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Abstract

Massachusetts curriculum frameworks in English/Language arts (ELA) aligned to the Common Core State Standards were issued in 2011 and full implementation is expected for the 2014-2015 school year. Teachers have been tasked with aligning their curriculum such that their lessons and units will prepare their students for state assessments aligned with the new frameworks. This study utilized a casual-comparative *ex post facto* design to examine, through the lens of Piderit’s (2000) multidimensional response to change in conjunction with Chin and Benne’s (1961) leadership strategies of planned change, the extent to which a teachers’ perceptions of leadership style affect that teacher’s cognitive, emotional, intentional and behavioral response to the state-mandated changes in literacy instruction across content areas. Leadership style was operationalized as one of the following: power-coercive, rational-empirical, or normative-reeducative. An online survey was distributed to all K-12 members of the Massachusetts Teachers Association. Data were analyzed via MANOVA; significant Pillai’s trace indicated the need for one-way ANOVA and *post-hoc* tests for each independent variable. Results indicate a significant difference exists in teacher responses between leadership styles. Teachers responded cognitively, emotionally and intentionally more positively when they perceived a normative-reeducative or a rational–empirical style versus a power-coercive style. Discussion centers on effective leadership during changes in policy and practice in public education.

*Keywords:* planned change, mandated curriculum change, teacher response to change, leadership style, educational leadership, Common Core State Standards
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Chapter 1: Introduction

Statement of the Problem

Districts across Massachusetts have been working to implement the Massachusetts Curriculum Framework for English/Language Arts and Literacy issued in 2011, aligned with the Common Core State Standards (CCSS). The frameworks imply literacy is a cross-curricular endeavor with the subtitle Incorporating the Common Core State Standards for English Language Arts and Literacy in History/Social Studies, Science and Technical Subjects. A planned change in the curriculum will elicit some response from teachers (Avila, Zacher, Griffo, & David Perason, 2011; Chan, 2010; Craig, 2012; Gee, 2003; Hargreaves, 2004; Hargreaves & Fullan, 2009; Melville, 2008; Moyer, Cai, Wang, & Nie, 2011; Richards & Skolits, 2009; Smith & Southerland, 2007; Vogler, 2008; Witz & Lee, 2009), and will create administrative challenges for leadership to adequately and positively support the teachers during the implementation of curricular changes (Buczynski & Hansen, 2010; Davis, Beyer, Forbes, & Stevens, 2011; Gibson & Brooks, 2012; Goldschmidt & Phelps, 2010; Hargreaves & Fullan, 2009; Huffman, Thomas, & Lawrenz, 2003; Johnson, 2007; Johnson & Marx, 2009; Margolis & Nagel, 2006; Paik, Zhang, Lundeberg, Eberhardt, Shin, & Zhang, 2011; Schnellert, Butler, & Higginson, 2008).

This state-mandated, planned curriculum change implies a multidisciplinary approach to literacy and suggests adjustments will be required at the instructional level for non-English/Language arts (ELA) teachers for whom literacy instruction has historically not been mandated and may be outside of their area of expertise. Further, teachers of reading and language arts will be compelled to adjust their lessons and units of instruction to integrate more science, technology and social studies content - subject matter which is also unfamiliar or outside
of their area of expertise. School leadership can play a pivotal role in determining the teachers’ response to this planned curriculum change (Bogler, 2001; Parise & Spillane, 2010). The need for motivating and supportive leadership to drive a sizeable and diverse group of teachers toward meaningful adjustments in classroom instruction during a planned curricular change of this magnitude creates a problem of practice for both the administration and teachers.

The teachers are at the core of the implementation – without teacher acceptance of a change, meaningful adjustments in classroom curriculum and instruction will not occur. Therefore the manner in which teachers respond to school leadership style during the change may drive the success or failure of the implementation. The seminal leadership work of Chin and Benne (1961) identified three leadership styles which will serve as the framework for this study: a rational-empirical style which assumes a change agent will embrace the change if it is shown to make logical sense; a normative-reeducative style which encourages participation and accounts for the culture of an organization; and the power-coercive style in which a leader enforces his/her will with little regard for input or participation of the change agents. It has been demonstrated that an individual’s response to mandated change will be directly impacted by the style of leaders working to implement the change (Burke, 2008; Piderit, 2000; Szabla, 2007), consequently teacher perceptions of leadership style during this change will likely affect how the curricular change is integrated into classroom instruction (Hargreaves, 2004).

School leadership has been put into a position whereby leaders must ensure that curricular changes are implemented effectively as state assessments will be aligned to the new curriculum. The extent to which the implementation is effective may hinge on the teachers’ perception of the leadership style during the change; more specifically, the manner in which teachers respond cognitively, emotionally, and intentionally to the change may contribute to the
overall success or failure of the change. Therefore the purpose of this quantitative, survey study was to examine the extent to which a teacher’s perceptions of leadership style affect that teacher’s cognitive, emotional and intentional response to the state-mandated changes in literacy instruction across content areas. Utilizing a framework constructed of the multidimensional response to change (Piderit, 2000) in conjunction with Chin and Benne’s (1961) leadership strategies of planned change, the results of this study further the research concerning successful implementation of current and future planned curriculum changes.

**Significance of the Problem**

Educational reform in the United States has emerged gradually over the last 150 years from a local, community and school-based process to one that is politically charged, federally funded, and highly contentious (Ellsworth, Harris, & Moore, 2011; Harris, 2011; Pennycook, 2011; Tamir, 2011). Reform has become a national concern driven by media and political agendas. Though law, reform initiative, and state and federal requirements dictate much of what is intended to occur in public education, ultimately the success or failure of changes in education comes down to how district and school leadership provide an environment whereby the teacher is able to translate those initiatives into actual changes in the classroom (Hargreaves, 2004).

Adequate and appropriate leadership by school administrators may cultivate a positive teacher response to a mandated change thus increasing the likelihood for changes in classroom instruction (Buczynski & Hansen, 2010; Davis, et al. 2011; Gibson & Brooks, 2012; Goldschmidt & Phelps, 2010; Hargreaves & Fullan, 2009; Huffman et al., 2003; Johnson, 2007; Johnson & Marx, 2009; Margolis & Nagel, 2006; Paik et al., 2011; Schnellert et al., 2008).
Examples of research concerning the teacher response to mandated curriculum reform in the United States reveal teachers require adequate support from their building and district leadership to plan and implement changes (Davis et al., 2011); the style to which a leader subscribes may determine the type and scope of that administrative support. If teachers perceive sufficient leadership support, they are more likely to embrace the change (Buczynski & Hansen, 2010; Davis et al., 2011; Gibson & Brooks, 2012; Goldschmidt & Phelps, 2010; Hargreaves & Fullan, 2009; Huffman et al., 2003; Johnson, 2007; Johnson & Marx, 2009; Margolis & Nagel, 2006; Paik et al., 2011; Schnellert et al., 2008).

The study of teacher response to mandated curriculum reform is an endeavor not unique to the United States. Examples of research concerning planned curriculum change and reform are evident in developed countries with highly structured public educational systems. For example, in Japan an implementation of a mandated English curriculum hinged significantly on the resources made available to teachers during the implementation process, as well as the teacher perceptions and beliefs concerning the reform (Underwood, 2012). Similarly, studies have explored the interaction between planned curriculum change and a teacher’s instructional practice and perceptions in China (Wang & Paine, 2003), New Zealand (Fernandez, Ritchie, & Barker, 2008), Israel (Bogler, 2001), and Singapore (Lam, Alviar-Martin, Adler, & Sim, 2013; Rossi, Fry, McNeill, & Tan, 2007). These studies revealed a teacher’s propensity to embrace mandated change increased with a perception of administrative leadership support. Additionally, research in England (Opfer, Pedder, & Lavicza, 2011) suggests there are multidimensional influences on teacher perceptions and beliefs during educational change—a notion further supported by research in the Netherlands (van Venn, Sleegers, & van de Ven, 2005) which revealed how a teacher’s emotional response to reform and change may affect enthusiasm and
propensity to change. In each study, teacher perception of the change emerged as central to the implementation of a reform or educational change. Hence, it may be inferred that globally, teachers are faced with the evolving nature of public education and are in a seemingly perpetual state of change; teacher perceptions of leadership style during change implementation play a critical role in the success or failure of a change.

It may be said then, if a teacher perceives a leadership style which encourages thoughtful and meaningful change, that teacher is likely to display a positive response to that planned change; conversely, the opposite also may be true. One notable difference in the research concerning American curriculum reform versus that of other, developed countries is the concern American teachers have for loss in teacher autonomy and identity (Craig, 2012; Masuda, 2010; Sandholz & Scribner, 2006) as well as the changing role of the teacher from active curriculum designer to passive curriculum implementer (Coenders, Terlouw, & Dijkstra, 2008; Craig, 2012). Leadership style during a planned change may address or influence those perceptions and be a determining factor in the success or failure of the change implementation. As the state of Massachusetts moves toward full implementation of a mandated, planned curriculum change, domestic and international research suggests a need for supportive and encouraging school leadership to facilitate a successful implementation.

**Positionality Statement**

My path into education was a long and winding one. Fresh out of college, I worked in international sales and marketing for a small medical device firm in Ithaca, NY. As a private company, decisions were made quickly and implementation of changes happened through company-wide cooperation. Though these changes were not always completely smooth, the
small, private nature of the business offered employees opportunities to voice opinions and suggest alternative strategies or ideas. During my time at this company, I spent the early mornings and/or evenings coaching the novice women’s rowing team at Ithaca College.

Gradually I realized I preferred the teaching aspects of rowing to the 8 x 8 cubical-lifestyle of international business, so I moved to Boston to coach full-time at Boston University. There I learned that bigger is not always better.

In Ithaca, both organizations for which I worked – the college and the business - were small and tightly run. In Boston, layers of bureaucracy framed my daily life. What had been accomplished in Ithaca with one phone call now took one week of back and forth emails, phone calls, and occasionally trips to the office of several individuals before the task was completed. The trade off was better equipment, fancier facilities, and larger budgets from which to recruit faster athletes. In terms of my own bias, I learned though I enjoyed the many benefits of the ‘big leagues’, I disliked the inefficiencies of the larger organization. This is something which I will come back to in the following paragraphs to connect back to curriculum work.

The circuitous route to the classroom continued as I left rowing all together and taught horse-back riding and ran my own small business as a personal trainer. In a move back to the smaller, tightly run career option, the teaching involved as a trainer and an instructor became the focus of everything I did. I would see a person on the street and think about how their balance looked off, or how their posture needed adjustments. If a client or student told me they used something I said or did in a lesson in other parts of their life, I felt I had done my job. Gradually, I knew I was moving toward a career in teaching.
The bridge from private business to public education.

As educators who have worked both in and outside of public education know, there is much more to teaching than simply the teaching. Again, I find myself frustrated with the bureaucracy and the snail’s pace of needed change and implementation. More often than not, I am inspired by my interactions with the students, yet frequently aggravated by my experiences with the adults. Though I work in an excellent school with strong leadership and reciprocal respect for faculty and staff, communication remains a challenge. As “only” a teacher, I sometimes struggle to find a voice in an organization which only listens to state and federal agencies – not the folks in the trenches. Again, my bias shows through in that I believe in local control of schools and minimizing state and federal involvement. Though I do recognize the need for some regulations in an effort to provide resources for districts less fortunate than mine, the current laws seem to complicate and cloud the larger issues of providing a strong education for all children, regardless of geography and socioeconomic status.

After spending five years teaching 6th grade reading and language arts, I left for an 18-month maternity leave. My return to work was met with a new role in the school as a ‘study skills’ teacher for the sixth grade, and a speech and debate instructor for the eighth grade. During a conversation with the former assistant superintendent, she suggested this new role would align nicely to a doctoral study program in curriculum leadership as I was able to integrate myself into the entire sixth grade curriculum via the avenue of study skills rather than being ‘constrained’ to English/Language Arts. Though that may be true, I confess I was largely unsuccessful at this for a number of reasons.

First, the curriculum at our school, like many schools, is segmented. The math department rarely engages in conversations with the English department, which has little or
nothing to do with the science and social studies departments. Each operates as its own entity and only in rare cases do cross-curricular, collaborative events take place. But that is changing.

Though I am not necessarily a proponent for moving in the direction of national learning standards, and I am completely against a prescribed curriculum being dictated to the teachers (a bias at face value, no doubt), I do think the Common Core State Standard Initiative has the potential to create some positive changes by way of integrating a more cross-curricular approach to public education. Yet the outcome of this change in curriculum will only be realized if teachers are on board not just in words, but in actions; whether we are on board or not will hinge on quite a few factors, many of which I hope to explore in my research.

Contextual factors will most likely come in to play in terms of the implementation process such as paid professional development time for integrating new learning standards into curriculum, time offered to teachers for cross-departmental collaboration, building leadership and district leadership styles, and of course, the perceptions of the teachers regarding the value of the change and the value of their voice in the change process. I bring up this list because of some of the preliminary reading I have done to prepare for this study, but also because these are things I would be concerned about as an English teacher (things which will not affect me at all in my current role). At the core, a change in curriculum will only be positive if the teachers implementing that change see value in the change and make adjustments in their teaching as the result of the change.

There is a fine line between openly embracing a change and charging blindly into a mandated change. Veteran teachers at our school have commented on how this is just another initiative and though everyone will run around spending lots of time and money to comply,
nothing will really ever change. It could be argued this is not a healthy attitude and perhaps a 
more critical look at the initiative is in order, yet having spent over ten years working outside of 
public education, I can completely understand how some veteran teachers have become so jaded 
to curricular reform – there is little room for teacher input and opinion in state-mandated 
changes, and there are no avenues in place for teachers to explain why certain aspects of the 
change may work well while others do not.

That being said, public education should not be compared to a business – children are not 
products and teachers are not factory workers, however if I may be allowed, for a moment, to 
compare the structure and culture of a well-run business to that of public education – schools 
really should have gone bankrupt years ago.

How does this all relate back to me as a “vulnerable observer” of curricular reform? I 
believe large-scale change is okay – so long as it is conducted at a local level. I believe 
communication is the key to successfully moving forward with changes to public education – 
right now communication is a one-way street from state offices to district offices to schools and 
finally to teachers – that needs to change. I believe public education can take a lesson from a 
business model, but only on the operational side of things – never with teacher-student 
relationships and certainly never by viewing students as “commodities”, and I know if teachers 
had a louder, more valued voice in things, positive changes would ensue. With all of these 
beliefs, I am wrought with vulnerabilities and biases, however I am committed to exploring the 
beliefs and perceptions of others from as neutral a position as is possible so as to foster an 
understanding for myself of the roots of our current educational system, and to explore where we 
are capable of growing.
Research Question

The research question for this study was framed around the intellectual goal of acquiring an understanding of the manner in which a district’s school leadership style may influence teachers’ response to mandated change. In turn, it was the hope of this researcher to explore how that perception of leadership style affects the ways teachers makes changes in classroom instruction and unit design. There is a need to create policy toward educational change and to disseminate information about that policy, but school leadership must also assess the effectiveness and utility of that policy to continue to build and develop ideas to further the interests of public education (Giroux, 2010). If a mandated curricular change does not yield an instructional change, this information should be passed along to school leadership to determine not only why that is occurring, but what may be done to improve the likelihood of changes being implemented as intended in the future. To those ends, the present study explored the following research question:

To what extent does a teacher’s perception of the school leadership style affect that teacher’s cognitive, emotional, and intentional response to the implementation of a planned, state-mandated curriculum change?

This question facilitated the investigation of the relationship between the teacher’s perception of his/her school’s leadership and that teacher’s multidimensional (cognitive, emotional and intentional) response to a mandated cross-curricular change occurring under the umbrella of literacy via the new Massachusetts Curriculum Frameworks in English Language Arts and Literacy. It was hypothesized that the teachers’ perception of leadership style will influence his/her acceptance or resistance of a change, and may also affect the teacher’s intention to implement changes in curricular design and instructional practices. Cognitively, a teacher will
respond to a mandated change based on his/her beliefs (Piderit, 2000); if a teacher believes he/she has been well-informed (Chung, Su, & Su, 2012) and the information aligns with his/her own goals and beliefs about teaching (Hallinger, 2011), he/she is more likely to respond favorably to the change. Emotionally, a teacher seeks out a sense of trust, involvement, and communication to respond to a change in an emotionally favorable way (Hulipia & Devos, 2010). That teacher’s intentional response to the change tends to hinge on a perception of administrative support (Parise & Spillane, 2010) and the extent to which a teacher believes the change will enhance the students’ learning experience (Heck & Hallinger, 2010). A more in-depth discussion of this tripartite theory of attitudes – also referred to interchangeably in this paper as the multidimensional response to change - is outlined in the following theoretical framework section.

