12-2020

An Examination of Continuous Improvement in an Educational Organization

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ACKNOWLEDGMENTS

Dr. Billy Gira, Ed.D.

Individuals do not become who they are alone; it takes a village. Many people have played a role in my journey to becoming Dr. Billy Jacques Gira. I think of those individuals as I write this. Foremost, I want to thank my Lord and Savior, Jesus Christ. Without his guidance, wisdom, endurance, and strength, I would not have accomplished this achievement. Jeremiah 29:11 states, "'For I know the plans I have for you,' declares the Lord, 'plans to prosper you and not to harm you, plans to give you hope and a future.'" I looked to this verse when things became difficult.

To my wife, Lorannecie Gira, your countless support and sacrifices have been invaluable. At every stage of this journey, you provided me with what I needed to continue. During my time at Palm Beach State College, you stayed up with me as I wrote papers serving as my English support lab. During my time at Palm Beach Atlantic University, you listened and provided feedback. You sacrificed not having me at home, as I spent nights in the library completing projects. Most importantly, during my time at Lynn University, you provided emotional support for my goals and reminded me why I started this journey.

To Marie and Jacques Gira, I am honored to call you my parents. With the support of Jesus Christ, you have made me the man I am today. From a very young age, you instilled in me the importance of education so I would not have to endure the struggles you faced. I appreciate the sacrifices you made, leaving Haiti and coming to America for the benefit of your future children. I will continue to make you proud, and will carry the Gira name with honor and pride.

To my family, friends, and future generations, I hope I made you proud. Allow this accomplishment to serve as an example that anything is possible. No dream is too big. A special thank you to my godmother, her husband, my sister, my brother, and John M. LeJeune. As I reflect on my education, you played an instrumental role. I remember everything you have done and continue to do for me.

To all my educators, you each played a part in my success. A special thank you to: Mr. Willie Nelson of Westward Elementary; Mr. James Legros of Inlet Grove Community High School; Ms. Karin St. Pierre of Palm Beach State College; Dr. Jim Laub and Dr. Art Johnson of Palm Beach Atlantic University; Dr. James W. Guthrie, Dr. Jennifer Lesh, and Dr. Kelly Burlison of Lynn University .

And to Dr. Jennifer Martinez, it has been an honor to have you as a partner in my doctoral dissertation journey. You held me accountable, and your strengths complemented my weaknesses. I look forward to what else we will accomplish together.

Dr. Jennifer Martinez, Ed.D.

My doctoral journey has been nothing short of a dream come true—one that was made possible because of my parents. Mom and Dad, words cannot express my deepest gratitude for your unconditional love and unwavering support. From a young age, you taught me the power of hard work and determination. You instilled in me the power of education guided by the words of Anthony J. D'Angelo: "Develop a passion for learning. If you do, you will never cease to grow." My passion and love of learning continues to be the essence of who I am. I have watched you make sacrifices and ensure I had every opportunity for my education. From my bachelor's degree from Florida Atlantic University to my master's from Nova Southeastern to my

specialist's degree at Barry University, and now to my doctoral degree from Lynn University, I am the person I am today because of you, and for that, I will be eternally grateful.

To my daughter Olivia, I am blessed to be your mother. I recognize the sacrifices you made despite it not being your choice to do so. It is not easy for a mother to miss horse shows, lacrosse games, or arrive late for school performances. However, your constant smile and encouraging words—"Don't worry mom, you're always there in spirit"—are what kept me going. I hope I continue to live by example of what is possible in life. Always remember to love life, work hard, never stop learning, and follow your dreams. You are my sunshine, and because of you, my life is full.

To my colleagues, mentors, and professors, I am grateful that God brought you into my life. You have each played an integral role in helping me reach my dreams. A special thank you to the following:

To Mr. Jim Pegg, I am thankful to have called you my principal but even more blessed to call you my mentor and friend. You have shown me the power of great leadership and all that is possible when dedicating yourself to education. From you, I have learned the power and value in building relationships.

To Dr. Kelly Burlison, our dissertation chair, I am extremely thankful and appreciative of your unwavering support. You were always just a phone call or text message away. You helped take our big idea and turn it into digestible bites. You kept us focused through the finish line.

To Dr. Guthrie, I am in awe of your life experiences. I am a wiser person today because of you sharing that knowledge and experience with me. Your guidance and support has meant the world to me.

To Dr. Johnson, I am so grateful for the opportunity to meet you and work with you through this dissertation journey. Billy always sang your praises, and now I can do the same. Your support and ability to provide clarity was instrumental in the completion of our dissertation.

To Dr. Kathy Weigel, they say God brings people into your life at the right time for the right reasons, and who knew that meeting you at a quilting seminar would have led me to my doctoral degree. I am eternally grateful for having you in my life both as my professor and mentor. Your knowledge, experience in education, and passion for your students is unrivaled.

Lastly, to Billy Jacques Gira, words cannot express my deepest gratitude. I am honored to call you my colleague and friend. You have been the best dissertation partner anyone could ask for. Your strength, determination, and ability to always stay calm kept us focused on our goal. I love that you are a big picture thinker and that you will always pursue your dreams. You have been and will always be an inspiration to me.

ABSTRACT

Continuous improvement (CI) is used across organizations to solve problems. Since the 2010s, CI practices have gained popularity in education. When comparing business organizations' applications of CI practices to those in education, a gap is evident. Educational organizations create strategic plans, set long-term goals, implement initiatives, and measure overall outcomes in terms of student achievement. However, when attempting to build a high-performing culture and improve customer service between district departments and school centers, frequent and routine monitoring of customer experiences must occur.

This study examines current CI practices in a large, urban school district as they relate to improving the customer service of district departments. If CI efforts throughout the school district are systemically insufficient, the researchers seek to develop a process to assist district departments with ongoing progress monitoring measures to improve the customer service relationship between departments and schools.

This study's primary rationale evaluates the need for a CI tool assisting school district departments in implementing effective customer service strategies with school centers. Currently, district departments in a large urban school district receive feedback as part of the annual Department Quality Survey (DQS). Once data is analyzed, district departments utilize various methods of developing improvement plans, different strategic actions for implementation, different progress monitoring methods, and have limited feedback on departments' progress measures before the following year's survey is issued. The ongoing professional development and progress monitoring are missing from the PDCA cycle.

The researchers utilize the conceptual framework model of Lean Six Sigma (LSS) as a resource to develop a tool that remedies the problem. The LSS methodology supports the existing process improvement structures that a large urban school district currently employs. As part of a districtwide strategic plan to develop a high performance culture, the large urban school district administers the DQS. The survey of principals and school leaders examines schools' satisfaction levels concerning district department-provicded customer service.

Individual interviews with responses were recorded and transcribed for data analysis. The researchers used thematic analysis to identify, analyze, organize, describe, and report themes found within the data set (Nowell, Norris, White, & Moules, 2017). The study's participants provided feedback on the importance of personnel at both district and school levels. Team-building with the 'right' people was highlighted as an essential factor in sustaining improvement. Further, communication was found essential to outlining the work to be done, highlighting what is not working, and making necessary changes to improve.

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CHAPTER I:

INTRODUCTION

Continuous improvement (CI) is used across industries and organizations to describe a process or approach to problem-solving that represents an ongoing effort to improve an organization's outcomes (American Society for Quality, n.d.). In recent years, the implementation of continuous improvement practices have gained popularity in the field of education as school districts face the challenge of improving performance in America's urban, public schools. According to Best and Dunlap (2014), implementing a continuous improvement approach has proven successful within industries such as health care, manufacturing, and technology. However, while continuous improvement has become commonplace and well-documented in other industries, consistent implementation and improvements have yet to manifest in educational organizations. (Honig, n.d.; Park, Hironaka, Carver, & Nordstrom, 2013). As national reform efforts continue to grow, and accountability measures reveal minimal improvement in urban schools, not one specific problem-solving approach or initiative has produced a high-performing urban school system (Childress, Elmore, & Grossman, 2006). "Reformers fundamentally misunderstand how schools and districts work. As a result, they have focused their school improvement efforts on indirect structural changes and top-down governance reforms" (Honig, n.d.).

> Achieving excellence on a broad scale requires a districtwide strategy for improving instruction in the classroom and an organization that can implement it. Only the district office can create such a plan, identify and spread best practices, develop leadership capabilities at all levels, build information systems to monitor student improvement, and hold people accountable for results. One of the main reasons reform efforts haven't

scored any districtwide successes is they have neither helped the district office play this role nor created a viable substitute. To serve in this capacity, district offices will have to transform themselves. (Childress et al., p. 2)

Business leaders and corporate executives recommend district leaders run their districts more like business organizations. However, Childress et al. (2006) state, "Public school districts, however, are not business. The differences between the two are greater than their similarities" (p. 3). Public schools are required to serve all customers (students), and maintain accountability to diverse stakeholders (parents, school board members, and community members).

Challenges

There are challenges schools and district departments face: Work is often conducted in silos, policy demands for immediate results, data is not provided quickly enough for it to inform and change practice, and poor outcomes are viewed as individual failures rather than the result of a misaligned system (Park, Hironaka, Carver, & Nordstrum, 2013). Urban school districts must build similar continuous improvement systems, structures, and cultures to that of business organizations. Educational organizations must utilize continuously improving systems by implementing change both quickly and incrementally, and learn from experience while testing and refining strategies to produce better results (Best & Dunlap, 2014; Honig, n.d.).

Background

The evolution of continuous improvement dates back to quality improvement (QI) efforts made in the late 1700s with Eli Whitney's origination of the cotton gin assembly line. The desire to improve production, efficiency, and performance led the industrial world to greater profitability (Six Sigma Timeline, 2018). The QI movement defined quality through the value generation theory of production and suggested a scientific model as the epistemology for

improving quality (Koskela, Tezel & Patel, 2019). As noted by Koskela et al. (2019), Walter

Shewart, W. Edwards Deming, and Joseph Juran recommended QI as a process. "These

prescriptions were not presented in terms of theory, epistemology or ontology but through

models and verbal arguments" (Koskela, et al., 2019, p. 1388). Shewart, Deming, and Juran

further built upon QI process through the use of conceptual models, and laid the framework for

the basic tenets of the CI cycle (as cited in Koskela et al., 2019)., "There are multiple continuous

improvement models built on this same basic cycle, including Plan, Do, Study/Check, Act

(PDSA, PDCA); Six Sigma; (DMAIC); Lean; Results-Oriented-Cycle of Inquiry (ROIC); and

Data Wise" (Best and Dunlap, 2014, p. 2). The PDCA continuous improvement models use an

iterative process to move potential solutions into practice and allow for ongoing QI (Best &

Dunlap, 2014). This framework and CI practice grew throughout industry, health care, and

education. However, lack of a unified theory of QI and variations in process models has hindered

progress in CI (Koskela et al, 2019).

Conceptual Framework

Improving quality within organizations is essential to remain competitive in global

markets. Whether it is manufacturing, health care, service, or education, organizations focus on

quality output must not erode customer satisfaction levels (Sunder & Antony, 2018). According

to Sunder and Antony (2018), "Excellence in quality is not merely delivering the required output

to the customers, but a management strategy to enhance and align the processes in a way that

excellence becomes inherent part of the ways of working" (p. 857).

> Researchers and analysts from diverse disciplines have studied variables that influence
> the diffusion of innovations. In addition, numerous theories of behavioral change have
> been developed from a variety of perspectives—psychology, sociology, economics,

marketing, education organizational behavior, and others. In QI, theories abound

regarding ways to change the behavior of patients, clinicians, and organizations.

However, these 'parts' are not integrated into one overarching 'whole.' (Shojania,

McDonald, Wachter, Graham, & Grimshaw, 2004, p. 2)

Therefore, classic theories and models of change help identify potential determinants of change,

but do little to provide information on the best way to replicate, accelerate, or give direction for

operationalizing. "For this reason, QI implementers and researchers tend to be more interested in

planned change theory models which are specifically intended as guides, or to cause change"

(Shojania et al., 2004, p. 15).

Paradigm Shift

Over the past two decades, there has been a paradigm shift of viewing quality from the

manufacturing industry to the service industry. "There have been ceaseless efforts made by

researchers to comprehend that the quality perspectives across service sectors and higher

education is not an exception" (Sunder & Antony, 2018, p. 858). In the last decade, the

conceptual framework model of CI—known as Lean Six Sigma (LSS)—has gained popularity as

a rapid way to improve quality in the service and education industries. It is a blended version of

Lean and Six Sigma methods and tools addressing business processes, waste reduction, and

customer satisfaction improvement. "There is evidence in the literature highlighting the key Lean

implementation steps, along with the Six Sigma tools that can be used as support in achieving

quality excellence" (as cited in Sunder & Antony, 2018, p. 859). The integration of LSS aims to

target every opportunity for improvement within organizations. The DMAIC (define, measure,

analyze, improve, control) process of LSS is an improvement system for existing processes

falling below specification and looking for incremental improvement (SDPBC Continuous Improvement LSS, n.d.).

CI Practices in Education

In an effort to help leaders of urban school disctricts develop and implement improvement management models, members from the Harvard Business School and Harvard Graduate School of Education launched the Public Education Leadership Project (PELP) (Childress et al., 2006). PELP studied the successes and failures of 15 school districts in the United States. "Nine of the 15 districts partnered with PELP to test and refine the new management approaches" (Childress et al., 2006, p. 4-5). The PELP team created a framework for (1) developing an effective strategy that would improve student performance across an entire school district, and (2) for building an educational organization implementing that strategy in a sustainable way (Childress et al., 2006). PELP research highlights one fundamental flaw in previous initiatives aiming to enhance urban school improvement: the tendency to focus on a specific, structural solution. PELP also advises that reform efforts for urban schools must address all aspects of a district's organization (Childress et al., 2006).

> District offices are uniquely positioned to increase the ability of all schools, not just some, to perform at high levels. Specifically, district offices must carry out what we call the strategic function—that is, they need to develop a districtwide strategy for improving teaching and learning and to create an organization that is coherent with the strategy. (Childress et al., 2006, p. 18)

The PELP framework guides district leaders to understand how culture, systems and structures, resources, stakeholders, and environments reinforce the implementation of strategy across the organization, as well as how to keep track of all the moving pieces across an entire school system

(Childress et al., 2006). Utilizing a CI approach not only aligns the district's strategic goals, but it supports ongoing practice of QI within the educational organization.

