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# Implicit Theories and Perceptions of Academic Changes Among Teachers in Lasallian Secondary Schools in the San Francisco New Orleans District

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The University of San Francisco

IMPLICIT THEORIES AND PERCEPTIONS OF ACADEMIC CHANGES  
AMONG TEACHERS IN LASALLIAN SECONDARY SCHOOLS IN  
THE SAN FRANCISCO NEW ORLEANS DISTRICT

A Dissertation Presented  
to  
The Faculty of the School of Education  
Department of Leadership Studies  
Catholic Educational Leadership Program

In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Education

by  
Heidi M. Harrison  
San Francisco  
December 2016

THE UNIVERSITY OF SAN FRANCISCO

Dissertation Abstract

Implicit Theories and Perceptions of Academic Changes Among Teachers in Lasallian Secondary Schools in the San Francisco New Orleans District

A central issue in education is whether teachers are preparing students to succeed and serve a rapidly changing world. In Catholic Lasallian schools, teachers are called to accomplish the Church's ministry of education and therefore to continually renew and adapt their practices to prepare students for their contemporary society and to live out Christian values in service to others.

This study focused on the fundamental beliefs and perceptions of teachers who implement academic changes in Lasallian schools. It utilized the psychological framework of implicit theories (Dweck, 2000) as its theoretical rationale. The purpose of the study was to investigate the extent to which teachers in Lasallian secondary schools in the San Francisco New Orleans (SFNO) District have entity (fixed) or incremental (malleable) theories in the domains of (a) intelligence, (b) the world, and (c) morality. The study also investigated the extent to which teachers in Lasallian secondary schools in the SFNO District have favorable perceptions about implementing academic changes in (a) curriculum, (b) instruction, and (c) assessment. Furthermore, the study investigated whether there is a correlation between the implicit theories of teachers in Lasallian secondary schools in the SFNO District and their perceptions about implementing academic changes.

This study utilized survey methodology. Part I of the online survey utilized measures published by Dweck (2000) with permission. Part II utilized items developed by the researcher to measure respondents' perceptions about academic changes in

curriculum, instruction and assessment. Part III consisted of demographic questions. The survey was administered to teachers in 14 secondary schools in the SFNO District. Fifty-five percent of the population (366 respondents) completed the online survey.

The study found that respondents held incremental theories of intelligence, the world, and morality, and favorable perceptions of academic changes in curriculum, instruction, and assessment. Respondents with incremental theories of the world were more likely to favor academic changes in curriculum and assessment than those with entity theories of the world. These findings were consistent with prior research on implicit theories of teachers in the intelligence domain and contributed new insights regarding the implicit theories of teachers in the world and morality domains.

This dissertation, written under the direction of the candidate's dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements for the degree of Doctor of Education. The content and research methodologies presented in this work represent the work of the candidate alone.

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Candidate

October 21, 2016  
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The Jesuit Community of the University of San Francisco continues to subsidize the tuition for students in the Catholic Educational Leadership program. I am grateful for their financial commitment to forming Catholic educational leaders and scholars who will help transform the Church, the world, and students' lives, and for the many ways I benefited from their generosity in attending the Institute of Catholic Educational Leadership.

This study would not have launched without the permission granted by Dr. Carol Dweck. Her research is changing the paradigm of how teachers conceive of and talk about learning—that of their students and their own—and I am honored she allowed this study to go forward in a Lasallian setting.

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## CHAPTER 1

### THE RESEARCH PROBLEM

#### Statement of the Problem

In an address to the Congregation for Catholic Education (CCE), Pope Francis (2014) declared, “Today education is directed at a *changing* generation and, therefore, every educator—and the entire Church who is the mother educator—is called ‘*to change*’ or know how to communicate with the young people before them” (para. 5). The problem this study investigated is the beliefs and perceptions educators hold about the changes they are called to implement in order to serve the academic, spiritual, social, emotional, and economic needs of the students before them in a quickly shifting world.

In the first quarter of the 21<sup>st</sup> century, students attend school in a world characterized by rapid, disruptive, and global shifts in technology, the economy, labor, and geopolitics (Friedman, 2015). According to Frey and Osborne (2015), even though the digital age has improved the lives of consumers, it also has transformed the nature of work in that 47% of jobs in the United States are at risk of being replaced by software interfaces and smart machines, with new employment opportunities being created for only the most highly skilled workers. For example, complex supply chains that used to require skilled labor and knowledge workers at every stage are being replaced by software interfaces, such as, Google, Facebook, and Alibaba that provide thin layers of digital service connecting consumers directly to services and goods (Goodman, 2015). All this, according to Friedman, opens up the labor force for more creative and innovative endeavors, but workers need to be educated and trained for them.

In addition to these massive changes, according to Friedman (2015), the world of the current generation of students is characterized by immense geopolitical shifts.

Friedman noted that, although nations once maintained economic, political, and social order, environmental disasters, economic inequalities, and sectarian violence are leading to enormous and continual economic, political, and social disorder, contributing to the largest displacement of peoples since World War II. The issue of whether schools, and therefore teachers, are preparing students to innovate, lead, and transform a society marked by new forms of labor, disruption, and disorder is a central challenge in Catholic education (CCE, 2014; Francis, 2014; Fullan & Langworthy, 2014; Jacobs, 2010).

According to Turkle (2011, 2012, 2015a, 2015b), the digital age has also manifested in massive shifts in people's social and emotional well-being, especially that of children, adolescents, and college students. Turkle (2012) observed that mobile communication and devices in particular have threatened people's capacities for solitude, self-reflection, conversation, and empathy, and therefore have changed people's sense of identity. Turkle (2015b) saw this dynamic as leading to a cyclical problem: an inability to have conversations, and a lack of capacity for solitude, which together have formed "an assault on empathy" (para. 8). She explained that when young people use social media and mobile device communication to avoid open-ended and spontaneous conversations, they do not cultivate skills such as listening, making eye-contact, reading others' body language, and reacting to what others say. She claimed that, conversely, in conversations, people learn who they are and who others are, and therefore, empathy. Likewise, when mobile devices distract people from being alone, they lose opportunities for solitude which allows them to gather themselves, self-reflect, develop authentic things

to say, and to recognize other people for who they are. For Turkle, solitude helps people be secure in themselves and hear others better. In turn, for Turkle, conversations with others help people become more aware of their own thoughts and feelings.

To resist technology's deterioration of empathy, Turkle (2015a, 2015b) recommended that young people, especially students, be taught solitude, how to set limits around their technology use, how to have conversations, and how to achieve "attentional pluralism" (2015a, ¶ 21) in which one becomes skilled at both the hyper attention of multi-tasking and the deep attention that comes from "unit-tasking." A critical factor in learning these skills, Turkle maintained, is positive, mentoring-type relationships between teachers and students.

The CCE (2014) observed a similar challenge in the context of Catholic schools, stating, "Schooling must face a new challenge: that is, helping students develop the necessary critical tools to avoid being dominated by the power of new media" (Sec. III. ¶ 2d). Furthermore, the CCE noted that among the radical global, economic, social, and political shifts that educators are contending with is, a flattening of hierarchical educational relationships, whereby students can encounter new opportunities without teachers, outside of schools through media and social networks. The CCE also maintained that schools are also dealing with "massive and uncontrollable" (Sec. II. ¶ 1d) amounts of information. Therefore, the CCE called for a fundamental shift in curriculum and instruction from solely the distillation of knowledge to the development of students' skills for knowledge acquisition, reflection, global and intercultural citizenship, critical thinking, and taking action. Thus the CCE affirmed that teachers in Catholic schools are thereby called to foster their students to faith, "to gratitude, to a sense of awe, to asking

themselves questions, to develop a sense of justice and consistency” (Sec. III) so that they can gain the analytical, theological, and humanistic skills necessary to lead and to protect human dignity in the midst of the massive economic, technological, and cultural changes of the 21<sup>st</sup> century. Moreover, the CCE appealed to schools in this context to become “communities that learn how to improve” (Sec. III. ¶ 1c).

Since 1965, Catholic schools in the United States have faced several fundamental changes, primarily in declining enrollments and increasing financial constraints (Frabutt, Holter, & Nuzzi, 2013; Kennedy, 2012; O’Keefe & Goldschmidt, 2014). Heft (2011) explained that Catholic schools in the United States have also faced large cultural shifts inside and outside of the Church since the Second Vatican Council (1962-1965). For Heft, three major changes have challenged the leadership, funding, and stability of Catholic schools. Those major changes are: (a) the rise in cost of education following the exit of vowed religious women and men from the schools, (b) the subsequent growth of impoverished inner-city Catholic schools serving increasing numbers of non-Catholic students, while increasing numbers of affluent suburban Catholics chose strong public schools over Catholic schools, and (c) a weakened Catholic identity and growing ambivalence among Catholics about the value of Catholic education. Between 2000 and 2010, 1,600 Catholic schools closed in the United States, and enrollment dropped by over one half million students (McDonald, 2011). According to Heft, survival of Catholic schools in the United States depends on their ability to address these issues and to engage directly with the changing culture they are situated in. More pointedly, Kennedy stressed, “For many leaders in Catholic education, the choice is clear: innovate or die” (p. 2). Whereas Heft (2011) focused on exit and loss in Catholic schools, the Alliance for

Catholic Education (ACE) (2009) identified potentially positive changes, new opportunities, and greater enrollment if Catholic schools were to address demographic shifts and attract and support greater numbers of Latino families.

### *Adaptive Challenges and Academic Change*

Inside and outside of Catholic schools, education is contending with vital issues of how best to prepare students through their academic programs for a rapidly changing society and world. Schools frequently embark on academic change initiatives, such as integration of new technology, implementation of new forms of assessment and instructional methods, or the adoption of new curricular frameworks such as the Common Core of State Standards (CCSS) in the name of “21<sup>st</sup> century education” (Jacobs, 2010; Trilling & Fadel, 2009), which may be defined as “teaching and learning that focuses on 21<sup>st</sup> century outcomes that are believed by educators, school leaders, researchers, employers, and others to be critically important for success in today’s world” (Swallow, 2015, p. 8). Often such academic changes are initiated from an authoritative entity (federal guidelines, the state, the local district, the archdiocese, the board, or the principal) and received by teachers simply as “technical challenges” (Heifetz & Linsky, 2002, p. 14). In other words, academic initiatives are often treated as technical challenges in which, as explained by Heifetz and Linsky, the authority-in-charge simply applies current know-how and procedures in an existing framework to new initiatives. When academic changes are understood as technical challenges, teachers mostly comply, and school leaders implement and manage the latest initiative, but educators’ underlying assumptions about teaching and learning often remain the same (Heifetz & Linsky, 2002; Jacobs, 2010; Wagner, et al., 2006). As is discussed below, the difficulty in shifting

assumptions about teaching and learning may derive both from the nature of the change itself (Capelle, 2003; Fullan & Langworthy, 2014; Jacobs, 2010; Zukowski, 1997) and the dynamics within and among organizational systems, leaders, and teachers (Bridges 1986, 2004; Evans, 1996; Fullan, 2001; Hargreaves & Fullan, 2012; Schneider, 2014; Senge, et al., 2000; Sergiovanni, 2009).

*The nature of academic change*

According to Capelle (2003), Fullan and Langworthy (2014), Jacobs (2010), and Zukowski (1997), major academic initiatives, such as technology integration and the implementation of the CCSS, are manifestations of far deeper and more fundamental changes confronting schools in the first quarter of the 21<sup>st</sup> century. Jacobs contended that these types of academic initiatives are parts of an entirely new curricular approach and paradigm shift that “should begin with specific rethinking and examination of choices based on the tensions between critical points from our past practice and new challenges for the future” (p. 5). At the same time, Fullan and Langworthy observed that the goals of the new paradigm for deeper learning and a focus on competencies that will help students thrive in “today’s knowledge-based, creative, interdependent world” (p. 2) are not really new. However, what is new, they maintained, is an emphasis on teachers and students creating “active learning partnerships” (p. 2) with each other.

For Catholic schools, Zukowski (1997) advocated for a new paradigm for Catholic schools in which instruction moved away from knowledge transfer to students discovering and constructing knowledge for themselves. Similarly, Capelle, a Brother of the Christian Schools, asserted that academic and other types of innovations were necessary for the ongoing vitality of students, teachers, and Lasallian schools. (Lasallian

schools are Catholic schools sponsored or operated by the Brothers of the Christian Schools, formally known as the Institute of the Brothers of the Christian Schools, and founded by St. John Baptist de La Salle in 17<sup>th</sup> century France.)

Therefore, the aforementioned academic changes are “adaptive challenges” (Heifetz & Linsky, 2002, p.13) rather than technical ones. As such, they require teachers, staff, and administrators to learn in new ways by changing their attitudes, values, and behaviors about teaching and learning (Wagner et al., 2006). Moreover, as noted by multiple researchers, (Fullan & Langworthy, 2014; Heifetz & Linsky; Jacobs, 2010), although many change initiatives in academics may feel trendy, shallow, and temporary and may even be treated as such by administrators and teachers, the educational shifts that schools are implementing toward greater student mastery of 21<sup>st</sup> century learning skills require positive and meaningful growth to which all members of the school community need to be committed in order for the shifts to take root and be sustained.

#### *The systems and agents of academic change*

The difficulty in shifting educators’ assumptions about academic change also derives from various dynamics within and among organizational systems, leaders, and teachers (Bridges, 1986, 2004; Evans, 1996; Fullan, 2001; Hargreaves & Fullan, 2012; Schneider, 2014; Senge, et al., 2000; Sergiovanni, 2009). Fullan (2001) noted, for example, that the best, most innovative ideas do not often have staying power when visionary leaders with authoritarian styles fail to convert excitement about the ideas into internal commitment. He also pointed to an “implementation dip” (p. 40) during which individuals in the organization are called not only to examine their behavior and beliefs, but also to learn new skills, often causing them anxiety about their proficiency.

Similarly, Senge, et al. (2000) identified the challenge of implementing academic change as one in which schools' systems of thinking about change need to shift from compliance to an authority, to learning. They emphasized, "Schools that train people to obey authority and follow the rules unquestionably will have poorly prepared their students for the evolving world they live in" (p.7). Instead, they called for schools to become learning organizations in which all members foster five disciplines of: (a) *personal mastery*, meaning that all in the school develop themselves toward their personal dreams and goals; (b) *mental models*, meaning that all engage in metacognitive reflection about the sources and meaning of their thinking; (c) *shared vision*, referring to the development of a commitment to common purpose; (d) *team learning*, in which dialog fosters alignment of purpose and goals; and (e) *systems thinking* in which all develop an awareness of the complexities and interdependencies of the school and the change it faces.

Schneider (2014) also examined systems and processes in schools and observed that academic changes often fail to take root because of "a fundamental separation of the capacities and influence needed to move research into practice" (p. 4). More specifically, he understood teachers as being in the right position to influence instructional practice but lacking the capacity to do so. On the other hand, Schneider contended, educational researchers in universities and also policy makers are poorly positioned for their research and policies to have a real impact. Schneider elaborated,

The teaching profession, it has been repeatedly demonstrated, is simply not culturally or structurally positioned to absorb research. Further, the occupation is configured in a manner that gives teachers significant control over implementation of curricular and pedagogical policy, regardless of their low capacity for consuming research. Thus, while scholarship may occasionally

penetrate policy documents or teacher talk, it rarely gains a foothold in the place that matters most—the classroom. (p. 184)

Schneider offered several recommendations to bridge the gap between practice and research. He concluded that: (a) teachers need to be convinced of the purpose and significance of a change; (b) the change needs to be philosophically compatible with teachers' beliefs about students and learning; (c) the change needs to be easy to adapt and integrate into existing practices and contexts; and (d) the change needs to be easily understood and packaged in a practical way for straightforward implementation.

Likewise, Hargreaves and Fullan (2012) also linked difficulties in academic change to the structure and capacity of the teaching profession, as well as a gap between policy makers and practice. They contended that the reason deep and lasting educational changes, especially in student academic achievement do not succeed is because school, district, and government leaders have often treated educational reform like an investment in business capital with an over-emphasis on improving the quality of individual teachers. Instead, they emphasized a need for an investment in the professional capital of teachers by focusing on improving the entire profession of teaching and the quality of all teachers together. In their recommendations for lasting, meaningful, and effective educational changes, Hargreaves and Fullan highlighted steps leaders could take such as improvement of teacher working conditions, school culture, and teacher preparation. Similarly, they asserted the need for teachers as agents of change to improve their own work habits such as taking more initiative in their own professional learning and trusting their peers more.

Sergiovanni (2009) identified motivational issues among teachers in implementing academic changes in cases in which they feel like “pawns” (p. 323), as

well as feeling isolated in their teaching. Although Sergiovanni recommended that school leaders need to try to motivate teachers up front by clearly articulating what needs to be accomplished, the benefits of the change, teachers' tasks, and the markers of success, he also noted that setting up teachers with professional development, tools, and support networks for implementing the change was even more important. He explained,

Principals often spend too much time trying to get support beforehand when in fact it may be more important to help people be successful so that they come to support something in a more sustained way... Once the change implementation process begins, teachers will come to support the change if they are successful in implementing it. (p. 354)

Evans (1996) traced difficulty in academic change to how educators experience change implementation through a natural "conservative impulse" (p.25) toward preservation and stability. The conservative impulse, according to Evans, is manifested in feelings of loss and confusion, a challenge to teachers' feelings of competence, and the potential for conflict. Evans explained,

How we experience change depends on how it affects the pattern of understanding and attachments we have already constructed and by which we live. The impact of any particular innovation depends on many factors, including, among others, our individual characteristics (personality, history), the kind of organization we work in, the nature of the change, and the way it is presented to us. But, at best, our reaction is likely to be mixed. For though the public meanings of change are firmly linked to growth and renewal, progress and development, its primary private meanings are quite different: they begin... with loss. (p. 26)

Bridges (1986, 2004) also identified loss as the pivotal interior moment in individuals facing change, and therefore transition. As Bridges (2004) observed, change is brought on usually by external events and situations, but transitions are psychological occurrences during which individuals experience endings, "inner-reorientation and self-redefinition" (p. xii) that are necessary for any change to last. Bridges (1986) also noted that leaders and managers of organizational change are usually adept at managing change

*per se* but that too often they neglect to plan for or to attend to the subsequent interior transitions undertaken by the individuals subject to and carrying out the change.

Transitions, Bridges (1986, 2004) theorized, have three stages: (a) endings; (b) the “neutral zone,” and (c) the new beginning. He contended that in order for new beginnings to take hold, individuals must first let go of old ways and spend some time in an emotional neutral zone of withdrawal, which he defined as a period of “wilderness” or a “period of nothingness” (p. 123). The periods of endings and the neutral zone are characterized by disengagement from and dismantling of old understandings and identifications and reorientation toward something new. Leaders guiding individuals through the neutral zone may face obstacles including helping them understand the change, individuals’ “rigidity and the inability to put aside popular assumptions” (p. 86), lack of time to allow new ideas to come forth, and their fear of people’s reaction to unconventional ideas.