**Theoretical Framework**

To frame the investigation of the research question, this study employed the conceptual structure utilized by Szabla (2007) encompassing two essential paradigms: (1) the theory of multidimensional response to organizational change, and (2) leadership style. By delving into the connections between the school leadership style and the teachers’ cognitive, emotional, and intentional response to this mandated change, the hope was to gain new knowledge and perspective concerning the multifaceted aspects of teacher resistance and acceptance of mandated curriculum change, and how leadership style may affect those various aspects.

**Leadership style.**

Though the implementation of the new curriculum frameworks came mandated by the state of Massachusetts, the actions taken during the implementation of this change remain the responsibility of the individual school districts, thus each district administration may determine
its own leadership style and implementation strategy. In turn, building-based leadership must interpret and lead the school-based implementation of the new frameworks. It is important to bear in mind this attempt at improving the curriculum and aligning to the CCSS is considered a planned organizational change — one for which administrators were given warning, information, and preparation time. In light of the fact that districts were made aware of the changes and given a timeline for implementation, this paper will utilize the seminal work of Chin & Benne (1961) and the construct of leadership styles during planned organizational change. Chin and Benne’s work implies there are three, principal leadership styles during a planned change: (1) rational-empirical, (2) normative-reeducative, and (3) power-coercive (Szabla, 2007); each will be explained in greater detail below.

Rational-empirical.

The rational-empirical leadership style presumes the change agent — for the purposes of this research, the teacher — will adopt a change if the change can be justified and is perceived as being beneficial in some way to that change agent (Quinn & Sonenshein, 2008). In order to facilitate a positive reaction and adoption of a change, this style calls for a leader to tell why the change is required and how it will improve the organization. Leaders who subscribe to this style presume that reason and logic will guide change agents (Szabla, 2007), thus if adequate and logical reasons are provided by leadership, the agents will respond in a positive fashion.

Normative-reeducative.

Similar to rational-empirical in that this style also assumes change agents will act in a rational and self-interested manner, the normative-reeducative leadership style goes a step further to view “people as inherently social, guided by a normative culture that influences behaviors,” (Quinn & Sonenshein, 2008). With this type of leadership style, change agents are given
information, but are also encouraged to collaborate in an effort to reeducate and normalize organizational culture and goals. The distinguishing characteristic of this leadership style is the emphasis on participation – specifically a leader utilizing this style will encourage change agents to participate in “designing, developing, and implementing the change effort,” (Szabla, 2007, p. 529).

**Power-coercive.**

Power is the root of this leadership style (Chin & Benne, 1961). If a leader chooses to force change agents to adopt a change essentially imposing his/her will on those with less organizational power or clout, the leader has adopted the power-coercive strategy (Quinn & Sonenshein, 2008). This style of leadership implies the leader has little regard for the opinion or input from change agents and instead it is assumed by the leader that his/her orders will be carried out with little or no consultation (Szabla, 2007).

**Multidimensional response to organizational change**

In the last decade, research on organizational change suggests a complex and multidimensional set of factors affecting and being affected by large-scale planned change (Kaniku, 2012; Kuhn & Nelson, 2006; Zins, 2007). A school setting is indeed a complex and multidimensional organization encompassing the cultures, beliefs, and knowledge of not only the adults and students within the school building, but those of the local community and state administration (Brint, 2006). School leadership and teachers must operate in a diverse and ever-changing environment, thus even with a planned organizational change such as the implementation of the new curriculum frameworks, the human multidimensional response to a change will have an influence on the success or failure of the change. For the purposes of this paper, the human response to change will be presumed to occur at a cognitive, emotional, and
intentional level; Piderit (2000) referred to this as the tripartite theory of attitude. This theory will operationalize the multidimensional response to change which assumes that an individual will instinctively respond to a change based on what he/she knows, feels, and intends to do (Szabla, 2007). In turn, those responses which occur at a cognitive, emotional, and intentional level will dictate the level of resistance an individual will have toward a planned change.

Figure 1.1 illustrates a conceptualization of the tripartite model as described by Breckler (1984). Belief is pivotal in establishing a cognitive response to a change (Piderit, 2000). How an individual evaluates the changes, based on his/her own beliefs, will frame his or her attitude toward the change. This valuation may be either positive or negative, and in some cases may even be neutral (Eagley & Chaiken, 1993). At a cognitive level, teachers recognize curriculum change to be inevitable (Craig, 2012), but leadership style during an implementation may affect a teacher’s beliefs and perceptions concerning the curriculum change (Goddard, Neumerski, Goddard, Salloum, & Berebitsky, 2010).

Emotionally, an individual will respond based on his/her feelings. These feelings are intertwined with belief, but are a result of what Eagley and Chaiken (1993) call the sympathetic nervous system response to the change. It can be said then that teachers will respond emotionally based on their beliefs and perceptions of self as both a teacher and a member of the community (Hargreaves, 2004).

The intentional level of a teacher’s response to change may be examined based on a teacher’s report of the extent to which classroom-based lessons will be aligned to the new curriculum. Nevertheless, though an attempt may be made to examine each level in isolation, it
is the interaction between each level which fuels a teacher’s acceptance, resistance, or rejection of a change.

Figure 1.1 The Tripartite Theory of Attitude. Hierarchy of the effects of a stimulus (such as the implementation of a mandated curriculum change) on the attitude of a change agent in terms of a cognitive, emotional and intentional response; referred to as the tripartite theory of attitude (Piderit, 1999).

**Leadership style and the multidimensional response to change.**

This paper explored how a teacher’s cognitive, emotional, and intentional response to a planned change in curriculum is affected by that teacher’s perception of administrative leadership style. Figure 1.2 demonstrates Szabla’s (2007) conceptualization of the leadership style framework utilized in this study. Each leadership style will evoke a response in one, some, or all dimensions of the tripartite theory of attitude. It was the intention of this researcher to explore those responses and make recommendations for leadership as schools move forward with the implementation of the new Massachusetts Curriculum Frameworks.

The multidimensional response to change theory, when applied to the responses, attitudes, intentions, and resistance of content area teachers toward the changes in curriculum mandated as a result of Massachusetts’ adoption of the CCSS framed this study, the purpose of which was to investigate teacher perceptions of the new curriculum frameworks and their intentions to make modifications to their instructional practice. Utilizing the combined lenses of the theory of multidimensional response to organizational change, and Chin and Benne’s (1961) leadership strategies, the present study found significant differences between the leadership styles in terms of teacher response to the change in curriculum. These results may be useful in informing educational leaders and policy-makers when planning for the implementation of future initiatives.
Conclusion

Though significant literature exists regarding teacher response to change (Chan, 2010; Gee, 2003; Hargreaves, 2004; Hargreaves & Fullan, 2009; Melville, 2008; Moyer, CaWang, & Nie, 2011; Richards & Skolits, 2009; Smith & Southerland, 2007), and the influence of school leadership on teacher response to change (Fullan, 2002; Hall, Rutherford, Hord, & Huling, 1984; Kelly, Thornton, & Daugherty, 2005) this study explored a unique change – the implementation of a new, state-mandated literacy curriculum for teachers unaccustomed to literacy instruction – and how teacher perception of leadership during this change affected the teachers’ cognitive, emotional, and intentional response.

If educational policy is moving toward a more holistic, cross-curricular style of curriculum design and instruction, it is important to study ways to smooth the implementation of such policies so that any planned change in curriculum will be well received by the teachers and will enhance student learning and classroom experiences.
Chapter 2: Literature Review

Since the introduction and large-scale adoption of the Common Core State Standards (CCSS) across much of the United States, school and district leaders across the country have led their teachers into a large-scale, planned curriculum change. In Massachusetts, district leaders and teachers may be in the process of implementing curricular changes as outlined in the 2011 updates to the Massachusetts English Language Arts Curriculum Frameworks aligned to the CCSS. Content area teachers outside of reading and language arts will be tasked with explicitly instructing students in literacy, while reading and language arts teachers must integrate more non-fiction and expository texts into their existing units and lessons. This change in the curriculum has initiated the need for teachers to practice in a subject matter with which they may not feel comfortable, and in which they may not be adequately prepared or knowledgeable. Because top-down, mandated change does not necessarily equate with sustained and meaningful educational change (Fullan, 2002), school leadership style during this mandated curriculum change may affect the teachers emotional, cognitive, and intentional response to the change.

The purpose of this chapter, therefore, is to review the literature concerning how leadership style during planned organizational change affects an individual’s response to the change. This chapter will first review the literature investigating the relationship between normative-reeducative, rational-empirical, and power-coercive leadership styles and subordinate response to these styles. There is a notable gap in the literature with regard to these three leadership styles in education, thus most of the research concerning normative-reeducative, rational-empirical, and power-coercive leadership styles are in the context of public or private organizations. Bearing in mind the deficit literature with regard to Chin and Benne’s leadership styles in public education, this chapter will then review traditional and emerging studies of
educational leadership style to help generate some perspective concerning the similarities and differences of traditional and emerging leadership in public education and the leadership styles which defined the present study. This chapter will then change course to discuss research concerning cognitive, emotional, and intentional response to mandated change both in and outside the field of public education. The chapter will conclude with a discussion of areas in which further research may be warranted.

**Leadership Style**

Leadership style in public education has been studied extensively since the early 1980s, however notably absent from the literature on educational leadership are studies which employ the seminal leadership styles of Chin and Benne (1961); indeed only one education-related study integrating Chin & Benne’s leadership styles appears to exist in the literature. The following section will therefore review a diverse group of studies which utilize all or part of Chin & Benne’s construct to operationalize leadership style.

**Power-coercive, rational-empirical, and normative-reeducative leadership styles.**

**Power-coercive.**

According to Burke (2008), the sources of power in a power-coercive style are economic or political. This style involves unilateral, top-down communication from the leader, and the assumption on the part of inferior members of the group, that superior members will establish the course of change (Janićijević, 2012). Though the name “power-coercive” may conjure negative images of leadership assuming managerial or political power and exercising such in an effort to generate change, there are also instances in which this style may be appropriate (Janićijević, 2012; Lozano 2006).
For example, in an article which generated eight hypotheses concerning the causal relationships between organizational culture and leadership styles during change, Janićijević, (2012) discussed how the possibility of creating rapid change which all employees must adopt may be achieved with a power-coercive leadership style. However, the power-coercive style was revealed to allow only first order changes in affected individuals; first order changes were defined as those which do not include or take into account for change agents’ assumptions or values.

This was further supported by Lozano (2006) in an article discussing the incorporation of sustainable development into the university system in the United Kingdom. Lozano outlined and categorized barriers to this potential change in the university system. In the discussion, Lozano suggested the power-coercive strategy to be a “last resort”, however potentially appropriate to address certain barriers to change such as an individual’s lack of trust in a system, or a difference in values between a leader and a subordinate.

**Rational-empirical.**

According to Chin & Benne (1985) there are six strategies under the umbrella of the rational-empirical style: (1) disseminate knowledge so individuals will understand and approve the change, (2) select personnel who will help in disseminating that knowledge and dismiss those who will impede it, (3) hire expert consultants who are able to deliver the knowledge, (4) use data derived from applied research or action research to increase the acceptance of the change, (5) use utopian thinking to convey an improved vision for the future, (6) clarify and classify terminology and the names of various elements in the change to convey a sense of clarity and debunk any myths which may be associated with those elements of change (Burke, 2008).
Outcomes in terms of lasting and meaningful change manifested via this leadership style are well summarized in this quote from Janićijević (2012), “A deterministic rather than voluntaristic assumption of human action underlines this strategy. The process of change does not include the free will and choice of the members of the organization. The course of action, or of change, is already determined by the objective nature of the problem, and it is the task of those who make decisions in the organization merely to apply it through adequate knowledge and theory” (p. 31).

It is that application of knowledge in consort with the assumption that humans will behave rationally if furnished with all the necessary information which guided Lozano’s (2006) inference that the rational-empirical style worked well to dispel resistance based on a lack of information or confusion concerning the change. Lozano discussed the need for educating individuals affected by a change thus instilling a sense of logic and recognition of the benefits of the change. Logic and reason also formed the basis for Szabla’s (2007) conclusions concerning the implementation of a new employee-appraisal program for government workers. In his study, the employees who perceived a rational-empirical style from their leaders were likely to express positive beliefs, emotions and intentions to embrace the mandated change.

Normative-reeducative.

A normative-reeducative style assumes change agents will tend to conform to social norms and respond favorably to changes aligned with their own individual values. Yet often, those norms are conflicting in some way with those values thus influencing an individual’s attitudes. Leadership must therefore employ subtle and tactical attempts to reeducate change agents such that values, attitudes and skills conform to the new social norm (Burke, 2008). The two main strategies in this style of leadership involve (1) an improvement of the problem-solving
capability of the system – not just fixing the problem, but learning from it to develop the individuals within the system as they are the most basic and most essential unit in any organization, and (2) improve the individual’s ability to solve-problems (Burke, 2008) through employee participation in the change process (Szabla, 2007).

The individual as the change agent is at the heart of studies involving a normative-reeducative leadership style. In a conceptual article reviewing the literature on individual’s readiness to change, it was posited when a normative-reeducative style is employed during an organizational change, individuals showed a greater level of readiness to change (Choi & Ruon, 2011). This conclusion was further supported by Sheaffer, Phillips, Donlevy, and Pietruch (1998) in a study concerning continuing education for nurses. Sheaffer et al. utilized a normative-reeducative style during the implementation of a continuing education program and discussed the importance of communication and participation of staff as being instrumental in successful, ongoing behavioral changes. The normative-reeducative style evident during this organizational change improved attitude, acceptance and readiness to change of the nursing staff.

This increased readiness to change may be due in part to a more positive attitude toward the change as evidenced in Szabla’s (2007) study which revealed that employees who perceived a normative-reeducative leadership style demonstrated positive intentions, emotions, and beliefs toward the change; indeed his conclusions indicated the normative-reeducative style and the rational-empirical style, with an emphasis on reason and participation respectively, yielded comparably positive responses from the employees involved in the change. Additionally, the normative-reeducative style may also contribute to long-term implementation of changes as revealed in a study of adjustments made to improve hospital patient care in Kenya (English et al,
30. English et al. discussed how changes in the hospital were successfully initiated and sustained over time when a normative-reeducative style was employed.

The success of the normative-reeducative style was also reported in an education-related study which utilized Chin & Benne’s leadership styles. Kennedy (1987) categorized behaviors observed during teacher in-service trainings and professional development and related those behaviors to Chin and Benne’s leadership styles. It was concluded that educational professionals are very much guided by attitude – specifically their cognitive response to change tended to guide their behavior, therefore a normative-reeducative style “with its emphasis on active participation and involvement…offer[ed] the greatest potential” (p. 165) for meaningful and long-lasting educational change amongst participating teachers.

Because the leadership styles of Chin and Benne have been utilized to study leadership in public education on a very limited basis, it is helpful to consider leadership styles most often associated with research in public education. It is important to gather existing perspectives and explore the knowledge base concerning styles of leadership typically studied in educational setting when conducting a study which utilizes a framework not often seen in this context. Therefore, the following section will overview the traditional and emerging educational leadership research, and will conclude with a rationalization for this study’s use of a framework which incorporates the seminal leadership styles of Chin and Benne.

**Traditional and emerging research on educational leadership style.**

Leadership in public education and the style educational leaders employ in guiding teachers toward school or district goals have been studied extensively. In the early 1980’s, Hall et al. (1984) suggested a “responder, manager, initiator, facilitator” model of change which defined leadership behavior in terms of those four core areas. Leadership style has also been
pigeon-holed into the narrowly defined role of supervisor (Reitzug, 1997), and expanded to encompass a multifaceted and diverse set of styles, roles and behaviors including supervision of curriculum and instruction, facilitation of a shared vision and set of common goals amongst the faculty, and promotion of a positive learning environment rich with opportunity for professional development and incentives for teachers to engage in practices which improve their students’ performance (Hallinger, 2003).

To say that education leadership is multifaceted is to understand the myriad of behaviors, mindsets, contexts, and issues within which school leadership operates on a daily basis. Researchers admit that operationalizing leadership style in a school setting presents a challenge (Bess & Goldman, 2001; Currie, Lockett, & Suhomlinova, 2009; Ghamrawi, 2013; Hall et al., 1984; Leonard & Leonard, 1999) in that leaders tend to respond to contextual or situational issues in a variety of ways (Currie et al., 2009; Easley, 2008) often combining and intertwining elements of various leadership styles and behaviors (Fullan, 2002; Hadjithoma-Garstka, 2011). Nevertheless, three leadership styles have emerged to receive significant attention during the last 15 years: instructional, transformational, and distributed leadership (Bess & Goldman, 2001; Hallinger, 2003; Heck & Hallinger, 2010; Louis & Robinson, 2012; MacBeath & Cheng, 2008; Marks & Printy, 2003; Mulford & Silins, 2011). These three styles will be discussed in greater detail in the following sections.