Background of the Study

      In 2015, the School District of Palm Beach County swore in a new superintendent to establish an educational organization that functions with a culture of collaboration, high expectations, and accountability. From the first day on the job, the superintendent enlisted input from all stakeholders involved within the system to better understand what changes and improvements were necessary. Twenty-two community meetings were held, and an online survey was provided for those who could not attend in-person. Throughout the process, the newly hired superintendent acquired the feedback of 18,000 people on the capabilities and weaknesses of the district. With the information collected, the district developed a strategic five-year plan to outline four long-term outcomes, and to measure the progress of the organization. The four long-term outcomes were: (a) to increase reading on grade level by 3rd grade, (b) ensure high school readiness, (c) increase high school graduation rates, and (d) foster post-graduate success (School District of Palm Beach County, n.d.). Embedded within the strategic plan and its four long-term outcomes were four strategic themes that emerged as a guide to establish priorities, focus energy, and ensure a common path to CI. "These areas are centered on instruction, school climate, talent, and organizational culture" (School District of Palm Beach County, n.d.). The strategic themes include a focus on:

- effective and relevant instruction to meet the needs of all students;
- positive and supportive school climate;
- talent development; and

- high-performance culture (School District of Palm Beach County, n.d.).

According to Bangert (2019), Childress et al. (2006), and Park et al. (2013), utilizing a variety of improvement strategies can produce results as long as they focus on strengthening teaching and learning, have clear objectives, establish accountability, and create a culture of CI. However, educational organizations have long embraced cultures valuing efforts over results. "This type of culture breeds defeatism, which makes it difficult to implement districtwide strategies that depend on teachers, principals, and the district working together to critically examine data to improve their performance" (Childress et al., 2006, p. 26). Highlighting the significance of culture as a critical component of CI, this study will examine one of the current strategic themes used by a large urban school district to improve a high-performance culture.

District Strategic Plan

As part of a districtwide strategic plan to develop high-performance culture, large urban school districts administer the Department Quality Survey (DQS). This survey of principals and other school leaders examines the level of satisfaction schools feel they receive in relation to the customer service district departments provide. Once data is collected, a corresponding letter grade is assigned to each department. The purpose of the DQS is to align district initiatives with the theme of developing a high-performance culture within the organization.
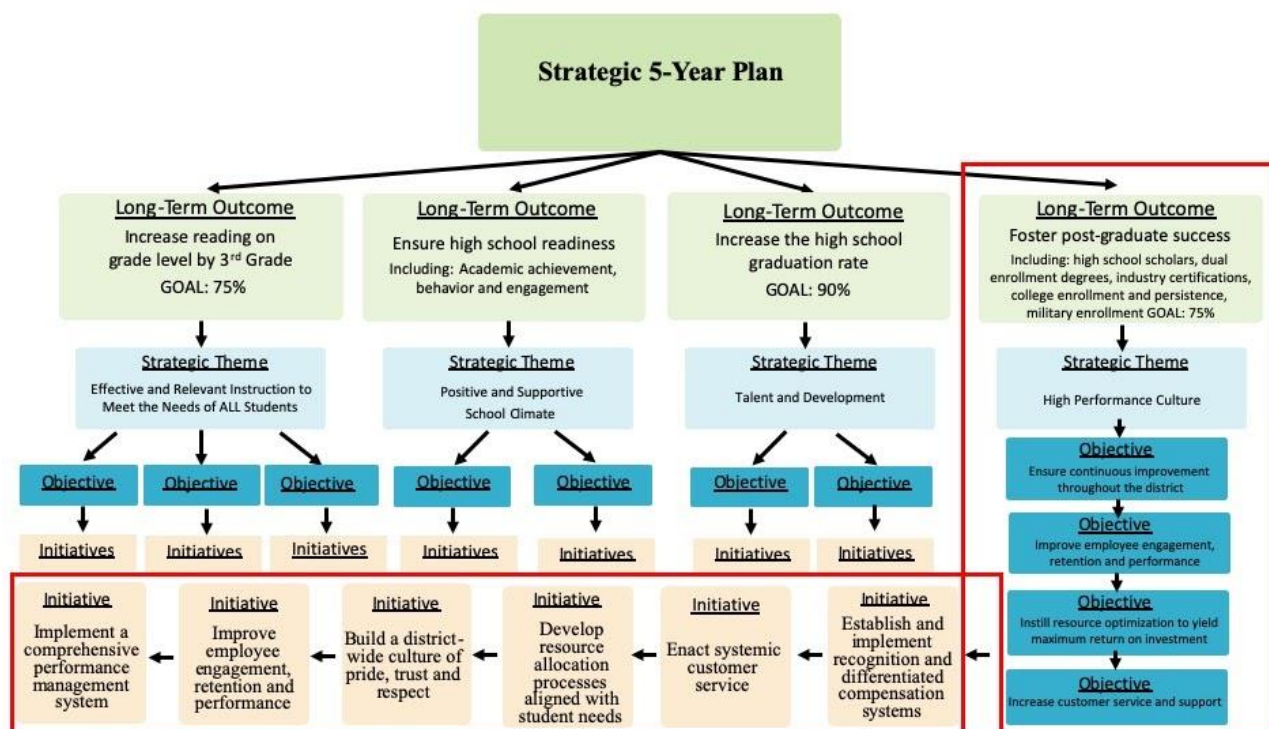
Figuer 1. Model of strategic five-year plan. Adapted from "School District of Palm Beach County 2016-2021 Strategic Plan." (n.d.). School District of Palm Beach County. https://www2.palmbeachschools.org/strategicplan/

Department Quality Survey

Each academic year, principals complete a survey that examines the school district department's customer service. Once data is collected and processed, the results are shared with the district departments, and the cycle is repeated the following year. The Plan-Do-Check-Act (PDCA) cycle is a form of CI that includes a four-step, problem-solving strategy that can be used to enhance procedures. School districts and their departments across the Unites States of America utilize various methods of developing improvement plans, different strategic actions for implementation, different progress monitoring methods, and have limited feedback on departments' progress measures before the following year's survey is given. The ongoing professional development and progress monitoring are missing from the PDCA cycle. If the

ultimate purpose of the survey is to meet the goal of CI, and all departments are receiving feedback without instructions on how to get better, are the districts' departments being set up for failure?

Significance of the Study

This study aims to ensure there is an achievement of CI over time, which impacts improved product quality, simplified work processes, cost reduction, improved customer satisfaction, and less wastage of resources. Educational organizations struggle to implement CI models as successfully as other industries currently do. According to Park et al. (2013), "[s]trategic plans fall short because they are nearly universally focused on measuring outcomes, and spend little time identifying processes, devising means to measure them, or attempting to situate outcomes and processes within a system" (p. 6). Even when special attention is given to the work processes, they are given in vague terms and do not articulate how the processes of work are impacted (Park et al., 2013). Data and analytics may be used as an attempt to measure changes; however, it is reporting lagging outcomes that inform the decision to change, not the actual work practice (Park et al., 2013). Such CI practices have resulted in the inability to measure process improvement while directly impacting long-term goals and planning (Zmuda, Kuklis, & Kline, 2015).

The purpose of the district strategic plan is to guide the educational organization to reach four specific long-term goals and communicate the goals and vision to all stakeholders (School District of Palm Beach County, n.d.). It outlines strategic initiatives as a means of achieving those goals while utilizing CI strategies across the entire school system. The CI process directly impacts the performance of the organization. This study will closely examine the district's strategic theme focusing on developing a high-performance culture; specifically, highlighting the

initiatives that aim to: (a) implement rigorous project management structures, protocols, and processes; (b)build a districtwide culture of pride, trust, respect; and (c) enact systemic customer service (School District of Palm Beach County, n.d.).

The large, urban school district selected in this study aims to improve customer service relationships between district departments and the school center. The departments maintain the goals and objectives of the strategic five-year plan while implementing improvement initiatives; however, monitoring tools measuring their on-going performance are lacking. Compared to other industries utilizing CI, such as health care, "without objective indicators of performance, it is difficult to know how effective an initiative or program is improving or worsening" (Forman & Nagy, 2006, p. 97). The annual Department Quality Survey (DQS) measures schools' customer satisfaction with the district departments as an overall score for the year (School District of Palm Beach County, n.d.). This does not provide departments with opportunities to adjust their initiatives or improve the work they are providing to the schools in order to ultimately improve their customer service relationship. According to Schwager and Meyer (2007), measuring customer satisfaction does not help the department with how to achieve it. "Customer service satisfaction is essentially the culmination of a series of customer experiences or, one could say the net result of the good ones minus the bad ones" (Schwager & Meyer, 2007, p. 6). In order to achieve a level of customer service satisfaction, an organization or department must deconstruct the customer's feedback into its component experiences.

Rationale for the Study

Compared to the CI practices used in business organizations, a gap in educational organizations' CI processes is evident. Educational organizations create strategic plans, set long-term goals, implement initiatives, and measure overall outcomes in terms of student

achievement. However, when attempting to build a high-performing culture and improve customer service between district departments and school centers, monitoring frequent customer experiences must occur frequently. This, again, allows departments to receive feedback, adjust and improve the work, and build a rapport with the school center. The educational organization must utilize a database of locating the correct and accurate information for the employees to facilitate to the customers (Anderson & Kumari, 2009). Failure to focus on customer service within the education industry results in a decrease in employee engagement, lowered productivity, reduction in employee retention, and lack of proper customer experience.

Purpose of the Study

The purpose of this study is to examine the current practice of CI in a large, urban school district as it relates to improving the customer service of district departments. If CI efforts throughout the school district are systemically insufficient, the researchers seek to develop a process to assist district departments with ongoing progress monitoring measures to improve the customer service relationship between departments and schools. With the absence of frequent feedback from the schools, district departments are not effectively monitoring, adjusting, or improving strategic initiatives aimed to help schools and improve customer service. The district uses annual feedback from school principals on the quality of department services. In an effort to improve customer service operations and develop a high-performance culture utilizing the PDCA cycle, more periodic measures must be implemented to ensure departments utilize feedback to adjust and align their efforts.

Research Questions

Given the success of CI practices in business organizations, it is promising to implement a similar approach in public education. Although schools and districts are slower to fully

implement CI practices, research supports the PDCA cycle as a "highly reliable" model to improve performance. To assist district departments in their strategic initiatives, the researchers seek to answer the following questions:

Research Question 1: What tools and/or resources can be provided to departments to review the DQS data and create department action plans?

Research Question 2: What processes can be put in place to ensure that departments are monitoring customer support efforts throughout the year?

Research Question 3: What methods can district leadership utilize to encourage employees to establish and maintain a CI culture?

Assumptions

The need for district departments to improve their customer service within the school district is evident based on the feedback the district received from its stakeholders in the creation of its strategic five-year plan's initiatives. Focusing on the strategic theme of developing a high-performance culture, the researchers assume individual departments support the district practice of continuous improvement by utilizing the PDCA cycle:

- **Plan**: The department studies areas/domains from the DQS, identifies a problem that needs to be solved, elaborates potential solutions, and develops an action plan.

- **Do**: The department implements the action plan, collects data on the interventions (process improvement) being used, and records the data.

- **Check**: The department gauges the success of the intervention (process improvement) by comparing the baseline data with the new data and documents its findings.

- **Act**: The department determines what needs to be adapted, abandoned, or newly adopted to ensure continuous improvement (Best & Dunlap, 2014).

The examination of the research demonstrates a gap in the CI practice of business organizations and educational organizations. School districts undertaking major improvement projects to keep

apace of accountability measures frequently include more goals and action items than can be

realistically implemented (Best & Dunlap, 2014). Allowing district departments to identify

specific goals based on the feedback of the DQS is critical for CI process. Then, the organization

must test possible solutions utilizing ongoing progress measures, thereby allowing school

districts to work on many strategic goals over time while ensuring the CI process is iterative and

cyclical (Best & Dunlap, 2014). It can be assumed a CI planning and monitoring tool will better

equip district departments in the design of department improvement strategies, help implement

the appropriate action steps, check and monitor the interventions, and adjust or improve

interventions.

Definitions of Terms

This section provides words, key terms, and definitions used frequently throughout this

dissertation. The definitions provide information and bring clarity to contextual concepts used in

the study.

- **Continual improvement:** Ongoing effort to improve products, services, and processes with regular stops in the process. W. Edwards Deming uses this term continual to signal the importance of the stop in the process, in line with his Plan, Do, Check, Act (PDCA) methodology. This allows for regular check and adjust in the improvement process (Monnappa, 2019).

- **Continuous improvement (CI):** Sometimes used synonymously with continual improvement and quality improvement, CI is the ongoing improvement of products, services, or processes through incremental and breakthrough improvements. CI is an ongoing effort to improve products, services, or processes (Bangert, 2019; Bhuiyan & Baghel, 2005; Caffyn, 1999; Park et al., 2013.).

- **Department Quality Survey (DQS):** The tool used to provide district departments feedback on their level of customer service to schools (School District of Palm Beach County, n.d.; Fulton-Holland Education Services Center, n.d.).

- **Improvement science:** A discipline of continuous improvement [based on Deming's PDS(C)A cycle] that relies on rapid tests of change to guide the development, revision,

and continued fine-tunning of new tools, processes, work roles, and relationships (Yurkofsy, 2015).

- **Kaizen:** A Japanese business philosophy of constant, incremental improvement; synonymous with continuous improvement. Kaizen goes beyond the focus on quality products and focuses on the broader concept of improving people and processes (Imai, 1986; Mahon, 1991).

- **Lean Six Sigma:** A combination of two popular CI methods—Lean and Six Sigma—that pave the way for operational excellence (Bendell, 2006).

- **PDS(C)A cycle**: A systematic process for gaining valuable learning and knowledge for the continual improvement of a product, process, or service. It is also known as the Deming cycle/wheel or Shewhart cycle (Bangert, 2019).

- **Process improvement (PI):** The proactive task of identifying, analyzing, and improving upon existing business processes within an organization for optimization and to meet new quotas or standards of quality (Zmuda, Kuklis, & Kline, 2015; Harvey, 2004).

- **Six Sigma:** A disciplined, data-driven approach and methodology for eliminating defects (driving toward six standard deviations between the mean and the nearest specification limit) in any process—from manufacturing to transactional and from product to service (Stamatis, 2004).

- **Strategic plan:** The process of documenting and establishing the direction of your organization—by assessing the strategic function of the organization and developing a strategy that carries the organization in the direction it wishes to go (Childress et al. , 2006; School District of Palm Beach County, n.d.).

