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Effectively Serving Tomorrow's Students: The Collaborative Model for Improvement

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Educational institutions are being challenged now more than ever to more effectively serve student needs (Spellings, 2006). In the same ways that businesses are better serving their customers' needs, higher education must become more flexible, responsive, efficient, and focused on students' needs and others they serve (Alexander, 2000; Cullen, Joyce, Hassal, & Broadbent, 2003). Students should be viewed as well-informed consumers who select institutions of higher education based on their ability to provide a quality education and excellent services. Advances in technology have greatly increased student choice and flexibility options. Students are demanding a quality educational experience at the same time that they are insisting that yearly college tuition increases not outpace inflation. Higher education institutions are increasingly competing with one another to offer students quality education, flexible course delivery, and exceptional student services. The Collaborative Model for Improvement outlines one way to meet students' changing needs.

The Collaborative Model for Improvement is a theory-based model that provides a framework to study and improve administrative, academic, and business processes and that encourages employee ownership over how those processes are revised and improved. Academic institutions will be able to make decisions based on data and information as they improve the quality of student services, resulting in improved services, lower costs, and higher student, faculty, and staff satisfaction.

This paper is organized into three main sections. First is a discussion on the characteristics that indicate student service processes are not functioning at optimal levels. The second section describes how Deming's theory of profound knowledge and lean theory contribute to the Collaborative Model for Improvement. The third and final

section defines the Collaborative Model for Improvement and discusses some improvement tools.

Characteristics Indicating the Need for Change

Before discussing the Collaborative Model for Improvement, it is important to understand when the model may be valuable to an organization. This section illustrates some characteristics that indicate an institution needs improvement. These include ineffective methods, non-value-added tasks, unlevel activity flow, and frustrated faculty, staff, and students.

The first characteristic is the approach used to conduct day-to-day tasks. Are the core administrative student service processes using methods or procedures to accomplish tasks and assignments that are similar to the methods used for the last ten to twenty years? The methods may not be as useful as they once were, resulting in non-value-added activities. Staff working independently may have become comfortable with using a certain method to accomplish their work over the years and may not be aware that new methods exist that are better for increasing the overall organizational effectiveness of the student services. As institutions are charged with expanding services, growing enrollments, and maintaining costs, the status quo method may help individuals accomplish their assigned work but may not be the best model for the institution.

Second, are the staff members consistently inundated with tasks and assignments from the time they start their shifts until the end of the day, day after day, week after week, month after month? Are others complaining that they do not have

enough work except during the high-demand times at the start or end of each semester? Are staff members still doing tasks that no longer align with any organizational or departmental goals simply because the tasks were done in the past or for former supervisors of the institution? Essentially, staff members are spending an enormous amount of time in areas that have little impact and less time in areas that have great impact on improving services to students.

Third, do students have to wait in line to get questions answered or to take care of their business needs? Waiting for services is often an indicator that a process no longer works as originally intended. The reason for the imbalance may be due to enrollment growth, additional workload, or an unlevel activity flow. An unlevel activity flow occurs when the demand is too great for the current supply.

The final characteristic that indicates an institution needs improvement is behavior. Is the institution experiencing a mix of low morale, burnout, or fear of change? Is there over-exaggerated suspicion over which staff members are working hard and which are just coasting along from day to day doing the bare minimum? These behaviors occur when staff feel overburdened and underutilized because they are not empowered to improve the processes they work in day after day. Focusing these negative energies on process improvement tends to revitalize the workforce because most employees want to do their best for the institution.

The characteristics that indicate an institution needs an improvement plan, such as the ones discussed, tend to be symptoms of a large-scale problem. Institutions need a systematic approach to problem solving that leads to improved services for students, faculty, and staff.

Deming's Theory and Lean Theory Integrated

The Collaborative Improvement Model, based on Deming's theory of profound knowledge and lean theory, is a framework to redesign administrative, academic, and business processes in higher education. Deming (1986) suggests that profound knowledge is a leadership philosophy grounded in systems theory. The main principle of systems theory is that organizations are a collection of interrelated processes and people, which create the system's operating components. The success of all work within the system is dependent on the delicate balance of each component. For example, a redesign of an admissions process may depend on a fine balance of policies, procedures, recruiting practices, technology, faculty and staff involvement, and applicant academic ability. Lean theory evolved from Deming's work; lean is built on the foundation of strong leadership commitment that is data-driven and reliant on employee participation through cross-functional teams.