There are many theories as to why academic changes are difficult in terms of the nature of the change (Capelle, 2003; Fullan & Langworthy, 2014; Heifetz & Linsky, 2002; Jacobs, 2010; Zukowski, 1997), and the systems and agents involved in carrying out the change (Bridges, 1986, 2004; Evans, 1996; Fullan, 2001; Hargreaves & Fullan, 2012; Schneider, 2014; Senge, et al., 2000; Sergiovanni, 2009). Evans’ (1996) and Bridges’ (1986, 2004) work in particular highlighted the importance of leaders needing to attend to individuals’ interior experience of change. They contended that in the midst of change, some individuals hold a conservative or rigid response to the loss involved in the change, while others are more adaptable.

This study was confined to exploring another interior aspect of change which is the fundamental beliefs and perceptions of teachers who are called to be agents of academic change in Lasallian schools. These beliefs and perceptions were examined through the psychological framework of implicit theories (Dweck, 2000, 2006; Kelly, 1955) which orient individual actors toward a fixed or changing view of the world, and therefore, toward particular goal-orientations and motivations before, during, and after change. Dweck's theory of implicit theories offers a means to study Lasallian teacher's beliefs and perceptions related to academic change. What follows are brief discussions about teachers as agents of change in Catholic education generally and Lasallian schools particularly, as well as an overview of Dweck's theory.

*Teachers as Agents of Change in Catholic Education*

As asserted above, teachers are called to carry out the academic changes called for in schools in general—Catholic, other private schools, and public schools (Bridges, 1986, 2004; Capelle, 2003; Evans, 1996; Fullan, 2001; Fullan & Langworthy, 2014; Hargreaves & Fullan, 2012; Jacobs, 2010; Schneider, 2014; Senge, et al., 2000; Sergiovanni, 2009; Zukowski, 1997). Like Bridges (1986, 2004) and Evans, Palmer (1998) asserted that the interior worlds of the agents of change, in this case, teachers, are as important to education as the curriculum and instructional methods. For Palmer, “who” the teacher is as a whole person—his/her identity and integrity—is critical to the educational enterprise. Moreover, Palmer (2000) described the calling of teachers as a cohesive, holistic human and spiritual calling with a practical response in service to students. In quoting Buechner (1993, p. 119), Palmer wrote,

True vocation joins self and service, as Frederick Buechner asserts when he defines vocation as “the place where your deep gladness meets the world's deep

need.” Buechner’s definition starts with the self and moves toward the needs of the world: it begins, wisely where vocation begins—not in what the world needs (which is everything), but in the nature of the human self, in what brings the self joy, the deep joy of knowing that we are here on earth to be the gifts that God created. (pp. 16-17)

Similarly, in Catholic education, and in Lasallian education in particular, the whole person of the teacher is called to be the agent of change in the world, and in the lives of students, by answering God’s call through discernment and analysis of the Reign of God, in and through the spiritual, social, emotional, economic, realities faced by their students (Brothers of the Christian Schools, 2008, 2015; CCE, 1988, 1997, 2014; CCE, 1988, 1997, 2014; Francis, 2014; National Conference of Catholic Bishops [NCCB], 1973; Pius XI, 1929; Sacred Congregation for Catholic Education [SCCE], 1982; Second Vatican Council, 1965a; Van Grieken, 1999).

According to Pope Paul VI (1975), evangelization, the primary mission of the Catholic Church, means “bringing the Good News into all strata of humanity, and through its influence transforming humanity from within and making it new” (¶ 18) and requires renewed methods and direct engagement with the contemporary society, culture, and times in which it is undertaken. Multiple ecclesial writings (Benedict XVI, 2008; CCE, 1988, 1997, 2014; Francis, 2013b, 2014; NCCB, 1973; Pius XI, 1929; SCCE, 1982; Second Vatican Council, 1965a) emphasized that in the Church’s ministry of education, teachers have the chief responsibility to carry out that mission of evangelization. More specifically, Pope Pius XI (1929), who in writing that “perfect schools are the result not so much of good methods as of good teachers” (¶ 88), declared that teachers were the primary deliverers of the twofold purpose of Catholic education in a rapidly modernizing world: (a) “the Supreme Good...for the souls of those being

educated” (¶ 8) and (b) “the maximum of well-being possible here below for human society” (¶ 8).

Furthermore, the Second Vatican Council (1965a) clarified that Catholic schools depend on teachers “almost entirely” (¶ 8) for the realization of the mission of Catholic education. With regards to this central importance of teachers, the Second Vatican Council proclaimed:

Beautiful indeed and of great importance is the vocation of all those who aid parents in fulfilling their duties and who, as representatives of the human community, undertake the task of education in schools. This vocation demands special qualities of mind and heart, very careful preparation, and continuing readiness to renew and to adapt. (¶ 5)

This ecclesial call for teachers to renew and adapt was reinforced and developed in several writings after the Second Vatican Council (CCE, 1988, 1997, 2014; Francis, 2014; NCCB, 1973; SCCE, 1982) which emphasized the necessity of continual updating of research-based pedagogical methods in order to facilitate both the spiritual salvation of students and their earthly success in contributing toward the transformation of the world. The CCE (2014) emphasized that adaptation and honing of pedagogical methods is part and parcel of Catholic schools’ theological and spiritual vision which it described in part as,

The need for Christian education to grow at the same time as human education, albeit respecting its Christian character to prevent a situation in which the life of faith is experienced or perceived as being separate from other activities in human life. (Sec. I. ¶ 1b)

In the Lasallian educational tradition, teachers have the same calling to continually renew and adapt their practices to serve their students’ spiritual and temporal needs through a “human and Christian education to the young, especially the poor, according to the ministry which the Church has entrusted to it” (Brothers of the Christian

Schools, 2008, ¶ 3; 2015 ¶ 3), the statement which describes the Catholic, incarnational mission of the Brothers of the Christian Schools. To elaborate, as Van Grieken (1999) explained, for Lasallian educators, the phrase “human and Christian” refers to a belief that Christ is present in and through the work of the Christian Schools and their teachers. He wrote, “Lasallian spirituality is a spirituality that has the school as its setting, the teacher as its focus, and the salvific potential of education as its inspiration” (p. 123). Van Grieken continued that for teachers in Lasallian schools, “There is no separation between the professional journey and the spiritual journey. Both are aspects of a single vocation and commitment to education... Christ is to be found in the teacher... Christ is to be found in the student... Christ is to be found in the work of education” (pp.123-124). Similarly, the 2015 version of the *Rule of the Brothers of the Christian Schools* asserted that Lasallian educators, both Brothers and lay partners, are called to be “co-operators with Jesus Christ,” dedicated to “the building up of the Reign of God through the service of education” (Brothers of the Christian Schools, 2015, ¶ 6). Muñoz (2013) elaborated that since the beginnings of the Brothers of the Christian Schools in 17<sup>th</sup> century France, the Lasallian teacher’s calling is a “synthesis” (p. 99) of faith in God and a practical response to the concrete reality of their students, especially those living in poverty. Therefore, in Lasallian schools, teachers have a spiritual calling to minister to their students in the practical circumstances of their lives and to adapt their practices as necessary to best help their students make a living in the society in which they live (Capelle, 2003; Fox, 2012; Brothers of the Christian Schools, 1997, 2008; Muñoz; Rummery, 2011; Van Grieken), as well as to help them “discover, appreciate, and assimilate human and Gospel values” (Brothers of the Christian Schools, 2015, ¶ 16).

The founder of the Brothers of the Christian Schools and Lasallian education, St. John Baptist De La Salle, embodied and modeled the responsiveness and adaptability that teachers needed in order to educate the children of the poor and artisan classes of 17<sup>th</sup> century France (Muñoz, 2013). Several Lasallian scholars (Everett, 1996; Lauraire, 2004; Rummery, 2011; Salm, 1996; Van Grieken, 1999) have noted that as a teacher, administrator, and leader, De La Salle implemented several academic innovations with the goal of helping students earn their own living upon completion of their schooling. Among the academic innovations that De La Salle and the first Brothers implemented were simultaneous and small group instruction (rather than the more common individual recitation in front of a teacher while the rest of the class sat idle) and literacy instruction in the vernacular French rather than Latin (Everett; Lauraire; Rummery; Van Grieken). Furthermore, the lay teachers—not ordained priests—lived together in community as Brothers as a means of mutual support and teacher training (Everett). These and other educational reforms and innovations were formalized in a practical manual for curriculum, instruction, school administration, and teacher training called *The Conduct of the Christian Schools* (De La Salle, 1720/1996). According to Everett, De La Salle wrote *The Conduct* over a 35-year period in dialog and collaboration with the first communities of Brothers as they continually refined and modified their practices. Furthermore, according to Everett and Lauraire, between 1720 and 1996, the Brothers of the Christian Schools revised *The Conduct* at least 24 times as they modified and innovated educational practices to suit the students and pedagogy of their times and societies.

Similarly, the 2008 version of *Rule of the Brothers of the Christian Schools* (Brothers of the Christian Schools, 2008) stated: “The educational policies of Lasallian

institutions are centered on the young, adapted to the times in which they live, and designed to prepare them to take their place in society” (§ 13). *The Rule* also stated that the Brothers are called to continually evaluate their schools and educational programs and to revise programs to meet their students’ needs in partnership with lay persons for the shared mission of providing “a human and Christian education to the young, especially the poor” (§ 3). Likewise, the 2015 version of the *Rule* (Brothers of the Christian Schools, 2015) called for Lasallian schools to be constantly “renewed” (§ 3). Furthermore, the 2015 *Rule* emphasized that change in renewal in Lasallian schools was necessary according to Brothers’ and lay partners’ prayerful discernment “of the needs of the Reign of God” (§ 13), and that in order to be faithful to the Lasallian tradition and spirituality, they are called to analyze and respond to educational needs “in a creative manner” (§ 14.2). In this manner, Lasallian teachers—Brothers and lay partners—have a duty to continually adapt their practices to remain practical and relevant to the lives of their students (Capelle, 2003; Fox, 2012; Brothers of the Christian Schools, 1997, 2008, 2015; Rummery, 2011).

In Catholic education, specifically Lasallian education, teachers bear much of the responsibility for academic changes in service to the students entrusted to their care. In this study, Dweck’s (2000, 2006) theory of implicit theories provided a means to examine Lasallian teachers’ beliefs and perceptions related to academic change.

#### *Implicit Theories*

Dweck’s (2000, 2006) implicit theory framework provides a means to explore teacher beliefs about and orientation toward the adaptive challenges in academics that schools confront. This framework, though primarily attributed to Dweck, has been

developed, tested, and supported by Dweck and several colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995; Hong, Chiu, Dweck, Lin, & Wan, 1999). According to Dweck and colleagues, an implicit theory consists of basic, core assumptions in an individual's belief or meaning system that strongly influences his or her goals, achievements, and relationship patterns. They concluded that persons hold either entity (fixed) theories or incremental (growth) theories. Subsequently, according to Dweck (2000), entity theorists are less adept at managing changes and challenges, and incremental theorists are more adept at managing changes and challenges. In *Mindset*, Dweck (2006) used the terms "fixed mindset" and "growth mindset" in place of the terms "entity theory" and "incremental theory" respectively. This study utilized her social scientific language to refer to implicit theories. Previous studies (Altendorff, 2012; Bernardo, 2012; Chaucer, 2013; Garcia-Cepero & McCoach, 2009; Gero 2013; Gutshall, 2013; Klein, 1996; Morrison, 2013; Poliquin, 2010; Rattan, Good, & Dweck, 2012; Shim, Cho, & Cassady, 2013; Sweeny, 2013; Vander Ploeg, 2012; Williams, 2013) examined the implicit theories of teachers, but there no known research on this dynamic about teachers in Catholic schools generally, and Lasallian schools specifically, related to their perceptions of academic changes in curriculum, instruction, and assessment.

The problem this study explored is the beliefs and perceptions teachers in Lasallian secondary schools have about academic changes in curriculum, instruction, and assessment. These perceptions related to academic changes were studied through the framework of implicit theories as developed by Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000, 2006; Dweck, Chiu, & Hong, 1995; Dweck & Leggett,

1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999). As educational institutions are called to implement rapid and dramatic change initiatives in curriculum, instruction, and assessment in the first quarter of the 21<sup>st</sup> century, Lasallian secondary schools have a unique mission to prepare students to engage with, learn from, and transform the world and to ensure that their teachers are able to guide their students in those endeavors.

### Background and Need

Lasallian schools have adapted their methodologies to respond to student needs since their beginnings in 17<sup>th</sup> century France (Brothers of the Christian Schools, 2003; Rummery, 2011). Therefore, Lasallian schools provided a fitting context for examining teacher beliefs about change through Dweck's (2000, 2006) framework of implicit theories and teacher perceptions of academic changes in curriculum, instruction, and assessment. They were also a fitting context in light of Catholic Church teaching on education and the central role of teachers in implementing academic changes. Furthermore, Lasallian schools were suitable for this study because of their emphasis on providing a "practical education" which Fox (2012) defined as having a focus on helping students "make a living and a life" (p. 13) and which Rummery described as "answering needs" (p. 2) of the students being served so that they can "obtain and develop employment in a particular society" (p. 2). Moreover, Lasallian schools were an appropriate setting for this study because of the foundational value placed on the role and person of the teacher in Catholic teaching generally, and the Lasallian heritage specifically, in at least four ways.

First, since the Second Vatican Council (1962-1965), the Catholic Church has grappled with the rapid paradigm shifts of the 20<sup>th</sup> and 21<sup>st</sup> centuries in and outside of Catholic education, and how best to prepare teachers and students for those changes (Benedict XVI, 2008; CCE, 1988, 1997, 2014; Francis, 2013b, 2014; NCCB, 1973; SCCE, 1982; Second Vatican Council 1965a, 1965b). Collectively, Second Vatican Council documents and other ecclesial writings support the call and responsibilities for teachers to be prepared to adopt changing and innovative pedagogies and thereby to prepare their students to adapt to and serve in a changing world.

Secondly, within the Catholic tradition, Lasallian schools have a long-standing and historic commitment to providing a practical education that adapts to student needs and prepares students for their contemporary workforce (Brothers of the Christian Schools, 2008; Fox, 2012; Rummery, 2011; Van Grieken, 1999). As stated in the *Rule of the Brothers of the Christian Schools* (2008), “The educational policies of Lasallian institutions are centered on the young, adapted to the times in which they live, and designed to prepare them to take their place in society” (§ 13). Likewise, the 2015 version of *Rule* (Brothers of the Christian Schools, 2015) emphasized that creative responses to student needs are discerned through analysis and discernment of the “social and religious contexts” (§ 14) in which students live. Thus, in Catholic schools generally and in Lasallian schools particularly, teachers are called to adopt the most effective methodologies to prepare students for service in a rapidly shifting, globalized world (CCE, 2014; NCCB, 1973; Rummery; Second Vatican Council, 1965a; Van Grieken).

Thirdly, the Catholic tradition (Francis, 2013b; NCCB, 1973; Pius XI, 1929; SCCE, 1982) and the Lasallian heritage (Brothers of the Christian Schools, 2008, 2015;

De La Salle, 1730/1994; Mueller, 2006, 2008; Van Grieken, 1999) both emphasize the importance of the whole person of the teacher and the beliefs and practices that the teacher brings with himself or herself to teaching. Finally, since 2000, Lasallian secondary schools have strived to engage with adaptive challenges in academics that require major shifts in beliefs and practices held by teachers (Brothers of the Christian Schools, 2003, 2014; Christian Brothers Conference, 2011; Fox, 2012).

*Lasallian Schools Today and the Changes They Face*

Lasallian schools are a longstanding and major contributor to the ministry of Catholic education in the United States and Canada. In 2015-2016, they served 81,393 students in the Lasallian Region of North America (RELAN) through 93 institutions at the elementary, secondary, post-secondary levels, including family and youth centers (Center for Applied Research in the Apostolate [CARA], 2016). Since 1845, the Brothers of the Christian Schools have operated schools in the United States (Christian Brothers Conference, 2012). Lasallian education in what is now the San Francisco New Orleans (SFNO) District dates to 1859, when the Brothers founded what is today St. Michael's High School in Santa Fe, New Mexico, and 1868, when they began administrating St. Mary's College in San Francisco, California, which is today, St. Mary's College in Moraga, California, and St. Mary's College High School in Berkeley, California (Miller & Sinitiere, 2014).

The Lasallian secondary schools of the SFNO District have faced and continue to face many adaptive challenges related to the realm of academics. As background to this study, in an email correspondence with the researcher in October 2014, a representative group of 10 principals of the secondary schools of the SFNO District reported several

adaptive challenges that their schools faced (see Appendix A). The most frequently cited academic change in response to adaptive challenges was integration of educational technology in curriculum and instruction with several principals mentioning the implementation of one-to-one iPad or “Bring Your Own Device” programs. The next most commonly cited academic changes in response to adaptive challenges were new assessment and grading practices, as well as new observation, evaluation, and supervision systems tied to improving instructional pedagogies. Other academic challenges mentioned by the principals included: (a) addressing teacher turnover and retention and the impact those dynamics have on school culture and student learning; (b) restructuring and redesign of the curriculum; (c) implementing STEM education programs; and (d) establishing new expectations for faculty collaboration. According to the group of responding principals (see Appendix A), as of October 2014, the Lasallian secondary schools in the SFNO District had engaged with these academic changes in response to adaptive challenges for as short as a year or less and as long as nine years.

The major changes and shifts undertaken by the Lasallian secondary schools of the SFNO District are contextualized within the Catholic Church’s own directives about the role of change in the Church and in education (Benedict XVI, 2008; CCE 1988, 1997, 2014; Francis 2013b, 2014; NCCB, 1973; Pius XI, 1929; SCCE, 1982; Second Vatican Council, 1965a; Vatican Radio, 2015) and the Lasallian heritage of providing a practical education that adapts to the needs of the students of the day (Brothers of the Christian Schools, 1997, 2003, 2008, 2014, 2015; Fox, 2012; Killeen, 2013; Rummery, 2011; Van Grieken, 1999). The changes have been implemented mostly by teachers who, in both the Catholic tradition and Lasallian heritage, are called to be good teachers who integrate

current pedagogies and innovations to facilitate the learning of their students, so that they in turn, will be empowered to serve and to contribute to the world they live in (Benedict XVI; Brothers of the Christian Schools; CCE 1988, 1997, 2014; Fox; Francis 2013b, 2014; NCCB; Pius XI; Rummery; SCCE; Second Vatican Council; Van Grieken). The weight and complexity of the call and responsibility to carry out academic changes shouldered by teachers in Catholic and Lasallian education will be expanded and explained in Chapter II. This study examined the deeply held beliefs teachers in Lasallian secondary schools in the SFNO District have about change, as well as their perceptions about academic changes in curriculum, instruction, and assessment through the implicit theories framework of Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000, 2006; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999).

### Theoretical Rationale

This study was based upon the theory of Dweck (2000) who posited that people's overarching implicit theories about intelligence, the world, and morality directly impact their goals and their achievement patterns. Implicit theories are people's beliefs about themselves that "create different psychological worlds, leading them to think, feel, and act differently in identical situations" (p. xi). More specifically, an implicit theory consists of basic, core assumptions in an individual's belief or meaning system that strongly influences his or her goals, achievements, and relationship patterns. Dweck's ideas about implicit theories in the domains of intelligence, the world, and morality are supported by her research with several colleagues (Chiu, Dweck, Tong, & Fu, 1997;

Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999).