- **Total quality management (TQM):** A philosophy that makes quality the driving force behind leadership, design, planning, and improvement initiatives. TQM requires the help of eight key elements: ethics, integrity, trust, training, teamwork, leadership, communication, and recognition (Padhi, 2010).

- **Urban school district:** Schools located in or near urban centers, primarily serving poor and ethnically diverse students in densely populated areas (IGI Global, n.d.).

- **Quality improvement (QI):** A term often used in health care, it can be used synonymously with continuous improvement/continual improvement. QI aims to change behavior through improved processes using a PDC(S)A cycle and produce the desired results (Koskela, Tezel & Patel, 2019).

CHAPTER II:

LITERATURE REVIEW

This chapter provides a comprehensive review of related literature focusing on continuous improvement (CI) within organizations and its implication in developing high-performance outcomes. The literature discusses the historical context of continuous improvement, theory, and frameworks that exist, and its impact on learning and innovation. Research reveals that CI is used across industries.

Continuous Improvement

CI is defined as an ongoing, never-ending change that concentrates on enhancing the efficiency and effectiveness of an organization to meet its objectives and policy. It is not constrained to quality initiatives. Enhancements in business strategy, customer, personnel and supplier relationships, and business results are subject to CI. Byuiyan and Baghel (2005) define continuous improvement as a culture of maintained improvement, focusing on waste elimination in all processes and systems in an organization, adding that it entails working as a group to make developments without the need for substantial capital investments. Martichenko (2004) argues that CI concerns improvements in organizational improvements, and focuses on the progressive nature of CI. Other researchers like Bessant and Francis (1999), along with Hyland, Mellor, O'Mara, and Kondepudi (2000), focus on the systematic inclusion of all workers in an organization while defining CI. CI is also perceived as the potential of an organization to outdo its competitors through innovation and engagement of employees (De Jager et al., 2004). According to Boer et al. (2000), CI refers to a planned, systematic, and organized process of progressive, company-wide, and incremental change of the prevailing practices focused on enhancing the performance of an organization. From these definitions, it is evident that

improvement practices are based on process models that are progressive in nature, incremental in nature, organizationally broad, and include coordinated processes. Bhuiyan and Baghel (2005), suggest CI practices, as well as the specific tools and techniques utilized by the organization, directly impact the ongoing cycle of improvement and the overall quality of the organization.

Models of Change Improvement

According to Shojania et al. (2004), a conceptual model is action-oriented with process steps to provide an approach. In CI, there are several models used to design quality improvement strategies, ultimately serving as conceptual models, conceptual frameworks, and conceptual systems that represent global ideas about a phenomenon. "They are used to clarify, describe, and organize ideas, and could be viewed as the top level of the hierarchy" (Shojania et al., 2004, p. 8). It is important to note, however, that conceptual models/frameworks vary in their levels of abstraction and their continuum of hierarchy. The boundaries between conceptual models, frameworks, and theories sometimes overlap, and can often make it difficult to clearly differentiate among them within the hierarchical structure (Shojania et al., 2004).

Quality improvement models are rooted in change model/theory utilizing a set of logically interrelated concepts that explain, in a systematic way, the means by which planned change occurs. "These models predict how various forces in an environment will react in specified change situations and help QI implementers control variables that increase or decrease the likelihood that change will occur" (Shojania et al., 2004, p. 16). In this context, change occurs as a deliberate effort within groups that vary in size and setting. "Those who use planned change models may work with individuals, but their objective is to alter ways of doing things in social systems" (Shojania et al., 2004, p.16).

Historical Perspective

Improvement programs trace back to the early 1700s, when industrial assembly was looking to improve employee-driven results and reward positive changes within the organization (Bhuiyan & Baghel, 2005). There was much attention given to scientific management, which involved developing methods for managers to analyze and solve production problems to achieve production rates and labor standards (Bhuiyan & Baghel, 2005). During World War II, the U.S. federal government started training programs that focused on "Training Within Industry" to improve industrial output on a national scale. Management experts like Deming, Juran, and Gilbreth developed job method training guidelines and CI models to improve quality control and organizational effectiveness.

According to Deming, the key to practice constant improvement was to imagine the manufacturing process as a whole, rather than as a system made up of incongruent parts (Monnapa, 2019). This philosophy gave birth to what is known as the Deming Cycle. The term "cycle" refers to the collective, ongoing efforts of the organization as a whole. The cycle is the basic tenet of the CI process model: Plan, Do, Study/Check, Act (PDS(C)A).
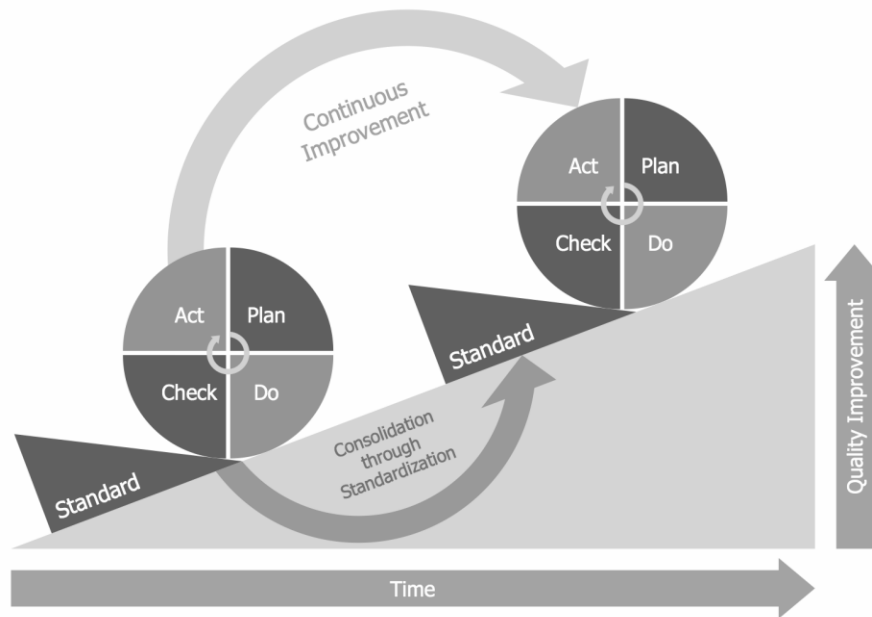
Figure 2. Continuous improvement process cycle as based on the Deming Cycle. Adapted from "Pioneers of Project Management: Deming vs Juran vs Crosby." Monnappa, A. (2015). *PMP Concepts,* p.4.

As quoted in Best and Dunlap (2014), the four stages of the cycle include:

1. **Plan:** A continuous improvement team studies a problem that needs to be solved, collects baseline data on that problem, elaborates potential solutions to that problem, and develops an action plan.

2. **Do:** The team implements its action plan, collects data on its intervention, and records developments.

3. **Study/check:** The team gauges the success of the intervention by comparing baseline and new data, analyzes results, and document lessons learned.

4. **Act:** The team determines what to do with the results. Depending on the success of its intervention, the team may choose to adopt, adapt, or abandon its tested solution.

"There are multiple continuous improvement models built on this same basic cycle, PDS(C)A;

Kaizen; Six Sigma (DMAIC); Lean; Results-Oriented-Cycle of Inquiry (ROCI); and Data Wise"

(Best & Dunlap, 2014, p. 2).

Kaizen

Kaizen is the Japanese term for CI. The principle of improvement is a concept that means invariant, additional, positive change, which goes beyond the production of quality products (Bhuiyan & Baghel, 2005). "Imai (1986) proposes that there are three types of *kaizen*: management, group, and individual-oriented *kaizen*" (Bhuiyan & Baghel, 2005, p. 766). Management-oriented *kaizen* is considered to be the most important as it focuses on the 'whole' organization's strategy and involves everyone in the company. Group-oriented *kaizen* requires teams of employees (quality circles) to find and solve day-to-day problems without help from management. Individual-oriented *kaizen* is derived from the premise of bottom-up design, which requires the individual to make a recommendation to the problem at hand (Bhuiyan & Baghel, 2005). The concepts of *kaizen* also accommodate improvement in the people involved, products being produced, and the process of production. While people think improvement and innovation are the premise of *kaizen*, the core function is the practice of constant, gradual, and incremental changes. This is evident in the production of new products, and the advancement in quality and quantity of existing products. Research reveals that educational organizations are beginning to implement *kaizen* based upon the three different orientation types.

Quality Mindset

At the forefront of the *kaizen* practice, companies and organizations must consider the quality of the services and products. Quality products are to be produced by incorporating quality people and quality processes. This shift in product and process improvement led to a change in educational organizations, as many educators only focused on the end product improvements like test scores. Process strategies impact improvement overall. Focusing on just the end result does not improve the incremental steps used to achieve true success (Duffy, 2013). For high

achievements in marks, examiners are acquainted with repeating what they have been doing, contrary to what *kaizen* states. It tries to explain that when one way or style of doing something leads to failure, it should be changed to avoid wastage of time.

In traditional educational organizations, repeating the same style of learning or instructional practice to ensure high achievement on test scores does not utilize improvement process strategies. For quality to be recognized in the education system, the curriculum must be narrowed for every learner to master it. However, this will help to implement promising improvement processes on a large scale, avoiding expansion of curriculum and time in school, which adds no improvement at all. This can be easily achieved by dismantling large student groups that are staffed by one lecturer. This large group makes the quality of content delivery to students less effective as the level of concentration is not uniform to all students (Bolcar, 2014).

Moreover, such achievements need narrowing down to specific topics such as learning and teaching styles to improve instructional mechanisms and QI of students. The instructional process using well grouped and organized students offers a chance for improvement as a gauge in individual students, and the self-auditing of each student. This gives learners the benefit that they are given an opportunity and freedom to discover new things.

Toyota

One business organization that has successfully implemented *kaizen* to improve its productivity is Toyota, using the Japanese CI approach to ensure high-quality work, elimination of waste, and improved efficiency in both procedures and equipment. This improvement helps by increasing productivity at the worksite. Standardized work includes continuous follow-up of procedures allowing employees to identify problems quickly. This company's improvement system humanizes the worksite, and encourages and empowers employees to identify areas of

improvement and suggest possible solutions. It is the individual's responsibility to adopt an improved standard procedure and eliminate waste around the local environment and its surroundings.

Six Sigma

Six Sigma is a measurement-based strategy used for continuous process improvement to improve work processes and increase customer satisfaction. "Customer service satisfaction is established through the knowledge of the customer, overall customer service systems, responsiveness, and the ability to meet all customer requirements and expectations" (Stamatis, 2004, p. 23). Six Sigma utilizes the basic PDS(C)A approach with subtle variations in a breakthrough strategy (Stamatis, 2004). The QI process is based on the approach of minimizing the variations that are present in a process to obtain consistent outcomes with low defects (Bendell, 2006). According to Stamatis (2004), the lean six sigma methodology has three broad levels of objectives:

- **Problem-solving**: fixes of specific areas;

- **Strategic improvement**: targets of key strategic or operational weaknesses or opportunities; and

- **Business transformation**: a significant shift in how the organization works (culture change).

The different phases of the Six Sigma CI model aim at initiating a change in the process for improvement. "In its entirety, the approach is the define, measure, analyze, improve and control (DMAIC) cycle" (Stamatis, 2004, p. 31).

Six Sigma DMAIC Process
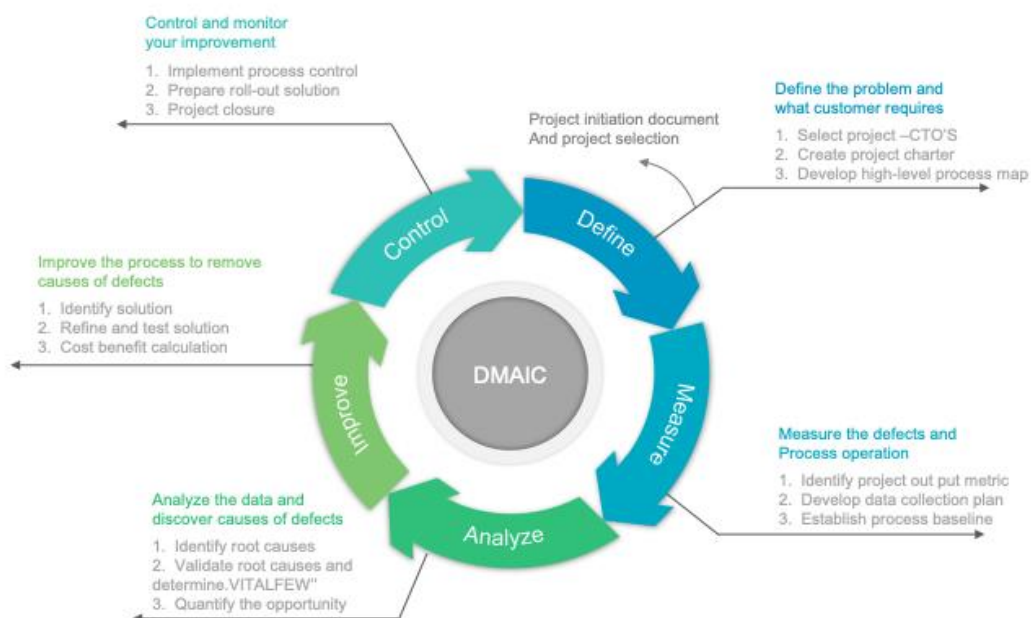
Figure 3. Six Sigma's DMAIC process. Slidegeeks Six Sigma Roadmap. (n.d.). https://www.slidegeeks.com/marketing/product/six-sigma-dmaic-roadmap-ppt-icon.

Defining the problem regarding the set objectives in the process aims at summarizing the project plan. This phase not only focuses on identifying the problem but also the goals to be achieved in the CI process, as well as the internal and external needs of the customer (Vavra, 1997). Defining the problem also requires a collective responsibility and contribution from all stakeholders in order to move the organization forward.

Identifying the cause of the problem involves collecting data in areas within the organization that are not functioning efficiently. Data is then analyzed to determine the current process capability using tools like flowcharts. Analyzing data helps identify the root cause of business inefficiency and gaps within the improvement process. The improvement of the process is the only determinant of the correct identification of the root cause of the problem. The correct

root cause analysis helps in curing the numerous defects within the process, thus natural elimination of the possible causes of deviation from the process (Vavra, 1997).