**Distributed leadership.**

Research in the context of school leadership has frequently utilized distributed leadership to frame leadership style (for example, Hallinger, 2011; Heck & Hallinger, 2010; Hulpia & Devos, 2010; Kaniuka, 2012). The distributed style conceptualizes leadership as a group effort; the school leader distributes leadership roles and responsibilities thereby enabling and often
empowering the faculty to become agents for school improvement (Harris & Spillane, 2008). In some instances, distributed leadership evolves and is shaped over time as the organization’s human resources, needs, and goals change (Harris, 2008).

For example, in a review of the literature concerning organizational change and distributed leadership, Harris (2008) suggested there is a connection between the use of a distributed leadership style and sustaining organizational change. The discussion posited that informal school leaders – those without formal leadership titles or duties – may be influential in that their interaction with teachers via ongoing collaboration and discussion serve to sustain meaningful change. These findings are further supported by a study designed to investigate the impact of distributed leadership practices on performance outcomes; this study revealed that changes implemented with a distributive leadership style appear to be directly related to school improvement (Heck & Hallinger, 2010).

Nevertheless, it has been cautioned that distributed leadership does not necessarily equate with improved organizational performance. In an article outlining potential uses for and limitations to a distributed leadership style, Harris and Spillane (2008) submitted that there are complex interactions between teachers and the administration thus there is a need for school leadership to make a contextually appropriate analysis of the existing leadership. It has also been suggested that ongoing changes in informal leadership roles of individuals at a school may lead to confusion over who has the final say in decision-making and a struggle for perceived power in the school (Hulipia & Devos, 2010). Overall, however, the distributed leadership style appears to yield positive results in terms of implementing mandated educational change.
Instructional leadership.

Instructional leadership has also received recent attention as a means of providing principals with a more active role in instructing both teachers and students (Bendikson, Robinson, & Hattie, 2012; Heck, 2012; Louis & Robinson, 2012). To embrace an instructional leadership style, a principal must shift his/her focus from managerial tasks to the specific tasks involved in teaching and learning; this shift in management requires empowerment of the teachers to both self and peer review curriculum and instruction to create ongoing, reflective changes (Robinson, 2011).

In a New Zealand-based study of secondary school principals designed to examine the impact of instructional leadership practices on school performance, it was shown that the principals’ use of direct instructional leadership (with a focus on improving teaching) and indirect instructional leadership (with a focus on providing optimal conditions for teachers and students to be effective) were successful at sustaining high levels of student performance (Bendikson et al., 2012). Similar findings were revealed by Heck (2012) in an examination of the ways in which American principals’ instructional leadership affects student outcomes; it was found that by engaging in instructional leadership practices, such as increasing time for collaboration and improving teacher commitment through direct instruction, school leadership may play a role in improving student performance.

School and student performance are increasingly measured by state and national testing forcing accountability onto the schools which may further affect the instructional leadership practices of school leaders. Louis and Robinson (2012) investigated the question “Are those school leaders who perceive their accountability context (state or district) as supportive more likely to behave as instructional leaders?” (p. 630). The researchers found that if a school leader
positively perceived a district’s accountability environment, that leader was more likely to engage in instructional leadership behaviors (as reported by their teachers). Moreover, a school with higher levels of student poverty was more likely to have teachers report instructional leadership behaviors. This is interesting in light of the causal relationship the authors discussed concerning accountability and teacher practice. In other words, if a school leader wishes to meet certain accountability targets, he/she may be more likely to engage in direct instructional leadership in an effort to improve teacher practices and bolster student performance (Louis & Robinson, 2012; Marzano, Waters, & McNulty, 2005).

**Transformational leadership.**

Transformational leadership has emerged over the past 30 years to become the most studied educational leadership style (Marzano et al., 2005) and has been touted as a springboard toward fostering and facilitating educational change. Leaders who employ a transformational style have engrained meaningful change into their leadership (Bogler, 2001) which has been linked to positive teacher satisfaction (Korkmaz, 2007) and feelings of empowerment, autonomy, and professionalism amongst the faculty. Transformational leaders utilize behaviors which give consideration to the individual, offer intellectual stimulation, are inspirational and motivational, and are influential in promoting their ideals by leading by example (Sosik & Dionne, 1997).

In a mixed-method investigation of teachers’ perception of effective leadership, Kirby, Paradise, and King (1992) utilized Bass’s (1985) Multifactor Leadership Questionnaire to answer the essential question: “Are there extraordinary leaders in education and if so, what do they do?” (p. 309). The results and discussion of this study indicate leaders who exhibited transformational behaviors yielded greater commitment and more positive rating by subordinate teachers.
Also noteworthy in the study of transformational leadership is the meta-analysis conducted by Leithwood and Sun (2012). In this article, the authors synthesized 79 studies and drew connections between transformational leadership practices and school conditions. For example, the analysis showed significant effects of transformational leadership behaviors, such as fostering collaboration and strengthening school culture, on attaining shared goals, peer cohesiveness, and teacher job satisfaction and commitment.

*Emerging styles compared to Chin & Benne’s styles.*

Recent educational leadership research has identified effective leadership styles which embrace participation, empowerment, communication and training and professional development for school faculty and staff. The distributed leadership style shares attributes of both the rational-empirical (the encouragement of open communication to facilitate well-informed, logical responses) and normative-reeducative (participation in decision-making) styles. Instructional leadership is similar to normative-reeducational in terms of the empowerment of teachers to participate in decision-making and daily operations. Transformational leadership creates a culture of change and empowerment by fostering collaboration and communication – similar to the description of both the normative-reeducative and rational-empirical style. Interesting to note, however is the results of recent research concerning effective educational leadership indicate few if any similarities to the power-coercive style.

Regardless of the type of leadership style, comparable themes of successful leadership emerge in terms of the behaviors and mindsets; specifically, leadership which is visionary, encouraging, empowering, and supportive tends to generate the most benefits in terms of supporting educational change while leadership which is prescriptive, directive, and based on reward or punishment tends to be less successful during organizational change.
With that in mind, the present study investigated leadership through the lens of a normative-reeducative style, a rational-empirical style, and a power-coercive style. By taking into account the behaviors and actions which define each style of leaders, this researcher hopes to further the exploration of ways school leadership may facilitate positive teacher responses to mandated change, thus increasing the likelihood of meaningful and enduring educational change.

Cognitive, Emotional, and Intentional Response to Change

Teachers are the ultimate agents of curriculum change – if a teacher responds favorably to a curriculum change, he/she will incorporate that change into his/her instruction (Avila et al., 2011; Craig, 2012). According to Piderit (2000), the tripartite theory of attitude guides an individual’s propensity to resist a change and respond to a change on cognitive, emotional, and intentional level. It has been suggested that resistance (or lack thereof) to change occurs via a complex interaction of the cognitive, emotional and intentional responses (Chung et al., 2012; Darby, 2008; Kondakci, Zayim, & Caliskan, 2010; Szabla, 2007; van Veen, Sleegers, & van de Ven, 2005). The following section will review the literature investigating an individual’s response to change.

Cognitive response to change.

Two themes emerge from the literature concerning cognitive response to mandated change: (1) individuals respond favorably to leadership with clearly defined goals which align with their own values and beliefs (Hallinger, 2011) and (2) an individual’s cognitive response improves when they are well informed (Chung et al., 2012) and feel included in the decision-making process (Craig, 2012).
For example, in a study of 419 Taiwanese manufacturing employees, cognitive personality traits were utilized to gauge employee attitude toward organizational change (Chung et al., 2012). Results indicate when employees exhibited cognitive flexibility (the ability and willingness to adapt to changes) they were less likely to resist those changes. Though the authors discussed the causal framework linking cognitive, emotional and intentional response to overall change resistance, they suggested organizational leaders work to nurture cognitive flexibility by maintaining ongoing communication with employees and offering opportunities for professional development and self-reflection.

The need for communication and professional development is further supported by Craig (2012) in a narrative study of the transformation of “teachers-as-curriculum-makers” to “teachers-as-curriculum-implementers” (Craig, 2012, p. 91). The author utilized field notes, interviews, and documentation to illuminate an individual’s response to mandated curriculum change. Again, the complexity of response and resistance across the cognitive, emotional, and intentional levels are discussed, however the findings support the need for open lines of communication and a change agent’s sense of participation in the decision-making process to elicit a favorable cognitive and emotional response to mandated curriculum change.

The need for inclusion in decision making and communication is reiterated in a case study of a curriculum reform effort in one school district. The authors discussed teacher detachment and often rejection of a reform effort when teachers felt excluded from the decision-making process (Sandholtz & Scribner, 2006). Yet, when teacher feedback is solicited, it has been found to be essential in generating an effective change-implementation program based on altering teacher practices and beliefs (Gibson & Brooks, 2012).
The improved likelihood of a favorable cognitive response is also evident when leadership communicates clearly defined goals (Hulipia & Devos, 2010); more specifically, if a teacher’s perception of his/her role is to accommodate the goals set by the principal, there will be a positive outcome. Hallinger (2011) reviewed and reflected on educational leadership over a 25 year period and discussed the need for building leadership to design and communicate school goals which take into account the needs and values of the teachers. It has been shown that when teachers’ needs and values are addressed, they will respond positively to a change (Leithwood & Sun, 2012). Conversely, according to Kagan (1989), if there is a “disconnect” between the goals defined by the principal and the goals of the teacher, there is a lesser chance of compliance.

**Emotional response to change.**

As an oft cited expert in the field of teacher emotional involvement and response to their work, Fullan (2002) expressed that by ignoring a teacher’s emotional response to a mandated change, one is likely to doom that change to failure. Emotions dictate much of human action and guide attitudes and beliefs. Accessibility, approachability, and social interaction between teachers and school leadership instills a sense of trust and open communication which elicits a positive emotional response from all agents involved in a mandated change (Hulipia & Devos, 2010). That trust and communication does much to influence teacher self-efficacy which has also been linked to a positive emotional response (Tsouloupas, Carson, Matthews, Grawitch, & Barber, 2010). With that in mind, two themes emerge from the literature regarding teacher emotional response to mandated educational change: (1) the notion that teacher self-efficacy does much to affect emotional response and (2) leadership communication is essential to fostering a favorable emotional response to change.
In the last decade, significant research concerning the interaction of teacher emotions in his/her practice has revealed how the complex interaction of those emotions does much to influence a teacher’s self-efficacy during education reform (Fullan, 2002; Kelcherterman, 2005; Reio, Jr. 2005; Schmidt & Datnow, 2005; Shapiro, 2010; van Veen, Sleegers, & van de Ven, 2005). Teacher self efficacy is grounded in the belief that he/she has the ability to be successful in his/her teaching and learning (Bandura, 1977). One way to accomplish that end was studied by Finnigan (2010) and further discussed by Louis and Robinson (2012). Both studies concluded and discussed similar findings – specifically if, during a reform effort, a principal employs a leadership style which directly focuses on improving teacher practice and student learning, the likelihood teachers’ sense of self-efficacy will be aligned with the goals of the reform are high.

These results are similar to those of Tsouloupas et al., (2010). This study revealed an indirect effect between teacher self-efficacy and emotional exhaustion. After conducting an online survey of 610 teachers, the findings of Tsouloupas et al. (2010) confirm the need for leadership which enhances and supports the development of teacher self-efficacy to maintain positive emotional connections with their work.

It has also been posited that an environment characterized by trust and communication enhances a teacher’s emotional response to change. In a comparative analysis of the leadership of highly-committed teachers and low-committed teachers, the results indicate feelings of empowerment and inclusion – both positive emotional responses – from teachers whose building leadership maintained open lines of communication and facilitated an environment built on mutual trust (Hulipia & Devos, 2010).
Conversely, feelings of anger and anxiety have been reported in a case study of a “reform-minded” teacher whose perception of a lack of communication and lack of concern on the part of school leadership led to a rapid decline in the teacher’s support for a reform (van Veen, Sleegers, & van de Ven, 2005). The authors conclude their investigation with a discussion of the need for research concerning the impact of reform on teacher identity and commitment as identified by emotional responses.

**Intentional response to change.**

If leadership is able to instill the belief that implementing mandated change will improve learning experiences for students, teachers are more likely to have a positive intentional response (Heck & Hallinger, 2010). It has also been discussed how the perceived level of administrative support - specifically in the form of professional development and on-the-job learning opportunities - affects a teachers’ intention to make curricular and instructional changes (Parise & Spillane, 2010). Open and honest communication and expression of ideas, though closely linked with emotional response, also appears to improve the likelihood of teacher intention to change and acceptance of a change (Hulpia & Devos, 2010).

Chung et al.’s (2012) research affirmed the need for administrative support and communication. Their study of cognitive flexibility and its impact on resistance to change underscored the complex causal relationship between emotion, cognition, and behavioral resistance to change implementation – essentially negative feelings toward a change yielded negative thoughts which decreased the likelihood of an individuals’ intention to make a change. In other words, behavior will not change if leadership does not work to address the emotions and beliefs of the workers.
These findings are similar to those of van Venn, Sleegers and van de Ven (2005) in their study of teacher commitment to change in the context of school reform. Their results showed a teacher’s emotional response to a curriculum change (anger and anxiety), derived from the teacher’s perception of administrative apathy, directly impacted the ways in which the teacher intended to implement reforms in his daily practice. There is also research to suggest a visionary leader may rouse teachers to contribute toward a collective goal (Hallinger, 2011), thus inspiring and motivating a positive intention to change.

**Resistance to change.**

The persistent tendency in human nature to maintain a certain status quo may elicit a level of resistance to any change. Further, the multidimensional view of resistance suggests resistance occurs on a cognitive, emotional, and intentional level (Piderit, 2000; Szabla, 2007), therefore it is also important to consider why leadership may meet with resistance, from where that resistance may stem, and how to minimize resistance when implementing mandated curriculum change.

Resistance during planned change may not necessarily be the result of a negative emotional, cognitive, or intentional teacher responses, rather resistance may occur due to valid and justifiable concerns of the change agents (Piderit, 2000). In the case of the implementation of the new curriculum frameworks, teachers as the change agents in curriculum reform may express concerns for this change which may be both valid and justifiable. For example, Craig (2012) demonstrated teachers’ concerns for a lack of professional autonomy and changing identity. Additionally, teacher concerns for time, resources and professional development have been noted during mandated curriculum change (Borko, Elliot, & Uchiyama, 2002; Gibson & Brooks, 2012; Heller, Daehler, Wong, Shinohara, & Miratrix, 2012). Teachers have also
exhibited resistance to a change which they perceive does little to benefit their students (Coenders et al., 2008; Harris, 2012; Schnellert et al., 2008). Piderit (2000) suggested “the label of resistance can be used to dismiss potentially valid employee concerns about proposed changes” (p. 784). Research which offers suggestions to school leadership and administration for strategies to address those concerns appropriately may prove valuable in helping to shape a positive teacher response to a curriculum change and minimize resistance.

As described in the previous sections concerning emotional, cognitive and intentional response to change, administrative support may have an influence on a teacher’s acceptance or resistance to a curriculum change (Borko et al., 2002; Davis et al., 2011; Margolis & Nagal, 2006). It may then be suggested that an administration which proactively addresses and/or responds to resistance from teachers when facing mandated curriculum change may affect a positive intentional response to change (Chung et al., 2012; van Venn, Sleegers, & van de Ven, 2005). As content area teachers become aware of and align to the mandated changes in their curricula, the multidimensional response to change construct may offer insight into the leadership factors which influence a teacher’s resistance or acceptance of this change.

**Leading Meaningful and Enduring Curriculum Change**

In the instance of the new Massachusetts curriculum frameworks aligned to the CCSS, implementation has followed the inside-out” model (Louis & Robinson, 2012) as flexibility has been granted to district and school leadership to implement mandated reform in ways perceived to be aligned to school culture and district priorities. Nevertheless, when implementation is left to the discretion of the district or the school, significant inter-district variability will exist in terms of whether a given implementation strategy will actually serve to yield the original
intentions of the reform (Coburn, 2003; Hadjithoma-Garstka, 2011). For that reason, school and district leadership are instrumental in creating meaningful and enduring change.

