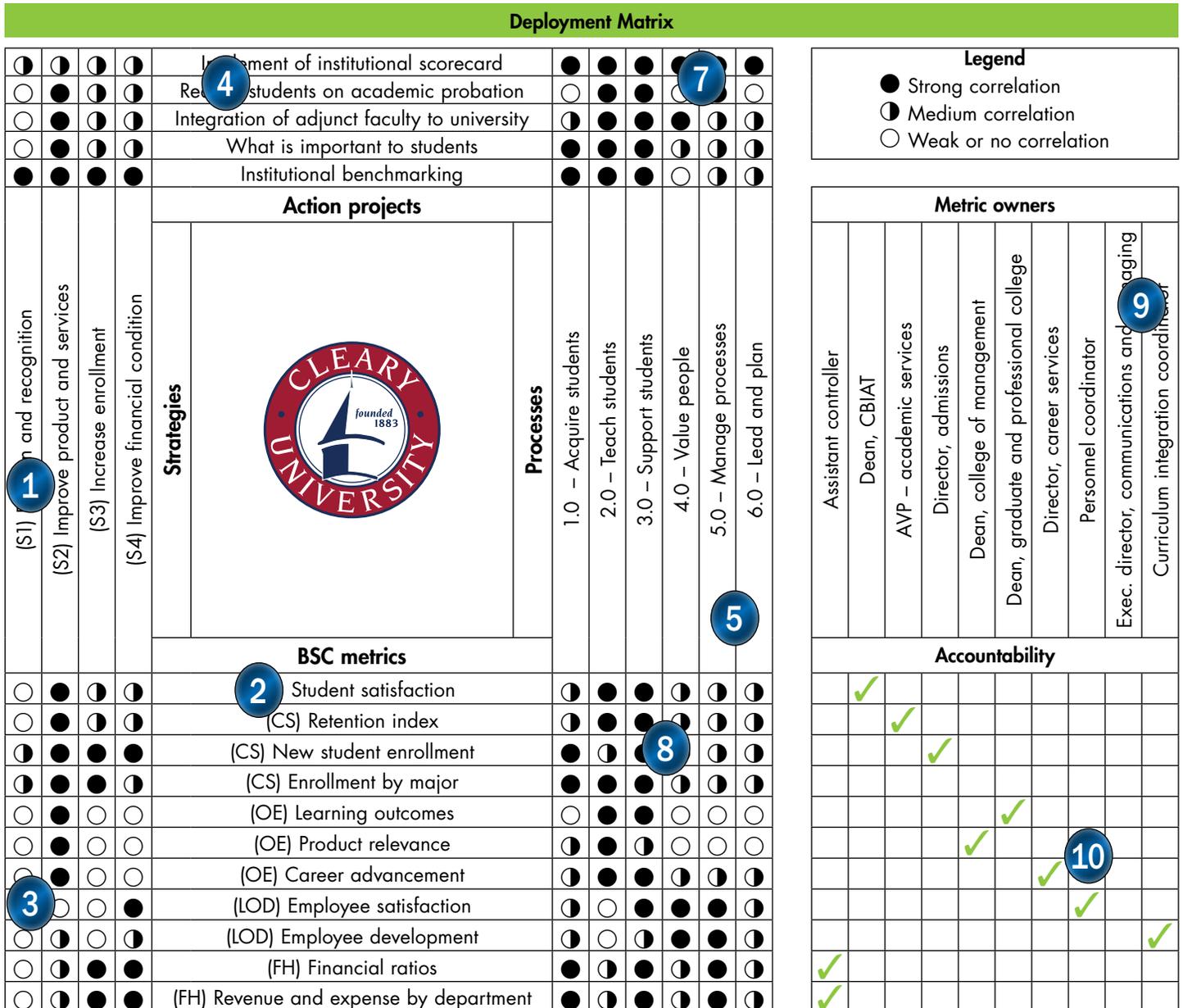
The Balanced Scorecard

This step involved discussions with stakeholders and updating the existing scorecard so that it represented measures that were of concern to the institution's leaders. Each measure was clearly defined so that it could be easily understood by everyone in the institution.

The Deployment Matrix

This portion was extensive as the team worked to link the strategic plan with the balanced scorecard, process owners, and areas of accountability.

Process Owners Selected

Each metric on the scorecard had a process owner who was responsible for identifying the processes and sub-processes tied to the metric. In addition, the process owner not only reported on the metric on the scorecard but also monitored and reviewed the other measures tied to the scorecard.

Training

Sessions were held with the process owners to explain the concept of hoshin kanri and to assist them in developing their matrix and measures for each process.

Sustain

This is a critical portion of the journey of strategic management as it ensures continuous review of processes, the data associated with each process, and an evaluation of process performance. In cases where processes are not on track for performance, the process owner and his/her group will then create a problem-solving team that will use the DMAIC process to identify root causes and implement solutions.

Conclusion

The strategic management process is continuous, thus it requires commitment at every level of the institution. As such there is a need to not only establish the system, but also to continually evaluate the progress of processes by implementing the balanced scorecard and policy deployment.

The ideas in this paper were discussed and created as part of a project entitled, "Improvement of the Institutional Balanced Scorecard." The project team as well as members of the cabinet believe in and support the need for a process to ensure the use of metrics in all activities.