The identification and implementation of the suggested strategies improve the process by identifying the action plan, specifying the solution to be implemented, and whom to implement the plan. The implementation plan helps enact the process by mitigating risks involved and preventing the process from achieving the set goals, which may include customer satisfaction. In this phase, suggested implementation actions are first tested for effectiveness before being fully implemented. The control phase in the Six Sigma process's CI plan helps the process by generating a monitoring plan aimed at checking the performance of the system upon the implementation of the actions. This monitors the procedures of a given system for it to maintain the required standards (Vavra, 1997). The control phase helps monitor the progress of the organization by verifying the benefits and profit growth.

Amazon, Inc., uses Six Sigma as their CI model. Six Sigma has transformed the business into the leading, online shopping company, worldwide. The organization is focused on consumer-focused innovation and meeting the service needs of its customers while making the online shopping process as simple and pleasurable as possible. The Six Sigma strategies help Amazon find solutions to problems and generate service value for its customers. The company uses the five phases of Six Sigma to identify and analyze critical inefficiencies within the organization. The Six Sigma practice led to the involvement of third-party sellers offering products on the Amazon website, and provides consumers with a wide range of products. The company also added a money-back guarantee for goods returned within a set timeframe (Lindič & Marques da Silva, 2011). These two suggestions were made during the initiation of the use of

the Six Sigma CI model and have significantly helped Amazon in its business operations, allowing it to emerge as the leading online retailer on a global scale.

Lean Six Sigma

Lean Six Sigma (LSS) is a blended, hybrid model of Lean manufacturing and Six Sigma strategies. It aims to improve the quality of process performance while improving the learning speed of traditional Lean learning. In the last decade, the LSS conceptual framework model has gained popularity as a rapid way of improving quality in the service and education industries. "There is evidence in the literature highlighting the key Lean implementation steps, along with the Six Sigma tools that can be used as support in achieving quality excellence" (Sunder & Antony, 2018, p. 859). The integration of LSS aims to target every opportunity for improvement within organizations. LSS utilizes the DMAIC (define, measure, analyze, improve, control) process of improvement for existing processes falling below specification and looking for incremental improvement (SDPBC Continuous Improvement LSS, n.d.). According to Robert Tripp of iSixSigma (n.d.), "Lean Six Sigma drives change in an organization. It inspires people to look at their processes differently—through the data-savvy lens of waste awareness—and to discover, characterize, and control their processes" (p. 1). LSS serves as a framework that provides change management tools that facilitate necessary change initiatives within an organization.

Sunder and Antony (2018) conducted a research study deploying a Lean Six Sigma conceptual framework model in higher education institutions (HEIs). Their work utilized the basic tenets of Lean Six Sigma (DMAIC) along with a focus on leadership skills within the organization. "According to Wickens (1999), it is a common mistake to attempt any reengineering practice without the requisite leadership and could have tremendous negative

effects" (Sunder & Antony, 2018, p. 864). LSS leadership readiness is essential within any

organization for CI to improve process and communication to occur down through the

organization. Sunder and Antony's research findings reveal LSS applicability in HEIs using a

six-stage conceptual framework. "The framework comprises of six steps, very similar to that of

LSS deployment in other industries with customisations to suit the HEIs" (Sunder & Antony,

2018, p. 864).
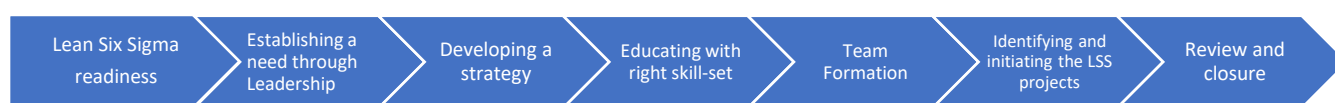
Figure 4. LSS model for HEIs. "A conceptual Lean Six Sigma framework for quality excellence in higher education institution." Sunder, V. & Antony, J. (2018). *International Journal of Quality & Reliability Management, 4,* p. 864.

The LSS model promotes structured problem-solving and practice-based experiential learning to

deploy QI and excellence. Sunder and Antony (2018) propose their model can be used for

improving both the academic and administrative processes of HEIs. "Lean Six Sigma is a culture

building vehicle for imbibing quality Excellence. It needs to be looked as a mindset and a

strategic initiative rather than a tactical gadget" (Sunder & Antony, 2018, p. 864). The process

strategies provided by the hybrid LSS methodology prove to be more effective in the service

industry than that of just Lean manufacturing strategies. "The synergies that Lean, when used

along with Six Sigma methods, will bring are not only an effective toolkit for improving the

quality of services, but also acts as a management strategy for quality excellence" (Sunder &

Antony, 2018, p. 870).

Continuous Improvement Uses

CI practices have evolved over time. From traditional industry and manufacturing to health care organizations, CI systems focus on production, waste reduction, product quality, and process improvement to develop comprehensive, systematic methodologies that organizations can implement (Bhuiyan & Baghel, 2005). CI is utilized in various types of organizations due to the many strategic approaches it provides. While individual CI programs help improve organizational operations in many aspects, they are not necessarily useful in solving all issues. To overcome the weaknesses of one program or another, more recently several companies have blended different CI initiatives, resulting in hybrid methodologiey to meet the organizations' individual needs (Bhuiyan & Baghel, 2005). However, review of the research literature reveals that all organizations utilizing any CI practice do so by implementing the core tenets of the PDS(C)A improvement cycle.

Business Organizations

In most business organizations, CI is crucial for survival in the industry. For a business to continue to be successful, it cannot be satisfied with the status quo. It must always focus on new, innovative practices to improve the level of performance. In the business sector, CI is used to empower personnel to handle issues that directly affect them and steadily enhance the efficiency of their work processes (Teeuwen, 2018; Azzemou & Noureddine, 2018). CI allows employees to identify and continue effective practices. Through CI, employees are engaged in decision-making, allowing them to feel they are contributing to part of the organization (Teeuwen, 2018).

Business organizations use CI to lower employee turnover. Turnover in business organizations is costly as it demands financial resources for recruitment, hiring, and training for new employees (Woliński & Bala, 2018). In most organizations, the training of an employee to

adapt to daily routines can be time-consuming. As a result, organizations have adopted CI approaches to developing organizational culture, ultimately increasing the involvement of employees while also reducing turnover rates. Workers who actively engage in the improvement of an organization acquire a sense of accomplishment and pride. This practice builds a sense of belonging and connected culture (Woliński & Bala, 2018).

Benefits of Continuous Improvement

CI practices in business organizations leads to the design of more competitive products and services. Process and product improvements align with organizational goals, thus leading to improved outcomes. Business organizations systematically using CI approaches to improve their business invariably enhance the value of its services and products. This utilization results in more refined and economically competitive offerings.

Within business companies, CI also enhances customer service experiences (Farrington, Antony & O'Gorman, 2018). Customer service experience goes beyond the primary measure of customer satisfaction; rather, it looks at the process the company uses to achieve it (Schwager & Meyer, 2007). Enhancements in customer service establish a culture of on-going improvement strategies that go beyond just the quality of the product and look at the business organization as offering a service. CI avails a framework for recognition of customer values and minimization of waste within the value delivery process (Farrington, Antony & O'Gorman, 2018). This customer value recognition results in the improvement of products and services that anticipate the demands of customers even before they understand the desires themselves.

Businesses organizations use CI practices to provide and establish a proactive learning culture (Woliński & Bala, 2018). The CI culture challenges personnel, as well as managers, to move beyond their comfort zones by attempting new things. Moreover, it offers organizations a

framework for the realization of the next level of distinction (Azzemou & Noureddine, 2018). This framework creates a culture of continuous learning and gives value to employee participation. Teeuwen (2018) states that a business organization utilizing CI is never satisfied with present accomplishments. In the long run, the best way to sustain and maintain a CI culture is to use the cycle as an ongoing practice.

Educational Organizations

For many years, school districts have attempted to apply a CI approach to improving student performance in America's urban schools. In education, CI can refer to a school, district, or other organization's ongoing commitment to QI efforts that are evidence-based, integrated into daily work, contextualized with a system, and iterative (Park et al., 2013). Schools and learning institutions implement CI models to improve teaching and learning. However, on a broad scale, these efforts have failed to improve educational systems as a whole. Currently, most of the approaches and efforts are aimed at assisting teachers and students; and while some efforts have made slight impacts on individual schools, they have not produced a single high-performing school system (Childress et. al, 2006). According to Best and Dunlap (n.d.), CI is a promising approach that public education can use on its path to improved outcomes. CI has already been used successfully in fields like health care, manufacturing, and technology. However, "schools and districts have been slower to incorporate continuous improvement into their practices, and few are referred to as 'highly reliable'" (Park et al., 2013, p. 3). The only way for QI to occur on a continuous cycle would be for the CI practice to be embedded in individuals' day-to-day work. CI cannot be a separate initiative or intervention; rather, it must be implemented parallel with others (Park et al., 2013). Utilizing a critical lens, educational organizations must identify problems of practice as products and elements of the more extensive system. "Rather than view

organizational success or failure as the product of a non-replicable craft, results are viewed (and situated) as natural outflows of the current design of the system" (Park et al., 2013, p. 5). Within the educational system, Park et al. (2013) characterize three types of organizational structures that engage in CI:

- those focused on instructional improvement at the classroom level;

- those concentrating on system-wide improvement; and

- those were addressing collective impact (p. 3).

Through case studies and research analysis, Park et al. (2013) highlight six common themes that characterize all three types of organizational structures:

- **Leadership and strategy**: Leaders of CI organizations bring a learning mindset to the work practice while focusing on establishing disciplined processes for developing, testing, evaluating, and improving its core work.

- **Communication and engagement**: Effective communication strategies are utilized to engage all stakeholders. Organizations apply a 'systems-thinking' approach breaking down the silos and bridging individuals across the system.

- **Organizational infrastructure**: Building on 'systems-thinking,' organizations set up structures across core processes around specific goals, which promote interaction across different parts of the organization.

- **Methodology**: CI organizations utilize a formal methodology [e.g., PDS(C)A, Lean, Six Sigma, Results-Oriented-Cycles of Inquiry (ROCI), and Data Wise]. The type of methodology an organization chooses depends on its goals, purpose, the focus of the inquiry, and the level at which improvement is targeted.

- **Data collection and analysis:** The organization uses a measurement tool to collect data and track its progress towards goals. Most education agencies collect student outcome data on state achievement tests. However, if the organization is looking to make system-wide improvements, district departments need other data measures and systems to collect process improvement information.

- **Capacity building:** Organizations must invest time and energy in training staff and build a culture of practice in the day-to-day work that supports the approach.

Some of these strategic themes are evident in urban districts' improvement planning. However, some yearly strategic plans espouse organizational goals and targets, layout a general vision of work, and are often labeled as a 'continuous improvement strategy' (Park et al., 2013). The gap in the research findings and organizational practice occurs in the implementation of the continuous cycle of improvement. "These strategic plans fall short because they are nearly universally focused on measuring system outcomes, and spend little time identifying processes, devising means to measure them, or attempting to situate outcomes and processes within a system" (Park et al., 2013, p. 6). Systems must utilize the improvement process cycle in its entirety, paying careful attention to the emphasis on data and measurement that requires systems-based adjustments to ensure active inquiry and progress (Park et al., 2013).

Summary

The literature reveals how business and health care organizations are successfully implementing CI practices through the ongoing implementation of the PDCA cycle. The researchers have found that the conceptual framework of Lean Six Sigma has been used effectively in business and HEIs. However, the researchers have yet to find an example of where a large, urban school district has successfully engaged in a CI practice that has resulted in sustained QI of customer service among its departments. As part of the CI cycle [Plan, Do, Study (Check), Act], research highlights the importance of checking the improvement strategy through data collection to either confirm that improvement strategies are effective, or that the improvement strategy needs to be adjusted. An example of this common theme is evident among organizations that consistently use feedback from customers, patients, and stakeholders to ultimately improve the effectiveness of the organization. Using Sunder and Antony's (2018) framework of LSS, including the DMAIC cycle along with the six-step framework (involving

leadership readiness of LSS), it is believed that a similar framework would promote QI in a large, urban school district.

Additionally, research conducted among educational organizations reveals that CI practices aimed at school improvement tend to focus on specific, structural solutions. Researchers advise that reform efforts for school districts must address all aspects of a district's organization (Childress et al., 2006). Utilizing a CI approach not only aligns the district's strategic goals but supports the ongoing practice of QI within the educational organization. The CI cycle provides a framework guiding district leadership to incorporate the departments' systems and structures, resources, stakeholders, and environments to reinforce the implementation of strategy across the organization, as well as how to keep track of all the moving pieces across their entire school system (Childress et al., 2006). The literature examined in this study reveals the CI cycle being utilized at the school center in an effort to improve student achievement. However, research has yet to reveal findings on districtwide CI at the department level. District organizations are falling short in utilizing ongoing progress measures as part of the CI cycle [PDS(C)A] to improve customer service practices across the entire school system.

CHAPTER III:

METHODOLOGY

Introduction

The implementation of continuous improvement (CI) practices in education is gaining

popularity among America's urban, public schools. Although other industries like

manufacturing, health care, and technology have demonstrated successful implementation

practices, there continues to be a gap in how this work manifests itself in education (Park et al.,

2013). Urban, public schools must develop a broad scale, districtwide strategy for improving

their CI practices. District departments must align their improvement practices to the districts'

strategic goals while implementing change both quickly and incrementally, and while testing and

refining strategies to produce better results (Best & Dunlap, 2014).

Rationale

This study's primary rationale is to evaluate if there is a need for a CI tool that will assist

school district departments in implementing effective customer service strategies to school

centers. Currently, district departments in a large, urban school district receive feedback as part

of the annual Department Quality Survey (DQS). Once DQS data is analyzed, district

departments enact various methods of developing improvement plans, different strategic actions

for implementation, different progress monitoring methods, and have limited feedback on the

department's progress measures before the following year's survey. Ongoing professional

development and progress monitoring are missing from the PDCA cycle.

Conceptual Framework

The researchers will utilize the conceptual framework model of Lean Six Sigma (LSS) as

a framework to develop a tool that can remedy the problem. The LSS methodology supports the

existing process improvement structures that a large, urban school district currently employs. As part of a districtwide strategic plan to develop a high-performance culture, the large urban school district administers the DQS. This survey of principals and other school leaders examines the level of satisfaction schools feel they receive concerning the customer service that district departments provide. The purpose of the DQS is to align district initiatives with the theme of developing a high-performance culture within the organization. If the ultimate purpose of the survey is to meet districts' goals of CI, and all the departments are receiving feedback without instructions on how to get better, then an improvement cycle methodology like LSS and the DMAIC cycle must be used by departments within the organization to improve the processes and tools they use to support schools.