Dweck (2000) contended that people hold either an *entity theory* in which they conceive of intelligence, the world, and morality as fixed entities, or an *incremental theory* in which they conceive of intelligence, the world, and morality as malleable. Since this study will investigate beliefs about change among teachers in Lasallian secondary schools in the three domains of intelligence, the world, and morality, and their perceptions about academic changes in curriculum, instruction, and assessment, Dweck's theory is particularly suitable as a rationale. Table 1 summarizes the three domains of implicit theories, listing definitions, foundational theorists, and references.

Table 1

<i>Implicit Theory Domains</i>			
Domain	Definitions	Foundational Theorists	References
Intelligence	How individuals implicitly conceive of intelligence as being either a fixed trait or skills and knowledge that can be developed	Sternberg, 1985, 1996, 1997	Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988
The world	Individuals' core ontological assumptions about whether reality is static or evolving and their epistemological approach to knowing and interpreting this reality by either quantifying a static reality or analyzing how reality evolves	Whitehead, 1938; Pepper, 1942; Piaget & Garcia, 1989; Heilbroner, 1991	Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988
Morality	How individuals implicitly conceive of the rightness or wrongness of a moral action as being rooted in either duty or rights	Dworkin, 1977	Chiu, Dweck, Tong, & Fu, 1997; Dweck, Chiu, & Hong, 1995

For the purpose of clarity of terminology, it is important to note that Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995; Hong, Chiu, Dweck, Lin, & Wan, 1999) developed a theory about individuals' own implicit theories. They interchangeably used the phrases, "a person with an entity theory" or "a person with an incremental theory," and "entity theorist" or "incremental theorist" to discuss persons and the implicit theories they hold. Keeping in line with the theorist herself, the researcher will use Dweck's terminology. Although Dweck (2000, 2006) sometimes referred to implicit theories as "self-theories" or "mindsets," in this study, the term "implicit theory" is utilized. Furthermore, because this study was conducted in Lasallian secondary schools which are rooted in religious beliefs, it is important to state that people's implicit theories do not pertain to religious beliefs. In the context of this study, reference to someone's "beliefs" or what a person believes was limited to the person's implicit theory about intelligence, the world, or morality. Whether implicit theories are related to personal religious belief or religious practice fell outside the scope of this study.

The intelligence domain refers to how individuals implicitly conceive of intelligence as being a fixed trait or as being skills and knowledge that can be developed (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988). Dweck (2000) did not define intelligence. Instead she derived contrasting definitions of intelligence from her subjects (Dweck & Leggett, 1988), from whom she concluded that for entity theorists, intelligence is a person's "inherent capacity or potential" (Dweck, 2000, p. 61) and an intellectual endowment demonstrated through "effortless ability" (p. 61). Conversely, for incremental theorists, intelligence is "a

person's skills or knowledge" (Dweck, 2000, p. 61), and growth and accomplishment are demonstrated through hard work and effort.

According to Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995), the "world" domain refers to individuals' core ontological assumptions about whether reality is static or evolving. It also refers to their epistemological approach to knowing and interpreting this reality. Thus, entity theorists tend to quantify the world's "unchangeable dispositions," whereas incremental theorists tend to analyze its "dynamic processes" (Dweck, Chiu, & Hong, 1995, p. 282). Dweck, Chiu, and Hong rooted the entity theory of the world and the incremental theory of the world in Whitehead's (1938) concepts of a static worldview and a dynamic worldview, as well as similar conceptualizations of static and dynamic worldviews by Pepper (1942), Piaget and Garcia (1989), and Heilbroner (1991).

For Chiu, Dweck, Tong, and Fu (1997), the morality domain refers to how individuals implicitly conceive of the rightness or wrongness of a moral action, as being rooted in either duty or rights. Chiu et al., extrapolated a moral theory from the legal scholar Dworkin (1977) who identified two classes of moral beliefs. First, in the "duty-based" moral belief system, the primary criterion for moral action is whether the agent has carried out duties prescribed by the moral order, which is a system and "a moral code that emphasizes duties and rules, with its focus on sanctioning moral deviance" and thereby functions "to maintain the status quo and hence social stability" (Chiu et al., 1997, p. 924). For Dworkin, the primary moral authority in the duty-based moral belief system is the external moral order as established in the law or in social rules.

By contrast, according to Dworkin (1977), a “rights-based” moral belief system, the primary criterion for moral action is whether moral principles and human rights are being upheld. The primary moral authority in the rights-based moral belief system is the principles and rights internally held by the person. Like Dworkin, Chiu, Dweck, Tong, and Fu (1997) held that a rights-based moral belief system allows for and supports social change in order to advance moral principles and human rights.

For Chiu, Dweck, Tong, and Fu (1997), entity theorists tend to adhere to a fixed morality that corresponds with Dworkin’s (1977) duty-based moral system and are motivated by a desire to carry out duties prescribed by the moral order. Because entity theorists believe that moral authority comes from the moral order itself, they are invested in maintaining systems and the status quo out of this deep concern. Conversely, Chiu et al., asserted that incremental theorists tend to adhere to a malleable morality that corresponds with Dworkin’s (1977) rights-based moral system and are concerned with ensuring that the principles and rights necessary for guiding and shaping society are upheld.

Dweck, Chiu, and Hong (1995) contended that implicit theories do not rigidly determine a person’s behavior. Rather, implicit theories create a social cognitive framework of beliefs out of which individuals then make attributions and judgments and react in a manner consistent with that framework. Table 2 synthesizes the social cognitive and attribution processes in implicit theories as proposed by Dweck and colleagues (Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Derrick, & Wan, 1999).

Table 2

*Implicit Theories Related to Social Cognitive and Attribution Processes*

	Entity Theory	Incremental Theory
Disposition	Fixed (Maladaptive)	Growth-oriented (Adaptive)
Achievement Goals	Performance Goals <ul style="list-style-type: none"> <li>• Maintain and prove competence and ability</li> <li>• Gain positive judgment</li> <li>• Avoid negative judgment</li> </ul>	Learning/Mastery Goals <ul style="list-style-type: none"> <li>• Increase ability</li> </ul>
Attribution / Reaction to Setbacks	Blame <ul style="list-style-type: none"> <li>• Blame poor ability</li> <li>• Blame lack of ability</li> <li>• Blame external causes</li> <li>• Interpret self as incompetent</li> </ul>	Remediation <ul style="list-style-type: none"> <li>• Blame poor effort</li> <li>• Blame lack of effort</li> <li>• Identify what has not been learned or mastered yet</li> <li>• Interpret setback as an opportunity to learn</li> </ul>
Behavior	Helplessness <ul style="list-style-type: none"> <li>• Self-judgment, negative affect, defensiveness</li> <li>• Lower persistence</li> <li>• Reduction in effort; shutting down</li> <li>• Reduced performance / lower achievement</li> </ul>	Mastery-Oriented <ul style="list-style-type: none"> <li>• Re-focus on effort and strategy</li> <li>• Greater persistence, striving</li> <li>• Generation of new problem-solving skills</li> <li>• Increased performance and achievement</li> </ul>
Reaction to Change / New Challenges	<ul style="list-style-type: none"> <li>• Refrain from new challenges</li> <li>• Change is a potential threat to one's competence; change invokes fear that one might fail and that one's competence will be judged negatively</li> </ul>	<ul style="list-style-type: none"> <li>• Seek out new challenges</li> <li>• Change is an opportunity to learn, grow, succeed, and thrive</li> </ul>

*Note.* Based on Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999

Furthermore, Dweck, Chiu, and Hong (1995) clarified, “We view these theories simply as alternative ways of constructing reality” (p. 268). They also contended that

some people have a generalized implicit theory—either an entity or incremental theory—that cuts across all domains. However, Dweck et al. also contended that other people have different implicit theories in the domains of intelligence, the world, and morality. Therefore, they found that implicit theories are not so much a generalized cognitive style as they are “domain-specific conceptual frameworks” (p. 269), and studied implicit theories in four domains, intelligence, the world, morality, and “other persons.” In consultation with her dissertation chair, the researcher decided to focus the scope of the study solely on the three implicit theory domains of intelligence, the world, and morality, since they were more pertinent relative to academic changes in curriculum, instruction, and assessment.

Dweck (2000) also observed that people’s implicit theories are stable but that they are responsive to situations and malleable over time. Similarly, Dweck, Chiu, and Hong (1995) found that by presenting research subjects with fictitious readings containing compelling evidence for either entity or incremental theories, they could influence the implicit theories their subjects used when trying to solve a problem. Poliquin (2010) and Gutshall (2013) confirmed this finding.

The researcher recognizes that the work of Dweck and her colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995; Hong, Chiu, Dweck, Lin, & Wan, 1999) offers one way of understanding how an individual interacts with change through his or her fundamental beliefs about intelligence, the world, and morality, and that it is not the only way to understand that dynamic. At the same time, their theory serves as a starting point for understanding the

beliefs of teachers who are called to implement many academic changes in curriculum, instruction, and assessment.

### Purpose of the Study

The purpose of the study was to investigate the extent to which teachers in Lasallian secondary schools in the SFNO District have entity or incremental theories in the domains of (a) intelligence, (b) the world, and (c) morality. The study also investigated the extent to which teachers in Lasallian secondary schools in the SFNO District have favorable perceptions about implementing academic changes in (a) curriculum, (b) instruction, and (c) assessment. Furthermore, the study examined whether there is a correlation between the implicit theories of teachers in Lasallian secondary schools in the SFNO District and their perceptions about implementing academic changes.

### Research Questions

The following research questions were addressed in this study:

- 1) To what extent do teachers in Lasallian secondary schools in the SFNO District have entity or incremental theories in the following domains:
  - a. Intelligence
  - b. The World
  - c. Morality
- 2) To what extent do teachers in Lasallian secondary schools in the SFNO District have favorable perceptions about implementing academic changes in the following areas:
  - a. Curriculum

b. Instruction

c. Assessment

- 3) Is there a correlation between the implicit theories of teachers in Lasallian secondary schools in the SFNO District and their perceptions about implementing academic changes in their schools?

### Significance

This study has significance for research in Catholic education in general, and Lasallian education in particular, because up to this point empirical research on teachers' implicit theories and their perceptions about academic changes in Catholic and Lasallian education had not been conducted. Although other studies (Altendorff, 2012; Bernardo, 2012; Chaucer, 2013; Garcia-Cepero & McCoach, 2009; Gero 2013; Gutshall, 2013; Klein, 1996; Morrison, 2013; Poliquin, 2010; Rattan, Good, & Dweck, 2012; Shim, Cho, & Cassady, 2013; Sweeny, 2013; Vander Ploeg, 2012; Williams, 2013) examined the implicit theories of teachers using Dweck's theory, until now, Dweck's theory was used to study the implicit theories of teachers in public and online education. This investigation adds to research on the beliefs and dispositions of teachers in Catholic schools who are called to provide an outstanding education and evangelize students through both innovative instructional practices and faithful representation of the Gospel in the modern world; the study also contributes to limited research on current academic practices in curriculum, instruction, and assessment in Catholic schools. It also adds to research on Lasallian education, especially research on the practical and adaptive nature of Lasallian schools and their teachers.

Additionally, this study has significance for the educational profession. Specifically, it provided insight into the beliefs and perceptions of teachers in the Lasallian secondary schools for the SFNO District leaders who plan professional development and formation programs for administrators and teachers. The study also provided valuable insights for Lasallian secondary school administrators, department chairs, and other academic leaders in their own planning to meet the adaptive challenges, especially those necessitating academic changes in curriculum, instruction, and assessment, in their schools.

Furthermore, the study is a resource to Lasallian administrators by providing insight into the beliefs and perceptions of the teachers whom they hire, develop, support, coach, and form professionally and spiritually in the midst of adaptive challenges, and at all stages of teaching careers. The study may also serve as a resource for Lasallian administrators discerning personnel decisions, specifically whether to retain teachers who do not adapt to the changes prioritized by the school. Additionally, the results give Lasallian administrators, department chairs, and other academic leaders insights into the complexity of the beliefs and dispositions of teachers and the complexity of different types of academic changes in curriculum, instruction, and assessment that they are charged with enacting, thus allowing them the possibility of differentiating their plans and strategies for implementation.

Finally, this study is a professional resource to Lasallian teachers who desire to understand their own interior beliefs and perceptions about the academic changes they encounter or are being asked to implement in curriculum, instruction, and assessment. In addition to understanding their own beliefs and perceptions about academic changes, the

study facilitated insight into how other colleagues learn and face change. Though not a focus of this study, learning about implicit theories offers Lasallian teachers a glimpse of how their students learn, view intelligence, the world, and morality and value change.

### Background of the Researcher

At the time of the study, the researcher was a doctoral student in the Catholic Educational Leadership program in the School of Education at the University of San Francisco. She holds a Bachelors of Art in political science from the College of the Holy Cross, Worcester, Massachusetts, and a Masters of Theological Studies from the Jesuit School of Theology at Berkeley, California. She is a graduate of the Lasallian Leadership Institute. With a 20-year career as an educator in Catholic secondary schools, she taught religious studies at St. Elizabeth High School in Oakland, California, and at Sacred Heart Cathedral Preparatory, a Lasallian-Vincentian secondary school in San Francisco, California, where she also led strategic planning work for the administration and facilitated an accreditation self-study and the ongoing follow-up to it. At the time of the study, she served as the Vice Principal for Curriculum and Instruction at Justin-Siena High School, a Lasallian secondary school in Napa, California, where she was responsible for leading the faculty in academic changes in curriculum, instruction, and assessment. As a lifelong Catholic, she attended Catholic schools from 4<sup>th</sup> through 12<sup>th</sup> grades and served as a Jesuit Volunteer advocating for adult education in San Antonio, Texas. This study was a culmination of the researcher's doctoral studies.

## CHAPTER 2

### REVIEW OF LITERATURE

#### Restatement of the Problem

In the first quarter of the 21<sup>st</sup> century, a central issue in education is whether schools, and therefore teachers, are preparing students to innovate, have empathy, lead, and transform a society characterized by disruption, disorder, shifts in social and political power structures, and new forms of labor and technology (Congregation for Catholic Education [CCE], 2014; Francis, 2014; Friedman, 2015; Fullan & Langworthy, 2014; Jacobs, 2010; Turkle, 2011, 2012, 2015a, 2015b). Therefore, the CCE (2014) called for schools to enact fundamental shifts in curriculum and instruction away from simply the distillation of knowledge toward the development of students' skills for knowledge acquisition, reflection, global and intercultural citizenship, critical thinking, and taking action grounded in well-formed values.

In Catholic schools, teachers have the chief responsibility to carry out the Church's mission and ministry of education (Benedict XVI, 2008; CCE, 1988, 1997, 2014; Francis, 2013b, 2014; National Conference of Catholic Bishops [NCCB], 1973; Pius XI, 1929; Sacred Congregation for Catholic Education [SCCE], 1982; Second Vatican Council, 1965a). Therefore, several ecclesial writings (CCE, 1997, 2014; Francis, 2014; NCCB, 1973; SCCE, 1982; Second Vatican Council, 1965a) emphasized the necessity for teachers to renew and adapt their practices based on sound pedagogical research. Similarly, teachers in Lasallian schools are called to continually renew and adapt their practices in order to best serve students within the practical circumstances of

their lives so that students, in turn, will be able to make a living in their contemporary society, (Capelle, 2003; Fox, 2012; Brothers of the Christian Schools, 1997, 2008; Rummery, 2011), and “discover, appreciate, and assimilate human and Gospel values” (Brothers of the Christian Schools, 2015, ¶ 16).

One component of educational change, specifically academic change, which deserves greater explanation, is the beliefs teachers bring to implementation of those changes in Lasallian schools. Dweck’s (2000) theory of implicit theories offers a lens through which to study teacher beliefs and dispositions related to academic changes. As defined by Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995; Hong, Chiu, Dweck, Lin, & Wan, 1999), an implicit theory consists of basic, core assumptions in an individual’s belief or meaning system that strongly influences his or her goals, achievements, and relationship patterns. Individuals with an entity theory (an implicit theory that is fixed and static) are less adept at managing changes and challenges, whereas those with an incremental theory (an implicit theory that is growth-oriented and malleable) are more adept at managing changes and challenges. Although previous studies (Altendorff, 2012; Bernardo, 2012; Chaucer, 2013; Garcia-Cepero & McCoach, 2009; Gero 2013; Gutshall, 2013; Klein, 1996; Morrison, 2013; Poliquin, 2010; Rattan, Good, & Dweck, 2012; Shim, Cho, & Cassady, 2013; Sweeny, 2013; Vander Ploeg, 2012; Williams, 2013) have examined the implicit theories of teachers, there is no known research on this dynamic about teachers in Catholic schools generally, and Lasallian schools specifically, related to academic changes in curriculum, instruction, and assessment.

The problem this study explored is the perceptions teachers in Lasallian secondary schools in the San Francisco New Orleans (SFNO) District have about academic changes in curriculum, instruction, and assessment. These perceptions related to academic changes were studied through the framework of implicit theories as developed by Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995; Hong, Chiu, Dweck, Lin, & Wan, 1999). Among educational institutions that implement major changes in curriculum, instruction, and assessment in the first quarter of the 21<sup>st</sup> century, Lasallian secondary schools have a unique mission to prepare students to engage with, learn from, and transform the world and to ensure that their teachers are able to guide their students in those endeavors.

### Overview

The review of literature is divided into five sections. Section one describes the central importance of teachers in Catholic schools and the necessity for Catholic schools and their teachers to renew and adapt academic practices as reported in Church documents and in research on Catholic education. Section two focuses on the priority given to the importance and formation of teachers in Lasallian education and the impetus in Lasallian schools toward continual adaptation of educational practices in order to meet the changing needs of students. Section three focuses on the study's theoretical rationale of implicit theories as developed by Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995; Hong, Chiu, Dweck, Lin, & Wan, 1999). Section four presents other empirical studies pertaining to

the implicit theories of teachers. Section five highlights current research on academic changes in Catholic education in curriculum, instruction, and assessment.

### Teachers and Change in Catholic Education

#### *The Central Importance of Teachers in Catholic Education*

A review of the literature revealed that multiple ecclesial writings (Benedict XVI, 2008; CCE, 1988, 1997, 2014; Francis, 2013b, 2014; NCCB, 1973; Pius XI, 1929; SCCE, 1982; Second Vatican Council, 1965a;) emphasized that in the Church’s ministry of education, teachers have the chief responsibility for carrying out its mission of evangelization, which Pope Paul VI defined as “bringing the Good News into all strata of humanity, and through its influence transforming humanity from within and making it new” (§ 18). In particular, these documents demonstrated that the mission is two-fold: to foster and increase students’ spiritual well-being and to foster and increase their earthly well-being so that they can earn a living and transform the world through their service. As is discussed later in this review of literature, according to *The Rule of the Brothers of the Christian Schools* (Brothers of the Christian Schools, 2008, 2015), the mission of Lasallian education and of Lasallian educators has the same two purposes.