Lean, a continuous improvement methodology, is characterized by using fewer resources to design, produce, market, and deliver products and services. Lean uses less space, less human effort, and less waste, and it is based on an integrated system of external and internal practices that flow throughout the operating processes (Womack, Jones, & Roos, 1990). A main characteristic of lean is its focus on waste elimination. The focus is so critical that Womack and Jones (1996) identify seven waste categories: overproduction, waiting, transportation, processing, inventories, moving, and defects. Emiliani and Stec (2004) argue that there are eight wastes, with the eighth waste being behaviors. Waste is associated with the concepts of value and non-value added activities.

Ohno and Setsuo (1988) suggest there are three possible classifications of value: activities that the customers are willing to pay for (value-added); activities that are necessary, even though the customers are not willing to pay for them (essential non-value-added); and activities that are not necessary and that the customer is not willing to pay for (non-value-added). For example, students are willing to pay for their books (value-added) but they are not willing to pay additional money because the bookstore ordered too many books that were non-returnable to the book supplier (non-value-added). In this example, the original book price was $65 but the bookstore needed to recoup the costs of the unsold books and therefore increased the price of the book by 10 percent. To improve this outcome the bookstore staff could identify the activities in the process, categorize them by value-added, essential non-value-added, or non-value-added, and work to eliminate the non-value-added activities. Table 1 shows examples of activities that are considered non-value-added activities, or waste.

Table 1: Examples of Waste

Waste Category	Example in Higher Education
Overproduction	Course sections not filling Unnecessary signatures Graduating students in majors for which there are no jobs Offering a minor that no one chooses
Waiting	Prospective students waiting for acceptance to a college Staff waiting for vacant positions Students waiting for grades to be entered Students waiting to talk to faculty advisors Students waiting to register for a class that is always full
Transportation	Substitution course waiver forms Walking timesheets to human resource office Moving equipment to different meeting rooms
Processing	Transcript requests Several employees processing or checking the same paperwork or information
Inventories	Excessive books in the bookstore Classes that have not been offered for years listed in the catalog Equipment and supplies in department offices and storerooms that have been accumulating for years
Moving	Students walking from department to department to get answers or information
Defect	Data entry error Incomplete forms Outdated mailing lists Equipment defects in classroom
Behaviors	Improper advising Faculty, staff, and students frustrated because of inefficient processes Blaming others when something goes wrong Not sharing information and skills

The integration of these two proven improvement methodologies, as discussed above, provide an organization with the opportunity to incorporate the Collaborative Model for Improvement into its improvement strategy.

The Collaborative Model for Improvement

The Collaborative Model for Improvement has four phases: preparation, discovery, interpretation, and implementation. The preparation phase serves three purposes: to establish leadership commitment, to ensure that the project is aligned with the organization's mission, policies, and procedures, and to form the improvement team. The discovery phase is designed to assimilate a complete picture of the current state and to research how other organizations with similar operations work differently to achieve superior outcomes. The purpose of the interpretation phase is to create a vision of how the process should operate. Finally, the implementation phase is intended to ensure that the recommendations are implemented and sustainable over time.

Phase I

Leadership commitment is one of the most essential roles (Womack & Jones, 1996; Womack, Jones, & Roos, 1990) in preparing for and achieving change. Leaders show their commitment in a number of ways including articulating and communicating the need for change, staying actively involved, and aligning objectives and resources. To articulate and communicate the need for change, the institution's president may express concern for the length of time it takes to service a student's business needs. This announcement indicates that the president feels that the time students wait for services is too long and that the process must be studied and redesigned. Communicating the need for change is one way for leaders to show their commitment and to be actively engaged in the improvement initiative. Another way for leaders to stay involved is to ask team members questions regarding the initiative. This sends a

message that the team's work is important, and when the president pays attention to change, the institution pays attention to change.

In addition to communicating the need for change and staying actively involved with the initiative, the leader shows commitment by ensuring that objectives and resources are well aligned with the institution's goals. New initiatives often clash with current policies and procedures unless the university is willing to make the necessary changes needed for alignment. Clashes often occur because of conflicting messages that employees receive from leadership as well as from the organizational structure. For example, as leaders communicate the importance of redesigning a process in which students wait in line for five or more minutes, budget allocations and other resources must also be available to support the redesign.