Proposed Research

This study seeks to determine the need for a CI tool to accompany large, urban school districts' initiatives to develop a high-performance culture within the organization. District departments utilize various methods of developing improvement plans, different strategic actions for implementation, different progress monitoring methods, and have limited feedback on the department's progress measures. A coherent, districtwide strategy to utilize CI planning tools and progress monitoring measures are missing from the continuous improvement (PDCA) cycle.

Proposed Research Design

The researchers selected a case study design to explore two themes that emerged from the body of research surrounding the gap in CI practices in education. First, the researchers seek input from former district department leadership and school-based leaders to determine what CI strategies can be provided to district departments to support the development of districtwide department action plans that further support the strategic five-year plan. Second, the researchers

will gather input from former district leaders on CI strategy solutions they see as a barrier to departments' improvement of customer service support.

Case sudy design provides a research approach that generates an in-depth, multi-faceted understanding of a complex issue in its real-life context (Crowe, Cresswell, Robertson, Huby, Avery, & Sheikh, 2011). There continues to be a gap in effective CI practices in business and health care industries and educational organizations. This qualitative inquiry further supports the case study approach as it will provide additional insights into what gaps exist in the current delivery strategies, or why one implementation strategy may be chosen over another (Crowe et al., 2011).

Research Questions

To assist district departments in their strategic initiatives and CI practices, the researchers seek to evaluate the following questions:

1. **Research Question 1:** What tools and resources can be provided to departments to review the DQS data and create department action plans?

2. **Reserch Question 2:** What processes can be implemented to ensure that departments are monitoring customer support efforts throughout the year?

3. **Research Question 3:** What methods can district leadership utilize to encourage employees to establish and maintain a CI culture?

Population and Sample

The researchers will use a purposive sample of participants for the study, focusing on individuals that have formerly served in a leadership role at a large, urban district department. This sampling includes stakeholders who have both vertical and horizontal experience among the organization, and ensures participants are selected and identified based on their knowledge and

experience with CI practices (Palinkas, Horwitz, Green, Wisdom, Duan, & Hoagwood, 2015). The researchers selected this target population because of their experience with CI implementation strategies, as well as experience with supporting large, urban school districts' strategic plans.

Selection Process

Participants will be selected for the study using a strategic recruiting method. The researchers will seek verbal permission (Appendix A) to email former district department directors, managers, support specialists, and school-based leaders. Once verbal permission and email addresses are obtained, the researchers will send an introductory email (Appendix B) to prospective participants, including an overview of the study and requesting permission for recipients' voluntary participation. If the email recipients choose to participate, there will be a link to Google Forms (Appendix C) for the participant to complete the consent, a brief demographic survey, and a link for the participant to access the interview questions (Appendix E) in advance of the study. Further included in the survey, participants will be asked if they have any acquaintances who may be interested and meet the inclusion criteria for participation in the study (Appendix D). The researchers will use this snowball sampling method as a recruitment strategy to access subjects with the target characteristics, and who are otherwise not easily accessible due to their employment status with a district department (Naderifar, Goli & Ghaljaie, 2017).

Instrumentation and Data Collection

Due to the COVID-19 pandemic and the CDC's recommendations on group gatherings, the researchers will use a digital platform, Zoom, to conduct individual interview sessions. Individuals being interviewed will be given the option to opt in or opt out of the interview being

recorded, having their faces appear during the interview, and whether or not dictation is used. The researchers estimate each interview will take no longer than one hour to conduct. The individuals being interviewed will be given an unlimited amount of time if they wish to elaborate on any given question. This interview will involve unstructured and open-ended questions (Appendix E) that intend to elicit views, opinions, and feedback from the volunteer participants (Creswell & Creswell, 2018). Upon the start of the interview, the researchers will review the informed consent with the participant, confirming that they agree to participate in the study. The researchers will use six to ten interview questions surrounding participants' experience and feedback on CI strategies. The transcription will assist the researchers in identifying underlying and emerging themes surrounding CI implementation efforts in district departments and gain input on helpful strategies that will be considered in the development of the CISolutions² website. The audio/visual recordings, transcription documents, and any identifying information included in the study will be stored on an encrypted external hard drive that will be kept in a locked file cabinet for one calendar year following the conclusion of the study.

Data Analysis

The researchers will collect qualitative data using a one-on-one interview approach. The data collected in the interviews will be transcribed and analyzed to understand what participants thought, felt, or experienced in some situations in time (Schutt, 2012). Each participant's statements will then be coded and analyzed further by their experiences, perceptions, and meaning-based relations. The researchers will remain neutral during the interview process and when extracting conclusions related to the themes that emerge.

The development of themes is a common feature of qualitative data analysis. It involves the systematic search for patterns to generate full descriptions capable of shedding light

on the phenomenon under investigation. In particular, many qualitative approaches use the 'constant comparative method,' developed as part of Grounded Theory, which involves making systematic comparisons across cases to refine each theme. (Gale, Heath, Cameron, Rashid, and Redwood, 2013, p. 3)

Due to the inductive nature and design of this study, the researchers are not concerned with generating a social theory developed as part of grounded theory. Instead, the researchers seek to investigate the perceptions of individuals who have experience with CI implementation. Therefore, the framework method for qualitative analysis will be utilized to facilitate comparative techniques through the review of data across the study (Gale et al., 2013).

"The Framework Method has been developed and used successfully in research for over 25 years and has recently become a popular analysis method in qualitative health research" (Gale et al., 2013, p. 5). It is an appropriate method to be used in other industries and organizations as a tool for supporting the thematic analysis of textual data; it provides a systematic model for managing and mapping the data (Gale et al., 2013).
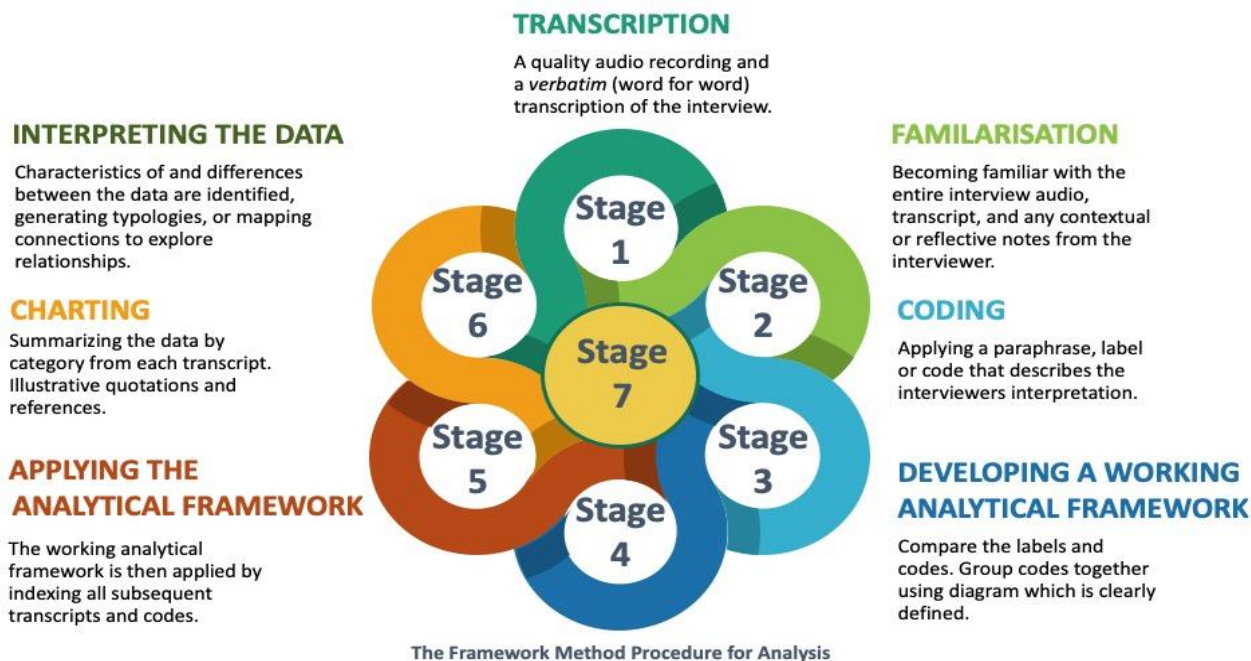
TRANSCRIPTION
A quality audio recording and a *verbatim* (word for word) transcription of the interview.

INTERPRETING THE DATA
Characteristics of and differences between the data are identified, generating typologies, or mapping connections to explore relationships.

CHARTING
Summarizing the data by category from each transcript. Illustrative quotations and references.

APPLYING THE ANALYTICAL FRAMEWORK
The working analytical framework is then applied by indexing all subsequent transcripts and codes.

FAMILARISATION
Becoming familiar with the entire interview audio, transcript, and any contextual or reflective notes from the interviewer.

CODING
Applying a paraphrase, label or code that describes the interviewers interpretation.

DEVELOPING A WORKING ANALYTICAL FRAMEWORK
Compare the labels and codes. Group codes together using diagram which is clearly defined.

Stage 1
Stage 2
Stage 3
Stage 4
Stage 5
Stage 6
Stage 7

The Framework Method Procedure for Analysis

Figure 5. Framework method procedure for analysis. "Using the framework method for the analysis of qualitative data in multidisciplinary health research." Gale, Heath, Cameron, Rashid, & Redwood. (2013). *BMC Medical Research Methodology, 13*, p. 4-5.

The identifying underlying and emerging themes that result from the study will be utilized to guide the researchers in the development of the CISolutions² website.

Risks

The researchers will take every precautionary measure to minimize the risk to the participants, utilizing security measures throughout the participant selection process, data gathering, analysis phases of the study, and storing the data. The participants selected for the interview study will share their professional experiences with CI implementation. They will also provide feedback on strategies they feel need to be developed for successful implementation by district departments. Each interviewee met inclusion criteria because they are no longer affiliated or employed by the large, urban school district. Therefore, there is minimal risk associated with participation in the interview study. All participation is voluntary, and each participant will sign an electronic consent form generated by Google Forms. Consent responses will be kept on the

encrypted external hard drive, locked in secure file cabinet, and destroyed one year after the study's conclusion. The participants will also receive via email a copy of the interview questions before the virtual interview. Upon the start of the interview, the researchers will review the electronic consent form with the participant reminding them they may stop at any time if they feel uncomfortable or do not wish to continue the interview. If the participant chooses to stop the interview process, the recording and any notes associated with the interview will be destroyed.

Benefits

Participants in the study will share their professional knowledge and experiences of CI implementation. Their responses may provide valuable feedback to current and future district department leaders, and provide essential information for the researchers to utilize in the development of a product that can be used as a solution.

Limitations

Limitations that may impact this research study are its sample size. Due to COVID-19, the researchers are unable to apply for the school district's Internal Review Board (IRB), leaving them to interview former employees. This limits the participant pool to district leaders who are no longer employed with the school district and have experience with the DQS and CI efforts. Due to a small sample size, another limitation is the researchers' belief that they will not attain a full representation of all options. The large, urban school district has over 20,000 employees, and for this research, the researchers will be interviewing five to nine participants. Although there are minimal risks associated with participation, participants may feel they could harm or penalize their professional relationship while sharing CI practices from their former employer. The researchers will utilize a snowball sampling approach to help increase participation. Further, there is potential for researcher and participant bias from previous experience working for the

same large, urban school district. Familiarity with the district's five-year strategic plan serves as a common ground to share experiences; however, individual perceptions may be influenced by the interview questions. The researchers are attempting to solve a problem within a specific school district. The researchers are unaware of any other school districts that measure the opinions of its school leaders in regards to departmental customer service. Lastly, the length of the interview process may limit the thoroughness of participants' responses and feedback. The researchers will give each participant a list of the interview questions in advance of the interview to help with preparation and time management of the interview.

Ethical Considerations

Participation in this study is voluntary. At any time before, during, or after the interview, participants can withdraw or choose not to answer any questions. Participants will sign an informed consent before participating in the study. At no point in time will personally identifiable information of the participants be connected to their responses. Participants' IP addresses will not be stored or collected during the video interview. During the video interview, participants will choose whether or not they will appear on video, whether or not the video will be recorded, and whether or not they closed captioning will be used. The data will be kept for three years on a password-protected, external hard drive at the researcher's residence to ensure data security. After three years from the study's conclusion, all data will be destroyed.

Summary

The goal of this research study is to examine the viability of implementation of CI strategies in a large, urban school district. Although other industries like manufacturing, health care, and technology have demonstrated successful implementation practices, there continues to be a gap in how this work manifests itself in education (Park et al., 2013). Urban, public schools

must develop a broad scale, districtwide strategy for improving their CI practices. The researchers wish to elicit feedback and input from former school district leaders on effective CI implementation practices they feel will improve departments' customer service support efforts. The qualitative data provided by participants will assist the researchers in the development of a website tool, CISolutions², to serve as a digital navigator and provide monitoring measures to school district departments. Finding ways to ensure a unified practice of CI within all school district departments will embed the full CI cycle [PDC(S)A; DMAIC] into the organization's culture.

CHAPTER IV: RESULTS

Introduction

Continuous improvement (CI) is used across industries and organizations to describe a process or approach to problem-solving that represents an ongoing effort to improve an organization's outcomes (American Society for Quality, n.d.). Although formal CI approaches have notable results within industries like health care and manufacturing, the field of education is slow to adopt such formal improvement methodologies (Park et al., 2013). CI in educational organizations must focus on process and performance management at the system or district level. This system-wide improvement approach provides broader infrastructural improvements from the top-down to better support instruction and learning at the school center (Park et al., 2013).

> Educational organizations are focusing on continuous improvement at the system level in an attempt to improve the process (or steps) that take inputs (e.g., monetary investments in training) and produce outcomes (e.g., educating children) through tests of measurable change. (Park et al., 2013, p. 9)

Improvement at this level means replacing wasteful activity with effective and efficient processes, requiring enumerating improvement processes, and systematically measuring them. Educational organizations center their measurement systems on inputs or outcomes, and have neglected to focus on the process as a guiding framework (Park et al., 2013). As educational organizations develop a collective vision and strategic plans for their school districts, it is paramount that there is a clear sense of shared accountability in executing the plan (Park et al., 2013). Utilizing the continuous PDSCA cycle as a tool provides a high-level framework for organizing, tracking, and improving the organizational process. District departments must

employ improvement plans to support the district-wide vision and utilize the PDSCA tool to ensure each part of the system follows the CI model.