In an attempt to make sense of federal and state mandates, it may be said that educational leaders, including principals, superintendents, department heads and curriculum specialists are left to interpret often ambiguous policies in ways befitting their own sense of values, beliefs and perception of school and district need (Louis & Robinson, 2012); policies inconsistent with a principal’s vision for his/her school may be implemented differently than those which align with that vision. Further, a school leader must engage teachers in implementing the change; if leadership is able to instill the belief that implementing mandated change will improve learning experiences for students, teachers are more likely to have a positive response (Heck & Hallinger, 2010).

**Conclusion**

Leadership style and the culture and context of the district and community interact to determine the course of educational change, yet the response of the teachers to the implementation of the change must be given careful consideration, for it is the teachers’ response to a mandated change which will truly determine the success or failure of any initiative (Hargreaves & Fullan, 2009).

Although educational leadership style has been investigated extensively from the perspectives of instructional, distributed, and transformational leadership, the research is deficit in investigations specifically linking a power-coercive, rational-empirical, or normative-reeducative leadership style with teacher cognitive, emotional, and intentional response to change. Though inferences may be made concerning how support for a change, satisfaction, and motivation are linked to a teachers’ response to a mandated change, it is important to explore
empirically those connections between leadership style during mandated curriculum change and a teacher’s response to that change at an emotional, cognitive, and intentional level. For that reason, the present study investigated those connections and the relationships between leadership style and Massachusetts teachers’ response to the implementation of the new ELA Curriculum Frameworks aligned to the CCSS.
Chapter 3: Methodology

This study utilized a casual-comparative \textit{ex post facto} design to examine, through the lens of Piderit’s (2000) multidimensional response to change in conjunction with Chin and Benne’s (1961) leadership strategies of planned change, the extent to which a teachers’ perceptions of leadership style affect that teacher’s cognitive, emotional, intentional and behavioral response to the state-mandated changes in literacy instruction across content areas. All K-12 Massachusetts Teacher’s Association members (N≈70,000) were invited to participate in the survey; the responses of English/language arts (grades 6-12), science/math/technology, social sciences/humanities (grades 6-12), and elementary (K-5) teachers were included for data analysis to investigate the research question: To what extent does a teacher’s perception of the school leadership style affect that teacher’s cognitive, emotional, and intentional response to the implementation of a planned, state-mandated curriculum change? The following chapter will first delineate a rationale for investigating the research question via causal-comparative survey design. Following, the chapter will detail and discuss the sampling method, procedures, and tools used for data collection, reliability of those tools, the strategy for data analysis, threats which may exist to generalizability, reliability, and validity, and a presentation of ethical considerations for human subject participation in this study.

Research Question

To what extent does a teacher’s perception of the school leadership style affect that teacher’s cognitive, emotional, and intentional response to the implementation of a planned, state-mandated curriculum change? Leadership style, the independent variable in this study, consisted of three categories: teacher perception of either (1) rational-empirical leadership, (2) normative-reeeducative leadership, or (3) power-coercive leadership. These perceptions emerged
from the results of the Perception of Change Leadership Strategy scale which will be discussed further in the instrumentation section.

The three dependent variables are defined as the teacher’s (1) emotional response, (2) cognitive response, and (3) intentional response to the implementation of the new curriculum frameworks. These responses were recorded as the result of the Reaction to Organizational Change scale which will also be discussed in more detail in the instrumentation section.

**Research Design**

This study closely followed the procedures established by Szabla (2007) in his study of the response of union employees to a planned change in their performance appraisal process. A causal-comparative study by definition examines the consequences or causes of existing differences in groups of individuals (Frankel, Wallen, & Hyun, 2012). In the present study, there are three groups of individuals: teachers who perceived the leadership style during the implementation of the new Massachusetts curriculum frameworks to be rational-empirical, those who perceived the leadership style to be normative-reeducative, and those who perceived the leadership style to be power-coercive. Within each group, the teachers were compared in terms of their cognitive, emotional, and intentional response to the change. The event studied – the implementation of the new ELA curriculum frameworks – had already taken place, or was at the very least, well underway. Further, the teacher’s response to the change had already occurred as the implementation process was underway or may in fact have been completed. Thus both ‘events’ – the implementation and the response to leadership style – have been studied in retrospect or *ex post facto*; the very essence of causal-comparative research.
One advantage to this type of research design is the researcher is able to investigate a real-world phenomenon which has already occurred in an effort to understand how a teacher’s perception of leadership style affected his/her response to the change along three dimensions (emotional, intentional, and cognitive). The data collected in this study may be useful for school leadership during future mandated curriculum changes. Further, because this study investigated teacher perception of leadership style and teacher response, a second advantage of the causal-comparative design is to lend further evidence to support the need for leaders to be mindful of teacher perceptions of the administration/leadership, specifically during planned curriculum changes, to facilitate the best possible response from teachers.

One obvious disadvantage is the lack of control this researcher had in terms of how teachers perceive the leadership style during this planned change in curriculum. There is the possibility that a difference in some variable other than leadership style (for example age, experience, gender, career-background) may impact how the teachers responded to the curriculum change. A second potential disadvantage is the lack of control over additional factors affecting the implementation which may have clouded the cause-effect relationship between leadership style and teacher response to planned curriculum change. Regardless, the results of this study contribute to the literature concerning the implementation of large-scale planned change in public education.

A cross-sectional, online-survey delivered via email to all MTA members provided the vehicle for data collection. A cross-sectional, web-based survey offers the advantage of reaching a large number of Massachusetts teachers at the same moment in time. This study was designed to reach a very large population, thus the convenience and timely availability of data which accompanies an online survey offered a distinct advantage to the researcher. However the
cross-sectional design has a disadvantage in that teacher attitude and perceptions of this curriculum change may evolve over time; this will be further discussed in the validity and reliability section of this chapter. A second disadvantage of the research design may be response rate; there is evidence to suggest online surveys suffer reduced response rates when compared to mailed surveys (Jin, 2011). This was found to be the case in the present study as well and will be discussed further in Chapter 5.

**Population and Sampling**

**Population.**

Because this study compared three groups in terms of their change leadership (rational-empirical, normative-reeducative, or power-coercive), it was necessary to establish a population in which change leaders were perceived to exhibit all three styles and neither appeared to be more emphasized than another; essentially there was a need to establish a sense of homogeneity in terms of each leadership style (Fraenkel et al., 2012).

In the state of Massachusetts, districts were tasked with implementing the planned curriculum changes; variations in implementation strategies were to be expected. Therefore, this researcher proposed the sampling population to include all Massachusetts K-12 public educators who were, at the time of data collection, members of the Massachusetts Teachers Association (MTA). In doing so, teachers from each of the 487 school districts in the state were invited to participate in the study thus the study employed a simple random sampling strategy. According to the Massachusetts Department of Elementary and Secondary Education, there are 70,635 teachers in MA public schools. Following data collection, the responses of teachers who identify themselves as being one (or more) of the following were included in data analysis: (1)
English/language arts teachers (grades 6-12), (2) science/math/technology teachers (grades 6-12), (3) social studies/humanities teachers (grades 6-12), or (4) elementary teachers (grades K-5).

All elementary teachers were included because an elementary classroom tends to encompass all subject matter. Responses of teachers who identified themselves as teachers in any other discipline were excluded from data analysis as this study was designed to explore the implementation of the Massachusetts Curriculum Framework for English Language Arts and Literacy, Grades Pre-Kindergarten to 12, Incorporating the Common Core State Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects.

**Sampling.**

It was somewhat problematic to report an exact number of teachers in the target population as the Massachusetts Department of Elementary and Secondary Education (DESE) reports are skewed by a single teacher reporting him/herself as teaching in more than one discipline; for example one teacher may report him/herself to be both a mathematics and a science teacher thus inflating the total number of teachers of math and science combined. It was therefore necessary to estimate based on reports generated by the DESE in 2013. Based on that estimation, it may be inferred that the sample population for this study was approximately 9,305 teachers.

**Power analysis.**

Crucial to the sampling process was to establish *a priori* and *post hoc* statistical power which may be calculated with the statistical software G*Power. To avoid rejecting the null hypothesis when it is indeed true (a Type I or α error), and to avoid accepting the null hypothesis when it is false (a Type II or β error), it is necessary to establish an appropriate sample size. Though not absolute, researchers generally accept an alpha level of .05 thus allowing only a 5%
chance of creating a Type I error (Light, Singer, & Willett, 1990), therefore, this researcher has set \( \alpha = 0.05 \) for this study.

Minimizing Type II errors is somewhat more complex. Controlling this type of error requires a power analysis. It is typical in research to establish a power in the range of .70 to .90 based on effect size, statistical tests, the number of covariates, population, rates of refusal and attrition (Light et al., 1990). In order to calculate the necessary sample size for MANOVA with a desired effect size relatively small (0.2), \( \alpha = 0.05 \) and \( \beta = 0.9 \), G*Power calculated the necessary sample size to be 320. Given that following data cleaning, analysis was conducted on a sample size of 325, adequate power was achieved.

**Data Collection**

**Instruments.**

Two existing scales: the Perception of Change Leadership Strategy Scale (Szabla, 2007) and the Reaction to Organizational Change Scale (Piderit, 1999), were combined and modified to collect the data for this study (see Appendix A). Both scales have been tested for validity and reliability.

The Perception of Change Leadership Strategy Scale was designed and tested for reliability and validity by Szabla (2007). The questionnaire consists of 33 items on a five-point Likert scale ranging from (1) “Strongly Disagree” to (5) “Strongly Agree.” Validity was established via factor analysis. Factor loadings reveal adequate construct validity. The content validity was established via feedback from 15 experts.

Cronbach’s alpha was calculated for each of the three dimensions of the survey and each indicates respectable reliability. The eleven items measuring the “rational-empirical strategy”
subscale revealed an alpha of .81. An example of an item measuring the rational-empirical strategy is item 12 which states, “Those who led the change focused on the facts and promoted the benefits of the change.” The eleven items measuring the “normative reeducative strategy” subscale revealed an alpha of .73. An example of an item measuring the normative reeducative strategy is item 14 which states, “The need for change was justified by employees from many levels of the organization.” The eleven items measuring the “power-coercive strategy” subscale revealed an alpha of .77. An example of an item measuring the power-coercive strategy is item 19 which states, “I had no authority to make decisions about the change.”

The Reaction to Organizational Change Scale was used originally by Piderit (1999) and then again by Szabla (2007). Reliability has been established by Piderit and retested by Szabla in each of the five subscales with Cronbach alphas measured as the following: .94 for the positive emotional reaction subscale, .93 for the negative emotional reaction subscale, .89 for the positive intentional reaction subscale, .86 for the negative intentional reaction subscale, and .85 for the cognitive reaction subscale which includes items worded both positively and negatively. Construct validity was also established by Szabla (2007) through factor analysis.

The scale is designed to collect ordinal data via a seven-point Likert scale, however this researcher reduced the scale to 5 points. The scale was designed such that a response of “Strongly Disagree” is coded as a “1” and a response of “Strongly Agree” is coded as a “5”. If a respondent chooses “Strongly Agree” the implication is that there is a more positive response to the statement. An example of an item measuring cognitive response is question 19, “I have the ability to make the change successful.” An example of an item measuring emotional response is item 48, “When I think about this change, I feel frustrated.” An example of an item measuring
intentional response is item 59, “How strongly do you intend to encourage others to make this change effective?”

Nominal data was also collected. Teachers were asked to respond to the following questions: Who is the person leading the implementation of the curriculum change? (choice of principal, teachers, superintendent, curriculum specialist, department head, or “self”), grade level taught, subject taught, number of years teaching, number of years working in current role, and district. Teachers were also asked to identify the stage at which they were currently working to implement the mandated changes: stage one (an introduction to the new standards), stage two (beginning to align curriculum to new standards), stage three (nearing completion of curriculum alignment to new standards), stage four (completion of curriculum alignment to new standards).

Both survey instruments were modified such that the wording of questions was appropriate to an educational setting and some items were eliminated due to irrelevance to a school context. On the advice of the MTA, data from the Reaction to Organizational Change Scale was collected via a 5-point (rather than a 7-point) Likert scale to create consistency in the online survey. For example, item number 14 on the original Perception of Change Leadership Strategy Scale originally stated, “The need for the change was justified by employees from many levels of the organization”; this item was changed to “The need for the change was justified by individuals from many levels of the district and/or school”. Item number 26 of the original Reaction to Organizational Change Scale stated, “The leadership of the organization is committed to make this change successful,” and was changed to “The leadership of the school and/or district is committed to make this change successful,” thus if a respondent chose “5-Strongly Agree”, this implies the most positive response to the question, whereas a response of “1 – Strongly Disagree” implies the least positive response.
In terms of omitted items, on the Reaction to Organizational Change scale, “This change will make the organization more economically viable,” and item eight on the same scale, “Many opportunities within the organization are arising for me because of this change” were deleted as economic viability is irrelevant in a public school and career advancement for teachers differs from that of the private sector. The modified scales yielded 11 items for normative- reeducative leadership, 10 items for rational-empirical leadership, 11 items for power-coercive leadership, 19 items for cognitive response, 12 items for emotional response, and 9 items for intentional response.

Due to the omission of and changes to some of the items, Cronbach’s Alpha was run for each subscale following data collection to confirm reliability. The results of the reliability testing are outlined in Chapter 4.

Procedures.

The surveys were transcribed into an online, web-based instrument produced by Qualtrics. The MTA was contacted and permission was granted to email the link to the online survey to their member base. Though the MTA does not allow access to their member-email list, it was agreed that the invitation to participate, an outline of informed consent, and the link to the online survey on Qualtrics would be emailed out by the MTA in May of 2014.

Although initially accepted by the MTA as part of the research proposal, requests for follow-up emails to thank those who participated and remind others of the value of their participation were denied by the MTA, thus the overall response rate was low, nevertheless, the desired sample size was achieved. Data collection closed after 21 days. The implications of this are discussed in Chapter 5.
Data Analysis

Following data collection, SPSS was used to conduct the statistical analyses. Analysis was conducted based on the following hypothesis:

1. Teachers who perceive school leadership to employ a rational-empirical strategy will exhibit more positive cognitive, emotional, and intentional responses to the planned curriculum change compared to teachers who perceive school leadership to employ a power-coercive leadership strategy, and less positive cognitive, emotional, and intentional responses compared to teachers who perceive a normative-reeducative leadership style or a power-coercive leadership style.

Data were cleaned and missing items were addressed (see Chapter 4 for further discussion of the treatment of missing data). Some items on the intentional and emotional scales were reverse scaled. Data was further transformed via a “reflect and square root” to achieve normality. Scale means were calculated for each category of the independent variable (leadership style) and each dependent variable (cognitive, emotional, and intentional response).

Although historically Likert scale data has been viewed as ordinal data and has been analyzed with non-parametric tests, research in the last two decades indicates a trend toward treating ordinal variables as though they are interval and utilizing the more robust and powerful parametric tests (Muijs, 2011). This study follows the data analysis protocol established by Szabla (2007) in which he conducted MANOVA and follow-up one-way ANOVA tests on means of Likert scale data, however there are many publications which indicate an acceptable use of parametric statistical testing for Likert scale data (for example, Hung, Chou, Chen, &
Based on mean responses from the Perception of Change Leadership Strategy, respondents were assigned to one of three groups: (1) power-coercive, (2) normative-reeducative, or (3) rational-empirical. Multiple analysis of variance (MANOVA) was used to explore the effects of the independent variable (perception of either power-coercive, normative-reeducative, or rational-empirical leadership strategy) and the three dependent variables (teacher cognitive, emotional, and intentional response to the planned curriculum change). MANOVA was appropriate in this case as it tested for differences between groups with greater than one dependent variable. When using MANOVA, there are three essential assumptions which must be met: (1) all observations are independent, (2) there are normal multivariate distributions in each group of dependent variables, and (3) the covariances are equal among groups and any error effects are multivariate normal (Scheiner, 2001). The assumptions were met and the results of the tests of assumptions are specifically summarized in Chapter 4.

Results of the MANOVA proved significant, thus an analyses of variance test (ANOVA) was run for each dependent variable to establish between-group differences. Assumptions for the ANOVA are similar to that of the MANOVA: independent observations, normal distribution of random effects (within-group error effects) and variances of those within group errors are normally distributed (Scheiner, 2001). In other words to establish which category of the independent variable (leadership style) contributed to variations in teacher cognitive, emotional and intentional response (dependent variables), ANOVAs were run for of the dependent variables.
The hypotheses were tested with post-hoc tests using the Bonferroni Correction to ascertain whether and the extent to which group means differed. This is appropriate because the correction is based on the notion that if hypotheses are being tested against a given set of data, as is the case in this study, the Bonferroni Correction will minimize the likelihood of a Type I (or false positive) error.