Pope Pius XI (1929) declared that teachers are the primary deliverers of the two-fold purpose of Catholic education in a rapidly changing world: (a) “the Supreme Good...for the souls of those being educated” (§ 8) and (b) “the maximum of well-being possible here below for human society” (§ 8). He emphasized that, in carrying out this mission, “Perfect schools are the result not so much of good methods as of good teachers” (§ 88).

Furthermore, the Second Vatican Council (1965a) further clarified that Catholic schools depend on teachers “almost entirely” (¶ 8) for the realization of the mission of Catholic education. With regards to this central importance of teachers, the Council proclaimed:

Beautiful indeed and of great importance is the vocation of all those who aid parents in fulfilling their duties and who, as representatives of the human community, undertake the task of education in schools. This vocation demands special qualities of mind and heart, very careful preparation, and continuing readiness to renew and to adapt. (¶ 5)

In the wake of the Second Vatican Council (1964, 1965a, 1965b), the National Conference of Catholic Bishops (NCCB, 1973) defined the aims of the teaching ministry of the Church as (a) proclaiming the message of Jesus and the doctrine of the Church, (b) building community, and (c) rendering service both within the Church and to the world. In this document, the NCCB also expressed great gratitude for the dedicated teachers in Catholic schools who carry on that mission.

The Sacred Congregation for Catholic Education (SCCE, 1982) further detailed the vocation of teaching with an explicit focus on the vocation of lay teachers. As the SCCE stated in the opening of the document, “It is the lay teachers, and indeed all lay persons, believers or not, who will substantially determine whether or not a school realizes its aims and accomplishes its objectives” (¶ 1). The SCCE distinguished the role of lay teachers in terms of the expertise and training required to fulfill the vocation by offering the following clarification:

The teacher under discussion here is not simply a professional person who systematically transmits a body of knowledge in the context of a school; “teacher” is to be understood as “educator”—one who helps to form human persons. The task of teacher goes well beyond transmission of knowledge, although that is not excluded. Therefore, if adequate professional preparation is required in order to transmit knowledge, then adequate professional preparation is even more

necessary in order to fulfill the role of a genuine teacher. It is an indispensable human formation, and without it, it would be foolish to undertake any educational work. (¶ 16)

Moreover, the SCCE stressed that lay teachers were to have as their goal the formation of strong and responsible students, and in doing so, they were to be inspired by and to be examples of the Christian concept of the human person who is imbued with dignity by God. The SCCE also stressed that teachers are called to implement pedagogy that is relational with students and open to dialog, and to collaborate with their colleagues in a genuine educational community within the school. The SCCE proclaimed:

The vocation of every Catholic educator includes the work of ongoing social development: to form men and women who will be ready to take their place in society, preparing them in such a way that they will make the kind of social commitment which will enable them to work for the improvement of social structures, making these structures more conformed to the principles of the Gospel. Thus, they will form human beings who will make human society more peaceful, fraternal, and communitarian. (¶ 19)

The CCE (1988) later emphasized that the vocation of teaching requires a spiritual commitment and Christian witness. It declared, “Prime responsibility for creating this unique Christian school climate rests on the teachers, as individuals, and as a community” (¶ 26).

Pope Emeritus Benedict XVI (2008) elaborated on this theme when he praised teachers for their self-sacrifice in carrying out the Church’s mission of evangelization. He also called them to lead young people to truth and hope in an age of relativism. He affirmed this responsibility and pronounced, “To all of you, I say: Bear witness to hope” (para. 20).

Pope Francis (2013b, 2014) further developed the message of the dignity and importance of teachers and the hope that they bring to their students. He encouraged

them to “accompany” (2013b) their students as they learn and grow. He elaborated that, in addition to teachers needing to be competent and qualified, they also need to be “rich in humanity and capable of being with young people in a style of pedagogy that helps human and spiritual growth” (2014, para. 5).

The CCE (2014) also emphasized the importance of quality pedagogy that facilitates human and spiritual growth in students through which teachers recognize the value of both what students learn (curriculum) and how they learn (instruction). The CCE continued that teachers must also focus on the centrality of the relationships between teachers and students in the learning process, become expert in conveying cultural understanding, and show students the social impact of what they are learning. In light of all these responsibilities, the CCE (2014) called for competent leadership and training of teachers at the institutional level and for teachers to undergo “constant self-improvement” (Sec. III. ¶ 1d). In referring to the institutional Church, the CCE declared that teachers “deserve all our attention and encouragement” (Sec. III). Finally, the CCE concluded that teachers and administrators were called to form a learning community. The CCE elaborated, “Schools are communities that learn how to improve, thanks to constant dialog among educators, between teachers and students, and amongst students in their relations” (Sec. III. ¶ 1c).

As ecclesial writings (Benedict XVI, 2008; CCE, 1988, 1997, 2014; Francis, 2013b, 2014; NCCB, 1973; Pius XI, 1929; SCCE, 1982; Second Vatican Council, 1965a;) have shown, teachers bear the responsibility for students’ human and spiritual growth. Recent ecclesial writings (CCE, 2014; Francis 2013b, 2014) demonstrated that this responsibility, when contextualized in the contemporary culture and society, requires

teachers to constantly learn and grow; this renewed message echoed that of the Second Vatican Council (1965a). As will be explored below, Lasallian education has the same long-standing commitment within the Catholic Church to the teacher's vocation to facilitate students' human and spiritual growth and to learn and adapt in response to the needs of their students in their culture and society. Whether one's fundamental beliefs are oriented to change and growth or are more fixed and static, is the subject of Dweck's (2000, 2006) research.

*The Call to Change in Catholic Education*

Since the Second Vatican Council (1965a, 1965b), Catholic Church teaching on education has revealed an emphasis on fostering change and growth (CCE, 2014; Francis, 2013b, 2014; NCCB, 1973; SCCE, 1982; Second Vatican Council, 1965a, 1965b). This emphasis signifies an engagement with the changes in the modern world, especially by employing instructional practices that engage innovation and the most current scientific, technological, and psychological research (Second Vatican Council, 1965a, 1965b; NCCB, 1973). Under the pontificate of Pope Francis, the Church affirmed the value of openness to and engagement with a changing world while also upholding the central importance of the love and mercy of God within Church teaching (CCE, 2014). Pope Francis (2013a, 2013b, 2014) also renewed a priority for developing in students habits of moral virtue, critical thinking, and service to others.

With *Gaudium et Spes* (Second Vatican Council, 1965b), the Church opened itself to embracing and engaging with “the joys and the hopes, the griefs and the anxieties of the men [sic] of this age,” (§ 1). In a spirit of openness to the realities and changes of the 20<sup>th</sup> century, the Second Vatican Council invited followers to consider how the scientific,

political, social, technological, and psychological advances of the modern era inspired humankind and how, in the midst of these changes and upheavals, Christ is present. Furthermore, the Second Vatican Council called on the faithful to constantly scrutinize “the signs of the times” (¶ 4) in order to proclaim the Gospel in the modern world.

Similarly in this spirit of openness to change and innovation, in *Gravissimum educationis*, the Second Vatican Council (1965a) declared that the educational ministry of the Church is concerned with proclaiming the Gospel to all. In order to carry out this ministry, the Second Vatican Council called on Catholic schools to embrace modern pedagogical methods rooted in sound scientific, psychological, and technological research. Therefore, the Second Vatican Council stressed that the Church is concerned with all of human life, including the social progress of the modern era, as well as the importance of shifting educational pedagogy in order to proclaim the Gospel to all. The Second Vatican Council also noted that the social change of the modern era made education more accessible to more people through new means of technology, communication, and scientific investigation. Therefore, according to the Second Vatican Council, the universal right to education includes the right to current pedagogy rooted in “the latest advances in psychology and the arts and science of teaching” (¶ 1) so that students may develop intellectually and morally and be equipped to serve and promote the common good. Moreover, as was highlighted above, the Second Vatican Council placed the responsibility for the development of modern, research-based pedagogical methods in the hands of teachers, in stating that the vocation of teaching “demands special qualities of mind and heart, very careful preparation, and continuing readiness to renew and to adapt” (¶ 5). Furthermore, the Second Vatican Council asked that teachers

in Catholic schools be “equipped with suitable qualifications and also pedagogical skill that is in keeping with the findings of the contemporary world” (§ 8).

The National Council of Catholic Bishops (NCCB, 1973) stated likewise, that engaging in the adaptive challenges of the modern world is essential to the mission of Catholic schools. The NCCB declared,

Faithful to the past and open to the future, we must accept the burden and welcome the opportunity of proclaiming the Gospel of Christ in our times. Where there is a summons to change, we must be willing to change. Where there is a call to stand firm, we must not yield. (§ 41)

Thus according to the Second Vatican Council (1965a) and the NCCB (1972), Catholic schools are called to prepare students to engage with, be in dialog with, learn from, and ultimately transform the modern secular world while remaining rooted in the Gospel.

As the CCE (1982) noted, in order to prepare students for transformation of the world and to form them spiritually, teachers need to continually update their competency in “a wide range of cultural, psychological, and pedagogical areas... It is not enough that the initial training be at a good level; this must be maintained and deepened, always bringing it up to date” (§ 27). The CCE continued,

Educators must realize that poor teaching, resulting from insufficient preparation of classes or outdated pedagogical methods, is going to hinder them severely in their call to contribute to an integral formation of the students; it will also obscure the life witness that they must present. (§ 27)

In this manner, conciliar and post-conciliar writings on Catholic education (CCE, 1982; NCCB, 1973; Second Vatican Council 1965a, 1965b) focused on the necessity for schools and their teachers to continually adapt pedagogical practices in order to help students be properly formed and prepared to engage with and transform the constantly changing circumstances of the modern world.

Other ecclesial writings on Catholic education (Benedict XVI, 2008; CCE, 1988, 1997; Congregation for the Clergy, 1997) shifted the emphasis from focusing on changing and adapting pedagogies, to focusing on the necessity of delivering a curriculum that faithfully upholds and brings students to understand the truth of the Gospel and to adhere to the teachings of the Church. More specifically, the emphasis moved to ensuring that schools implement sound “catechesis,” which may be defined as “the act of handing on the Word of God” (United States Conference of Catholic Bishops [USCCB], 2014). Furthermore, the CCE (1988) asserted that many of the changes of the modern era, such as the media, violence, drugs, eroticism, atheism, depression, and moral relativism, threatened young people’s faith and well-being. Thus, the CCE (1988, 1997) called for a renewed educational focus on the catechetical content of Church doctrine as a means to help young people combat these challenges of the modern era. In this vein, the Congregation for the Clergy (1997) sought to correct “crises, doctrinal inadequacies, influences from the evolution of global culture and ecclesial questions derived from outside the field of catechesis which have often impoverished its quality” (§ 2) in religious education since the Second Vatican Council (1964, 1965a, 1965b). In doing so, the Congregation for the Clergy asserted that catechesis must start in faith in the Gospel, be contextualized within the larger mission of the Church to evangelize, and appropriate the content of the faith.

Pope Emeritus Benedict XVI (2008) affirmed this stance and focused on encouraging teachers to help students face the harmful changes of the world by being firmly rooted in faith in Christ and the teachings of the Church. Consistent with the CCE

(1988, 1997) and the Congregation for the Clergy (1997), Pope Emeritus Benedict XVI prioritized delivery of doctrine through catechesis.

The CCE (1997) balanced a concern for shoring up students against the threats of modernity with recognition of the benefits of modern innovation through education and catechesis. The CCE focused on the kind of Christian formation and education necessary to help students combat these challenges. It also stated that “the Catholic school should be able to offer young people the means to acquire the knowledge they need in order to find a place in society which is strongly characterized by technical and scientific skill” (¶ 8).

The writings and addresses of Pope Francis (2013a, 2013b, 2014) related to education balanced the Church’s two emphases of (a) a curriculum that faithfully upholds and brings students to understand the truth of the Gospel and to adhere to Church teachings and (b) adapting pedagogy to promote students’ spiritual and human growth. In doing so, he also called the faithful to a “new chapter of evangelization” (2013a, ¶ 1), and he connected the Church’s call to evangelization directly to education. Pope Francis (2013a) echoed Pope Paul VI (1975) who defined evangelization as: “bringing the Good News into all the strata of humanity, and through its influence transforming humanity from within and making it new” (¶ 18), with the purpose of evangelization being interior change and the transformation of individual persons and communities. In this spirit, Pope Francis (2013a) called on the Church “to provide an education which teaches critical thinking and encourages the development of mature moral values” (¶ 64) as a means of combating the challenges of secularization and moral relativism. Furthermore, Pope Francis (2013b) called on students to grow in moral virtue, especially to become

more “magnanimous” (2013b) and more dedicated to service to others as Christ served. Thus, Pope Francis (2013a, 2013b) expanded the Church’s educational concerns from a narrow emphasis on the delivery of sound catechetical content to include a focus on student development and growth in virtue, critical thinking, and service. In doing so, he renewed the Church’s educational focus on change and transformation of persons, communities, and the world in light of the Gospel.

Additionally, Pope Francis (2014) urged the CCE (2014) to challenge educators to change and adapt their methods to meet to the needs of their students. He declared, “Today education is directed at a *changing* generation and, therefore, every educator—and the entire Church who is the mother educator—is called ‘*to change*,’ or know how to communicate with the young people before them.” Similarly, the Vatican Radio (2015) reported Pope Francis’ October 23, 2015, homily in which he urged Christians to change continually in order to respond to changing times, but not to succumb to conformity with the times, nor to give in to fear. In this manner, Pope Francis echoed the Second Vatican Council (1965b) in calling Christians to read “the signs of the times” (§ 4). The Vatican Radio quoted Pope Francis as exhorting his hearers:

Times are changing and we Christians must change continually. We must change whilst remaining fixed to our faith in Jesus Christ, fixed to the truth of the Gospel but we must adapt our attitude continuously according to the signs of the times. We are free. We are free thanks to the gift of freedom given to us by Jesus Christ. But our job is to look at what is happening within us, discern our feelings, our thoughts and what is happening around us and discern the signs of the times – through silence, reflection and prayer. (para. 7)

Encouraged by Pope Francis (2014), the CCE (2014) maintained a dual emphasis on both what students learn—the content—and how they learn—instructional pedagogy. While still emphasizing the importance of forming students through religious instruction

and catechesis, the CCE also highlighted the urgent need for educators to shift their paradigm from simply conveying knowledge to focusing on development of student skills including acquisition of knowledge and skills as well as critical reflection so that students could negotiate new media and be better prepared for a knowledge-based economy. The CCE specifically identified intercultural and citizenship skills in a globalized world as well as skills related to “consciousness, critical thinking, and creative and transforming action” (Sec. III. ¶1.e.) as pertinent areas for student learning. Furthermore, the CCE also noted the paradigmatic shift in the relationship between teachers and students, from one that used to be asymmetrical and hierarchical to one that calls for greater “mutual listening” (Sec. III. ¶1c) between teachers and students.

Since the Second Vatican Council (1965a, 1965b), teachers who carry out the educational ministry of the Church are responsible for facilitating two different and somewhat disparate emphases. The first emphasis focuses on openness to change and innovation, especially in instructional methods; it promotes malleable, creative, and critical responses in faith to the “signs of the times” (Second Vatican Council, 1965b, ¶4). The second emphasis focuses on the importance of teaching the unchanging truths of the Gospel; it promotes bringing students to understanding and adherence to Church teaching in the midst of the threats of the changing modern world.

However, Pope Francis (2013a, 2013b, 2014; Vatican Radio, 2015) synthesized both emphases as one unified goal for Catholic education: the necessity of creatively discerning and responding to current realities of the world as a means of “remaining fixed in our faith in Jesus Christ,” (Vatican Radio, 2015, para. 7). Thus, Pope Francis maintained the central importance and relevance of both the content of what students

learn and how they learn—instructional pedagogy, while with the CCE (2014), also focused on the skills and relationships teachers need to foster in students so that they can grow into loving, faithful persons who transform the world. In order to foster that growth in the contemporary, rapidly changing world, teachers in Catholic schools are called to change and adapt their methods (CCE, 2014; Francis, 2014). Thus, teachers in Catholic schools have a challenging calling to be “with young people in a style of pedagogy that helps promote their human and spiritual growth” (Francis, 2014). Lasallian education offers a historical and contemporary example within the Church of a pedagogy focused on responding and adapting to student needs to promote their human and spiritual growth.

### Teachers and Change in Lasallian Education

In the *Meditations for the Time of Retreat*, St. John Baptist de La Salle (1730/1994) reminded the first generation of the Brothers of the Christian Schools that their work as teachers was that of the Apostles and “one of the most important and necessary services in the Church, one which has been entrusted to you by pastors, by fathers and mothers” (§199.1). A review of literature shows that this understanding of teachers as important and necessary was original for its time and was vital for the successful operation of Lasallian schools, and that vitality continues today.

#### *St. John Baptist de La Salle and Lasallian Teachers of 17<sup>th</sup> and 18<sup>th</sup> Century France*

Salm (1996) detailed the life of St. John Baptist de La Salle, the founding of the Christian Schools in the late 17<sup>th</sup> and early 18<sup>th</sup> centuries, and the founding of the Brothers of the Christian Schools who staffed them. To summarize, De La Salle, a priest from a wealthy family and canon of the cathedral in Reims, and a layman named Adrien

Nyel who was a hospice administrator founded the first Christian School in Reims in 1679. Inspired by the success of schools for poor girls operated by the Sisters of the Child Jesus and similar schools in Rouen, Nyel and De La Salle sought to respond to the severe deficit in secular and religious literacy among the poor boys of Reims (Salm, 1996; Lauraire, 2004; Muñoz, 2013; Van Grieken, 1999), among whom there was a 20% illiteracy rate in basic reading and writing (Lauraire, 2013).

By Easter, 1680, De La Salle began inviting to dinner in his family's home the teachers in the Christian Schools who themselves were poor and illiterate, in effect establishing the first community of the Brothers of the Christian Schools (Salm, 1996). By 1681, he brought the teachers into his family's home to live. His purpose was to form the teachers spiritually, to develop them professionally, and to establish mutual support for them in community life (Muñoz, 2013; Van Grieken, 1999).

Muñoz (2013) observed that within the historical context of late 17<sup>th</sup> century France, De La Salle's community of teachers was entirely original in at least two ways. First, they were a community of lay men, not clergy, a characteristic of the Brothers of the Christian Schools that remains today (Brothers of the Christian Schools, 2008, 2015; Rodrigue, 1994; Van Grieken, 1999).

Secondly, De La Salle's spiritual and professional formation of the lay teachers stood in stark contrast to the models of teaching in late 17<sup>th</sup> century France when, according to Muñoz (2013), there were several types of Catholic teachers, among whom were: (a) clergy or vowed religious who were the most highly-esteemed, (b) the calligrapher-sworn teachers who held some esteem and were gathered in a "corporation," (p. 93), and (c) lay teachers who were not trained, were temporarily employed, paid

poorly, and assigned to the free schools which served the most illiterate and economically poor students. According to Muñoz, lay teachers endured “excessive exhaustion, diseases, loneliness, and major instability” (p. 93). Muñoz continued that De La Salle committed himself to the professional and spiritual development of lay teachers so that they were better prepared to respond to the needs of the students from the poor and working class.