Once the leader has taken the initial steps to prepare the culture for change, the organization moves to the final stage in the preparation phase, forming an improvement team. Team members should be individuals who supply information, material, or data to the process being studied, individuals who participate in the process being studied, and individuals who receive the output from the process being studied. In addition, the team should have participants from various positions. There should be a balance between the university's administration, staff, faculty, and, often, professionals from the community who are directly or indirectly connected to the process outcomes. For example, if the team's objective is to study and improve the admissions process, the team may be composed of two admissions staff members, one faculty member from the largest college discipline, the associate vice president of the area, one technology specialist, and two high school counselors from the top feeder schools. This balance ensures that

all stakeholders have a voice in the redesign of the process. Once the first phase prepares the culture for change and establishes the cross-functional improvement team, the team can move forward to the discovery phase.

Phase II

The discovery phase involves gathering vital data and information that is needed to show the team what is currently happening in the process. Some tools that are useful in the discovery phase include current state process maps, data collection and analysis, and reviews of the literature and best practices.

A process map provides a graphical description of the process. It illustrates the process from the beginning to the end and includes all of the activities needed to create the product or service. Process maps may be created at a macro level, micro level, or a combination of the two. If a process activity often produces errors, excessive wait times, or duplicated work, it may be helpful to see the steps at a micro level instead of at the macro level. The micro level provides detail necessary to understand how a specific task operates.

Data can be collected from focus groups, interviews, and descriptive statistics. In some cases, the data already exist in the institution and simply must be retrieved and analyzed. However, it is common for data to be stored in formats that are not compatible with data analysis. For example, data may be stored in word processing software instead of in a database. Extra effort is needed to format the data for analysis; however, it is a necessary step. The data analysis is then used to establish performance metrics and to highlight and substantiate potential process gaps that are discussed in

the interpretation phase. The purpose of performance metrics is to determine the performance level of key activities in a process. Levinson and Rerick's (2002) book, *Lean Enterprise: A Synergistic Approach to Minimizing Waste*, discusses three distinct standards that should be considered when establishing performance metrics:

1. Measurement must be objective, clearly defined, and quantifiable.
2. Performance must be under the control of the individuals and departments that it measures.
3. The performance metric must be aligned with the organization's goals.

A baseline performance metric is established before making any changes so the team can measure the impact of the change. After implementing the recommendations, the data show if the recommendations worked as planned or if the team needs to continue working to improve the process. After completing the current state process map and data collection and analysis, the team reviews current literature and best practices.

A review of the literature and best practices shows the team what other organizations are doing with similar processes. Innovative individuals often seek best practices from industries different from their own. For example, when a student orientation team was looking for ways to communicate to new students arriving on campus, they turned to best practices of the hotel industry. Some hotels slip an itemized list of charges under hotel doors during the early morning. This simple gesture is a way to communicate to hotel guests without requiring them to wait in lines at the front desk. The student orientation team placed welcome notes under the students' dorm doors and included the location of their first orientation class with a highlighted campus map. This elementary transfer of best practice between the two industries, hotel and higher

education, greatly reduced the amount of time students spent waiting in line at the information gallery.

The discovery phase is the most important to the overall success of the project because it brings all constituent groups together and gives them the same in-depth understanding of the current situation. It is the author's observation that teams usually spend about 75 percent of their time creating, gathering, and analyzing the information obtained from the current state process maps, data collection and analysis, and reviews of the literature and best practices. Participants and stakeholders use the vast collection of information gathered throughout this phase to move to the interpretation phase.

Phase III

During the interpretation phase, the team uses the evidence and research from the discovery phase to illustrate the current strengths and opportunities for change. The purpose is to develop a model of a future state, which is the vision of how the process will be after the redesign. The redesigned process should flow seamlessly from start to finish. The future state is based on facts instead of on intuition or isolated occurrences. When creating the future state, participants are able to assimilate data and information from multiple sources. In addition, during the interpretation phase, teams use problem-solving tools to understand why situations and processes are the way they are and to challenge status quo. Some effective problem-solving tools are cause-and-effect diagrams, a tool to explore all potential causes for a specific problem; the "5 whys," a method to explore and identify the root cause of a specific problem; and brainstorming, a technique to generate a large number of ideas to solve a problem. The final phase

begins after the team has created the future state and has a list of recommendations for improvement.