Validity, Reliability and Generalizability

Validity.

As with any research, there were inherent threats to validity, reliability, and generalizability of the results in this study. This section will outline those threats and speak to the actions this researcher took to minimize those threats throughout the various stages of the research process.

The internal validity of this study may have been threatened by subject characteristics (Frankel et al., 2012); in this study specifically, the subject-area taught, the length of time working as a public educator, the stage of implementation, and the length of time working in a teacher’s current position may affect the internal validity of the data. Each of these characteristics was established if the respondent willingly self-reported a response for each characteristic and may then be controlled by matching. In the analysis of the data, this researcher established aggregate results, then disaggregated for each of the subject characteristics listed above to address threats to validity. This was done to ascertain if, for example, a teacher who has been working in the field for less than five years responded (cognitively, emotionally, and/or intentionally) differently than a teacher who has been working in the field for greater than five
years. Additionally, disaggregating the data offers insight into whether teachers respond differently depending on the subject in which they teach.

Similarly, the site characteristics – or location of the participant – may have affected internal validity. In Massachusetts, some low-performing schools are under state-control, thus teachers at those schools contend with (1) the knowledge that the students in their school are considered “underperforming” and (2) that the state is in control of school operations. This may have affected both a teacher’s perceptions of leadership and his/her response to the curriculum change. Due to this researcher’s desire to preserve participant anonymity, this threat was not controllable within the parameters of this study. The possible effects of this threat are addressed in Chapter 5.

The timing of the data collection may also have posed a threat to the internal validity of the data. The state of Massachusetts has left the implementation strategy of the new frameworks, including the timing and stages of implementation, to the discretion of the districts, thus there was a high likelihood teachers were in varying stages of implementation during data collection. It may be that a teacher’s perception of leadership style may change over the course of the implementation process. Similarly, a teacher’s responses to the change may evolve over time. This threat to validity was moderated again through matching. As with subject characteristics, the aggregate results of the data were analyzed, then the data was disaggregated for stage of implementation based on teacher self-reporting of involvement either in stage one (an introduction to the new standards), stage two (beginning to align curriculum to new standards), stage three (nearly completion of curriculum alignment to new standards), stage four (completion of curriculum alignment to new standards).
Reliability.

Threats to reliability are inherent in any study (Light et al., 1990). In particular reliability may be threatened by (1) research design, (2) sampling, (3) data collection, and (4) data analysis. Actions taken by the researcher to minimize each of these will be addressed in the following section.

Regarding design and sampling, a casual-comparative design will not yield results which attempt to prove a cause-effect, rather this type of design demonstrates (or not) relationships between leadership style and teacher response to change (Brewer & Kuhn, 2010). The timing of the distribution of the survey was such that all teachers were either in the midst of aligning curriculum or had just completed aligning curriculum to the state-mandated changes. All MTA member teachers were solicited to participate in the survey. Three weeks were allocated for the data collection process.

In terms of data analysis, procedures and statistical tests were modeled after a study conducted by Szabla (2007). Permission to model this study was granted. As discussed in the instrumentation section of this paper, reliability of both survey instruments had been established. Szabla (2007) calculated Cronbach’s alpha for the survey items concerning the rational-empirical strategy at .81, the items concerning the normative reeducative strategy at .73, and the alpha for power-coercive items at .77. The Reaction to Organizational Change Scale was tested for reliability by Piderit (1999). Cronbach alphas were established to be .86 for the subscale concerning the cognitive response to change, .94 for the subscale concerning positive emotional responses, .93 for the subscale concerning negative emotional responses, .89 for the subscale concerning positive intentional response, .85 for the subscale concerning a negative intentional response. An alpha of greater than .70 indicates a respectable reliability (Frankel et al., 2012).
thus both survey instruments have been demonstrated to be reliable. Due to the minor changes this researcher made to both instruments (see Instrument section), reliability statistics were recalculated following data collection to ensure continued reliability.

**Generalizability (external validity).**

The generalizability, or external validity, of this study may be potentially threatened by population validity and ecological validity. Threats to each will be address in the section below.

**Population validity.**

This study was susceptible to what has been called ‘nonrepresentative samples’ with regard to population validity (Ondercin, 2007). Although the CCSS have been adopted by 45 states, this study was conducted only within the state of Massachusetts; therefore extreme caution should be exercised when attempting to generalize results to other states. Moreover, this study targeted individuals teaching specific subject matter; it may be that teachers of other subjects may respond differently given the content of their subject area.

**Ecological validity.**

Threats to ecological validity may present in the form of the “interaction of history and treatment effect” (Bracht & Glass, 1968) as the timing of this study found teachers at varying stages of implementation of the new curriculum frameworks. It may be that teachers in the beginning phases of implementation exhibited different responses to the change than teachers in the final phases of implementation. This researcher chose to include an item on the questionnaire (see Instrumentation section) so that teachers may self-report the stage at which they found themselves in terms of implementation of the new frameworks to minimize the effect timing may have on the validity of the results.
Additionally, the physical setting of some teaching assignments may predispose teachers to respond to curriculum change in different ways. The results of this paper aggregated responses from teachers across the state of Massachusetts; however this researcher included an item on the questionnaire asking teachers to indicate the district in which they teach. Future research may be needed to investigate variances in teacher response based on setting and or demographics of the school (i.e. rural, urban, high-income areas, low-income areas).

**Ethical Considerations**

According to ethical principles for conducting research set forth by the American Psychological Association as outlined in Frankel et al. (2012), there are three essential issues for consideration when conducting research on human subjects: (1) how the subjects will be protected from physical and psychological harm, (2) how the subjects’ responses will remain confidential, and (3) the need/justification for deception of subject. Because the present study did not require, in any way, deception of participants nor could the design of this study cause physical harm, the following section will outline the steps this researcher took to address confidentiality and prevent psychological harm. Subsequently, this section will outline the process this researcher took to obtain informed consent from study participants. The conclusion of this section will describe IRB approval of this study.

**Protection of human subjects.**

Given that the present study was a voluntary, anonymous survey, there was no potential for physical harm and little potential for psychological harm, yet it is important to address that potential, small though it may be. Psychologically, subjects in this study may have been concerned about possible repercussions for their responses regarding their school leadership. To ensure anonymity, no data was collected which might identify the specific school at which a
participant worked. Further, there existed the possibility that careful reflection on the educational practices of one’s own district, school, and one’s own classroom may have created stress. To address this possibility, subjects were told all responses were voluntary and if at any point a subject wished to omit a question he/she found stress-inducing, or withdraw from the study, he/she had that option.

Confidentiality.

To ensure the data collected remained confidential, the only individuals with access to the data were/are this researcher and her advisors. Additionally, subjects will retain the opportunity to request, at any time, that their responses not be used as part of the study.

Informed Consent.

In order to provide an avenue by which research subjects are able to understand the procedures and possible risks and benefits of their participation in this study, this researcher provided an informed consent form on the introductory screen of the online, web-based survey (Losch, 2008). Losch (2008) pointed out there is a risk of increasing bias and anxiety with lengthy, detailed consent forms on online surveys and suggested the introductory statement consist of only a short statement of purpose, the length of time to complete the survey, the general subject/topic of the survey, an insurance of confidentiality, and the contact information of the researcher. Participants provided their consent to participate by answering (or not) the survey items. Refer to Appendix B for the complete text of the introductory statement.

Institutional Review Board (IRB) approval.

The following are the steps this researcher took to gain IRB approval. First, this researcher completed the online internal review certification training course offered by the
Second, this researcher reviewed and reflected on the nine criteria for IRB approval as outlined in Frankel et al. (2012, p. 69). In response to each of the nine criteria, the following is true of this study:

1. There is minimal risk for participation in this study as it is a completely voluntary, online, anonymous survey.

2. Psychological risks identified as possible stress induced by concerned for potentially criticizing leadership and critical reflection of educational practices have been addressed in the informed consent process whereby participants may omit any survey item, or withdraw their participation at any time.

3. There will be no discrimination among any individuals in the proposed sampling population.

4. There are no vulnerable individuals (i.e. children) in the target population.

5. An informed consent form is attached to the IRB proposal.

6. Participants have the right to withdraw at any time.

7. Informed consent will be documented.

8. The data will only be accessed by this researcher and her advisors.

9. All responses will be private and confidential and be used strictly for this proposed research.

Conclusion

An investigation of Massachusetts teachers’ response to mandated curriculum change based on perception of leadership style was conducted via an online web-based survey constructed of two existing scales. These scales had been tested for reliability and validity and
had been used in previous studies. Data collection took place over a three week time period; the
target population was public school teachers currently enrolled as members of the MTA. The
data was analyzed via MANOVA, one-way ANOVA, and post-hoc tests to determine the extent
to which a teacher’s perception of leadership style affected his/her response to a recent, state-
mandated curriculum change. All efforts were made to ensure minimal risk to study participants;
responses were and will remain confidential and were reported in aggregate to preserve the
privacy of participants. This researcher has exercised due diligence to meet the criteria for IRB
approval for this proposed study. It is the hope of this researcher that the results of this study
contribute to the research concerning the importance of public educational leadership during
planned, mandated change.
Chapter 4: Report of Research Findings

The purpose of this quantitative study was to investigate the extent to which a teachers’ perception of leadership style affected his/her cognitive, emotional, and intentional response to mandated curriculum change. The study utilized a causal-comparative, *ex post facto* design by which teachers had already experienced a change in curriculum – the implementation of the Massachusetts English/Language Arts Curriculum Frameworks aligned to the CCSS. At this researcher’s request, an online survey was distributed by the Massachusetts Teachers Associate (MTA) to the MTA’s entire K-12 member base. Two, established scales were modified and utilized to collect data measured with a 5-point Likert scale. On the Teacher Response to Change scale, a reply of “1 – Strongly Disagree” indicated the least positive response and a reply of “5- Strongly Agree” indicated the most positive response.

Total response rate was somewhat low (N=1090/≈9000 or ≈12%), and dropout rate was fairly large (38% of the 1090 respondents). Because the research question is specific to the ELA curriculum frameworks, only the responses of English, science/technology/mathematics, social studies, and elementary teachers were included in data analysis, thus the total number of responses relevant to the research question following data cleaning and trimming was 342.

The following chapter provides a summary of the findings as they relate to the research question for this study: To what extent does a teacher’s perception of school leadership style affect that teacher’s cognitive, emotional, and intentional response to the implementation of a planned, state-mandated curriculum change?
Data Cleaning and Transformation

Taking into account for the drop-out rate, the total number of responses to the survey was acceptable (N=674), however that included responses from teachers of all subject matter and disciplines. The data were filtered further to include only the responses of teachers who reported themselves to be science/technology/mathematics, social studies, ELA, or elementary teacher for a total sample size of N=342. Any cases with greater than ten missing pieces of data were eliminated from data analysis.

Little’s MCAR test was administered to detect if any remaining missing data were missing at random. Missing data is to be expected in a large-scale, survey-based quantitative study (de Leeuw & Hox, 2008). Only one item in the emotional subscale contained 2% missing data (item ERI1=2% missing) all other items contained less than 2% missing data. For the Perception of Leadership Style Scale, Little’s MCAR test revealed Chi-square=911.05, DF=778, Sig =.001; the null hypothesis at p<.001 is accepted and it was concluded the missing values occurred at random. For the cognitive response subscale, Chi-Square= 256.91, df=196, Sig.=.002. For the emotional response subscale, Chi-Square=58.10, df=8, Sig. =.798, and for the intentional response subscale, Chi-Square = 36.60, df=32, Sig. =.264, thus all subscales indicate missing value are at random. In order to preserve the existing sample size, missing values were replaced with predicted values utilizing the expectation-maximization technique. The implications of this will be discussed further in Chapter 5.

The dependent variables were calculated based on mean scores for each subscale: emotional response, cognitive response, and intentional response. Four items on the intentional response subscale and six items on the emotional response subscale were reverse scored.
Demographics of Population and Sample

Elementary school teachers comprised 42% of the sample population (n=142), English/language arts teachers comprised 19% of the sample (n=65), science/technology/mathematics teachers comprised 30% of the sample (n=103), and social studies/humanities teachers comprised 8% of the total sample (n=27). Four teachers did not report his/her subject matter taught. A summary of all demographic data collected is outlined in Table 4.1. Data collected from the Massachusetts Department of Elementary and Secondary Education (included in Table 4.1 as “State %”) indicate the demographic of subject matter taught by teachers who participated in this study are fairly representative of the demographic of subject matter teachers in the state.

Table 4.1
Demographic Data Reported by Participating Teachers

<table>
<thead>
<tr>
<th>Subject Matter</th>
<th>% of sample</th>
<th>State %</th>
<th>Grade Level</th>
<th>% of sample</th>
<th>Years Teaching</th>
<th>% of sample</th>
<th>Years in Current Role</th>
<th>% of sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>42%</td>
<td>37%</td>
<td>K-2</td>
<td>18%</td>
<td>0-5</td>
<td>10.2%</td>
<td>0-5</td>
<td>27.8%</td>
</tr>
<tr>
<td>English/Language Arts</td>
<td>19%</td>
<td>19%</td>
<td>3-5</td>
<td>29%</td>
<td>6-10</td>
<td>18.4%</td>
<td>6-10</td>
<td>29%</td>
</tr>
<tr>
<td>Science/Technology/Math</td>
<td>30%</td>
<td>24.2%</td>
<td>6-8</td>
<td>22%</td>
<td>11-15</td>
<td>26%</td>
<td>11-15</td>
<td>22.2%</td>
</tr>
<tr>
<td>Social Studies/Humanities</td>
<td>8%</td>
<td>6.2%</td>
<td>9-12</td>
<td>29%</td>
<td>16-20</td>
<td>21.4%</td>
<td>16-20</td>
<td>10.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20+</td>
<td>23.7%</td>
<td>20+</td>
<td>10.2%</td>
</tr>
</tbody>
</table>

In terms of grade level taught, kindergarten through second grade teachers comprised 18% of the sample size (n=61). Teachers of grades 3-5 comprised 29% of the sample (n=100).
Teachers of grades 6-8 comprised 22% (n=75), and high school teachers (grades 9-12) comprised 29% (n=101). Four teachers did not report the grade level at which they teach.

In terms of stage of implementation, one teacher did not report the stage at which he/she felt his/her district was working, 6.7% (n=23) teachers indicated their district to be at Stage 1: an introduction to the new standards; 36% (n=124) teachers reported working at Stage 2: beginning to align curriculum to the new standards; 39.9% (n=136) teachers reported working at Stage 3: nearing completion of the curriculum alignment to the new standards; and 16.7% (n=57) reported Stage 4: completion of the curriculum alignment to the new standards (see Table 4.2). This demographic will be discussed further in Chapter 5 as school districts are expected to have full implementation of the new Curriculum Frameworks by the 2014-2015 school year.

Table 4.2

<table>
<thead>
<tr>
<th>Stage of Implementation</th>
<th>% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1: An introduction to the new standards</td>
<td>6.7% (23)</td>
</tr>
<tr>
<td>Stage 2: Beginning to align curriculum to the new standards</td>
<td>36% (124)</td>
</tr>
<tr>
<td>Stage 3: Nearing completion of curriculum alignment to the new standards</td>
<td>39.9% (136)</td>
</tr>
<tr>
<td>Stage 4: Completion of curriculum alignment to the new standards</td>
<td>16.7% (57)</td>
</tr>
</tbody>
</table>

With regard to experience levels of the respondents, 10.2% (n=35) teachers reported working in the field for 0-5 years, 18.4% (n=63) teachers reported working for 6-10 years, 26% (n=89) reported working for 11-15 years, 21.4% (n=73) reported working 16-20 years, and 23.7% (n=81) reported working greater than 20 years as a teacher. Teachers were also asked to report the number of years working in their current role. Of the responding teachers, 27.8% (n=95) reported working in their current role for 0-5 years, 29% (n=99) reported working for 6-10 years, 22.2% (n=76) reported working for 11-15 years, 10.2% (n=35) reported working 16-
20 years, and 10.2% (n=35) reported working greater than 20 years in their current role. One teacher did not report the number of years spent working in his/her current role.