The following individuals were members of the action team:

- Dawn Fiser, Assistant Vice President, Academic Services, Cleary University

- Tim Veenstra, Director of Institutional Research and Analysis, Cleary University

- Sheila Thompson, Director of Bookstore Services, Cleary University

- Norma Simons, Adjunct Faculty, Cleary University, President and Consultant, Performance Innovation LLC

References:

1. Kaplan, R.S. & Norton, D. P. (1992). The balanced scorecard: Measures that drive performance, *Harvard Business Review, January-February*, 71-79.

2. Kaplan, R. S. & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system, *Harvard Business Review, January-February*, 75-85.

See **Norma S. Simons'** author information on page 9.

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We continue to offer ASQ publications on quality in education topics in an effort to respond to the diverse needs of our members from our education sectors K-12, Higher Education, and Workforce Development. Some of these publications are sponsored by the Education Division and some by the ASQ staff. Articles from these publications, with the exception of *The Journal for Quality and Participation*, are available in our online library. Note that we have links to these publications on the right side of our website. The table below summarizes our publications.

QEDNews, the Division's newsletter, provides information to members on our activities and includes contributed articles on interesting topics related to recent and upcoming events and quality in education. All articles are contributed by Education Division members.

Our double-blind, peer-reviewed online publication, *Quality Approaches in Higher Education*, engages the higher education community and the ASQ Education Division membership in a discussion of topics related to improving quality and identifying best practices in higher education and expands the literature specific to quality in higher education topics. The journal web page includes the latest Call for Articles and all the issues. Manuscripts are limited to 4,000 words.

The Division-sponsored *Workforce Development Brief* is read by members interested in workforce development. If you have an article that describes instructional design or delivery, adult learning theory, or other education topics related to workforce development, please submit it to Ardith Beitel (Ardith.m.beitel@boeing.com). Articles should be 1,000 to 1,200 words and should be accompanied by a brief biography (75-100 words).

The *ASQ Primary and Secondary Education Brief* and *The Higher Education Brief* feature invited articles associated with each issue's particular education-oriented theme. Themes and articles are often suggested by the Division's leadership team. As a special publication, a joint issue on STEM issues is published annually in February to coincide with the celebration of Engineers' Week, since many of our ASQ members are engineers or are in the engineering field.

The *Journal for Quality and Participation* is a long-standing, peer-reviewed, combination print and online publication that focuses on the people side of quality. Each issue includes the department "Educators' World," which is dedicated to quality in education. This journal is published by ASQ.

In addition, stand-alone articles may be uploaded to the online ASQ Education Division library after a review.

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We welcome your participation as a contributor and reader!

Publication	Sponsor	Invited/Contributed	Peer-reviewed	Frequency	Editors
QEDNews Division Newsletter	Division	Contributed only by Division members	No	Bi-annual	Mandy Ellis
Quality Approaches in Higher Education	Division	Contributed	Yes	Bi-annual	Elizabeth Anne Cudney
Workforce Development Brief	Division	Contributed and Invited	No	Bi-annual	Ardith Beitel
ASQ Primary and Secondary Education Brief	ASQ Publications	Invited	No	Six issues per year	Megan Schmidt
ASQ Higher Education Brief	ASQ Publications	Invited	No	Six issues per year	Megan Schmidt
The Journal for Quality and Participation, "Educator's World" department	ASQ	Contributed	Yes	Quarterly	Deborah Hopen

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To promote networking worldwide on quality in education, including K-12, Higher Education and Workforce Development.

VISION

Shaping the future through quality in education and professional development.

VALUES & BELIEFS

We believe that:
- Members network in different ways.
- Our networking will improve student learning outcomes and achievement at all levels.
- Our networking will improve excellence in our education systems throughout the world.
- Helping low income school systems to achieve student success is part of ASQ's social responsibility focus.
- Effective collaboration requires trust and mutual respect
- We encourage student members to network with us as they develop a career as a quality educator.
- Continual member feedback through surveys guides improvement.

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- To network to improve student success at all levels.
- To use members' dues effectively.
- To support ASQ's global and social responsibility initiatives.
- To increase member satisfaction and participation in the Education Division.
- To empower educators to demonstrate 21st century leadership and learning.
- To provide publications, conferences and discussion boards for networking on quality in education and to provide targeted networking for each focus area: K-12, Higher Education and Workforce Development.
- To show how quality thinking can improve solutions to current educational challenges such as preparing students as leaders in the 21st century, decreasing the achievement gap, improving STEM education and providing a learning culture in the workforce.

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- "QUALITY in Education" Attaining excellence in the education system by monitoring key performance indicators and performing the strategic and tactical work necessary to meet goals and improve continually.

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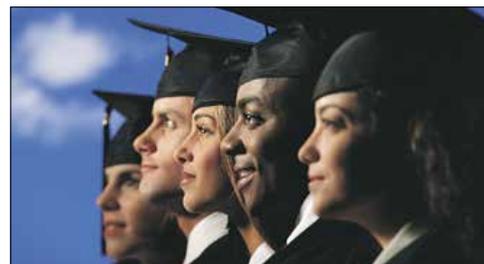vfawcett08@su.edu

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