Phase IV

Creating an implementation strategy that is sustainable over time requires support from leadership to reallocate resources as needed, project management skills to facilitate an engaged and timely implementation, and willingness from individuals to participate in actually implementing the recommendations. Before starting the implementation, the team presents recommendations to administration and stakeholders. The presentation provides an opportunity for leaders to ask clarifying questions, to offer input, and to help prioritize recommendations based on needed financial and human resources. Additionally, administration may suggest adding a few individuals to the implementation team based on their areas of expertise and ability to positively effect change.

Once the implementation team's work is complete, the individuals from both teams, the original improvement team and the implementation team, come together to celebrate the successes. This usually consists of holding a dinner, sponsored by the administration, to show appreciation for participating on the team. Finally, the implementation phase ends with reflection and research.

The Collaborative Model for Improvement is a framework for change. Results will differ based on the institution's culture. How can the model be refined to better align with the institution's culture? Questions for reflection may include:

- What worked well?

- What needs slight modification?
- What additional steps need to be added to the model?

The reflection step illustrates a deeper level of commitment to improvement by making modifications to the model so that the model integrates with the institution's culture. In theory, the end of the implementation phase begins another cycle of the improvement model.

Barriers from Past Total Quality Management Initiatives

A review of lessons learned from past Total Quality Management (TQM) implementations may increase the likelihood of success in future continuous improvement efforts. Klocinski (1999) provides insight into some of the struggles that higher education faced in the late 1990s. He states, "Barriers are part of any change, but some are compounded in colleges and universities because of the nature, purpose, and culture of higher education" (p. 6).

Using business models in higher education creates skepticism. This skepticism feeds the argument that there are substantial differences between business and education. The two main barriers that the Collaborative Model for Improvement minimizes are terminology and lack of understanding of quality improvement.

Perhaps the biggest difference between business and education is terminology. The terminology factor is directly responsible for a spiraling effect that influences all levels of the organization. The model is specifically designed for higher education and therefore has a literature review/best practices component and a reflection/research

component. It provides examples of non-value-added activities that are seen daily in higher education.

The second barrier that hindered the TQM movement was the lack of understanding of quality improvement (Freed, 1997). The attitude that “it’s only a fad” was an indicator that employees did not understand that quality improvement is a long-term strategic direction. When serving on an improvement team, participants begin to understand the concepts of non-value-added and waste and see why it is important to view problems from a systems approach. As an added benefit, they see how the resulting improvements help ease the demands of their jobs, thus improving job satisfaction. The Collaborative Model for Improvement addressed two of the main quality barriers; however, the real value of the model is its collaborative and systematic approach to problem solving.

The Model’s Value

Many institutions tackle problems with limited, if any, data. This approach tends to support problem solving at the symptom level instead of at the root-cause level. When problems are dealt with at a superficial or symptom level, the fix is usually temporary. For example, recently a team reviewed the process of admitting new students. There was frustration from students, staff, and faculty regarding the lack of information new students possessed when they arrived on campus. After reviewing the data from focus groups and studying the process map (identifying the current state), the team determined that new entering students received at least fourteen separate mailings at their homes before arriving on campus. This excessive mailing was not only

costly to the college, but also students were inundated with the mailings. The result of the inordinate amount of correspondence conveyed the message that the mail was junk mail instead of important information for incoming students. The data and information obtained during the improvement initiative led the team to realize the root cause of the problem was too many mailings, but the symptom that arose was uninformed or confused students.

In the past, when a department needed to communicate with new students, it would send a letter without informing other departments. Today, the process of new student communication is very intentional and integrated. It is viewed from a systems perspective instead of from the departmental level. Students receive two mailings that contain the most vital information; therefore, students are reading the material instead of throwing it out because it seems like junk mail. This small change from isolated actions to integration solved the root-cause problem and also decreased mailing cost. The value of the Collaborative Model for Improvement is that it brings together data and information so individuals can see problems and find solutions from a systems view.

Conclusion

This paper discussed a hybrid improvement methodology specifically developed for higher education. The model engages faculty, staff, administration, students, and community professionals in a collaborative, systematic, and respectful way. The power of the model is that it first seeks to understand the current state, or how the process currently operates, before figuring out how the process should be operating. After the team participants gain an understanding of how each component is interrelated, the

team can effectively determine the flow of the new process. When processes are redesigned to flow smoothly and consistently, non-value-added activities are at a minimum, if present at all, fulfilling the goal to have processes that add value for the students, faculty, and staff.

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