As Muñoz (2013), Salm (1996), and Van Grieken (1999) observed, De La Salle himself became poor, renouncing his family wealth and the privilege of his cathedral office, thereby dedicating his whole self to developing teachers spiritually, training them professionally, bringing them into community, and thereby ensuring the stability of their new schools. According to Salm, by 1685, De La Salle was being called upon by parish priests and nobility to train teachers in their schools, and before his death in 1720, De La Salle had founded two teacher training schools (Lauraire, 2004; Mueller, 2006; Salm, 1996). Today, that commitment to training teachers is carried out through schools of education in the six colleges and universities operated by the Brothers of the Christian Schools in the United States: Christian Brothers University, Memphis, Tennessee; La Salle University, Philadelphia, Pennsylvania; Lewis University, Romeoville, Illinois; Manhattan College, Riverdale, New York; Saint Mary’s College, Moraga, California; St. Mary’s University, Winona, Minnesota (Center for Applied Research in the Apostolate [CARA], 2016).

For De La Salle and the first Brothers, their vocation was to provide a “human and Christian education for the young, especially the poor” (Brothers of the Christian Schools, 2008, 2015, ¶ 3), the same vocation shared by all Lasallian educators today

(Brothers of the Christian Schools, 1997, 2015). Muñoz (2013) contended that the example and witness of De La Salle and the first Brothers demonstrated that: (a) the vocation of Lasallian teachers to provide for the spiritual and earthly needs of students requires a life commitment, and that vocation is dignified, in contrast to the status conferred on other lay teachers in 17<sup>th</sup> century France; and (b) the vocation of Lasallian teachers is a “synthesis” (p. 101) in responding to both a calling from God and to the practical needs of the students they serve.

De La Salle’s understanding of teachers as dignified and vital to a school’s success, as well as his synthesis of faith with response to practical needs of students, was developed in several of his writings for the first Brothers: *Meditations for the Time of Retreat* (De La Salle, 1730/1994), *Meditations for Sundays and the Principal Feasts* (De La Salle, 1731/1994), and *The Conduct of the Christian Schools* (De La Salle, 1720/1996).

#### *A Lasallian Vision of Teachers*

In the *Meditations for the Time of Retreat* and the *Meditations for Sundays and the Principal Feasts*, De La Salle (1730/1994, 1731/1994) revealed both the spiritual and earthly aspects of the Brothers’ vocation to teach, as well as his commitment to forming the Brothers spiritually and professionally. According to Loes and Huether (1994), De La Salle wrote the *Meditations* to be read out loud during the Brothers’ daily communal prayer, with time for individual reflection following the reading. The *Meditations* incorporated several images that illustrated the central importance and dignity of the Brothers as teachers, as well as their calling to conduct excellent schools (Everett, 1996; Rodrigue, 1994).

Comparing the Brothers to the Gospel image of the Good Shepherd, De La Salle (1730/1994; 1731/1994), proclaimed that the Brothers take the place of Jesus Christ in three ways: (a) by knowing each student individually and adapting one's teaching methods accordingly; (b) by ensuring that students follow their teacher's Christian witness and classroom directions; and (c) by seeking out and caring for students who are vulnerable, as did the Good Shepherd as described in Luke 15. In addition to their taking the place of Christ, De La Salle (1730/1994) called the Brothers "ambassadors and ministers of Christ" (§ 195.2) who represent Christ himself. Thus, for De La Salle and the Brothers, their instruction of students came from Jesus, making them his "co-workers" (Rodrigue, p. 16). De La Salle asserted that without Jesus working through them as teachers, their care for students would be useless.

Furthermore, De La Salle (1730/1994) stated that the Brothers "succeeded the apostles in their work of catechesis and instruction of the poor" (§ 200.1) and thereby continued to lay the foundation on which the Church was built. Moreover, he called the Brothers substitute "mothers and fathers" (§ 193.2), "architects" (§ 193.2) who built the foundation of religion and faith in children, "Guardian Angels" (§ 197.2) who enlighten their students to understand the Gospel and put its norms in practice, and "Magi" (1731/1994, § 96.1-96.3) who are called to look for, recognize, and adore Christ in their students.

According to Rodrigue (1994), through the *Meditations*, De La Salle reiterated to the Brothers that their work as teachers was important and dignified and was a calling from God. Rodrigue also asserted that the *Meditations* were unique in that they were spiritual writings illuminating and inspiring the spirituality and profession of lay teachers,

rather than clergy, as was customary in 17<sup>th</sup> century France. Like Muñoz (2013), Rodrigue commented that De La Salle synthesized the Brothers' religious vocation with their vocation to teach so that in addition to relying on God, the Brothers were called to "conduct an excellent school" (p. 27), a calling that exists for the Brothers and lay teachers in Lasallian schools today (Brothers of the Christian Schools, 1997, 2008, 2015) and for all Catholic educators (CCE, 1988; 1997; 2014; Pius XI, 1929, SCCE, 1982; Second Vatican Council, 1965a).

According to Everett (1996), De La Salle (1730/1994, 1731/1994) wrote the *Meditations* as a spiritual manual for teachers and *The Conduct of the Christian Schools* (De La Salle, 1720/1996) as a practical manual for teaching in and operating the Christian schools (Lauraire, 2004; Van Grieken, 1999). *The Conduct* evolved over a thirty-five year long collaboration between the leadership and guidance of De La Salle and the growing teaching experience of the first Brothers (Everett, 1996). To this day, the document guides Lasallian schools in their operations, educational pedagogy, and formation of teachers (Everett, 1996; Lauraire 2004, 2013; Mann, 2006; Mueller, 2006; Van Grieken, 1999).

*The Conduct* revealed two primary concerns of De Le Salle, according to Everett (1996): (a) to fulfill a practical need for primary education of boys, especially of the poor and working classes of late 17<sup>th</sup> and early 18<sup>th</sup> century France, and (b) the formation and education of teachers. With regards to the first concern, *The Conduct* described a new type of school that was pragmatic in adapting to needs of students (Lauraire, 2004), a topic that is expanded further below. With regards to the second concern, Lauraire contended that, not only did *The Conduct* highlight De La Salle's concern for developing

an effective educational program, it also emphasized the dignity of the profession of lay teacher as a vocation. As Lauraire wrote, *The Conduct* demonstrated that, “Teachers are not simply distributors of knowledge, but seek to provide pupils with a holistic education taking in the personal, social, civic, moral, and spiritual dimension of the person... Yes, this profession is a vocation” (p. 65).

According to Mann (1996), since 1720, most editions of *The Conduct* included a section entitled, “The Training of New Teachers,” (Brothers of the Christian Schools, 1996), which, like the *Meditations* and the rest of *The Conduct*, established the growth and development of teachers and their vocation as foundational and vital to Lasallian education. De La Salle did not write this section of *The Conduct*, and its authorship is unknown. Still, it was an early manual for “formators” or supervisors responsible for training new teachers, both young Brothers and young lay teachers in the teacher training schools founded by De La Salle (Lauraire, 2004; Mann, 2006; Mueller, 2006; Salm, 1996). According to Mann (2006), the document emphasized guiding new teachers to: (a) appreciate and enjoy their work, (b) make students love school, (c) teach students well, (d) be cognizant of the problems new teachers typically encounter, (e) preserve the reputation of the school, and (f) be mentored, formed and cared for by more experienced “brothers” (Mann, 2006), thus fulfilling the fraternal spirit of the Brothers. Additionally, as Mueller (2006) commented, “The Training of New Teachers” illuminated a mindset in which teachers in Lasallian schools are called to continual growth and learning. Mueller wrote:

Not every new teacher, if any, is a finished product; most, if not all, are teachers in the making who will make mistakes and hopefully learn from those mistakes. The formator needs to be patient with the human process of growth, of learning

from errors (sometimes the same error being made over and over again) with the different ways in which different people develop. (p. 5)

Similarly, contemporary Lasallian documents (Brothers of the Christian Schools, 1997, 2008, 2015) also emphasized the dignity and central importance of the teacher in Lasallian education. *The Rule of the Brothers of the Christian Schools* (Brothers of the Christian Schools, 2008, 2015) provided the set of norms for the Brothers in their life together as a religious order. (This study drew from both the 2008 and 2015 versions of *The Rule*.) In the opening paragraph of *The Rule*, the Brothers explicitly stated that, at the heart of their purpose, is the formation of educators on which the foundation of Lasallian schools rests:

John Baptist de La Salle devoted himself to forming schoolmasters totally dedicated to teaching and to Christian education. He brought these teachers together in a community and subsequently founded with them the Institute of the Brothers of the Christian Schools. (2008, ¶1)

*The Rule* also emphasized that, for the Brothers, the profession of teaching is a vital ministry in the Church, and that, as such, they are “cooperators” (2008, ¶ 5; 2015, ¶ 6) with Christ in their work. Echoing *The Conduct* (De La Salle, 1720/1996), and “The Training of New Teachers” (Brothers of the Christian Schools, 1996), *The Rule* also committed the Brothers to forming “Christian teachers” (2008, ¶ 17) so that they are both professionally competent and fully engaged as ministers in the Church.

*The Rule* also declared that, “The Brothers gladly associate lay persons with them in their educational mission” (Brothers of the Christian Schools, 2008, ¶ 17), and “The Lasallian charism is a gift of the Holy Spirit give to the Church in view of human and Christian education. The Brothers joyfully share the same mission together with their Partners who recognize and live the Lasallian charism” (Brothers of the Christian

Schools, 2015, ¶ 19). Thus, the Brothers signaled that they share their Lasallian heritage and foundation in St. John Baptist de La Salle with the lay teachers who commit themselves to Lasallian education. As the Brothers of the Christian Schools (1997) also wrote,

The mission of Lasallian education pioneered and preserved for a long time entirely by generations of Brothers, has now been enlarged and enriched by the gifts brought by others who have already become associated with this mission and wish to share it. (¶ 3.10)

For the Brothers of the Christian Schools (1997, 2008, 2015), such explicit inclusion of lay educators in the Lasallian mission was the result of gradual recognition of the vocations of lay teachers in the wake of the Second Vatican Council (1964), and the subsequent commitment of the Brothers to both a renewal of fidelity to the charism of St. John Baptist de La Salle and greater inclusion of lay teachers “in the whole life of the school” (Brothers of the Christian Schools, 1967).

Although the Brothers of the Christian Schools (1997) have a specific charism, commitment, and role in Lasallian education as consecrated lay persons, members of a religious order, and ministers in the Church, the educators with whom they collaborate in Lasallian schools share their educational mission. The Brothers declared:

All educators who work in Lasallian schools and foundations, therefore, are invited to share the common principles and particular emphases which are essential to the Lasallian heritage. To the extent that these educators feel that they can bring their own particular gifts to Lasallian education, they can legitimately feel themselves *sharers* of the overall *educational mission* carried out by their particular institution... In a very important sense, they should see themselves as enlarging and enriching the Lasallian Heritage’s traditional sense of *responding to needs* by bringing and sharing their own particular gifts with their students. (¶ 3.26)

Thus, in carrying out a common Lasallian mission of responding to needs of their students, the Brothers and lay teachers are “co-responsible” (¶ 3.24) and are “partners”

(¶3.24). In responding to student needs, the dignity and vitality ascribed to the Brothers as teachers in the writings of De La Salle (1720/1996, 1730/1994, 1731/1994) extend to all Lasallian teachers—Brothers and partners—today (Brothers of the Christian Schools, 1997, 2008, 2015; Van Grieken, 1999).

*A Practical Lasallian Education that Adapts in Response to Student Needs*

In Lasallian schools, teachers, both Brothers and partners, are called to minister to their students in the practical circumstances of their lives and therefore, to adapt their practices as necessary to best help their students make a living in the society in which they live (Capelle, 2003; Fox, 2012; Brothers of the Christian Schools, 1997, 2008; Rummery, 2011; Van Grieken, 1999) and “discover, appreciate, and assimilate human and Gospel values” (Brothers of the Christian Schools, 2015, ¶ 16). As discussed above, De La Salle embodied and modeled the responsiveness and adaptability that teachers needed in order to educate the children of the poor and working classes of 17<sup>th</sup> century France (Muñoz, 2013). Several Lasallian scholars (Everett, 1996; Lauraire, 2004, 2103; Rummery; Salm, 1996; Van Grieken) have noted that as a teacher, administrator, and leader, De La Salle implemented several academic innovations in curriculum, instruction, and assessment with the goal of helping students earn their own living upon completion of their schooling. This impetus for change and innovation is woven into *The Rule of the Brothers of the Christian Schools* (Brothers of the Christian Schools, 2008) and has historical roots in the early experience of De La Salle and the first Brothers who implemented academic innovations in curriculum, instruction, and assessment (De La Salle, 1720/1996; Everett, 1996; Lauraire, 2004, 2013; Rummery, 2011).

Throughout *The Rule* (Brothers of the Christian Schools, 2008, 2015), the necessity of responding to student needs and changing methods accordingly is incorporated into the purpose and mission of the Institute of the Brothers of the Christian Schools. As part of the Institute's mission and purpose to "provide a human and Christian education to the young, especially the poor, according to the ministry which the Church has entrusted to it" (2008, 2015, ¶ 3), is a mandate to adapt as needs change. The 2008 version of *The Rule* continued, "The Christian school, which has always been given to new vitality, is the preferred means of the activity of the Brothers. The Institute is also open to other forms of teaching and education more adapted to the needs of time and place" (2008, ¶ 3). *The Rule* asserted further that as a means of responding to God, the Brothers are called to be responsive and adaptable, especially when confronting "situations of distress" (¶ 11) and the "needs of the poor" (¶ 11). In doing so, "The Institute establishes, renews, and diversifies its works according to what the kingdom of God requires" (¶ 11). According to *The Rule*, therefore, "The educational policies of Lasallian institutions are centered on the young, adapted to the times in which they live, and designed to prepare them to take their place in society" (¶ 13). Consequently, *The Rule* also required that "the Brothers, together with those who work with them, undertake a periodic evaluation and revision of their educational programs" (¶ 13d).

The 2015 version of *The Rule* elaborated further that any adaptation or renewal of educational programs is, for Lasallians, rooted in the prayerful discernment of "the needs of the Reign of God" (Brothers of the Christian Schools, 20105, ¶ 13) and is an essential part of being faithful to the Lasallian charism. The Brothers continued,

The Brothers seek to understand the deep aspirations of those they work with. Sensitive to social and religious contexts, they discern the most appropriate ways

of announcing the Good News... In order to remain faithful to the charism of the Institute, the Brothers analyze new educational and pastoral needs. They respond to them in a creative manner, either in their existing educational establishments, or by founding other educational institutions for the service of the poor. (§ 14-14.2)

Thus, as demonstrated in *The Rule* (Brothers of the Christian Schools, 2008), a Lasallian impetus toward change and adaptability derives from a commitment to responding in faith to student needs and ensuring that students are prepared for personal success in the society in which they live. This impetus can be traced to early Lasallian writings (De La Salle, 1703/2007, 1720/1996, 1730/1994, 1731/1994) and the founding of Lasallian education when De La Salle and the first Brothers implemented academic changes in curriculum, instruction, and assessment.

*Curriculum in Early Lasallian Schools: A Practical Education*

In *The Conduct of the Christian Schools*, De La Salle (1720/1996) specified curricular content and methods for teaching reading, spelling, grammar, handwriting, arithmetic, prayers, parts of the Mass, and the catechism. *The Conduct* also included directions for teaching students common habits and skills related to hygiene, eating, walking to and from Mass, and in and out of the school building, and following *The Rules of Christian Decorum and Civility*, which De La Salle (1703/2007) wrote in a separate volume. As Van Grieken (1999) observed, the curriculum focused on the practical skills and habits students from the economically poor and working class needed to eventually make a living. For example, as Van Grieken noted, students learned advanced spelling by copying business documents such as letters, bills, and contracts. Furthermore, instruction in arithmetic focused on the French monetary system. This curricular focus

on basic skills was a direct response to the needs of the first Brothers' students who did not have them (Everett, 1996; Rummery, 2011; Van Grieken, 1999).

Everett (1996), Killeen (2013), Rummery (2011), and Van Grieken (1999) have all asserted that among the most important distinctions of 17<sup>th</sup> and 18<sup>th</sup> century Lasallian schools was literacy instruction in vernacular French, rather than in Latin. As both Everett and Van Grieken explained, the typical practice at the primary level at that time was for students to learn French by first learning how to read Latin outloud and then transferring their knowledge of Latin syllables and phonics to learning French.

According to both Everett and Van Grieken, De La Salle determined that students from the economically poor and working class should learn to read and write in French directly in order to better prepare them to make a living. Furthermore, according to Van Grieken, De La Salle reasoned that learning French directly would be easier for students since they already spoke and understood the language. In *The Conduct*, De La Salle (1720/1996) specified nine levels of reading instruction in French, culminating in students reading his own text, *The Rules of Christian Decorum and Civility* (De La Salle, 1703/2007). De La Salle explicitly gave directions that only students who had mastered reading in French would be allowed to learn to read Latin in the Psalter for the purpose of following along during the Mass. As Everett noted, other French educators of the time used a similar innovative practice of vernacular language instruction from a modernist philosophical position. However, according to Everett and Rummery, De La Salle insisted on language instruction in the vernacular for a purely pragmatic purpose in response to the needs of the economically poor and working class students: They needed to master reading and writing in the French language in order to make a living.

Killeen (2013) described how the Lasallian commitment to instruction in the vernacular and to minimal Latin instruction defined the entire Lasallian educational program as practical and responsive to the needs of students. He observed that the mandate to teach literacy in the vernacular allowed the Brothers to maintain their mission of serving economically poor and working class students. According to Killeen, in 18<sup>th</sup> and 19<sup>th</sup> century Europe, study of the classics, and therefore the Greek and Latin languages, defined education of the upper class.

However, at the same time in the United States, instruction in the classics was an important element of a middle class education and a necessity for “preparing immigrant Catholics to serve American society in roles of leadership” (Killeen, 2013, p. 171). Thus, according to Killeen, beginning in 1853, the Brothers in the United States began contesting the requirements to teach only in the vernacular, especially at the secondary and post-secondary levels. After numerous appeals within the Institute of the Brothers of the Christian Schools to the Superior General and the General Council, as well as to the Sacred Congregation of Propaganda at the Vatican, to keep teaching Latin and the classics, the American Brothers were eventually banned from doing so by the Sacred Congregation in 1900. After the ban threatened enrollment numbers in the American Brothers’ colleges and secondary schools and after the American Brothers threatened to split from the worldwide Institute, Pope Pius XI lifted the ban on teaching Latin in 1923 out of concern that the social progress of Catholic immigrants in the United States was obstructed by the ban. As Killeen asserted, this episode in Lasallian history over language curriculum illustrated a major priority of Lasallian education: serving poor and

working class students so they can advance in their own society by adapting methods to meet their needs.