**Power Analysis**

In order to calculate a *post hoc* statistical power for the MANOVA, the researcher utilized the statistical software G*Power. The probability of experiencing a Type I (α) error - in other words the probability of rejecting the null hypothesis when it was actually true - was set at 0.05. To control for the probability of experiencing a Type II (β) error - that is the probability of accepting the null hypothesis when it is actually false - a power analysis must be run. An acceptable power range is typically between .70 and .90 for an MANOVA based on desired effect size (Light et al., 1990), therefore G*Power was utilized prior to the study to calculate the necessary sample size. A sample size of 320 was necessary to achieve statistical power of 0.9 with p = 0.05, 1 degree of freedom, 3 groups, and relatively small (0.2) effect size. In light of the fact that the established sample size for this study is 325 (after eliminating outliers which violated one assumption of the MANOVA), the sample size is acceptable to balance the likelihood of experiencing a Type I or Type II error.

**Testing Internal Consistency of Teacher Response Sub-scales**

Though the teacher response to change scales have been tested in the past by researchers for internal validity, for the present study the wording for many of the items was modified to accommodate educational jargon and situational variances evident in public education versus a business setting. Further, some items were omitted as they were irrelevant to public education (see Chapter 3 for more details). Therefore, Cronbach’s alpha was run for the cognitive and emotional subscales. The cognitive scale consisted of 19 items and revealed an alpha of .947 indicating a very high level of internal consistency as an alpha of greater than 0.7 indicates
acceptable consistency (Kline, 2005). The 12 items on the emotional subscale also revealed high levels of consistency with a calculated Cronbach’s alpha of .935. Since the intentional subscale had fewer than 10 items, the average of inter-item correlation, instead of Cronbach’s alpha, was calculated to report the reliability of the 9 items on this subscale; this average was calculated to be .55. Though the reliability of this scale appears somewhat low, the potential reasons for the lower reliability will be discussed in depth in Chapter 5.

**Testing Internal Consistency of Perception of Leadership Styles Scale**

Though the Perception of Leadership Style scale has also been tested in the past by researchers for internal validity, again, for the present study the wording for many of the items was modified to accommodate educational jargon and situational variances evident in public education versus a business setting. Further, as was the case with the response scales, some items were omitted as they were irrelevant to public education (see Chapter 3 for more details). Therefore, Cronbach’s alpha was run for each of the three subscales: power-coercive, rational-empirical, and normative-reeducative. The 11 items on the normative-reeducative scale revealed adequate reliability with a Cronbach’s alpha of .867. The 11 items on the power-coercive scale also revealed adequate reliability with a Cronbach’s alpha of .865. The 10 items on the rational-empirical scale revealed a somewhat lower but still acceptable Cronbach’s alpha of .779.

**Testing Assumptions**

There are three essential and seven total assumptions which must be met in order to provide valid results with a one-way MANOVA. The manners in which the assumptions have been met and any violations are managed are described below.
Independence of observations—assumption met.

Essentially, each participant must be a member of only one group. Each respondent was grouped based on his/her mean score on the subscale for leadership style, thus each participant was categorized as a member of only one group.

Adequate sample size – assumption met.

There must be more cases in each group than there are dependent variables; as there are only three dependent variables, and each group has well over three cases, this assumption is met.

No univariate or multivariate outliers – assumption met.

Upon initial analysis, inspection of boxplots revealed 16 univariate outliers. By eliminating the outliers, the number of cases in the data would persist in fulfilling the minimal sample size of 320, therefore the outliers were eliminated. Further, one assumption of the MANOVA is the data will be multivariate normal and contain no univariate outliers, thus in order to meet this assumption, the 16 outlying cases were removed from data analysis bringing the total sample size to 325 – still acceptable based on the post hoc power analysis. There were no multivariate outliers in the data, as assessed by Mahalanobis distance (p> .001).

Multivariate normality – assumption met.

The Shapiro-Wilk’s test revealed the cognitive response scale was normally distributed for each perceived leadership style at p<0.05, however the emotional and intentional scales did not present normal distributions based on the results of the Shapiro-Wilk’s test. The null hypothesis (the data are normally distributed) is rejected at p>.05, therefore the intentional response and the emotional response data appeared to deviate from normality at all categories of
the independent variable. Z-values for skewness were calculated for each independent variable for the emotional and intentional scales to further assess normality.

In order to assume normality, Z-values must be within -2 to +2. Calculated Z-values indicate though the data are somewhat skewed and kurtotic for the dependent variable “intentional response” only the power-coercive leadership style shows deviation from normality, and for the dependent variable “emotional response”, both the normative-reeducative style and the power-coercive style indicate a deviation from normality.

Because the data appear to be moderately negatively skewed, a “reflect and square-root” transformation was performed on the dependent variables “intentional response” and “emotional response” for each category of the independent variable (Howell, 2007; Tabachnick & Fidell, 2007). Normality was reassessed and the results revealed improvements in normality.

Attempts to transform the data to improve Shapiro-Wilk significance levels were moderately successful, however following transformation, Z-values were within -2 to +2 range and visual inspection of histograms and Q-Q plots reveal approximately normally distributed data, therefore this researcher continued with running the MANOVA on the data transformed with “reflect and square root” based on the recommendation that the MANOVA is “fairly robust to deviations from normality” (Laerd Statistics, 2014).

**No multicollinearity – assumption met.**

Correlations between dependent variables were somewhat high as assessed by the Pearson Correlation (see Table 4.3). This was not unexpected based on the results of prior research which has revealed a strong interrelationship between the cognitive, emotional, and
intentional response to change (Chung et al. 2012; Darby, 2008; Ellsworth & Scherer, 2003; Kondakci et al. 2010; Szabla, 2007; Thompson, 2007; van Veen et al., 2005).

Table 4. 3

*Correlation Coefficient for Relationships Among the Three Levels of Response to Mandated Curriculum Change*

<table>
<thead>
<tr>
<th>Level</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cognitive response</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Emotional response</td>
<td>.843</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>3. Intentional response</td>
<td>.715</td>
<td>.748</td>
<td>-</td>
</tr>
</tbody>
</table>

**p < .01

Linear relationship – assumption met.

There must be a linear relationship between the dependent variables for each group of the independent variable. Scatterplots reveal a linear relationship between all three DV’s for each perceived leadership style.

Homogeneity of variances-covariances matrices - assumption violated.

Homogeneity of variances-covariances was assessed by Box’s M test of equality of covariance matrices (p=000). Although this assumption has been violated, the MANOVA may still be run with Pillai’s Trace of Variance (p>.05) rather than Wilk’s Λ to accommodate for the violation.

Homogeneity of Variances – assumption partially violated.

Assessed by Levene’s Test of Homogenity of Variance (p>.05), this assumption has been violated for the emotional and intentional scales however because the data have already
been transformed, this researcher chose to continue the data analysis at a lower level of statistical significance (α level) of .005. Further, follow-up univariate ANOVA tests will be corrected for this violation with the more robust Welch ANOVA.

Running MANOVA

As shown above, the data for the present study meet or will have accommodations made for the assumptions for MANOVA – any assumption violations have been reported and will be discussed further in Chapter 5. As such, a one-way multivariate analysis of variance was run to determine the effect of perceived leadership style on teachers’ cognitive, emotional, and intentional response to mandated curriculum change. The results from the MANOVA statistical tests are presented below.

Descriptive statistics.

Teachers were categorized in the independent variable by the largest mean score on each of the three subscales of perceived leadership style. Total number of teachers in each category is as follows: 83 teachers (25.5%) reported a perceived normative-reeducative leadership style, 99 teachers (30.5%) reported a perceived rational-empirical style, and 143 teachers (44%) reported a perceived power-coercive leadership style. Mean scores for each dependent variable (emotional, intentional, and cognitive response to change) across all three categories of independent variable (perceived leadership style), standard deviation, and total number of participants within each category of the dependent variable are presented in Table 4.4.

Mean scores for the cognitive scale are presented as untransformed data while mean scores for the emotional and intentional response scales are presented as transformed scores which explains the larger means for the cognitive scale. Also notable is the fairly equitable
distribution of teachers who perceive the leadership style during the mandated curriculum change
to be normative-reeducative or rational-empirical and the comparably larger group of teachers
who perceived a power-coercive leadership style.

Table 4.4

*Descriptive Statistics for Level of Response Across Each Perceived Leadership Style*

<table>
<thead>
<tr>
<th>Leadership Style</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional Response</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normative-reeducative</td>
<td>1.5307</td>
<td>.28597</td>
<td>83</td>
</tr>
<tr>
<td>Rational-empirical</td>
<td>1.5777</td>
<td>.28542</td>
<td>99</td>
</tr>
<tr>
<td>Power-coercive</td>
<td>1.9393</td>
<td>.22182</td>
<td>143</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1.7248</td>
<td>.32166</td>
<td>325</td>
</tr>
<tr>
<td><strong>Intentional Response</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normative-reeducative</td>
<td>1.2945</td>
<td>.17753</td>
<td>83</td>
</tr>
<tr>
<td>Rational-empirical</td>
<td>1.2932</td>
<td>.15403</td>
<td>99</td>
</tr>
<tr>
<td>Power-coercive</td>
<td>1.5868</td>
<td>.21933</td>
<td>143</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1.4227</td>
<td>.23972</td>
<td>325</td>
</tr>
<tr>
<td><strong>Cognitive Response</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normative-reeducative</td>
<td>3.5614</td>
<td>.60936</td>
<td>83</td>
</tr>
<tr>
<td>Rational-empirical</td>
<td>3.3518</td>
<td>.75767</td>
<td>99</td>
</tr>
<tr>
<td>Power-coercive</td>
<td>2.3186</td>
<td>.70185</td>
<td>143</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2.9507</td>
<td>.89697</td>
<td>325</td>
</tr>
</tbody>
</table>

**Multivariate test: Pillai’s Trace.**

Although Wilk’s Lambda is typically recommended as the multivariate test, in this case
the unequal sample sizes across the categories of the independent variable and the statistically
significant result of Box’s M test indicate the need for a more robust test, thus Pillai’s Trace was
utilized as the multivariate statistic. The alpha was set at .05.

There was a statistically significant difference between the categories of leadership style
on the combined dependent variables, F (6, 642) =31.949, p=.000; Pillai’s Trace=.460; partial
n²=.230. This is reported along with the results of the one-way ANOVA tests in Table 4.5 in the
following section.
One-way ANOVA on each dependent variable.

Due to the statistically significant results of the MANOVA, to follow up, a one-way analysis of variance (ANOVA) was run for each dependent variable. Given that the assumption of homogeneity of variances was violated, the more robust Welch ANOVA was utilized. Results of the Welch ANOVA test are summarized in Table 4.5 below.

Table 4.5

Multivariate and Univariate Analysis of Variance F Ratios and significant levels for Perceived Leadership Style and Teacher Response to Mandated Curriculum Change

<table>
<thead>
<tr>
<th>Perceived Leadership Style</th>
<th>Welch ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MANOVA</td>
</tr>
<tr>
<td></td>
<td>F(6,662)</td>
</tr>
<tr>
<td>Perceived Leadership Style</td>
<td>.460*</td>
</tr>
</tbody>
</table>

Note. F ratio is Pillai’s Trace approximations of F’s *p > .05

Results indicate the teacher emotional response to change was statistically significant for the independent variable “leadership style”, F(2,176) = 92.794, p<.005. The ANOVA on teacher intentional response to change was also statistically significant for the independent variable “leadership style”, F(2,201) = 88.605, p<.005. Finally, the ANOVA for teacher cognitive response to change was also statistically significant for the independent variable “leadership style”, F(2,196) = 112.812, p<.005. While a significant result was identified in the ANOVA test for each of the dependent variables, it remained unclear where exactly the significant differences lie among the three perceived leadership styles. To establish which leadership style(s) contributed to the significant results, a series of post-hoc tests was then conducted, the results of which will be discussed in the Hypothesis testing section below.
Hypothesis testing.

The hypothesis for this study was as follows: Teachers who perceive leadership to employ a rational-empirical style will exhibit more positive cognitive, emotional, and intentional responses to the planned curriculum change compared to teachers who perceive school leadership to employ a power-coercive style, and less positive, cognitive, emotional, and intentional responses compared to teachers who perceive a normative-reeducative leadership style.

The Bonferroni Correction was utilized in conjunction with the post-hoc Games-Howell test to test the research hypothesis and determine which group means differed significantly. Cohen’s d was used to calculate effect size (see Table 4.6). Cohen’s d was then used to calculate the effect size (r) using the formula in which $d =$ Cohen's index and $r =$ Effect-size coefficient.

$$r = \frac{d}{\sqrt{d^2 + 4}}.$$

Table 4.6

Means and Standard Deviation on Teacher Response to Change for Each Perceived Leadership Style for Pairwise Comparison

<table>
<thead>
<tr>
<th>Group</th>
<th>Cognitive Response</th>
<th>Emotional Response</th>
<th>Intentional Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Rational-empirical</td>
<td>99</td>
<td>3.351</td>
<td>.758</td>
</tr>
<tr>
<td>Normative-reeducation</td>
<td>83</td>
<td>3.561</td>
<td>.609</td>
</tr>
<tr>
<td>Power-coercive</td>
<td>143</td>
<td>2.319</td>
<td>.702</td>
</tr>
</tbody>
</table>
Nine, pair-wise comparisons were made: three comparisons for each category of the independent variable (rational-empirical, normative-reeducative, and power-coercive). The results partially support this hypothesis (see Figure 4.1) and are summarized in Table 4.7.

First, an examination and comparison of the three responses to change between the rational-empirical and power-coercive styles was conducted; the mean differences were significant at the .05 level. Teachers who perceived a rational-empirical leadership style reported more positive cognitive, emotional, and intentional responses than those who perceived a power-coercive style. Effects sizes were .61, .61, and .67 respectively. This aligns well with previous research and will be discussed in Chapter 5.

Table 4.7

*Significance Values and Statistical Testing Results of ANOVA and Post-Hoc Games-Howell Tests*

<table>
<thead>
<tr>
<th></th>
<th>Sig.</th>
<th>Levene’s Test for Equality of Variances</th>
<th>F</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional Response</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined independent variables</td>
<td>.000</td>
<td>4.809</td>
<td>88.0</td>
<td>2,322</td>
</tr>
<tr>
<td>Power-coercive—Normative-reeducative</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power-coercive—Rational-empirical</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normative-reeducative—Rational-empirical</td>
<td>.513</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intentional Response</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined independent variables</td>
<td>.000</td>
<td>4.342</td>
<td>94.31</td>
<td>2,322</td>
</tr>
<tr>
<td>Power-coercive—Normative-reeducative</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power-coercive—Rational-empirical</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normative-reeducative—Rational-empirical</td>
<td>.999</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cognitive Response</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined independent variables</td>
<td>.000</td>
<td>2.093</td>
<td>106.90</td>
<td>2,322</td>
</tr>
<tr>
<td>Power-coercive—Normative-reeducative</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power-coercive—Rational-empirical</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normative-reeducative—Rational-empirical</td>
<td>.099</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An examination and comparison of the three responses to change between the normative-reeducative and power-coercive styles also show mean differences significant at the .05 level and demonstrate teachers who perceived a normative-reeducative style reported more positive cognitive, emotional, and intentional responses. Effect sizes were .78, .68, .63 respectively. These results are also consistent with existing research.
Finally, an examination and comparison of the three responses to change between the rational-empirical and normative-reeducative style revealed no significant differences between teachers’ cognitive, emotional, or intentional response to change. Effect sizes were .14, .08, .00 respectively which illustrate the minimal differences between these groups. Though there are slight differences in effect on the cognitive and marginal differences in emotional response, there is no discernible difference in effect on the intentional response to change.

When interpreting the hypothesis tests, it is important to consider there is an unbalanced sample size as 44% of teachers reported their leadership embraced a power-coercive style. However each category of the independent variable does have a large enough sample size to accommodate validity, and the robust nature of the Welch ANOVA and Games-Howell tests justify the validity of the results.
Summary

A one-way multivariate analysis of variance (MANOVA) was run to determine the effect of perceived leadership style on teachers’ cognitive, emotional, and intentional response to mandated curriculum change. Teachers were categorized in the independent variable as perceiving either a (1) normative-reeducative leadership style, (2) rational-empirical leadership style, or (3) power-coercive leadership style. Preliminary assumption checking revealed the data appeared to be normally distributed as assessed by Q-Q plots, histograms, and Shapiro-Wilk test; there were no univariate or multivariate outliers as assessed by boxplot and Mahalanobis distance (p>0.001). Scatterplots revealed acceptably linear relationships and acceptable multicollinearity. The assumption of homogeneity of variance-covariance matrices was violated as assessed by Box’s M test (p=.000); this violation was addressed by utilizing Pillai’s Trace rather than Wilk’s Lambda for the MANOVA statistic. Further, the assumption of homogeneity of variances was partially violated, thus the follow-up univariate ANOVA tests were corrected for this violation with the more robust Welch ANOVA.