Summary of Analyses

This study aims to ensure CI over time, impacting improved product quality, simplified work processes, cost reduction, improved customer satisfaction, and less wastage of resources. Deming's founding principles of CI have framed a dynamic approach to problem-solving that can be used to study and improve education programs and processes, known as improvement science (Bryk, Gomez, Grunow, & LeMahieu, 2017). This problem-solving approach centers on continuous inquiry and learning. "Change ideas are tested in rapid cycles, resulting in efficient and useful feedback to inform system improvements" (Bryk et al., 2017). Therefore, an educational organization's performance is a result of its design and operation, not just individual efforts within the system. Organizations must build a shared understanding of how their systems and departments work, where the breakdowns occur, and what actions can be taken to improve overall performance (Bryk et al., 2017). According to Bryk et al. (2017), the PDS(C)A approach must utilize small-scale testing, enabling quick learning and nimble adjustments. Over time and with repeated progress monitoring, the organization can identify ways to consistently achieve positive results at scale.

The researchers used a case study design to examine the current practice of CI in a large, urban school district as it relates to improving district departments' customer service. The CI efforts throughout the school district are systemically insufficient. The researchers explored two overarching themes that emerged from the body of research surrounding the gap in CI practices in educational organizations. First, gain input from former district department leadership to determine what CI strategies can be provided to district departments to support the development

of districtwide department action plans. Second, explore what features or tools could be provided to district departments to monitor and measure the departmental improvement efforts. With the absence of frequent feedback from the schools, district departments are not effectively monitoring, adjusting, or improving strategic initiatives to help schools improve customer service. The researchers utilized an individual interview approach to solicit feedback based upon former district department leaders' experiences. This target population was selected because of their experiences with CI implementation strategies and their experience supporting a large, urban district's five-year strategic plan. The following research questions guided the study in an effort to improve customer service operations, develop a high-performance culture utilizing the PDS(C)A cycle, and create more periodic measures to ensure district departments utilize feedback to adjust and align their CI efforts:

Research Question 1: What tools and/or resources can be provided to departments to review the DQS data and create department action plans?

Research Question 2: What processes can be put in place to ensure that departments are monitoring customer support efforts throughout the year?

Research Question 3: What methods can district leadership utilize to encourage employees to establish and maintain a CI culture?

Participants were selected using phone and email recruitment. Consent and demographic data were collected using a survey method to ensure participants met minimal years of leadership experience (at both the district level and school level) concentrated in the area of CI and strategic planning. Next, the researchers conducted individual interviews with each participant using open-ended (qualitative) questions. The nine interview questions asked participants to provide information on their leadership experience and feedback on CI strategies. The interview

questions were designed to better understand district and school leadership experiences. Participants were asked to provide additional recommendations for possible resources and support strategies that may improve CI implementation. Finally, the researchers identified underlying and emerging themes surrounding the interview data to answer the research questions guiding this study, and to utilize those themes to develop a CI tool that will better support district departments with specific strategies for future CI implementation.

Survey Results: Demographic Profile

The researchers contacted eight potential participants who met the requirement of the purposive sample (individuals who have formerly served in a large, urban school district department leadership role). Five participants completed the consent and demographic survey. The demographic questions aimed to understand the participants' professional experiences in educational leadership roles at both the district and school level. Of the five participants, two responded that they have served between 1-5 years at the district leadership level, one answered that they have served between 6-10 years, one answered that they have served between 11-15 years, and one responded that they have served between 16-20 years. *Figure 6* illustrates the participants' experience at the district leadership level.
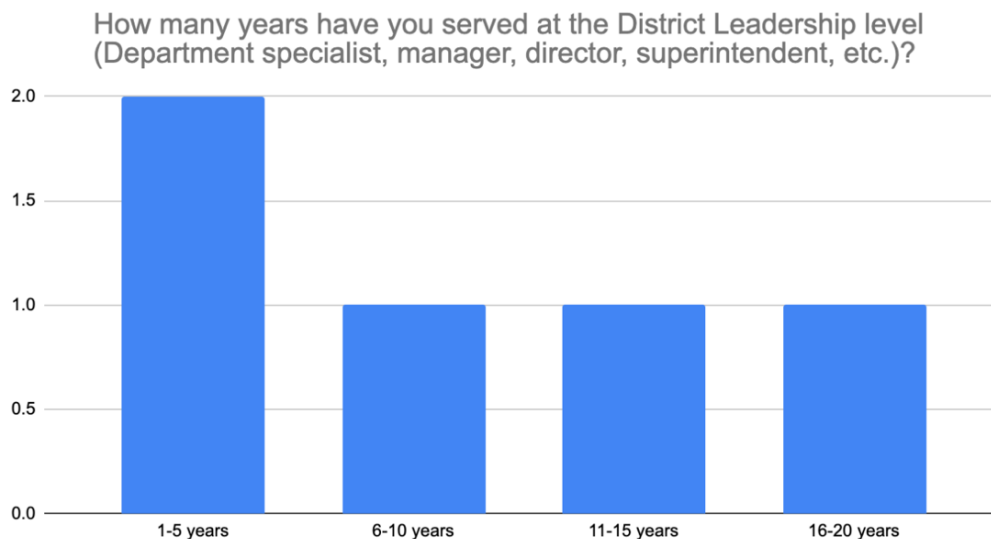
Figure 6. Demographics of participants' district level experience

Participants were also asked to indicate their years of experience at the school level. Of the five participants, three responded that they have served between 16-20 years at the school level, and two responded that they have served 20 or more years at the school level. *Figure 7* illustrates the participants' school level experience.
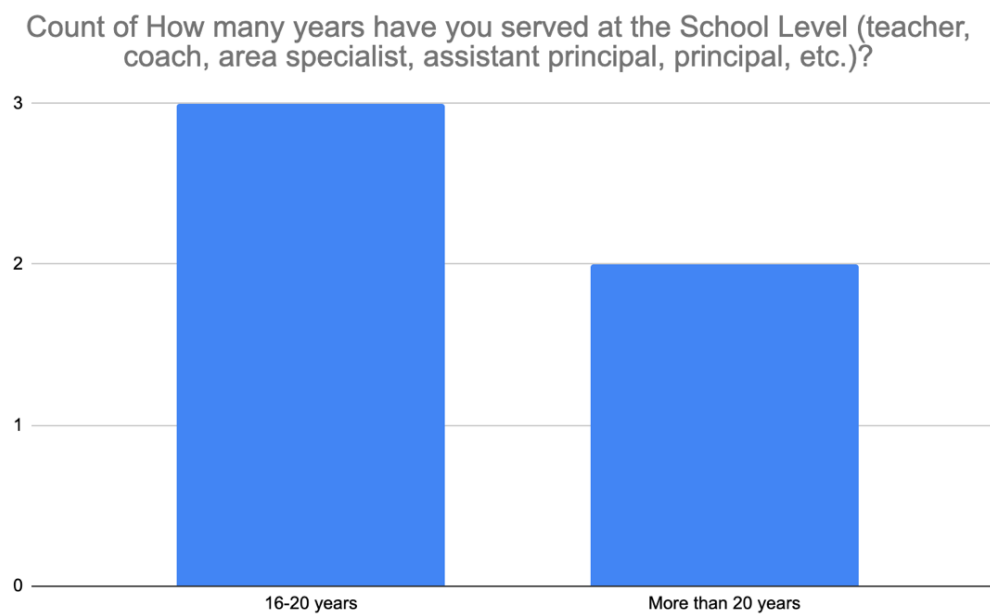

Figure 7. Demographics of participants' school level experience

Qualitative Results

Participant interviews were conducted individually, and responses were recorded and transcribed for data analysis purposes. The researchers used thematic analysis to identify, analyze, organize, describe, and report themes found within the data set (Nowell, Norris, White, & Moules, 2017). Utilizing otter.ai transcription software and initial coding, frequently used words and phrases provided the researchers with a reference point to generate emerging themes. *Figure 8* is a depicts the words and phrases used most frequently by participants.

Figure 8. Participants' most frequently used words and phrases

As a result, three broad themes emerged from the participant responses concerning factors that are essential to sustain CI in an educational organization: (1) personnel, (2) communication, and

(3) organizational structures. The broad themes elicited secondary elements that outline specific improvement practices, strategies, and measures to further support district departments in their customer service efforts.

Theme One: Personnel

Each of the five participants provided feedback on the importance of personnel at both the district and the school levels. Building a team with the 'right' players was highlighted as one of the essential factors in sustaining improvement. At the district department level and school level, directors and principals must work with established teams that they have not hired. Leaders must establish a rapport with staff, thereby building a culture of trust. Participants acknowledged the relationships among personnel within a school or department are the framework for creating a positive work environment. The climate of that environment provides a forum of trust and respect to allow individuals to work together. Departments and schools consist of individuals bringing diverse experiences to the job. Leaders can utilize diversity and work experience in a problem-solving approach throughout the CI process. Teams must work together to develop each other's strengths and provide professional development to grow in new areas. The following is a selection of verbatim quotations from participants:

- *"To make sustained improvements, you have to first…develop a relationship and a trust level, and a culture with the teachers in your school."*

- *"It comes down to building a department with the right culture of people and interpersonal type."*

- *"Everyone brings something to the table. You must recognize what a person's strengths are and put them or move them to a position or place that they can use those strengths."*

- *"A former superintendent had the best advice…he used to say, 'you can have great people, but sometimes they are not in the right place.'"*

- *"Leading change in a school is like driving a bus. The school is the bus. Your job is to make sure everyone is in the right seat."*

- *"Surround yourself with people who are highly qualified and not afraid to ask questions."*

- *"A culture of support has to be built with your teachers and staff. You have to be their biggest cheerleader. Let them know you are there to support them. Find the resources to develop your people. Build a culture of a growth mindset."*

Theme Two: Communication

The basis of CI within organizations is communication. Educational organizations communicate their goals, visions, and strategic plans with all stakeholders. Departments and schools share their plan of support for students to be successful. Communication is essential to outline the work that is to be done, highlighting what is not working, and making the necessary changes to improve. That is the premise of the CI framework and PDS(C)A cycle. Participants' responses elicited the importance of communication as the foremost factor to improving student performance and the foundation for enhancing the relationship between the district departments' support at the school center. The annual DQS, a survey used by the large, urban school district, is an evaluation tool to communicate information from the school to district departments. How the data and information is communicated to district leadership, departments, and personnel needs improvement. The survey is given to school leadership to complete and to provide feedback on the support that district departments offer. All five participants responded that not all departments receive a survey. Some operational departments are not included. The feedback

provided in the survey is disseminated to various departments, and no further guidance is given to department directors. Each department determines what they will do with the data and how they will use it for improvement purposes. Included below are several comments by participants:

- *"Communication is the key. You need to be able to find out what's wrong, how we can make it better, and communicate that to the right people."*

- *"I was overjoyed when they finally came up with that survey because it was the inertia to get something done in the district. In its first couple of years, you could see district leadership was using it to make improvements but over time that wasn't the case."*

- *"There are some departments that they care about what kind of rating they might get, so they don't do on with every department."*

- *"The content of the survey and what's distributed to the schools, I will say what it assesses for the department, is a good tool; I just don't know that it is utilized to its full degree."*

- *"I think that for the department heads, directors, and managers of the departments that they can be better served if they could use that survey data to improve the services that the departments are providing."*

- *"You have to be able to basically meet two different groups. First, you want to be able to target the question so that the people completing the survey understand the survey, and are giving valid answers. And then, you want to be able to meet and communicate with the other group which is the department that should be looking at that data and make it more useful for them."*

- *"I think communication is big. They used to send out bulletins and communications.*
  For example, here is what we found in the data, and this is what we're doing. I
  would think they would want feedback and input from all of the stakeholders and be
  able to communicate what improvements are being made."

Theme Three: Organizational Structures

The five participants included in this research study all had experience working for the large, urban school district. Each responded that the district's size played an essential role in making sustained improvements at the department and school levels. The organizational structure (hierarchy) of district leadership did not provide enough support for district departments and schools. Department directors and managers responded that there were inconsistent communication and support from their direct supervisors. The participants' feedback provided suggestions for districts to utilize a horizontal organizational structure versus a vertical/linear (top-down) structure. It was further revealed that some district departments were not adequately staffed with personnel or resources to meet the needs of the number of schools they were responsible for supporting. The following are several comments by participants:

- *"There was really no one I could go to. If I saw concern, I didn't have enough staff*
  to get out to the schools to the teachers that were in trouble. You would go to budget,
  and they'd say, 'that's all you got.' I was in a department of two. It was really hard,
  and I was doing discipline and competency. I think they need to look at these surveys
  and do something about it."

- *"I had a supervisor who was on the same wavelength. My deputy superintendent and*
  supervisor would have face-to-face conversations. We called them two on ones. They
  were on board with the things directors wanted to see and make changes. They

would come to essential departments so we could make them stronger and make them better. I could see where if departments are not essential; there's no sense in having that department any longer. We need to look at that and find out what we can do better for the schools."