*Instruction and Assessment in Early Lasallian Schools*

The instructional strategies that De La Salle and the first Brothers implemented also were innovative in response to the specific needs of their students (Rummery, 2011). From the beginning, consistent with the practical focus of the education of children of the economically poor and working class, De La Salle decided to implement what was commonly known as the “simultaneous method of instruction,” though De La Salle did not use the term (Everett, 1996; Lauraire, 2013). According to Lauraire (2013), this instructional method originally meant that the teacher grouped students by level of academic achievement, taught students in the same level in groups, while other students studied. Although De La Salle did not invent this method, he systematized it at the primary school level and modified it to be more consistent with the Lasallian belief in fostering strong relationships between teachers and students (Lauraire, 2013). According to Everett (1996) and Lauraire (2004, 2013) De La Salle’s modifications were: (a) to apply a method usually reserved for university education to the primary level; (b) to reduce class sizes to 50 or 60 students in a classroom from the customary 80 to 100 students in a classroom; and (c) to assign more advanced students called “monitors” (Lauraire, 2013, p. 69) to correct, assist, and model correct skills for less advanced students while the teacher worked with one group at a time (Lauraire, 2004; 2013; Van Grieken, 1999). Moreover, every student was expected to work continuously, even when not being directly instructed by the teacher (Lauraire, 2004; Van Grieken, 1999). Instead of sitting idly, as was customary at the time, students were expected to follow along in

their texts with the more advanced group being taught directly, read or write on their own, or get assistance from the student monitors (De La Salle, 1720/1996; Everett; 1996; Lauraire, 2004, 2013). According to Lauraire (2013), this Lasallian rendition of the simultaneous method was called the “simultaneous-mutual method” (p. 69) and was prescribed by *The Conduct* (De La Salle, 1720/1994).

Everett (1996) emphasized that the hallmark of the simultaneous-mutual method was less about the ability to educate large numbers of students at once, even though large class sizes fulfilled the need to educate large numbers of children from the poor and working classes. Instead, he claimed the method’s key success was in the frequency of small group instruction by the teacher and opportunities for the teacher to give individual attention to students in those groups. Van Grieken (1999) also observed that this instructional method involved the teacher constantly tending to students’ varying abilities so that they could be taught at appropriate levels. Furthermore, Rummery (2011) and Everett noted that typically in schools of 17<sup>th</sup> century France, classroom seating and groupings were determined by economic class, with the economically poor and better-off students seated separately. However, in the Brothers’ schools, monthly assessments helped teachers place and group students by their level of achievement within each subject, monitor student progress, and communicate student progress to parents. Everett described the innovation of De La Salle’s instructional methodology as follows:

[De La Salle] transformed education into a group learning event and curtailed the great amount of time spent by the teacher in supervising the solitary recitation of individual students. He held to what was then understood as small class size, fifty or sixty instead of eighty or a hundred students, and identified a strong teacher-student relationship as the key to learning. He eliminated the practices of discriminating against the poor and of disciplining slow students by ridicule, and tempered and restructured the authority of school monitors. (p. 24)

Rummery corroborated these insights and highlighted how assessment and the Brothers' form of instruction were mutually informative and emphasized how the call for creativity and innovation in instruction and assessment remains alive in Lasallian schools today.

In *The Conduct*, De La Salle (1720/1996) prescribed that the monthly assessments and subsequent student placements and promotions were to be overseen each month by the school supervisors called Inspectors. De La Salle further directed teachers to administer and correct the assessments with written comments according to the detailed criteria spelled out for each level of each subject area in *The Conduct*. Furthermore, De La Salle forbade placement and promotion to the next level of studies in any subject for any reason except for student ability as measured through monthly assessments. As Rummery (2011) noted, this regular and orderly use of assessment to inform instruction, to group students according to their ability, and to communicate with parents was an innovation for its time. Informative use of assessment and communication with parents remains an important practice in Lasallian schools today.

#### *Change and Adaptability in Lasallian Education Today*

Van Grieken (1999), Capelle (2003), and Rummery (2011) considered the experience of De La Salle (1720/1996) and the first Brothers as the foundation of an ongoing commitment to change, innovation, and adaptability in response to student needs that continues today. Van Grieken identified 10 Lasallian operative commitments for today's Lasallian schools; two of those commitments are especially relevant to this study. One of the operative commitments is "creativity and fortitude" (p. 126). By this, Van Grieken means that today, Lasallian teachers are called to take up "the bold, persistent innovation that De La Salle and the Brothers succeeded [in] where so many others failed"

(p.138) and to demonstrate imagination, resilience, persistence, and ingenuity. These qualities are congruous with Dweck's (2000, 2006) framework.

A second relevant operative commitment identified by Van Grieken (1999) is "practical orientation" (p. 127). For Van Grieken, this commitment means that Lasallian education and teachers are constantly attentive and responsive to the needs in students' lives, even as their lives change in the modern world. As Van Grieken stated,

This down-to-earth practicality is found today in Lasallian schools throughout the world, from street-kids in Vietnam who are taught to repair motorcycle engines to students throughout the West who are taught to translate book-knowledge into life-knowledge. Within today's shifting family structures and mass media's tendency to dull one's critical posture into uniformly simplistic thinking habits, the Lasallian School pays practical attention to the real relationship between people, the development of a sensible integrity among personal convictions, and a continuity of purpose from the present to the future. It is those practical sensibilities that continue to make this educational enterprise so necessary and so successful. (p. 149)

Consequently, for Van Grieken, teachers in Lasallian schools are responsible for continually applying practical and adaptive methodologies.

Capelle (2003) asserted that Lasallian innovation reinvigorates persons, the Institute of the Brothers of the Christian Schools, and its mission. He wrote,

Innovation is necessary for our Institute and for the lay people associated with it. It is at the same time the source of the 'foundation' of persons, and of the refoundation of the social body we form. It is innovation which nourishes and diversifies our fidelity. (p. 14)

Capelle reflected further that fidelity to *The Conduct of the Christian Schools* (De La Salle 1720/1994) in a contemporary setting requires openness to educational needs and innovation to respond to them. Furthermore, he described Lasallian innovation in the following terms:

It is not simply an adaptation to a new situation, but a different way of seeing reality, of relating to it, of allowing oneself to be transformed by this new

relationship. In a word, innovation alters people as much as it alters their way of creating society. (p. 8)

In this light, Capelle's observations about Lasallian innovation were similar to those made by Heifetz and Linsky (2002) about adaptive challenges and Fullan and Langworthy (2014) and Jacobs (2010) about the degree of change facing education today as described in Chapter 1 of this study. For Capelle, the heritage of De La Salle calls Lasallian educators to fundamentally and continually shift their minds, their way of seeing and interpreting, and their practices in order to respond to the needs of their students in the contemporary context.

Rummery (2011) traced several historical instances of Lasallian schools engaging in "creativity" (p. 1) over the 330-year history of the Institute by "answering needs" (p.1). Rummery acknowledged that De La Salle did not use either term. Nevertheless, for Rummery, creativity as means of answering the needs of students is a "hallmark of Lasallian education" (p. 1). From the curriculum, instructional methods, and monthly assessment system described in *The Conduct*, to Brothers ministering to young prisoners and administering public schools in post-Revolutionary France, to the American Latin controversy, and to global literacy projects in the late 20<sup>th</sup> and early 21<sup>st</sup> centuries, Rummery identified creativity in how Lasallians have responded to the needs of young people, especially those who are economically poor or socially and politically marginalized.

From the founding of the Brothers of the Christian Schools in 1680 to contemporary Lasallian schools today, the Lasallian heritage reveals the dignity of teachers and their central importance in both the spiritual and earthly development of students. The Lasallian heritage also demonstrates consistently, that in their call to

discern and respond to God in and through the pragmatic needs of students, Lasallian educators have historically and continually implemented adaptive, changing, and innovative initiatives in curriculum, instruction, and assessment. One way to understand teacher openness to change in Lasallian secondary schools is through the implicit theories as researched by Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999).

### Implicit Theories of Intelligence, the World, and Morality

Dweck's (2000) implicit theories of intelligence, the world, and morality form the theoretical rationale of this study. Although attributed primarily to Dweck (2000, 2006), the theory has been developed, tested, and supported by Dweck and several of her colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999). This section of the review of literature will examine what implicit theories are and the foundations for Dweck's (2000, 2006) implicit theories in the domains of intelligence, the world, and morality.

#### *Implicit Theories*

According to Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999), individuals' implicit theories consist of basic core assumptions in their belief or meaning systems that strongly influence their goals, achievements, and relationship patterns. Dweck also referred to implicit theories as "self-

theories.” She wrote, “My work is built around the idea that people develop beliefs that organize their world and give meaning to their experiences. These beliefs may be called ‘meaning systems,’ and different people create different meaning systems” (p. xi).

Thus, for Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999), implicit theories are fundamental beliefs and unconscious parts of individuals’ personalities. As Dweck, Chiu, and Hong (1995) explained, implicit theories do not rigidly determine individuals’ behavior, nor cause individuals to take specific actions. Rather, individuals create frameworks of beliefs out of which they then make judgments and react in manners consistent with those frameworks. Dweck, Chiu, and Hong noted, “We view these theories simply as alternative ways of constructing reality” (p. 268). As Dweck (2000) explained further, implicit theories are “things that we can *become* aware of, but at any given moment, we may not realize that they’re present and how they are affecting us” (p. 139).

Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999) maintained that individuals hold either entity (fixed) theories or incremental (growth) theories. Subsequently, they concluded that entity theorists are less adept at managing changes and challenges, and incremental theorists are more adept at managing changes and challenges. Dweck and colleagues also asserted that implicit theories organize what individuals believe about themselves and others in the domains of intelligence, the world, and morality.

Dweck, Chiu, and Hong (1995) emphasized that some individuals have a generalized implicit theory that cuts across all domains, while others have different implicit theories in different domains. They noted that, “In this sense, then, we are dealing not with a generalized cognitive style but with domain-specific conceptual frameworks” (p. 269). Moreover, regarding the degree to which individuals have consistent implicit theories across the domains, Dweck and Leggett (1988) observed that individuals can vary the extent to which they pursue goals relating to the different domain. They explained that the variation depends on the extent to which individuals value the different characteristics associated with each domain. Implicit theories in each of the domains of intelligence, the world, and morality will be explained in detail below.

Furthermore, according to Dweck and colleagues (Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Derrick, & Wan, 1999), individuals’ implicit theories influence their achievement goals which, in turn, motivate their actions, as well as influence how they attribute the causes of their successes and failures. To elaborate, for Dweck and colleagues, entity theorists are driven by achievement goals in which they long for their successes to validate their competence and ability; they called the achievement goals of entity theorists, “performance goals.” Conversely, incremental theorists are driven by “mastery goals” in which they want to learn and master new things; Dweck and colleagues also referred to the achievement goals of incremental theorists as “learning goals.”

In Dweck’s (2000) theory, people’s achievement goals orient them toward different explanations or attributions for their successes or for their setbacks and mistakes. According to Dweck (2000) and Hong, Chiu, Dweck, Derrick, and Wan

(1999), entity theorists with performance goals are more likely to attribute their successes and setbacks to their intelligence or ability. Conversely, incremental theorists with learning or mastery goals are more likely to attribute their successes and setbacks to their effort. Subsequently, when faced with setbacks, entity theorists are more vulnerable to helplessness, defensiveness, decreased persistence, and even shutting down, whereas incremental theorists are more likely to examine their effort and strategies and find opportunities for learning, remediation, and growth. Thus, for Dweck (2000) and Hong et al. (1999), implicit theories influence people's goals, their explanations for successes and setbacks, and their behaviors. This attribution dynamic is synthesized in Table 2 and will be discussed further below as it relates to the domain of intelligence.

Dweck (2000) contended that adults' implicit theories began developing when they were children as young as age three and a half, as a result of parental reactions and feedback to their children's successes and failures. According to Dweck (2000, 2006) if parents react to children's successes with person-oriented praise, calling children "good girl" or "good boy," or for example, "good at math" or "smart," or using phrases like, "I'm proud of you," children are more likely to equate their success with some innate quality about who they are. Furthermore, when they later fail, according to Dweck (2000), they are more likely to judge themselves harshly and feel helpless when they feel like they do not live up to what they were once praised for. Likewise, according to Dweck (2000, 2006), if when children fail or make mistakes parents respond by pointing out a perceived inherent flaw in who the children are or in their ability, or by blaming other people (e.g., the coach, the referee, the teacher, etc.), children will be more likely to learn helplessness and to shut down when facing future challenges for fear of being

judged. These children develop entity theories with performance goals oriented toward demonstrating or proving competence.

Conversely, for Dweck (2000), if parents react with process-oriented feedback, by praising children's effort and hard work with responses such as, "You must have worked hard," or by asking children to describe what they did, like how they selected certain strategies or how they were able to concentrate, for example, children are more likely to attribute their success to learning and effort. If parents respond to failure or mistakes with encouragement to try again, try harder, try a different strategy, or practice more, children are more likely to try to figure out how to solve the problem, fix the issue, and persist in their effort. Thus, these children develop incremental theories with performance goals oriented toward mastery and learning. To summarize, Dweck (2000) wrote,

Children who had received what might seem like the most ego-boosting forms of praise ("You're a good girl/boy," "I'm proud of you," and "You're very good at this") were at a clear disadvantage when it came to later coping with setbacks. In contrast, children whose positive feedback focused on their effort or their strategy were in the best position to cope with obstacles. (p. 114)

Dweck (2000) maintained that for children, "The key issue is goodness, and that their mistakes and failures are seen in that light" (p. 103). For children with entity theories, their sense of being good is contingent upon avoiding mistakes and others' judgment and therefore staying good. For children with incremental theories, their sense of goodness is not threatened by mistakes; instead they learn to see mistakes as opportunities to improve. For Dweck and Dweck and Erdley (1993), these motivations subsequently carry into adulthood as achievement goals.

Although Dweck (2000) understood that implicit theories develop as fundamental, unconscious, meaning-making beliefs at an early age, her research also demonstrated that implicit theories in children and adults can be influenced at least temporarily. To this point, Dweck, Chiu, & Hong (1995) found that by presenting research subjects with fictitious readings containing compelling evidence for either entity or incremental theories, they could influence the implicit theories their subjects used when trying to address a specific issue or solve a particular problem. They concluded that, “It is more appropriate to view implicit theories and their allied judgments and reaction patterns as relatively stable but malleable personal qualities, rather than as fixed dispositions” (p. 279).

Dweck and colleagues (Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999) identified implicit theories as part of social-cognitive theory which, according to Dweck (2000) “addresses how people’s beliefs, values, and goals set up a meaning system within which they define themselves and operate” (p. 139). Dweck (2000) traced the approach to Kelly’s (1955) book, *The Psychology of Success*. She understood her and her colleagues’ contribution to social-cognitive theory as identifying a type of a core construct referred to by Kelly.

Furthermore, Dweck (2000) also identified attribution theory as being one of the important foundations of her research. She defined attribution theory as dealing with “how people make sense of their world, particularly with how they explain things that they observe and experience” (p. 139). In particular, she traced her work to the research of Weiner (1985, 1990), Abramson, Seligman, and Teasdale (1978), and Seligman,

Kamen, and Nolen-Hoeksema (1988). Both social-cognitive theory and attribution theory are discussed briefly below.

### *Social-Cognitive Theory*

As a foundational theorist in social-cognitive theory, Kelly (1955) advanced the underlying philosophical position of constructive alternativism which, according to Kelly, meant that, the reality of the world is constantly changing and that our view of the world is open to many interpretations. Kelly asserted that people create alternate constructs to better understand and explain what they observe; he concluded that there is no single way of constructing a view of the world.

Kelly (1955) applied constructive alternativism in a theory called the “psychology of personal constructs” which he defined in terms of how “a person’s processes are logically channelized in ways in which he [sic] anticipated events” (p. 46). In other words, Kelly proposed that a person’s psychological processing happens through a structured network that “both facilitates and restricts a person’s range of action” (p. 49). According to Kelly, these channels or networks are the constructs through which people interpret reality based on past and present experience, and in anticipation of some future outcome. The characteristics of Kelly’s psychology of personal constructs include: (a) people anticipate events by construing or interpreting them based on recurrent themes in their experience; (b) people construe events differently; (c) each construct a person forms has a dichotomous nature (e.g., good versus bad, smart versus stupid, or black versus white); and (d) people’s constructs can vary and change as they interpret different situations in light of the patterns of past experiences.

For the purposes of this study, two clarifications are important. First, Kelly (1955) explained that “the construct is the interpretation of the situation and is not the situation which it interprets” (p. 109-110) and that each construct applies in a limited number of situations. Secondly, Kelly contended that people’s constructs do not control their actions. Instead, according to Kelly, constructs are the controls and structures of interpretation people place on their lives to help them anticipate and manage situations. He described them as follows: “Forming constructs may be considered as binding sets of events into convenient bundles which are handy for the person who has to lug them. Events, when so bound, tend to become more predictable, manageable, and controlled” (p. 126). Dweck (2000) understood implicit theories to be a type of personal construct through which individuals interpret their experience and subsequently set different goals in the domains of intelligence, the world, and morality.

#### *Attribution Theory*

Dweck (2000) was also influenced by attribution theory, especially the research of Weiner (1985, 1990), Abramson, Seligman, and Teasdale (1978), and Seligman, Kamen, and Nolen-Hoeksema (1988). Attribution theory, according to Weiner (1985), pertains to how individuals perceive and structure causality and act in response.

For Weiner (1990), an individual’s attribution system has two parts: (a) the *attribution process* which relates to “how causal inferences are reached—that is, how one knows” (p. 465); and (b) the *attributional process* which relates to “so what” (p. 465) or what the individual believes are implications for future thought and action. Weiner (1985) also proposed the “expectancy principle” which states that “changes in expectancy of success following an outcome are influenced by the perceived stability of the cause of

the event” (p. 559). In other words, what individuals believe about the permanency of the perceived cause of the outcome will influence their expectations for the future in similar situations.

Weiner (1985, 1990) connected his findings to the research of Abramson, Seligman, and Teasdale (1978) on learned helplessness. Abramson, et al. demonstrated that learned helplessness occurs when individuals perceive a negative event without evident causality, and then attribute their sense of helplessness to a cause. The cause can be stable or unstable (referring to how permanent and extensive the perceived cause is), global or specific (referring to how pervasive the perceived effects are), and internal or external (referring to whether the perceived cause is internal or external to the person). Abramson, et al. found that individuals’ chosen attributions influence their expectations of future helplessness—how chronic or temporary it will be, how broadly or narrowly-felt it will be, and whether or not it will lower a person’s self-esteem.

Weiner (1985) further contended that how individuals engage in the attribution process will impact their emotional reactions. For example, Weiner wrote, “Success perceived as due to good luck produces surprise whereas success following a long period of effort expenditure results in a feeling of calmness or serenity” (p. 560). In other words, “Feelings arise from how an event is construed” (p. 560). At the same time, Weiner cautioned that, although this pattern of attribution influencing emotions is prevalent, it is not universal.