The differences between leadership styles on the combined dependent variables was statistically significant \( F(6, 642)=31.949, p=.000; \) Pillai’s Trace=.460; partial \( \eta^2 = .230. \) Follow-up Welch ANOVAs showed that teacher emotional response to change was significant, \( F(2,176) = 92.794, p<.005; \) intentional response to change was significant, \( F(2,201) = 88.605, p<.005; \) and teacher cognitive response to change was also significant, \( F(2,196) = 112.812, p<.005 \) using the Bonferroni adjusted \( \alpha \) of .025. Games-Howell post-hoc tests illuminate significant differences between teachers who perceive a power-coercive style versus those who perceive either rational-empirical or normative-reeducative styles. In other words, teachers who perceive a normative-reeducative leadership style or a rational-empirical respond more positively than
those who perceive a power-coercive style. There was no significant difference in the cognitive, emotional, or intentional response of teachers who perceived a normative-reeducative style versus a rational-empirical style.
Chapter 5: Discussion of Research Findings

This study investigated the extent to which a teacher’s perception of school leadership style affected that teacher’s response to the mandated curriculum change resulting from the implementation of the updated Massachusetts Curriculum Frameworks in English/Language arts. The responses of an online survey were compiled and analyzed via MANOVA test (Pillai’s Trace) to explore the effects of the independent variable on the dependent variable. Follow-up Welch ANOVA tests along with post-hoc Games-Howell testing with a Bonferroni Correction helped to identify which category of the independent variable affected the dependent variables.

The following chapter discusses the results described in chapter four, gives consideration to the possible explanations for the results, assesses the implications of the findings, and offers suggestions for future research.

Results and Discussion of Research Question

The research question for this study investigated the effects of leadership style on a teacher’s response to mandated curriculum change. More specifically, the research question is: To what extent does a teacher’s perception of school leadership style affect that teacher’s cognitive, emotional, and intentional response to the implementation of a planned, state-mandated curriculum change?

Notable gaps in the literature emerged during the review of existing research on this topic; this study assists in filling those gaps in that (1) leadership style is operationalized with Chin and Benne’s (1961) seminal leadership work as being either power-coercive, rational-emperical, or normative-reeducative, (2) teacher response to planned, mandated curriculum change is measured across a tripartite theory of attitude (Piderit, 2000) including the cognitive, emotional, and intentional response, and (3) the focus of the study is the implementation of the
mandated curriculum change resulting from the adoption of the Common Core State Standards and the issuance of new Massachusetts Curriculum Frameworks.

**Leadership style.**

It is notable, however not surprising that nearly half (44%) of respondents perceived their leadership to exhibit a power-coercive style. Public education has emerged over the last 30 years as very much a top-down organization in terms of how policy and practice are implemented. Ample research suggests teachers feel powerless and frustrated with the manner in which curriculum is implemented as they often have little or no input in terms of the curriculum taught (see, for example, Avila et al., 2011; Craig, 2012; Harris, 2012; Masuda, 2010; Smith & Southerland, 2007). This is increasingly evident in the high-stakes nature of state and/or national testing and accountability in which local control of the curriculum is gradually fading in favor of a more standardized curriculum across the country.

That notwithstanding, school leadership is also experiencing tremendous pressure in terms of accountability for not just implementing state-mandated curriculum and improving students’ test scores, but also in recent years, for making changes to teacher evaluation systems, and adhering to rigid mandates for special education services. Though the majority of teachers in this study (44%) perceived a power-coercive leadership style, it may well indeed be the case that school leaders feel governed by a power-coercive hierarchy and are caught up in the need to implement state mandates rather than taking time to communicate, educate, and respond to teacher concerns. This will be discussed further in the Implications for Practice section below.

Also notable in the results specific to perceived leadership style is that of the three styles - normative-reeducative, rational-empirical, and power-coercive – the style most often associated
in the literature with positive response to change is the one least cited by teachers as describing their school leadership during this change. The normative-reeducative style, with its emphasis on developing and training individuals within a system to enhance the overall problem-solving capabilities of that system generally garners the most positive, multifaceted response to planned change (Burke, 2008). Over 30 years of research concerning leadership in public education (see Chapter 2) has revealed an emergence of transformative leadership in education – the transformative leader embraces many of the same traits and behaviors as the normative-reeducative style – nevertheless, only 25% of respondents perceived their leadership to employ a normative-reeducative style during this curriculum change. This finding will also be discussed further in the Areas for Further Research section below.

**Teacher response to change.**

The present study employed the tripartite theory of attitude (Piderit, 2000) to operationalize teacher response to change – teacher’s reported their responses to the planned, mandated curriculum change along cognitive, emotional, and intentional levels. Essentially, response to the change was multidimensional, that is to say a teacher’s beliefs (cognitive response) about the change affected his/her feelings (emotional response) concerning the change which in turn affects his/her intention to comply with or reject the change.

The findings of this study support previous research such as Chan (2010) who found teacher beliefs and emotions about a change may affect not just his/her intention to comply with the change, but his/her ability to do so. Results of the present study also indicate teachers respond favorably to leaders who encourage, empower and include teachers during educational change. This reinforces the results of Hargreaves (2004), who found that inclusive change yields more positive emotional response from teachers than exclusive change, and Melville (2008) who
revealed a connection between helping teachers establish ownership of a reform thereby improving the likelihood of sustaining the changes.

**Implications**

The findings are especially pertinent to this researcher’s motivation for developing this study in that teacher response to an educational change will largely dictate the success or failure of the implementation of the change (see Chapter 1 for a discussion). Consequently, the perceived behaviors and traits of leadership during the change, or in other words leadership style, become instrumental in impacting teacher’s attitude toward the change. This attitude shapes and impacts teacher behaviors during the implementation process. Public education is in a seemingly perpetual state of evolution and change; in particular, the last few years have witnessed not only changes in curriculum, but also changes in teacher evaluation, changes in school and district accountability, and changes in requirements for teachers with students for whom English is a second language. Mandated change in education is something with which teachers must contend on an ongoing basis. The results of this study indicate leadership style may have an effect on teacher response to change – something for policy-writers as well as district and school leadership to consider during the construction and implementation of these changes.

**Implications for theory.**

With regard to the significance of this study to the theoretical framework, leadership style as defined by Chin & Benne (1961) is perceived by teachers based on their personal experiences with educational leadership. Thus, the teacher’s perception of the style with which leadership conducts change implementation affects the ways in which a teacher responds to a mandated change. The present study revealed that a rational-empirical style will elicit a more positive response from teachers than the power-coercive style. Szabla (2007) revealed similar findings
when comparing the rational-empirical and power-coercive styles to the cognitive, emotional, and intentional responses of government employees realizing a change in their appraisal process. According to Chin & Benne (1985) and further discussed by Burke (2008), the rational-empirical style utilizes a strategy which includes selected employees to help disseminate knowledge and clarify and classify the change, and to debunk myths and convey a sense of clarity concerning the change. Craig (2012) expressed the need for communication to improve teacher response to curriculum change, and Chung et al. (2012) demonstrated an individual’s cognitive response will improve when the individual feels well-informed about the change.

The present study also found the normative-reeducative style to provoke a more positive response from teachers than the power-coercive style. Similar results were discussed by Craig (2012) suggesting a sense of inclusion in the decision-making process as being critical to a teacher’s positive response to change, and may indeed improve a leader’s ability to alter teacher practices and beliefs (Gibson & Brooks, 2012). Along with a sense of inclusion, the need for administrative support in the form of professional-development and learning opportunities has also been shown to improve a teacher’s response to change (Parise & Spillane, 2010). The normative-reeducative style was also found to produce a more positive cognitive, emotional, and intentional response in Szabla’s (2007) study, thus the results of the present research align to existing theory.

One result which deviates slightly from historical theory concerning leadership style is the comparison of the normative-reeducative and rational-empirical styles: in the present study, no significant differences were noted in teacher’s cognitive, emotional, or intentional responses to the change. Interestingly, these results are consistent with the findings of Szabla (2007) who found no significant difference between the responses of participants in his study between the
rational-empirical and normative-reeducative leadership styles. However these results contradict what has been historically demonstrated by researchers, specifically that participative leadership styles during planned change have been shown to elicit more positive responses than reason-based leadership styles (Nutt, 1992; Yukl & Falbe, 1990; Zaltman & Duncan, 1977).

Results of the present study do align well with that of previous research concerning response to planned, mandated change. The multidimensional response to change suggests that attitude is affected by a stimulus, for example the need to align curriculum to the new curriculum frameworks, and will manifest along cognitive, emotional and intentional levels creating the Tripartite Theory of Attitude (Piderit, 2000). Perhaps more important is the complexity of the interactions between the three levels of response. Ample research suggests how intricately woven are the beliefs and emotions of an individual undergoing change (for example, Chung et al. 2012; Goddard, Neumerski, Goddard, Salloum, & Berebitsky, 2010; Hargreaves, 2004; Louis, Dretzke, & Wahlstrom, 2010; Moroye, 2009; Smith & Kovacs, 2011; Vogler, 2008), and how those beliefs and emotions serve to frame the intentions of the change agents (Heck & Hallinger, 2010). Results of the present study affirm existing theory and further the discussion of the complexity of an individual’s reaction to change.

Implications for research.

Although ample research exists concerning leadership behavior, traits, and style in public education, prior to this study only once did a researcher utilize Chin and Benne’s seminal leadership styles to study educational leadership (Kennedy, 1987). Further, research on cognitive, emotional, and intentional response to change has occurred in business and municipal settings, yet not until this study has a researcher operationalized teacher response with the tripartite theory of attitudes. This study has assisted in filling that gap in that research.
Specifically, research cited in Chapter 2 indicates a normative-reeducative approach to leadership elicits more positive responses from subordinates (see, for example, Choi & Ron, 2011). The normative-reeducative style utilizes communication, education, and aligning the change to the values evident in the culture of the organization. The present study confirms these findings and provides evidence to suggest if a leader embraces this style during mandated curriculum change, teachers will respond more favorably to that change.

That notwithstanding, a rational-empirical approach to leadership during change implementation is not without merit and the present study revealed no significant difference (in terms of teacher response to change) between a rational-empirical and normative-reeducative style. As discussed in Chapter 2, this style of leadership serves to dispel resistance subordinates may feel resulting from a lack of knowledge concerning a change. By educating individuals affected by a change, it may indeed be easier to instill a sense of logic, reason, and generate recognition of the benefits of the change (see, for example, Lozano, 2006). The present study confirms these findings and presents evidence to suggest a rational-empirical leadership style may also be successful during change implementation as teachers tended to respond favorably to a change when they perceived leadership to exhibit this style.

Prior research suggests the power-coercive leadership style has shown to be effective only when there is a need for rapid change which does not take into account for the assumptions or values of those affected by the change (see Chapter 2 for a discussion). The results of the present study confirm these findings in that the power-coercive style yielded the least favorable teacher response to mandated curriculum change. It is notable, however, to consider that 44% of the teachers perceived the leadership during this change to exhibit a power-coercive style. When nearly half of respondents perceive the “least desirable” leadership style evident during the
implementation of mandated curriculum change, it is important to consider why that is the case, and how that might be changed.

**Implications for practice.**

Based on the discussion above, the results of this study have potential to contribute to leadership practice during planned, mandated educational change. Yet there are two essential parties involved in implementing change in public education: the teachers and those leading the teachers. The following section will discuss first the implication of the present study on the practices of educational leadership, and will then turn to the implications for the practices of teachers attempting to implement a curriculum change. Discussion will focus specifically on the results of the intentional response to change scale and teachers’ report of the stage (1-4) at which they find themselves in the implementation process.

**Leadership during planned curriculum change.**

As discussed above, educational leadership has been studied extensively over the last 30 years, and has been shown to be multifaceted with regard to the often contextually defined behaviors, mindsets, and individual goals of leadership. Despite the large body of research (see Chapter 2) suggesting effective school leadership involves empowering the faculty (Harris & Spillane, 2008; Robinson, 2012), delegating responsibility to the teachers (Heck & Hallinger, 2010), facilitating teacher-autonomy (Korkmaz, 2007), and fostering collaboration and strengthening school culture (Leithwood & Sun, 2012), it is interesting to note that 44% of teachers perceived their leadership (during the implementation of the new curriculum frameworks) to be power-coercive in nature. The power-coercive style uses political or economical power to “force” subordinate compliance with a change. The present study confirms these findings and lends credence to the notion that leadership should consider
embracing a normative-reeducative or rational-empirical style when implementing planned, mandated change due to the improved likelihood of not simply a favorable teacher-response to the change, but an improved likelihood of sustaining and embracing the change (Buczynski & Hansen, 2010; Davis et al., 2011; Gibson & Brooks, 2012; Goldschmidt & Phelps, 2010; Hargreaves & Fullan, 2009; Huffman et al., 2003; Johnson, 2007; Johnson & Marx, 2009; Margolis & Nagel, 2006; Paik et al., 2011; Schnellert et al., 2008).

**Teacher intentional response to change.**

The scale utilized for teacher intentional response revealed interesting results which will have implications for the practices of both teachers and educational leaders. This discussion must be prefaced with the notion that teachers may or may not agree with content and implementation of the new state curriculum standards aligned to the Common Core State Standards. That being said, teachers are often very motivated by how they perceive a change will affect their students (Heck & Hallinger, 2010), therefore, though a teacher may believe that a curriculum change is not necessarily going to improve the learning experience of his/her students, the state assessment will align to the new curriculum, thus the teacher will have no choice but to implement the change in the best interest of his/her students educational progress (as it relates to state testing). This notion may explain much of the variability in the intentional response scale and the low inter-item mean correlations.

Further evidence to suggest this push-pull between doing what “must” be done versus doing what “should” be done in the teacher’s eyes and a teacher’s hesitation to report that conflict is evident in the drop-out rate of the intentional response scale, and the struggle with meeting assumptions for the MANOVA and ANOVA tests for this scale. Of the three response scales, the intentional response scale, with items such as, “How strongly do you intend to speak
out about the drawbacks of this change?”, and “How strongly do you intend to make this curriculum alignment effective” reveal how teachers feel conflicted about their need to implement even if the implementation is not something with which they agree. The implication for teacher practice is the need for teachers to become more involved and vocal in policy design and implementation in order to avoid this push-pull between what “must” be done and what “should” be done in future curriculum changes.

**Teacher reported stage of implementation.**

Full implementation of the new curriculum frameworks in Massachusetts is expected in the fall of 2014. As such, the new state assessments will be aligned to the new frameworks, yet only 16.7% of respondents reported being in stage 4 of the implementation process (*completion of curriculum alignment to the new standards*). Further, only 39.9% of respondents reported being in stage 3 (*nearing completion of the curriculum alignment to the new standards*). Therefore, 43% of all responding teachers are either just now beginning to align (stage 2) or are being introduced (stage 1) to the new standards. This presents a noteworthy implication in terms of teacher and leadership practice due to the fact that the standards have been in place since 2011, yet implementation is nearing completion or complete for just over half of the responding teachers in the state. The questions are then, why have nearly half of the state’s teachers only begun the process of aligning curriculum to the new frameworks? Does leadership affect how quickly the implementation is occurring, or have teachers been left to take care of the implementation on their own? This implication will be discussed further in the Areas for Future Research section below.
Limitations

Response rate.

Response rate for an online survey is often lower than a paper-and-pen survey (Nulty, 2008) and needs to be addressed with multiple communications to the target population in order to encourage as much participation as is possible. Unfortunately the communication in the present study had to come from an outside organization (the MTA) and the researcher was not in control of the timing or distribution of the initial invitation to participate and the reminder emails. Due to the low response rate (∼12%), the results of this study should be generalized only with extreme caution. Though the discussion topics are indeed relevant based on the results of prior research, it is risky to generalize the results of the present study to all the teachers in public education in Massachusetts, much less to all public educators in the country.

Missing data.

There are varying schools of thought on what to do with missing data in a quantitative research design, however recent research suggests using the expectation maximization technique after confirming the data are either missing completely at random (MCAR) or missing at random (MAR) is an acceptable means of preserving the sample size and generating reliable results (Erastus, Jigish, & Ashraf, 2013; Tsikriktsis, 2005). As discussed in Chapter 4, such was the case in the present study as Little’s MCAR revealed the data were indeed missing at random and expectation maximization was used to complete the data set. Though this is the recommended course of action based on recent statistical research, completing missing data with a statistical test presents a limitation and caution must again be exercised when interpreting the results, and when generalizing those results beyond the target population.
Demographics of the participants.