- *"I had the experience of being superintendent of a district outside of Boston. There was one high school, two middle schools, and six elementary schools. It gave me the opportunity to be in the schools and manage that size of an organization. I found that the only superintendent capable of managing a large district like this one was Dave Brown. He had the temperament, the tools, the personality, and the humanism that really made something as big as we have here."*

- *"There are two sides of the house. The business side, which we will say, they too often are disconnected…and then you have the academic side. I truly believe that their hearts really want to serve schools because of being on the academic side of things. People at the district level need to have more time to go into schools and see what's going on."*

A variety of comments and suggestions were based upon former district and school leaders to improve the district department's CI support efforts. *Figure 9* illustrates the themes and secondary elements essential to sustain CI in an educational organizat
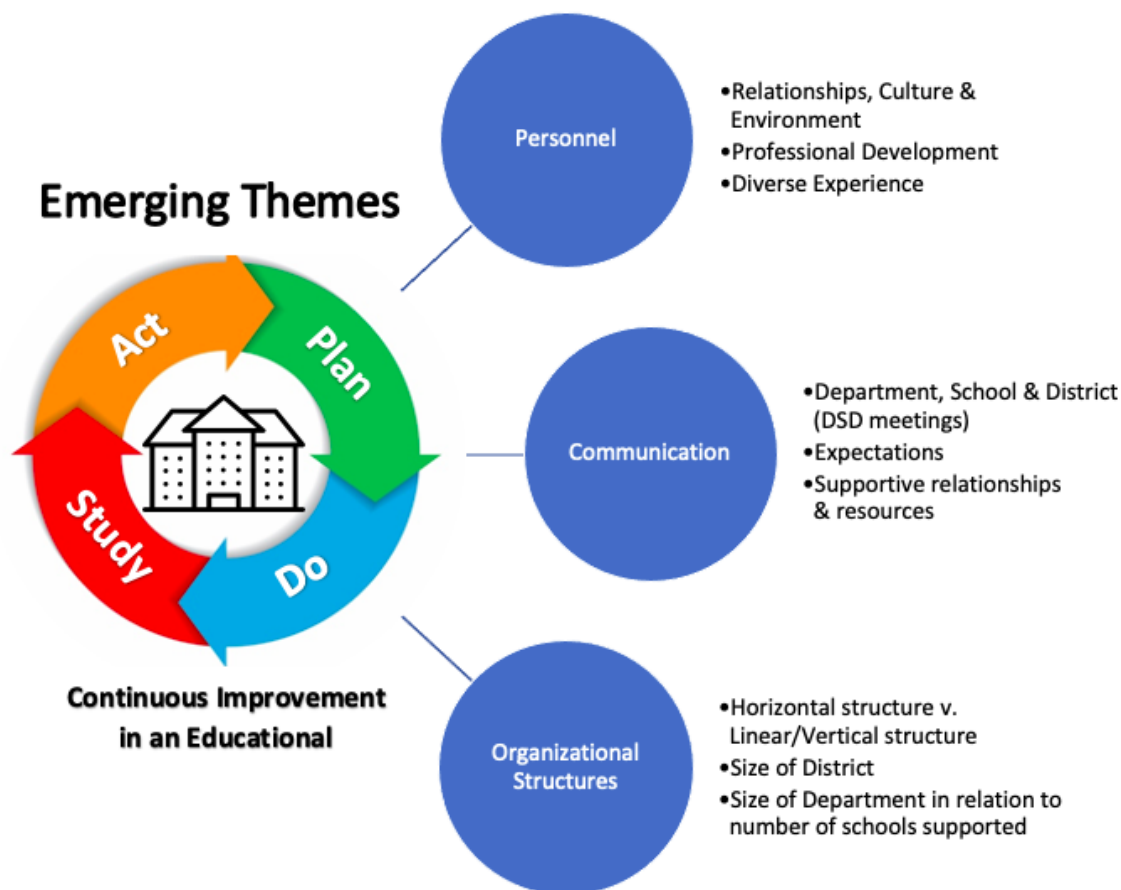
Figure 9. Emerging themes and secondary elements

Summary of Results

The feedback and suggestions from former district and school leaders who participated in this case study confirm that the current CI efforts in a large, urban school district are systematically insufficient. With the absence of frequent feedback from the schools, district departments are not effectively monitoring, adjusting, communicating changes, or improving strategic initiatives to help schools improve customer service. The district's strategic initiatives outline goals and provide annual feedback utilizing the DQS. To improve CI practices and customer service operations, educational organizations must develop a high-performance culture using the CI framework and full PDS(C)A cycle. More periodic measures must be implemented

to ensure the department utilizes feedback to adjust and align their efforts. This study revealed three broad themes that emerged from the research: (1) personnel, (2) communication, and (3) organizational structures may provide educational organizations insight as to which elements to focus their CI efforts.

CHAPTER V:

DISCUSSION, CONCLUSIONS, & RECOMMENDATIONS

This case study focused on the CI practices used in an educational organization. The researchers examined the current continuous improvement efforts used by a large, urban school district as they relate to improving the customer service of district departments. Compared to the CI practice utilized in other industries, it is evident that there continues to be a gap in the CI process within the education organization. Educational organizations create strategic plans, set long-term goals, implement initiatives, and measure the overall outcomes in terms of student achievement. However, when attempting to build a high-performing culture and improve customer service between the district departments and school centers, monitoring customer experiences must occur frequently.

The researchers examined the experiences of former district department leaders. The feedback they provided highlighted key elements of CI practices district departments must utilizie to adjust and improve the work, as well as build a rapport between their department and the schools. School districts undertaking major improvement projects to keep up with accountability measures frequently include more goals and action items than can be realistically implemented (Best & Dunlap, 2014). Allowing district departments to identify specific goals based on the strategic initiatives is critical for CI process. The organization must test possible solutions using ongoing progress measures, thus allowing school districts to work on many strategic goals over time while ensuring the CI process is iterative, and cyclical (Best & Dunlap, 2014). The research provided in this study assisted with the development of a CI planning and monitoring tool that will support district departments in the design of department improvement strategies, help implement the appropriate action steps, check and monitor the interventions, and

adjust or improve interventions. To assist district departments in their strategic initiatives the researchers sought to answer the following research questions:

1. **Research Question 1:** What tools and/or resources can be provided to departments to review the DQS data and create department action plans?

2. **Research Question 2:** What processes can be put in place to ensure that departments are monitoring customer support efforts throughout the year?

3. **Research Question 3:** What methods can district leadership utilize to encourage employees to establish and maintain a CI culture?

The researchers used a case study design to explore two themes that emerged from the body of research surrounding the gap in CI practices in education. First, the researchers sought input from former district department leadership and school based leaders to determine what CI strategies can be provided to district departments to support the development of districtwide department action plans that further support the strategic five-year plan. Second, the researchers gathered input from former district leaders on CI strategy solutions that could improve customer service support. Furthermore, the researchers determined if there was a need for a CI tool to accompany large, urban school districts' initiatives to develop a high-performance culture within the organization. District departments utilize various methods of developing improvement plans, different strategic actions for implementation, different progress monitoring methods, and have limited feedback on departments' progress measures.

The researchers recruited five former district leaders who met the criteria of working in a large, urban school district. Each participant had district or school level experience supporting a school district's strategic plan. The researchers collected data utilizing an individual interview approach. Each participant interview lasted approximately 45 minutes to one hour in length. The

study was conducted over a two-week period. The data collected in the interviews was transcribed and analyzed to understand what participants thought, felt, or experienced in situations over time. Each of the participants' statements were then coded and analyzed by their experiences, perception, and meaning-based relations to further develop emerging themes from the data.

Discussion of Findings

Research Question 1: What tools and/or resources can be provided to departments to review the DQS data and create department action plans?

In response to the first research question, the findings indicate an unclear set of expectations exist as to what district departments are to do with the data from the DQS. Participants revealed that schools provide feedback on each department's quality of support, that information is shared with the departments, and then it is unclear what happens in the CI cycle afterwards. The findings further recommend the following strategies be implemented to improve action planning and CI practices for district departments:

- Established expectations for district departments to ensure a unified practice on what to do once DQS data is received

- Training for department teams on how to review the DQS data

- Training and support on developing and implementing department action plans

Research Question 2: What processes can be put in place to ensure that departments are monitoring customer support efforts throughout the year?

The findings indicate that action plan implementation must be measured and frequently monitored. A coherent, districtwide strategy to utilize CI planning tools and progress monitoring measures are currently missing from the continuous improvement [PDS(C)A] cycle. The

strategic initiatives of the district fall short because they are measuring outcomes and not identifying the process of improvement. The quality of customer service efforts of district departments are measured annually by the DQS. More attention and emphasis on frequent monitoring measures on each department's action plan strategies will elicit adjustments to the process of improvement. Participants were asked two specific interview questions focused on the process of improvement: (1) What could have improved your experiences or made the CI process more effective for you, and (2) what processes would you put in place to ensure CI throughout the year? Responses included the following recommendations:

- Ensure that all departments have an action plan developed directly from the current year's DQS data.

- Utilize a progress monitoring system/tool that can measure the progress in reaching the action plan goals.

- Create and utilize a CI framework that is specific to each department's goals, needs, and support it provides to schools.

Research Question 3: What methods can district leadership utilize to encourage employees to establish and maintain a CI culture?

The findings indicate more emphasis be placed on communication, culture, and the organization's structure. The researchers examined participant responses to highlight themes that emerged in addressing this question. Participants indicated that the district's overall size and hierarchical structure play a key role in establishing an improvement culture. A large, urban school district has different levels of leadership. When establishing a culture of change and improvement, the relationships between supervisors and teams are critical. The following responses included recommendations for improving the overall culture of CI:

- Facilitate ongoing meetings with supervisors (one to two levels above) to
  ensure communication, concerns, and strategies are taking place with people
  who have the authority to fix the problem or create change.

- Establish an effective system of communication between:
  - departments;
  - schools; and
  - district level leadership

- Create and implement an improvement culture among personnel.

Recommendations

The researchers recommend that a product be created to address the problems identified
in this research study. The goal of this product will be to shape a large, urban school district's CI
culture. For this product to be successful, it must be user-friendly, meet stakeholders' needs, and
guide employees through a straightforward process of a CI cycle. CI² on cisolutions2.com is the
product the researchers created to support large, urban school districts. The CI² website will be
comprised of two phases.

Phase 1

Phase one of CI² is designed to educate its visitors on what CI is, its history, provide CI
resources, and introduce the creators of the product. The mission of CI² is to be committed to
moving education forward by supporting organizations, departments, schools, and individuals in
reaching their goals. The researchers will accomplish this mission by our "we work on the work"
philosophy. CI² takes the CI cycle to a deeper level beyond measuring outcomes to a

comprehensive approach, and is dedicated to identifying the processes that inform the work and measure how the process of the actual work impacts long-term goals.

A critical component of this website is to establish creditability with visitors. Upon arrival to the website's homepage, visitors will be able to review the following biographical profile:

Billy J. Gira is currently serving as a Dean at Inlet Grove Community High School in Palm Beach County. He has prior experience with The School District of Palm Beach County with the Department of Afterschool Programming. He started as an afterschool counselor, then became a program site director, and then a department liaison.

Billy is a devoted professional with years of experience in leading staff. He has experience creating a vision, taking actions towards that vision while mobilizing others in becoming partners in pursuing change. His expertise, coupled with a Bachelor of Science in Supervision & Management from Palm Beach State College and a Master of Science in Leadership from Palm Beach Atlantic University, has imparted the ability for him to align an organization's daily operations to meet its goals. Currently, Billy J. Gira is a doctoral candidate in Lynn University's Educational Leadership Program.

Jennifer Malanga Martinez currently serves as an English language-learner (ELL) teacher at Palm Beach Public Elementary. Her 21 years of experience with the School District of Palm Beach County has afforded her incredible opportunities to work with diverse populations. Jennifer began her career teaching at the primary level serving grades kindergarten, first, second, and third. Her innate love of learning led her to specialize her instructional practice while serving as an exceptional student education teacher and reading coach. As a professional student herself, she holds a Bachelor of Arts in Education from Florida Atlantic University, a Master of TESOL

from Nova Southeastern University, and a Specialist in Educational Leadership from Barry University.

Jennifer is a dedicated professional who truly believes in the power of education. Her experience as a classroom teacher and reading coach allows her to serve in many leadership roles. She currently provides professional development support to teachers and staff, mentors university students in educational programs, and provides community support for families while bridging the home-school connection.

Jennifer is currently a doctoral candidate in Lynn University's Educational Leadership Program. She is the proud mother of a 14-year-old daughter, Olivia. She is a quilting enthusiast, animal lover, and laces up her running shoes as often as she can.

The CI² website will also provide a brief history of CI. Everyone alive is impacted by CI, knowingly or not—the researchers believe when an organization's people recognize the history of CI and how it affects them personally or professionally, buy-in is more likely.

The Pareto principle— also known as the 80/20 rule—is used in process improvement, focusing on the problems with the most potential impact.

Henry Ford's assembly line focused on the manufacturing of the Model T, moving in the direction of making it the best product possible. Ford prioritized working smarter, not harder, and encouraged a "flow" associated with a process utilizing raw materials, resulting in an amazing product.

Walter Shewhart is known as the "father of statistical quality control" (SQC or SPC). Along with W. Edwards Deming, his work established the framework for Plan, Do, Check, Act (PDCA), also known as the Shewhart Cycle. His work focused on reducing variation in the

process of manufacturing. He looked at problems in the process as either special cause or common cause. Shewhart developed a control chart that distinguished between the two.

W. Edwards Deming is known as the master of continual improvement of quality and overall operation, and is often hailed as the father of the third wave of the industrial revolution. He is best known for his pioneering work in Japan post-World War II contributing dramatically to the turnaround of Japenese industry. Deming's contributions led to a set of transformational theories and teachings that changed the way industry thinks about quality, management, and leadership.

Joseph Juran's further built upon Deming's work for CI with the Juran Trilogy. His work focused on QI, adding a human element to his teachings. He developed the popular Juran Trilogy that serves as cross-functional management composed of quality planning, quality control, and quality improvement.

Masaaki Imai developed the Kaizen Institute as part of his work on quality management. It is derived from the Japanese term for CI. The kaizen method follows ten specific principles and strives toward perfection in the workplace. It focuses on production without waste by improving the process of activities.

William Smith is known as the father of Six Sigma. He brought Japanese quality control methods based on Deming's teachings back to the U.S.. While working with Motorola, he developed Six Sigma to improve design margin and product quality, which includes a four-stage problem-solving approach known as DMAIC: design, measure, analyze, improve, control.

Next, on the CI² website, visitors are provided with resources in three formats:

Books

- *The Goal: A Process of Ongoing Improvement* by Eliyahu M. Goldratt

- *Lean Thinking: Banish Waste and Create Wealth in Your Corporation* by James P. Womack

- *The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer* by Jeffrey K. Liker

- *The 4 Disciplines of Execution: Achieving Your Wildly Important Goals* by Chris McChesney

- *The Productivity Project: Accomplishing More by Managing Your Time, Attention, and Energy* by Chris Bailey

Videos

- *How Great Leaders Inspire Action* by Simon Sinek

- *Leading with Lollipops* by Drew Dudley

- *Great Leaders Do What Drug Addicts Do* by Michael Brody-Waite

- *Why Comfort Will Ruin Your Life* by Bill Eckstrom

- *Fooling Penn & Teller with LEAN Principles & Continuous Improvement* by Stuart MacDonald

Articles

- "Negotiating for Continuous Improvement" by Lawrence Susskind

- "The Fit Organization: How to Create a Continuous-Improvement Culture" by Daniel Markovitz

- "Creating a Culture of Continuous Improvement" by Aravind Chandrasekaran

- "Cristo Rey St. Martin College Preparatory School: Promoting a Culture of Continuous Improvement" by Gail Berger Darlow and Liz Livingston

- "Conducting a Kaizen" by Willy Shih Publication

Phase 2

While Phase 1 of the website provides visitors with knowledge on CI and background on the product developers, Phase 2 of the website will be restricted by a secure login requiring an email and password. At the organization's discretion, an individual's login will have different access levels; levels of access would be edit, comment, and view.