Weiner (1985) continued that individuals’ perception of causality and their resulting emotions play important roles in motivation. He posited that individuals experience an outcome positively (meaning that the desired outcome was attained) or

negatively (meaning that the desired outcome was not attained). Individuals then interpret the outcome and ascribe it to either achievement factors (such as effort or strategy, for example) or to affiliation factors (such as one's physical characteristics, one's personality, or external causes, for example). Subsequently, according to Weiner, individuals process the ascription cognitively (their expectancy) and affectively (their emotions), resulting in motivation toward action. For example, as Weiner explained, an individual might fail at a task, feel ashamed and humiliated, have a low expectancy of future success in that task, develop a sense of helplessness, and therefore withdraw and not try the task again. To summarize, Weiner (1985) showed that expectancy and emotions guide motivational behavior.

Weiner (1990) also affirmed the notion of hedonistic bias in the dynamic among attribution, expectancy, emotions, and motivation. He maintained that individuals have a tendency to take credit for success and attribute failure to external factors. As an example, he suggested, "I succeeded because I worked hard but failed because the economy is bad" (p. 467). Weiner noted that the hedonistic bias is the reverse of the tendency toward learned helplessness.

Seligman, Kamen, and Nolen-Hoeksema (1988) advanced attribution theory by introducing "explanatory styles." They defined explanatory style as "a tendency to explain good and bad events in a characteristic way" (p. 91). Furthermore, they asserted that individuals' explanatory styles can influence their health and their achievement. For Seligman et al., maladaptive explanatory styles that attribute failure to personal innate qualities, and success to external, unstable realities like luck, correlate with lower achievement and helpless behavior. They described adaptive explanatory styles that

attribute failure to temporary, external factors that can be overcome and success to effort. Adaptive explanatory styles, according to Seligman et al. correlate with higher degrees of achievement and success.

Moreover, Seligman, Kamen, and Nolen-Hoeksema (1988) found that individuals' explanatory styles can change throughout the lifespan based on how adaptively they manage major life events, especially setbacks and traumas. In adults, they found that those with adaptive explanatory styles are more likely to achieve greater productivity and to persevere than those with maladaptive explanatory styles. Seligman et al. wrote, "These findings suggest that the way one reacts to failure in the workplace can powerfully affect his or her overall performance and likelihood of success on the job and this reaction can be predicted by explanatory style" (p. 105). In 1990, Seligman alone developed the concept of adaptive and maladaptive explanatory styles to derive optimistic and pessimistic explanatory styles.

Social cognitive theory and attribution theory form a foundation for Dweck's (2000) implicit theories of intelligence, the world, and morality. How Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Derrick, & Wan, 1999) conceptualized implicit theories, achievement goals, and attribution processes is summarized in Table 2. Each implicit theory domain of intelligence, the world, and morality are examined more closely below.

## *Intelligence*

### *Implicit Theories: Intelligence Domain*

According to Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Derrick, & Wan, 1999), the intelligence domain refers to how individuals implicitly conceive of intelligence as being either a fixed trait or as being skills and knowledge that can be developed. They did not define the concept of intelligence. Instead, they derived contrasting understandings of intelligence from their subjects. Dweck (2000) described their findings that, for entity theorists, intelligence is a person's "inherent capacity or potential" (p. 61) and an intellectual endowment demonstrated through "effortless ability" (p. 61). Conversely, as Dweck noted, for incremental theorists, intelligence is "a person's skills or knowledge" (p. 61), and growth and accomplishment are demonstrated through hard work and effort.

In summarizing her research and that of her colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, Chiu, & Hong, 1995a; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Derrick, & Wan, 1999), Dweck (2000) contended that in the domain of intelligence, entity theorists are motivated by performance goals such as high grades and test scores, and they regard effort as a sign of weakness: if one needs to work hard, then one is not smart enough. She noted that a primary goal for entity theorists is to maintain the appearance of looking smart, and they feel smart when they outperform others in easy, low-effort tasks. For Dweck, in order to maintain high self-esteem, entity theorists need continued success in relatively easy or familiar endeavors, and they will often refrain from new, challenging endeavors for fear that failure will expose them as being incompetent. She

suggested that frequently, entity theorists shut down or give up easily in the face of obstacles or setbacks, and they have a tendency to ignore criticism or negative feedback. As a result, according to Dweck, entity theorists are frequently static in their growth, achieve less than their potential, and are often reluctant to change.

Dweck (2000) expressed special concern for entity theorists, especially those who are high-achieving and smart with high IQ's. She described them as vulnerable, "chronically worried about the future" (p. 26), and living under a lot of stress and anxiety for fear that their limitations will be exposed and that they will be indicted as persons if they fail at a challenge. She continued, "Wouldn't you be afraid of failure if each intellectual task you confronted could tell you how smart you were now and would be forever" (p. 27)?

Conversely, incremental theorists, according to Dweck (2000), are motivated by learning goals, rather than performance goals. In other words, they are motivated by the desire to learn and to be challenged in the process. Dweck found that, unlike entity theorists, incremental theorists regard effort as a sign of intelligence, not a weakness. When incremental theorists apply effort and subsequently learn something, they feel successful and build self-esteem as a consequence of persisting in challenging tasks and obstacles. Thus, Dweck concluded that they thrive taking on new tasks and challenges, and they perceive setbacks and negative feedback as opportunities to learn. Even though, according to Dweck, incremental theorists do not deny that people have different intellectual abilities or that people master tasks at different paces, they believe that everyone can increase their intellectual abilities with effort.

*Sternberg's Theory of Intelligence*

Sternberg's (1985, 1996, 1997) theory of intelligence is one of the foundations of implicit theories of intelligence, as developed by Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Derrick, & Wan, 1999). Sternberg (1985) disputed the understanding of intelligence as purely a fixed entity that (a) could be known and measured through testing like IQ tests and (b) could predict an individual's success. Alternatively, Sternberg (1985, 1996, 1997) proposed the triarchic theory of intelligence and later, a model of successful intelligence.

Sternberg (1985) developed the triarchic theory of intelligence based on two accounts of intelligence: explicit theories of intelligence and implicit theories of intelligence. According to Sternberg, explicit theories of intelligence are based on "data collected from people performing tasks presumed to measure intelligent functioning" (p.3). For Sternberg, explicit theories of intelligence include: (a) differential theories of intelligence which attempt to understand intelligence in terms of sets of underlying abilities such as verbal and reasoning abilities; and (b) cognitive theories of intelligence which attempt to understand intelligence in terms of processing speed and complexity of processing related to cognitive task performance.

However, Sternberg (1985) saw explicit theories of intelligence as incomplete, and he therefore proposed implicit theories of intelligence as a complimentary account of intelligence. According to Sternberg, implicit theories of intelligence cannot be defined; instead they are to be discovered based on what individuals say their notions of intelligence are. Sternberg contended that implicit theories of intelligence are derived

within individual contexts, include non-cognitive and adaptive skills such as social competence and practical intelligence, and evolve in real-life situations.

For Sternberg (1985), both explicit theories and implicit theories of intelligence are needed to conceptualize intelligence. He clarified, “Implicit theories set the context in which explicit theorizing occurs, and indeed... explicit theorizing always occurs with the context of explicit theorists’ implicit theories, whether or not the theorists acknowledge this fact” (p.43).

Thus, Sternberg (1985) included aspects of both explicit and implicit theories of intelligence in proposing the triarchic theory of intelligence which is composed of three subtheories of intelligence: (a) contextual intelligence, (b) experiential intelligence, and (c) componential intelligence. Contextual intelligence, according to Sternberg (1985, 1997) is based in how individuals manage different contexts. Sternberg (1985) described contextual intelligence as, “mental activity directed toward *purposive adaptation to, and selection and shaping of, real world environments relevant to one’s life*” (p.45). In other words, according to Sternberg (1985), individuals attempt to find good fits between themselves and their environment. When that is not possible, they either select another environment or attempt to shape the one they are in.

Sternberg (1985) clarified that in contextual intelligence, what is necessary to adapt, select, or shape environments may differ among individuals, groups, environments, and cultures. He also contended that contextual intelligence may change throughout people’s lifespans. However, Sternberg (1985) rejected criticisms that contextual intelligence is relative. He maintained that although contextual intelligence may manifest differently in different individuals, it is accompanied by componential

intelligence, which will be explained below. Sternberg wrote, “Individuals may use different components or strategies in a given task, but they use components and strategies of some kind” (p.47). In the specific context of the United States, Sternberg identified contextual intelligence as consisting of practical problem-solving ability, verbal ability, and social competence.

Additionally, Sternberg (1985) acknowledged that to the extent that contextual intelligence is directed toward individuals’ goals, there are many contexts that can impede success toward achieving those goals. As he explained,

Various forms of bad luck—physical infirmities, political repression, financial or familial exigencies—may get in the way of the realization of intelligence as specified by the contextual subtheory... Intelligence, then, is, in part, the ability to succeed in context, not the success itself, which may be moderated by a host of variables (such as wealth or poverty) that are unrelated to intellectual ability. (p. 55)

Sternberg’s (1985) second subtheory of intelligence relates to experiential intelligence which refers to either or both of the following skills: (a) the ability to deal with novel kinds of tasks and situational demands, and (b) the ability to automatize the processing of information. Since this present study focuses on teacher beliefs about academic changes that they are called to implement, as well as entity and incremental theories, as developed by Dweck (2000), Sternberg’s experiential subtheory of intelligence as related to managing novelty is especially pertinent.

According to Sternberg (1985), success in situations requiring adaptation and change depends on individuals’ past experience, familiarity and unfamiliarity with the type of task at hand, and ability to deal with novelty. Critical mental processes for success include: (a) recognition that a novel conceptual system is required and that it is different than the one the individual has been using; (b) accessing the novel conceptual

system; (c) being able to conceptualize differently than before; and (d) the ability to recover from a mistaken or incorrect expectation of change and to subsequently function in the original conceptual system. Difficulty in managing novelty comes in two forms, as Sternberg explained: “In some instances, it is figuring out what the situation is that is different; in others, it is operating that situation once one has figured out what it is” (p. 70).

The third part of Sternberg’s (1985) triarchic theory of intelligence is componential intelligence, or the components of intelligence. Componential intelligence refers to the information-processing components and functions of intelligence, specifically: (a) metacomponents which are higher order executive processes for planning, monitoring, and decision-making in completing tasks; (b) performance components which are processes used in completing tasks; and (c) knowledge-acquisition components which are processes used in learning new information. Related to the acquisition of new knowledge, Sternberg emphasized, “Encoding and combination of new knowledge are guided by retrieval of old information. New information will be all but useless if it cannot somehow be related to old knowledge so as to form an externally connected whole” (p. 107). Thus for Sternberg, in order for individuals to internalize new knowledge, they need to be able to process it in light of what they already know.

Sternberg (1996) further developed his triarchic theory of intelligence to propose the concept of “successful intelligence” which is “the kind of intelligence used to achieve important goals” (p.12). Furthermore, successfully intelligent individuals “know their strengths; they know their weaknesses. They capitalize on their strengths; they

compensate for their weaknesses” (p.12). Moreover, successfully intelligent individuals are characterized by intellectual abilities that are “dynamic and flexible” (p. 33).

In Sternberg’s (1996) theory, three types of flexible intellectual abilities characterize successful intelligence: (a) analytical intelligence, (b) creative intelligence, and (c) practical intelligence. Analytical intelligence refers to “the conscious direction of our mental processes to find a thoughtful solution to a problem” (p.155). Creative intelligence, according to Sternberg, is “the ability to go beyond the given to generate novel and interesting ideas” (p.191). It requires good synthetic thinking and the ability to sell one’s ideas so others will recognize their value. Practical intelligence includes the abilities to handle the absence of exact information, tolerate ambiguity, obtain information relevant to one’s goals even without help from others, and adapt to, shape, or leave one’s environment.

Sternberg’s (1985, 1996, 1997) insights pointed to intelligence as being flexible and adaptable. Specifically, Sternberg’s theory of intelligence emphasized that intelligence includes being adaptable in a changing context or environment, being able to manage novel situations by synthesizing new understandings with old understandings, and being able to process information. For Sternberg (1985), although explicit theories of intelligence are useful, they are incomplete. Implicit theories of intelligence contribute to an understanding of intelligence that is growth-oriented, goal-oriented, relevant to the real world, and adaptable. These characteristics of intelligence relate to implicit theories of intelligence as described by Dweck (2000) and Dweck & Leggett (1988), who, like Sternberg (1985), understood that implicit theories of intelligence are constructed by

individuals themselves and indicate a successful intelligence that is malleable, flexible, and growth-oriented.

### *The World*

#### *Implicit Theories: The World Domain*

Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988) observed that implicit theories in the domain of intelligence influenced how individuals perceive the fixed or malleable nature of the world. Dweck and Leggett (1988) and Dweck, Chiu, and Hong (1995) defined the implicit theory domain of “the world” as: (a) the core ontological assumptions about whether reality is static or evolving, and (b) their epistemological approach to knowing and interpreting this reality by either quantifying a static reality, or analyzing an evolving reality. In this domain, Dweck and Leggett and Dweck et al. asserted that entity theory related to the “static worldview” and that the incremental theory related to the “dynamic worldview” described by Whitehead (1938). Foundational theories for the implicit theories domain of the world will be discussed below.

According to Dweck, Chiu, and Hong (1995), on the ontological level, entity theorists see attributes of the world and the people in it as fixed traits. They have strong internal beliefs about the fixed nature of the world and other people; they believe that the fundamental nature of the world does not change. At the epistemological level, they strive to know and understand the traits of the world and others by quantifying and measuring them. As Dweck, Chiu, and Hong observed, entity theorists’ “sweeping trait inferences... may sometimes lead to self-stigmatization and ineffective striving” (p. 282).

Dweck and Leggett (1988) described implicit theories in the world domain in terms of goal orientation, behavior, cognition, and affect. For Dweck and Leggett, entity theorists' behavior involves inhibiting "the initiation and pursuit of change, even when an external attribute is judged negatively and improvement is seen as desirable" (p. 267). Dweck and Leggett continued that entity theorists' cognition of the world is marked by oversimplified thinking and "all or nothing characterizations" (p. 267) of people, situations, actions, and outcomes. Furthermore, according to Dweck and Leggett, their affect is evaluative and judging, sometimes to the point of contempt.

Conversely, for Dweck, Chiu, and Hong (1995), at the ontological level, incremental theorists see human attributes as dynamic, growing, and evolving. At the epistemological level, incremental theorists seek to understand the world and human beings by understanding "the specific processes that mediate outcomes" (p. 283). Whereas inferences made by entity theorists can lead to self-stigmatization, the drawback facing incremental theorists in the domain of the world, according to Dweck, Chiu, and Hong, is a lack of certainty in predicting behaviors and outcomes. However, the benefit, they noted, is that incremental theories in the world domain allow for change, reduce the likelihood of helplessness, and promote mastery-oriented responses to setbacks and adversity.

Dweck and Leggett (1988) characterized the behavior of incremental theorists in the world domain as increasing "the competence, sensitivity, or morality of another person, an institution, or a society" (p. 268). Their cognition of the world is characterized by process analysis. Additionally, their affective position is to develop compassion and empathy for others and their situations.

Chiu, Dweck, Tong, and Fu (1997) asserted that implicit theories about the world—whether held by entity theorists who believe in the fixed nature of the world, or by incremental theorists who believe in the malleable nature of the world—predict whether individuals have duty-based moralities or rights-based moralities. Implicit theories in the domain of the world also predict the degree to which individuals will support enacting change to improve the situations of others. The implicit theory domain of morality will be discussed below. In order to understand better the foundation of the domain of the world, the next section of the review of literature will explore briefly foundational theories regarding worldview, as identified by Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988).

#### *Ontological Assumptions for Knowing the World*

Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, Chiu, & Hong, 1995) cited Whitehead's (1938) conception of reality as a foundation for the implicit theory domain of the world. They also drew upon the theories of Pepper (1942), Piaget and Garcia (1989), and Heilbroner (1991).

Whitehead (1938) examined the presuppositions which underlay human thought because, as he wrote, "Civilized beings are those who survey the world with some large generality" (p. 4). How individuals observe the physical world and interact with it, as well as their presuppositions in those observations and interactions, was the subject of Whitehead's series of lectures in the volume, *Modes of Thought*. In this work, Whitehead contrasted two complementary ways of observing physical nature. In the first view, individuals observe and analyze details from which they make abstractions and

classifications. This worldview, according to Whitehead, tends toward observation of matter as fixed in space and measured and analyzed with tools such as geometry to describe motion and spatial relations among forms and space. Whitehead characterized this view of the world as follows:

In itself, space is conceived as unchanging from eternity to eternity, and as homogeneous from infinity to infinity. Thus we compose a straight-forward characterization of nature, which is consonant to common sense, and can be verified at each moment of our existence. (p. 129)

Alternatively, Whitehead (1938) proposed and endorsed a “new view” (p. 140) of the world which he saw as consistent with the modern scientific worldview. This view of the world emphasized a dynamic interrelatedness of activities, forms, and space. For Whitehead, “All things change” (p. 140), and rather than space and matter being fixed and separate, he saw them as being unified in a process “as a complex activity with internal relations between its various factors” (p. 145). To summarize this worldview, Whitehead stated, “The modern point of view is expressed in terms of energy, activity, and the vibratory differentiations of space-time” (p. 138).

Whitehead (1938) continued by describing human interaction with the world through a process-oriented view. Human interaction with the world, according to Whitehead, consists of three unified processes: (a) “prehension,” (b) creativity, and (c) aim. Prehension is a process by which individuals appropriate what they observe into something meaningful. Prehensions are, as defined by Whitehead, “occasions of experience” (p. 151). In other words, reality consists of both physical nature and the mind and its mental processes.

The second component of human interaction with the world, as described by Whitehead (1938), is creativity, or “the transformation of the potential into the actual” (p.

151). The third component of human interaction with the world is aim, which, for Whitehead, was the particular and selected way individuals interpreted and processed the transformation of the potential into the possible. In this manner, Whitehead conceived of the world as dynamic, changing, and transforming, and of the human being as being in constant process.

Pepper (1942) was the second theorist cited by Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, Chiu, & Hong, 1995) as influencing their implicit theory domain of the world. Pepper developed four “world hypotheses” or root metaphors to describe peoples’ worldviews. In doing so, he rejected any form of “dogmatism,” which is a worldview in which individuals’ beliefs exceed their cognitive processing about facts and ideas, as well as “utter skepticism,” which is a worldview in which individuals reject everything new outright. Instead, Pepper proposed four world hypotheses or root metaphors that although flawed, according to Pepper, were more tenable than dogmatism or utter skepticism: (a) formism, (b) mechanism, (c) contextualism, and (d) organicism.

According to Pepper (1942), the first and second world hypotheses of formism and mechanism are related versions of a similar static worldview. For formism, as described by Pepper, the root metaphor is similarity. Formism emphasizes grouping like things and unlike things and classifying things in categories based on character, particulars, and participation. Pepper also described a formistic ethics in which norms are “laws determining the concrete course of existence” (p. 180). Relating formism and formistic ethics to the platonic ideal of the state, Pepper explained that norms establish

“human and social equilibrium” (p. 179) which if distorted, create “discomfort and pain” (p. 179).