The demographics of the participants show a fairly low percentage of respondents identified themselves as social studies/humanities teachers (8%), and interestingly, only 19% identified themselves as English/Language arts teachers. Conversely, a comparatively large percentage of the respondents are elementary teachers (42%), thus the generalizability of the results to secondary teachers must be done with caution. This is further supported by the fact that 29% of respondents reported teaching in grades 9-12.

Also of note is the experience level of the respondents. The vast majority of the teachers (71%) have 11 or more years experience in teaching. These veteran teachers have lived through many changes in public education policy and practice, thus their responses to change and perception of leadership may be different from less-experienced teachers. This also limits the generalizability of the results of the study in that a proportionately smaller population of respondents had 10 or fewer years of experience.

Reliability of intentional response scale.

Though the reasons for the greater variability in responses on the intentional response scale and the lower calculated reliability were discussed in the Implications for Practice section above, it must also be noted that a lower reliability will manifest as a limitation of the study. It may be that teachers are less likely to report their intentions for fear of retaliation, job security, or their own conflicting thoughts concerning their intentional response. Clearly, there is something unique about how teachers chose to respond to items on this scale as the scale, until this study, showed adequate reliability.
Areas for Further Research

The following section will outline four areas for potential future research. Though each of these areas are suggested to explore public education in Massachusetts, there is also a need to gather data from other states to fully understand how variability in curriculum change implementation nationwide may affect how teachers respond to that change.

How do school leaders perceive leadership?

The present study focused on how teachers perceived leadership during this mandated curriculum change. Though a large percentage of teachers (~44%) perceived a power-coercive style, it would be interesting to explore the style which school leadership perceives themselves to employ. Future research should consider gathering the perceptions of teachers and leaders and comparing the similarities and differences observed via those perceptions. The results of this research may serve to inform leadership of the behaviors and local policies which are perceived as improving teacher-response and those which are prohibitive to a positive-teacher response.

District variability.

Though not relevant to the present study, demographic data was collected concerning the district in which a responding teacher worked. This survey item was flagged as voluntary, however 195 teachers (60%) responded with the name of their district. Future research may use this data in a variety of ways. First, districts may be categorized by criteria and compared across the leadership styles. For example, districts serving low-socioeconomic populations may be compared with districts serving high-socioeconomic populations to determine if leadership is perceived to employ a certain leadership style depending on the population of the students it serves. Another example may be to compare urban school districts with suburban and rural
districts to examine whether the subtle cultural differences evident between these populations may impact leadership style.

Second, teacher response to curriculum change may be compared across districts meeting a certain criteria. Again, this may be examined across the socio-economic status of a district, but other criteria may also be explored such as teacher-professional development opportunities, number of hours of preparation time offered to teachers, or number of hours of collaboration offered to teachers. Each of these criteria may affect a teacher’s perception of leadership and that teacher’s response to a mandated curriculum change.

Third, qualitative research may be employed to explore more deeply into certain school districts to investigate specific behaviors, traits, personalities and policies which may impact a teacher’s perception of leadership style as well as his/her response to change. Further, it may be interesting to connect, at a district level, which aspect(s) of teacher response is most affected by certain behaviors, traits, and policies.

**Stage of implementation.**

Future research may look for variability of perception of leadership style and teacher response to change across the four stages of curriculum implementation. It may be that teachers in the early stages of implementation will respond differently and perceive a different leadership style than teachers who are nearing completion or have completed implementing the curriculum change. What is more, when every district has completed implementation, it may be interesting to compare the perception of leadership style six months into the school year and explore any variability in perceived leadership style and teacher response.
Exploring “Who led the change?”

The present study also collected data concerning “who led the change” – specifically, teachers were asked to report who they perceived to be the “leaders” during the implementation of the new curriculum frameworks and were given the following choices: principal, teachers, superintendent, curriculum specialists, department heads, and self. Teachers were asked to keep that leader(s) in mind as they responded to the survey items relevant to research question for the present study. Future research should explore categorically those teachers who perceived, for example, the principal as the leader during this change, and how his/her leadership style influenced the teachers’ responses to change. The differences in styles and responses between teachers who named (for example) the principal as leader and the curriculum specialists as leaders would provide insight into the various influential people at play during a planned, mandated curriculum change.

Conclusion

Significant differences in teacher response to change were found between leaders who were perceived to employ a normative-reeducative style versus a power-coercive style, and between leaders who were perceived to employ a rational-empirical style versus a power-coercive style. No significant difference was found between leaders perceived to employ a normative-reeducative versus a rational-empirical style. Both the normative-reeducative and the rational-empirical styles facilitated more positive cognitive, emotional, and intentional responses from teachers during the implementation of the Massachusetts ELA curriculum frameworks (a planned, mandated curriculum change) than did the power-coercive style. The low response rate, the skewed demographics of the participants, and the low reliability score of the intentional response scale represent significant limitations such that the results should be generalized only
with extreme caution. Nevertheless, the results align well with past research and indicate educational leaders should be mindful of the style with which they operate during planned, mandated curriculum change as that style will affect a teacher’s response to the change and may influence sustaining and implementing meaningful educational change.
References


Tsouloupas, C.N., Carson, R.L., Matthews, R., Grawitch, M. J., & Barber, L.K. (2010). Exploring the association between teachers' perceived student misbehaviour and
emotional exhaustion: The importance of teacher efficacy beliefs and emotion regulation. 

*Educational Psychology, 30*(2), 173-189.


Appendix A

Teacher Perception of Leadership Style and Response to Mandated Curriculum Change

UNSIGNED CONSENT TO PARTICIPATE IN THIS STUDY

I would like to invite you to participate in a web-based online survey that is part of a research study, investigating the ways leadership may affect a teacher's beliefs and feelings about mandated curriculum changes, and how leadership may influence a teacher's intentions to make changes in curriculum and instruction aligned to the Massachusetts Curriculum Frameworks. This survey should take about 10 minutes to complete. We are asking you to participate in this study because you are a teacher in the Massachusetts public schools. You must be at least 18 years old to take this survey. The decision to participate in this research project is voluntary. You do not have to participate and you can refuse to answer any question. Even if you begin the web-based online survey, you can stop at any time. There are no foreseeable risks or discomforts to you for taking part in this study. You will not be paid for your participation in this study. Your part in this study is anonymous to the researcher(s). However, because of the nature of web based surveys, it is possible that respondents could be identified by the IP address or other electronic record associated with the response. Neither the researcher nor anyone involved with this survey will be capturing those data. Any reports or publications based on this research will use only aggregate data and will not identify you or any individual as being affiliated with this project. If you have any questions about this study, please feel free to contact Jennifer Devlin via email at devlin.j@husky.neu., the person mainly responsible for the research. You can also contact Dr. Yufeng Qian, the Principal Investigator, at je.qian@neu.edu. If you have any questions regarding your rights as a research participant, please contact Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: n.regina@neu.edu. You may call anonymously if you wish.

Thank you for your time. Jennifer Devlin

First, please provide some general information about yourself:

In what grade level(s) do you teach?

- K-2
- 3-5
- 6-8
- 9-12
What subject matter do you teach?

- Elementary
- Mathematics
- Science/technology
- Social studies/humanities
- English/Language arts
- Special Education
- World Languages
- Specialist (ie. music, art, physical education)
- Other

In 2011, Massachusetts adopted the Common Core State Standards (CCSS) as the revised ELA and Math curriculum frameworks which were approved in 2011. Districts across Massachusetts were expected to adjust and align their local curriculum to implement the new frameworks. Who, in your estimation, were the leaders involved in the realignment of the curriculum in your school? (please select all that apply)

- School leaders (principal, assistant principal)
- Teachers
- Superintendent
- Curriculum Specialists
- Department heads
- Yourself
Keeping in mind the leadership you feel was involved in the realignment of curriculum at your school, please read and select one response for each statement

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree Somewhat</th>
<th>Neither Agree nor Disagree</th>
<th>Agree Somewhat</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The leaders united and created bonds among everyone involved in carrying out the realignment.</td>
<td></td>
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</tr>
<tr>
<td>The need for the realignment was justified by experts who were knowledgeable about the curriculum changes.</td>
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<tr>
<td>My role in the curriculum changes was completely passive.</td>
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<tr>
<td>Leaders had to play the role of persuader.</td>
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</tr>
<tr>
<td>Leaders created a division between themselves and the teachers responsible for carrying out the realignment.</td>
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</tr>
<tr>
<td>The leaders played the role of coach.</td>
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<tr>
<td>I had a lot of authority to make decisions about the changes in curriculum.</td>
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</tr>
<tr>
<td>The pressure to realign curriculum put forth by leadership was moderate.</td>
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<tr>
<td>The leaders did not focus on how teachers were accepting the changes in curriculum.</td>
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<tr>
<td>There was a collaborative relationship between leadership and the teachers responsible for carrying out the curriculum realignment.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I had some authority to make decisions about the realignment of curriculum.</td>
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<tr>
<td>The leaders focused on the facts and promoted the benefits of the curriculum realignment.</td>
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</tr>
<tr>
<td>To get teachers to make changes in curriculum, leadership used their position of authority to implement the change.</td>
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</tr>
<tr>
<td>The need for the realignment was justified by leaders from many levels of the school.</td>
<td></td>
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</tr>
<tr>
<td>To get teachers to realign</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
The pressure to make changes in curriculum put forth by the leaders was high.
I played an active role in making the curriculum changes

Continuing with your thoughts about the leadership involved in the realignment of curriculum at your school, please read and select one response for each statement

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Agree Somewhat</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The relationship between leadership and the teachers was professional.</td>
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<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>I had no authority to make decisions about curriculum changes.</td>
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</tr>
<tr>
<td>Leadership communicated about the realignment primarily through group discussions.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Decisions about the realignment were made by high ranking members of the school.</td>
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<td>○</td>
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<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Leadership established links between themselves and the teachers responsible for the realignment.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The need for the realignment was justified by high ranking members of the school only.</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>Decisions about the curriculum realignment were made by individuals from many different levels of the school.</td>
<td>○</td>
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</tr>
<tr>
<td>Decisions about the realignment were made by experts who were extremely knowledgeable about the changes in curriculum.</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>The relationship between leadership and the teachers was strained.</td>
<td>○</td>
<td>○</td>
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</tr>
<tr>
<td>Leadership communicated about the realignment primarily through emails and memos.</td>
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<td>○</td>
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<tr>
<td>Leadership spent a lot of time dealing with how the curriculum realignment was being accepted by teachers.</td>
<td>○</td>
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</tr>
</tbody>
</table>
The pressure put forth by leadership to realign curriculum was low. Leadership communicated about the realignment primarily through lectures/presentations at meetings. To get teachers to change, leadership used logical arguments and factual evidence to carry out the realignment. Leadership played the role of order giver.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree Somewhat</th>
<th>Neither</th>
<th>Agree Somewhat</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The pressure put forth by leadership to realign curriculum was low.</td>
<td>○</td>
<td>○</td>
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<td>○</td>
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</tr>
<tr>
<td>Leadership communicated about the realignment primarily through lectures/presentations at meetings.</td>
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</tr>
<tr>
<td>To get teachers to change, leadership used logical arguments and factual evidence to carry out the realignment.</td>
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<tr>
<td>Leadership played the role of order giver.</td>
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</tbody>
</table>

This section focuses on your beliefs about the changes in curriculum which have come about during the realignment. Please read and select on response for each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree Somewhat</th>
<th>Neither</th>
<th>Agree Somewhat</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>These changes in curriculum are very important to me.</td>
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<tr>
<td>I have adapted easily to these changes in curriculum.</td>
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<tr>
<td>Making these changes in curriculum has improved my relationships with coworkers.</td>
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<tr>
<td>The changes have made me more effective with my job.</td>
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<tr>
<td>This change offered me opportunities to do what I do best.</td>
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<tr>
<td>This change has improved my satisfaction with my job.</td>
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<tr>
<td>Leadership within my school is supportive of this change.</td>
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<td>○</td>
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<tr>
<td>I have the resources I need to make these curriculum changes successful.</td>
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</tr>
<tr>
<td>With these changes, I have gained more control over my job.</td>
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</tr>
<tr>
<td>I am confident that I can make these curriculum changes a big success.</td>
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<tr>
<td>This curriculum realignment has made it more likely that I will continue working at this school.</td>
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<tr>
<td>The realignment was necessary for the school.</td>
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</tr>
<tr>
<td>This was the right change for the school to make.</td>
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</tbody>
</table>
The curricular changes are a good fit for the school.  
School leadership is committed to make the realignment of curriculum successful.  
I am confident in our leadership’s ability to implement these changes effectively.  
Leadership is providing the resources necessary to implement these changes.  
The curricular changes will enhance the credibility of our school.  
These changes in curriculum will improve the effectiveness of our school.
This section focuses on your emotional responses to the changes in curriculum - essentially what you have felt during the realignment to the new Curriculum Frameworks. Please read and select on response for each statement.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree Somewhat</th>
<th>Neither</th>
<th>Agree Somewhat</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>When I think about these changes I feel EXCITED.</td>
<td>○</td>
<td>○</td>
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<tr>
<td>When I think about this change I feel HOPEFUL.</td>
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<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel CAPABLE.</td>
<td>○</td>
<td>○</td>
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<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel CONFIDENT.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel INTERESTED.</td>
<td>○</td>
<td>○</td>
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<td>○</td>
<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel FRUSTRATED.</td>
<td>○</td>
<td>○</td>
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<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel DISGUSTED.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel BURDENED.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel IGNORED.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel OVERWHELMED.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel CONCERNED.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>When I think about this change I feel DISAPPOINTED</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
This section focuses on your intentions to act in response to the changes in curriculum which have come about during the realignment to the new Curriculum Frameworks. Please read and select on response for each statement.

<table>
<thead>
<tr>
<th></th>
<th>Strongly do not intend</th>
<th>Somewhat do not intend</th>
<th>Neither</th>
<th>Somewhat Intend</th>
<th>Strongly Intend</th>
</tr>
</thead>
<tbody>
<tr>
<td>How strongly do you intend to help make sure this curriculum alignment is effective?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>How strongly do you intend to speak up about the advantages of this curricular change?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>How strongly do you intend to support the implementation of this curriculum alignment?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>How strongly do you intend to encourage others to make this curriculum alignment effective?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>How strongly do you intend to speak out about the drawbacks of this curriculum change?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>How strongly do you intend to suggest that others not participate in this curriculum change?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>How strongly do you intend to oppose the implementation of this curriculum alignment?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>How strongly do you intend to encourage others to resist implementing this curriculum alignment?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>How strongly do you intend to suggest ways in which to carry out this curriculum alignment</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Thanks for your responses. Just a few more questions about you and that is it! How many years have you worked as public educator?

☐ 0-5 years
☐ 6-10 years
☐ 10-15 years
☐ 15-20 years
☐ 20+ years
How many years have you worked in your current role?

- 0-5 years
- 6-10 years
- 10-15 years
- 15-20 years
- 20+ years

At which stage would you classify yourself in terms of implementing the new Curriculum Frameworks?

- Stage one: an introduction to the new standards
- Stage two: beginning to align curriculum to new standards
- Stage three: near completion of curriculum alignment to new standards
- Stage four: completion of curriculum alignment to new standards

Will you please share the district in which you currently teach? (optional write-in)
UNSIGNED CONSENT TO PARTICIPATE IN THIS STUDY

I would like to invite you to participate in a web-based online survey that is part of a research study, investigating the ways leadership may affect a teacher’s beliefs and feelings about mandated curriculum changes, and how leadership may influence a teacher's intentions to make changes in curriculum and instruction aligned to the Massachusetts Curriculum Frameworks. This survey should take about 10 minutes to complete.

We are asking you to participate in this study because you are a teacher in the Massachusetts public schools.

**You must be at least 18 years old to take this survey.**

**The decision to participate in this research project is voluntary.** You do not have to participate and you can refuse to answer any question. Even if you begin the web-based online survey, you can stop at any time.

**There are no foreseeable risks or discomforts to you for taking part in this study.**

**You will not be paid for your participation in this study.**

Your part in this study is anonymous to the researcher(s). However, because of the nature of web based surveys, it is possible that respondents could be identified by the IP address or other electronic record associated with the response. Neither the researcher nor anyone involved with this survey will be capturing those data. Any reports or publications based on this research will use only aggregate data and will not identify you or any individual as being affiliated with this project.

**If you have any questions about this study,** please feel free to contact Jennifer Devlin via email at devlin.j@husky.neu., the person mainly responsible for the research. You can also contact Dr. Yufeng Qian, the Principal Investigator, at je.qian@neu.edu.

**If you have any questions regarding your rights as a research participant,** please contact Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617.373.4588, Email: n.regina@neu.edu. You may call anonymously if you wish.

Thank you for your time.

Jennifer Devlin