Once a user logs in, they would land on their dashboard. The dashboard will have a tile for each department. The viewer will see tiles that only apply to them based on their login clearance. For example, a chief operating officer would view departments under their supervision while a department director would only see their department. Once you click on a tile, the tool will have five sections/features.

The first feature of this tool would be to provide DQS results. The school district publishes an official document and disseminates it via bulletin and its website. The results on the site would contain the following information for the individual logging in:

- All Principals, Percent of Respondents, and Ratings

- Ratings and Familiarity by School Levels

- Interaction Index

- Principals Comments

- Summary of the Department Results from the FY17-FY19 Department Quality Services Survey

The second feature would contain a statical analysis of the previous data. As department leaders and staff are instructed to use the information provided, depending on their prior experiences, the researchers have found that they may or may not know how to best interpret the data to use in a plan to move the department forward.

- Compare Items Vertically: Positive & Rating Familiarity across Elementary, Middle, and High School

- Compare Rating Over Years

- Highlight Significant Rating Increases and Decreases

- Compare Similar Departments

The third feature would be a living document that guides a conversation allowing the team to develop a Department Improvement Plan. That guide would have the following questions:

1. How does this department's rating compare to last year?

2. How does this department's rating compare to other similar departments?

3. If different, how do this department's ratings compare between elementary, middle, and high schools?

    1. If different, then why?

4. Do the Familiarity and Interaction Index reflect how our team perceives our relationship to schools?

5. How many items does the team want to work on this upcoming year?

6. What are the things the team wants to work on this year?

For every item the department wants to work on, they will write out a goal with four action steps to achieving that goal; to ensure the goals are clear and reachable, each one should be written using the smart goal model.

- Specific (simple, sensible, significant)

- Measurable (meaningful, motivating)

- Achievable (agreed, attainable)

- Relevant (reasonable, realistic, and resourced, results-based)

- Time-bound (time-based, time-limited, time/cost limited, timely, time-sensitive)

As department leaders enter the information provided to them in feature three ,upon completion, feature four will give them their Department Improvement Plan pre-formatted. The Department Improvement Plan would then be sent to district leadership to ensure the department vision matches theirs.

The last feature of this product is ongoing monitoring between district leadership, departments, and schools. Based on the goals selected from the Department Improvement Plan, mini-surveys would be issued quarterly to three to five schools to check the progress of goals set in the Department Improvement Plan. Upon receiving those results, leadership members from the school district, department, and school would meet quarterly to review data, ensure the plan is working accordingly, and make any necessary adjustments throughout the year.

Recommendations for Future Research

As the researchers look to the future, it is clear what should happen to develop our product and research. The first step is to develop the website, cisolutions2.com. Once the website contains all the aforementioned items and Phase 1 and Phase 2 recommendations, product testing will begin. Upon completing an IRB application with the large, urban school district, the researchers will partner with two to three district departments and pilot the recommended product. This pilot would allow the researchers to work with current school district leadership to determine where school district employees feel pain and provide solutions. Upon completing this pilot, the researchers would then have the necessary data to move the product forward as a tool for an educational consulting company led by the researchers.

Summary

The education sector and business sectors are different and can not be treated the same for the education system to work in the U.S. It also can be said that the business sector has made considerably more advancement in the last century than education. For the education system to meet students' needs, the system must be scrutinized through new lenses and be approached innovatively in strategies and solutions. Looking at school district departments, it is clear that some serve an academic role and others an operational role. Suppose CI culture was imbedded in all school district departments. In that case, schools will be better supported, which thereby supports the education of students. As employees in an education system, that must be the foremost priority.

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APPENDIX A [PHONE CONTACT]

Good Morning/Afternoon,

My name is Billy Gira/Jennifer Martinez.

I am a Lynn University student working on my dissertation and research study. The study aims to examine the current practices of continuous improvement in a large urban school district as part of their Strategic 5-Year Plan. My dissertaion partner and I are seeking to understand your experience with this district's department quality survey and find areas of opportunity for growth and improvements.

Would you be interested in participating in this research?

If no: Thank you very much, have a great day.

If the caller is Interested:

Shortly after this call, you will receive an email with a detailed overview of the study. In that email, you will also find a consent form to sign along with a request for your availability to schedule your interview. If you have any questions, my contact information will be at the bottom of the email.

APPENDIX B [EMAIL CONTACT]

E-mail Request to Participate in an Interview Study on Continuous Improvement Practices

From: Billy J. Gira and Jennifer Martinez

To: Former School District Leaders

Subject: Participation Requested for Interview Study on Continuous Improvement Practices

Dear (Prospective Participant Name),

Thank you for your verbal agreement and willingness to participate in our research study. We are writing to formally request your participation in an interview study that has been developed around our doctoral research on the current continuous improvement practices in a large urban school district.

The interview study will be conducted using the digital platform Zoom. We estimate that the interview will be no longer than one hour. During the interview you will be asked questions surrounding the topic of continuous improvement within school district departments. Beyond recollecting and sharing past experiences, minimal effort will be required of you.

Overview of The Study

The implementation of continuous improvement practices in education is gaining popularity among America's urban public schools. Although other industries such as manufacturing, healthcare, and technology have demonstrated successful implementation practices, there continues to be a gap in how this work manifests itself in education. Urban public schools must develop a broad scale district wide strategy for improving their continuous improvement practices. District departments must align their improvement practices to the district's strategic goals while implementing change both quickly and incrementally and while testing and refining strategies to produce better results .

This study seeks to determine the need for a continuous improvement tool to accompany a large urban school district's Strategic 5-Year plan initiative to develop a high-performance culture within the organization. The urban school district currently administers an annual Department Quality Survey (DQS) to examine the level of satisfaction schools feel they receive concerning the customer service that district departments provide. District departments utilize various methods of developing improvement plans, different strategic actions for implementation, different progress monitoring methods, and have limited feedback on the department's progress measures before the following year's survey is given. As researchers, our goal is to create an effective, unified tool that will improve the practice and implementation of continuous improvement.

Why YOU were selected

As an educational leader and former urban school district administrator, you have professional experience and expertise that would greatly contribute to this project! Please complete the initial consent form so we may get your interview scheduled in a timely manner.

Initial Consent Form

If you would be willing to recommend another colleague or person who may be interested in learning about this research study, please click on the link below. You are under no obligation to do so and whether or not you share information will not affect your inclusion in this research study.

Recommend a Colleague

Confidential and Voluntary

Your participation in the interview is completely voluntary and all of your responses, feedback, and input are confidential. The video interview will be transcribed to text and then all identifying information will be deleted along with the video recording. No personally identifiable information will be associated with your responses for inclusion with the research data.

Contact Information

Please contact either of us with any questions, concerns, or comments. We can be reached at: Billy J. Gira ⬛⬛⬛⬛⬛⬛⬛, bgira@email.lynn.edu or Jennifer Martinez ⬛⬛⬛⬛⬛⬛⬛, jmartinez12@email.lynn.edu. Further, you may contact Dr. Kelly Burlison, Chair at kburlison@lynn.edu and Dr. Jennifer Lesh, IRB Chair for Lynn University, at jlesh@lynn.edu.

Thank you for your interest in our research. We appreciate your time and consideration.

Sincerely,

Billy J. Gira and Jennifer Martinez

APPENDIX C [PARTICIPANT CONSENT FORM]

Consent Form

You are invited to participate in one on one, web-based video interview with both researchers. The information you provide will be based upon your experience with continuous improvement in a large urban school district. This is a research project being conducted by Billy Jacques Gira and Jennifer Malanga Martinez, doctoral students at Lynn University. It should take approximately one hour to complete the interview but if you choose to elaborate further, more time will be provided.

PARTICIPATION
Your participation in this interview study is voluntary. You may refuse to take part in the research or exit the Interview at any time without penalty. You are free to decline to answer any question(s) you do not wish to answer for any reason.

BENEFITS
Although you may not receive any direct benefits from participating in this research study, your responses may help us learn more about the continuous improvement models you experienced during your time with a large urban school district and what recommendations you may have for improvements.

RISKS
There are no foreseeable risks involved in participating in this study other than those encountered in day-to-day life.

CONFIDENTIALITY
At no point and time during this process will we store your identifying information such as your name, email address, or IP address with your interview information. Therefore, your responses will remain confidential and pseudonyms will be used to reference your input and mentions of other personnel. The video interview will be transcribed to text and then all identifying information will be deleted along with the video recording. No personally identifiable information will be associated with your responses for inclusion with the research data. No one will be able to identify you or your responses, and no one will know whether or not you participated in the study. The audio/visual recordings, transcription documents, and any identifying information included in the study will be stored on an encrypted external hard drive that will be kept in a locked file cabinet for one calendar year following the study.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, you may contact us, Billy Jacques Gira via email: bgira@email.lynn.edu and Jennifer Malanga Martinez via email: jmartinez12@email.lynn.edu. Further, you may contact Dr. Kelly Burlison, the Dissertation Chair at KBurlison@lynn.edu. If you feel you have not been treated according to the descriptions in this form, or that your rights as a participant in research have not been honored during the course of this project, or you have any questions, concerns, or complaints that you wish to address to someone other than the researchers, you may contact the Lynn University Institutional Review Board at 3601 North Military Trail, Boca Raton, Florida, 33431.

ELECTRONIC CONSENT: Please select your choice below. You may print a copy of this consent form for your records.

First Name *

Short answer text

Last Name Initial *

Short answer text

Date *

Month, day, year

Have you have read the above information? *

◯ Yes, I have read the Consent Form

◯ No, I have NOT read the Consent Form

Do you voluntarily agree to participate? *

◯ Yes, I voluntarily agree to participate in the research study.

◯ No, I do NOT wish to participate in the study.

Are you at least 18 years of age? *

◯ Yes

◯ No

How many years have you served at the District Leadership level (Department specialist, manager, director, superintendent, etc.)? *

◯ 1-5 years

◯ 6-10 years

◯ 11-15 years

◯ 16-20 years

◯ More than 20 years

◯ No Experience

How many years have you served at the School Level (teacher, coach, area specialist, assistant *
principal, principal, etc.)?

○ 1-5 years

○ 6-10 years

○ 11-15 years

○ 16-20 years

○ More than 20 years

○ No Experience

Do you permit the Video & Audio to be recorded during the interview? *

○ Yes

○ No

APPENDIX D [RECRUITMENT FOR RESEARCH STUDY]

Recruitment for Research Study

Who might you know that would be interested in learning about our study? If you know more than one prospective participant please click submit another response after submitting your first repsonse.

Prospective participant First Name *

Short answer text

Prospective Participant Last Name

Short answer text

Is this person currently employed by a school district? *

◯ Yes

◯ No

:::

Please provide us with the prospective participant personal phone number.

Short answer text

Please provide us with the prospective participant personal email address.

Short answer text

APPENDIX E [INTERVIEW QUESTIONS]

PARTICIPANT INTERVIEW QUESTIONS

Research Questions

- What tools and/or resources can be provided to departments to review the DQS survey data and create department action plans?

- What processes can be put in place to ensure that departments are monitoring customer support efforts throughout the year?

- What methods can district leadership utilize to encourage employees to establish and maintain a continuous improvement culture?

Interview Questions

1. What professional roles have you served within a large urban school district?

2. Are you familiar with the Department Quality Survey (DQS)?
    a. What are your experiences with the Department Quality Survey (DQS)?
    b. What are your perceptions of the DQS?

3. Based on your experiences, what did you find valuable in the DQS?

4. What could have improved your experiences or made the CI process more effective for you?

5. What role did District leadership play in providing support to departments to improve the quality of customer service given to schools?

6. How/What would your supervisor have provided you to better assist you in the implementation of CI?

7. How are departments held accountable for improving customer service?

8. What processes would you put in place to ensure CI throughout the year?

9. If a tool is provided to departments to help manage CI, what features would be helpful?

APPENDIX F [IRB APPROVAL]

LYNN UNIVERSITY

Institutional Review Board

3601 North Military Trail
Boca Raton, FL 33433
T: 561-237-7082
561-237-7000 | lynn.edu
Jennifer J. Lesh, PhD, Chair

DATE: 10/16/2020

TO: Billy Gira & Jennifer Martinez
FROM: Jennifer Lesh
PROJECT NUMBER: 20.04

PROTOCOL TITLE: An Examination of Continuous Improvement in an Educational Organization
PROJECT TYPE: New Project

REVIEW TYPE: Expedited Review
ACTION: APPROVED
APPROVAL DATE: 10/16/2020
EXPIRATION DATE: 10/16/2021

Thank you for your submission for this research study. The Lynn University IRB has APPROVED your New Project. This approval is in accordance with 45 CFR §46.111 Criteria for IRB approval of research. All research must be conducted in accordance with this approved submission.

It is important that you retain this letter for your records and present upon request to necessary parties.

- This approval is valid for one year. **IRB Form 4: Application to Continue (Renew) a Previously Approved Project** will be required prior to the expiration date if this project will continue beyond one year.
- Please note that any revision to previously approved materials or procedures must be approved by the IRB before it is initiated. Please submit **IRB Form 5 Application for Procedural Revisions of or Changes in Research Protocol and/or Informed Consent Form 1 of a Previously Approved Project** for this procedure.
- All serious and unexpected adverse events must be reported to the IRB. Please use **IRB Form 6 Report of Unexpected Adverse Event, Serious Injury or Death** for this procedure.
- At the completion of your data collection, please submit **IRB Form 8 IRB Report of Termination of Project.**

If you have any questions or comments about this correspondence, please contact the chair of the Lynn University IRB, Jennifer Lesh (jlesh@lynn.edu).

Institutional Review Board
Lynn University
3601 North Military Trail
Boca Raton, FL 33433

561-237-7000 | lynn.edu