For Pepper (1942), the world hypothesis of mechanism has for its root metaphor a machine. Mechanism, according to Pepper, emphasizes relationships among parts, the quantity and quality of parts, and the location of parts. As Pepper explained, “Whatever can be located is real, and is real by virtue of a location. What cannot be located has an ambiguous reality until its place is found” (p. 197). In this world hypothesis, as Pepper posited, accidental occurrences do not really exist because things work in particular, specified ways. According to Pepper, in formism, forms exist separate from the particulars. In mechanism, conversely, the particulars function together in a mechanical way to define reality.

Pepper’s (1942) third and fourth world hypotheses of contextualism and organicism are related versions of a similar dynamic worldview. Contextualism, according to Pepper, has as its central point of reference, the historic event, which can only be described with verbs. As Pepper explained, historic events are “doing, and enduring, and enjoying...These acts or events are all intrinsically complex, composed of interconnected activities with continuously changing patterns” (pp. 232-233). For Pepper, in this world hypothesis, the present moment is changing, and novelty is a frequent part of events. He described contextualism as being “dispersive” or always moving outwards.

The fourth world hypothesis, according to Pepper (1942), is organicism, which has as its metaphors, organism and integration. In organicism, as Pepper explained, “Every actual event in the world is a more or less concealed organic process” (p. 281).

Like mechanism, this world hypothesis focuses on particulars, or fragments. However, unlike mechanism, according to Pepper, in organicism, “nexuses of fragments cannot be regimented or fixed in number...Several lines of progress may go on simultaneously” (p. 295). According to Pepper, whereas contextualism is dispersive in its dynamic worldview, organicism is integrative in its dynamic worldview, with an understanding of fragments contributing to a whole.

Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, Chiu, & Hong, 1995) also cited Piaget and Garcia (1989) as foundational theorists for implicit theories in the domain of the world. Piaget and Garcia sought to demonstrate that a congruency exists between (a) how knowledge grows in individuals, and (b) how knowledge has grown throughout the history of science. Growth in both realms, according to Piaget and Garcia, depends on transitional mechanisms by which individuals or a society adapts to and interacts with their environments more adequately.

Piaget and Garcia (1989) asserted that growth in the knowledge of individuals and societies also entails change in their epistemic frameworks. For Piaget and Garcia, an epistemic framework is “a particular conception of what the ideal type of theory should be, the model to be followed in a scientific investigation” (p. 248) in the epistemological realm. Piaget and Garcia explained in relation to an individual,

Any adult subject has already an elaborate arsenal of cognitive instruments enabling her [sic] to assimilate—and hence to interpret—the data she receives from the surrounding objects, as well as to assimilate the information transmitted to her by her society. (p. 252)

Among those cognitive instruments is the individual’s epistemic framework, or “conception of the world” (p. 252). Historically and scientifically speaking, at any time, according to Piaget and Garcia, there is a dominant epistemic framework that acts as an

ideology underpinning scientific investigation in a way that it limits both what gets investigated and what findings are derived. They claimed that only a crisis or scientific revolution can break the dominant epistemic framework and that subsequently a new framework replaces the old one.

To illustrate how epistemic frameworks can limit or promote the growth of knowledge, Piaget and Garcia (1989) observed that simultaneously in 4<sup>th</sup> century B.C.E. Greece and China, there were two opposite epistemic frameworks. At the height of ancient Greek civilization, the static Aristotelian worldview predominated while in China, scientific investigation flourished as a result of a dynamic worldview. Piaget and Garcia maintained that the static worldview held in the West, stymied the progress of scientific knowledge until the end of the Middle Ages.

Chiu, Dweck, Tong, and Fu (1997) also referenced the economist Heilbroner (1991) as a pertinent thinker in relation to implicit theories of the world. In an analysis of the failure of communist political systems in the early 1990's, Heilbroner described two distinct conceptions of human nature, conservative thought and radical thought. As Heilbroner explained, "The difference... lies in the diametrically opposed assumptions as to the fixity or malleability of human behavior" (p. 20). The conservative view, as described by Heilbroner, "resists historical change" (p. 20) out of individuals' psychological need for security stemming from infancy. The view has a static quality, which for Heilbroner, is its flaw. In comparison to the radical view, within the conservative view exists a deeper concern for avoiding disaster, rather than one for achieving new possibilities; for Heilbroner, the conservative position is "darker" (p. 20) than the radical position.

Conversely, radical thought, according to Heilbroner (1991), sees human nature as “plastic and therefore capable of being shaped through social experience” (p. 20). For Heilbroner, the radical view is rooted in a vision of society as always falling short of its potential and therefore needing to change. However, the flaw of the radical view, according to Heilbroner, is not adequately anticipating the dark human qualities and threats that the conservative view considers and anticipates more accurately. Thus for Heilbroner, radicalism needs the realism of the conservative view. Chiu, Dweck, Tong, and Fu (1997) posited that entity theorists tend to hold a conservative view, and that incremental theorists tend to hold a radical view, in the sense that Heilbroner used the terms.

The insights of Whitehead (1938), Pepper, (1942), Piaget and Garcia (1989), and Heilbroner (1991) pointed to core ontological assumptions through which individuals know and interpret reality. Furthermore, they described these core ontological assumptions as lining up behind two basic positions: (a) whether individuals conceive of reality as static, or (b) whether they conceive of it as evolving. According to Dweck and colleagues (Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Chiu, Dweck, Tong, & Fu, 1997), these positions correlated with entity and incremental theories in the domain of the world. The next section of the literature review will examine the implicit theory domain of morality.

### *Morality*

#### *Implicit Theories: Morality Domain*

Chiu, Dweck, Tong, and Fu (1997) found that implicit theories in intelligence relate to moral belief systems and that, moreover, “moral beliefs and implicit theories

form a coherent meaning system for an individual” (p. 923). They also observed that individuals’ beliefs about the world, the people in it, and its institutions influence moral beliefs. Therefore, they concluded that implicit theories about the fixed or malleable nature of the world predict whether one has a duty-based morality or a rights-based morality. In deriving these conclusions, Chiu et al. used Dworkin’s (1977) theory of duty-based versus rights-based morality as a theoretical rationale. Dworkin’s theory will be discussed below briefly after a summary of the entity and incremental theories in the domain of morality.

According to Chiu, Dweck, Tong, and Fu (1997), in the domain of morality, entity theorists believe in a static and stable social-moral order, meaning that they believe that the world, its people, and its institutions are fixed. For entity theorists, the defining issue is whether the world, its people, and its institutions conform to the moral order, which may be defined as “a set of duties and obligations prescribed by a stable and orderly system” (p. 937). Their moral orientation, as described by Chiu et al., is toward expecting institutions and people to fulfill a prescribed set of duties. According to Chiu et al., moral action for entity theorists centers on their duty to maintain the status quo. As a result, their responses to breaking the moral order tend toward sanction and punishment. In sum, entity theorists are focused on maintain the status quo as it pertains to the moral order. For Chiu et al., entity theory in the moral domain relates to the duty-based morality identified by Dworkin (1977).

Incremental theorists, on the other hand, believe in a malleable and evolving social-moral order, according to Chiu, Dweck, Tong, and Fu (1997). For incremental theorists, the defining issue is “whether the existing social arrangement, codes of

conduct, and life practices are working to foster and protect individual rights and liberty” (p. 938). Their moral orientation, according to Chiu et al., is toward ensuring that moral actions and social practices are guided by principles. Subsequently, their moral actions focus on supporting people’s rights and, if their rights are infringed upon, working for social change to protect those rights. For Chiu et al., incremental theorists’ responses to the infringement of people’s rights tend to center on negotiation, education, and remediation. As Chiu et al. concluded, incremental theorists are focused on changing the status quo if necessary in order to “foster and promote individual rights” (p. 938). The incremental theory in the domain of morality relates to the rights-based morality proposed by Dworkin (1977).

#### *Duty-Based and Rights-Based Moralities*

Chiu, Dweck, Tong, and Fu (1997) based their concept of implicit theories in the domain of morality on the work of legal scholar Dworkin (1977). In the book *Taking Rights Seriously*, Dworkin proposed an extended critique of the legal philosophy of positivism, and in particular the positivist theorist Hart (1961) and proposed an alternative theory of legal justice.

Dworkin characterized Hart’s (1961) positivism as being rooted in three tenets. First, positivism makes the claim that, “The law of a community is a set of special rules used by the community directly or indirectly for the purpose of determining which behavior will be punished or coerced by the public power” (p. 17). In positivism, according to Dworkin, the legitimacy or validity of the law may be tested not for its content but for its “pedigree” (p. 17) to ensure that the law was written and established by a legitimate authority. Secondly, positivism holds that if a legal case is not covered by a

valid set of rules, then it must be decided by a judge who then must exercise discretion by reaching beyond the law for another standard to guide a ruling. The third tenet of positivism, as identified by Dworkin, is that individuals have a legal obligation to follow a valid legal rule. If the rule is not valid, meaning its origins are not legitimate, then individuals do not have a legal obligation, unless a judge applies discretion to rule otherwise.

To summarize, according to Dworkin (1977), positivism emphasizes that the validity of any law was established when it was “posited” or created through acts of public officials or legislative processes. Individuals have a duty to follow valid rules, and judges have discretion to apply principles or standards in cases when the valid rule of law is not clear. Dworkin’s critique of positivism was that it works only in the ideal, separating legal obligation to follow rules from moral obligation. In practice, however, Dworkin observed that standards and moral principles such as liberty and fairness are at play in actual trials and legal decisions.

Instead, Dworkin (1977) proposed an alternate legal philosophy rooted in the work of Rawls (1971) in which moral obligations are part of legal decisions. Dworkin interpreted Rawls’ theory of justice as having a rights-based moral theory as its underpinning, particularly in relation to Rawls’ concept of a social contract. In contrast to a rights-based moral theory, Dworkin also discussed goal-based and duty-based moral theories.

For Dworkin (1977), goal-based moral theories or teleological theories “are concerned with the welfare of any particular individual only in so far as this contributes to some state of affairs stipulated as good quite apart from his choice of that state of

affairs” (p. 172). Dworkin found goal-based moral theories inadequate to the extent that they are focused on improvement in terms of totals and averages or the greatest good (utilitarianism), or on an ideal of excellence (e.g., Aristotelian ethics or *teleos*) rather than on individual welfare.

Dworkin (1977) understood both duty-based and rights-based moral theories to put individual persons at their center, but in different ways. Duty-based theories, according to Dworkin, focus on how individuals meet or fail to meet standards of behavior. In the duty-based theory, actions are inherently right or wrong regardless of the consequences. In contrast, rights-based theories, according to Dworkin, are “concerned with independence rather than conformity of individual action” (p. 172). Rather than setting primary focus on the morality of individuals’ actions, rights-based theories are concerned about protecting “individual thought and choice” (p. 172).

For Dworkin (1977), both duty-based and rights-based moral theories are deontological in nature and incorporate moral codes and codes of conduct but in a different manner. Duty-based theories emphasize the upholding of fixed moral codes as their ends, and in duty-based theories, individuals have an obligation to conform to them. Rights-based theories, on the other hand, consider moral codes as instruments in the protection of the rights of others, based upon liberty and freedom of choice.

Although Dworkin (1977) called his own analysis of duty-based and rights-based moralities “superficial and trivial” (p. 173), his purpose was to show that Rawls’ concept of a social contract came out of a rights-based theory in which “individuals have interests that they are entitled to protect if they so wish” (p. 176). Dworkin also clarified, in

contrast to the positivist position, that rights are “natural” or *a priori*, meaning that they are not the result of “any legislation, or convention” (p. 176) or human action.

Chiu, Dweck, Tong, and Fu (1997) adopted Dworkin’s (1977) ideas about duty-based and rights-based moral theories as the foundation for entity and incremental implicit theories in the domain of morality. Dweck and colleagues (Chiu et al; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999) rooted their appropriation of entity theories in social cognitive theory and attribution theory. They also drew from Sternberg (1985, 1996, 1997) regarding implicit theories of intelligence and Whitehead (1938), Pepper (1942), Piaget and Garcia (1989), and Heilbroner (1941) regarding implicit theories of the world. Implicit theories in the domains of intelligence, the world, and morality are summarized in Table 1.

### Empirical Studies on Implicit Theories of Teachers

#### *Academic Journals*

Research published in academic journals regarding implicit theories of teachers is sparse, especially related to teachers’ perceptions of academic changes or to their own learning and growth in light of those changes. Instead, the empirical research published in journals since 2009, focused on whether teachers’ implicit theories influence their instructional strategies and interactions with students. At the same time, the studies mentioned below confirmed the relevance of Dweck and colleagues’ (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988;

Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999) implicit theories framework for examining teachers' beliefs.

Garcia-Cepero and McCoach (2009) used Dweck's (2000) *Implicit Theory of Intelligence Scale* as one of nine factors related to intelligence in studying K-12 teachers' beliefs about the identification of gifted students. The researchers found that teachers who identify practical abilities and interpersonal skills as important aspects of intelligence are more likely to have an incremental theory of intelligence on Dweck's scale. However, they did not find a clear relationship between teachers' implicit theories of intelligence and their self-evaluations of their own cognitive and non-cognitive abilities, thereby confirming the findings of Dweck, Chiu, and Hong (1995) who concluded that implicit theories of intelligence do not correlate with measures of cognitive ability.

Bernardo (2012), a psychology professor at De La Salle University, a Lasallian university in the Philippines, studied the implicit theories (Dweck, 2000) of teachers through the linguistic patterns of their high school and university students in the Philippines. The researcher found a relationship between linguistic patterns in how students describe "learners" and their implicit theories. As a result, building upon the research of Tavakolizadeh & Qavam (2011) that demonstrated that teachers' instructional strategies influence how students make attributions about their learning and performance, Bernardo hypothesized that teachers may reveal their own implicit theories of intelligence in how they talk about learning, give feedback to students, and talk to colleagues about their students and lessons. He concluded, "It is not unlikely that how

we talk about our students may actually influence how they see themselves as learners and what they strive to do as learners” (p. 210).

In extending the research of Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Derrick, & Wan, 1999) to teachers’ implicit theories, Rattan, Good, and Dweck (2012) studied whether teachers’ implicit theories of others’ intelligence and abilities—whether static or malleable—play a role in their instructional practices. Through four different studies, Rattan et al. surveyed and interviewed math teachers and students to find out if math teachers with entity theories in the domains of intelligence and other persons “spontaneously focus more on comforting students for low ability following failure and on practices that could lock students into long-term low achievement” (p. 731). The researchers confirmed that: (a) math teachers with entity theories are more likely to evaluate a student as having low ability based on the results of a single assessment; (b) once math teachers with entity theories judge a student as having low ability, they are more likely to comfort students and to “engage in pedagogical practices that could reduce engagement” (p. 736) on the part of the students; and (c) math teachers with entity theories were more likely to tell students they perceive to have low ability, directly or indirectly, that they do not expect much from them; for example, the journal article’s title indicated the type of problematic feedback math teachers with entity theories are likely to give: “It’s ok—Not everyone can be good at math.” Therefore, Rattan, et al. emphasized that math teachers with entity theories are more likely to express their support of students whom they perceive to have low abilities in unintentionally de-motivating ways.

Gutshall (2013) studied the implicit theories of teachers of students with diagnosed learning disabilities. The researcher administered Dweck's (2000) *Implicit Theories of Intelligence* scale to teachers. She then presented them with one of four scenarios with varying representations of students with and without diagnosed learning disabilities, as well as representations of students who struggle in school but showed positive attributes such as enthusiasm and leadership. Afterwards, the participants took a second survey about their perceptions of the abilities of the students in the scenarios. Gutshall found that teachers' implicit theories of intelligence were highly correlated with their mindsets after considering the scenarios. She also concluded that, although implicit theories are stable, hypothetical, personalized scenarios may influence teachers with entity theories toward either neutral or incremental theories within the context of the scenario.

Shim, Cho, and Cassady (2013) examined whether teachers' achievement goals—whether performance-oriented or mastery-oriented—and their implicit theories of intelligence (Dweck, 2000) relate to their classroom goals and environments. By surveying public school teachers at the elementary and secondary levels in the Midwest using a modified version of Dweck's *Implicit Theories of Intelligence Scale*, the researchers found little evidence in their study to support the assertion of Dweck and colleagues (Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999) that implicit theories of intelligence are a precursor for achievement goals.

At the same time, Shim, Cho, and Cassady (2013) concluded that teachers' achievement goals do have significant implications for classroom goals. They stressed,

“Teachers who approach their teaching with the desire to improve their teaching competence tended to promote mastery goals for their students and value all students’ progress and learning” (p. 99). They continued, “In contrast, teachers who strive to demonstrate their superior teaching ability to their principal or other colleagues... were more likely to encourage competition among students” (p. 100). Therefore, Shim et al. recommended that school leaders modify teacher performance goal activities and systems in order to focus more on mastery of skills, rather than proving competence.

### *Dissertations*

Several dissertation studies have investigated the implicit theories of teachers that give further insight into the applicability of the theory of Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Erdley & Dweck, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999) for investigating the beliefs of teachers. Their findings may be grouped in the following areas: (a) implicit theories of teachers have implications for teacher education and professional development (Gero, 2013; Morrison, 2013; Poliquin, 2010); (b) implicit theories of teachers have implications for instructional practices (Altendorff, 2012; Epler, 2011; Klein, 1996; Sweeny, 2013; Vander Ploeg, 2012); and (c) implicit theories of teachers have limited or few implications for either teacher development or instructional practices (Bartee, 2011; Chaucer, 2013; Williams, 2013). Within each area, the findings of the studies will be summarized in chronological order.

Three dissertation studies (Gero, 2013; Morrison, 2013; Poliquin, 2010) established implications of the implicit theories of teachers for teacher development, either in terms of the training of pre-service teachers, or for the professional development

of in-service teachers. Poliquin used a mixed methods approach to study pre-service teachers' implicit theories and the impact of refutational texts on their beliefs. According to Poliquin, as well as Broughton, Sinatra, and Reynolds (2010), refutational texts directly acknowledge common misconceptions about a particular issue and explicitly refute them with evidence; the texts then present accepted research as a plausible position. Poliquin's results showed that an effective means to change the conceptions of pre-service teachers who held fixed viewpoints about intelligence was to intervene with refutational texts followed by structured discussion so as to challenge pre-service teachers' previous understanding and promote self-reflection. Poliquin also found that pre-service teachers' views of intelligence were rooted in their beliefs rather than their knowledge base about intelligence. Her research supported the findings of Dweck, Chiu, & Hong (1995) who concluded that individuals' implicit theories can be manipulated or temporarily changed with compelling readings and problems. Subsequently, Poliquin recommended use of refutational texts, structured discussions, and teacher self-reflection to try to dislodge fixed beliefs about intelligence.

Morrison's (2013) qualitative study of three pre-service teachers transitioning to student teacher positions found that the three participants exhibited characteristics of incremental theories, were "positioned to be learners" (p. i), and exhibited characteristics of resilience in the face of setbacks or failure. However, Morrison also observed that the participants were placed in difficult situations when they were placed in their student teacher internships in public schools through which they contended with (a) highly prescriptive and "unimaginative curriculum" (p. 217), (b) test-driven school cultures, and (c) colleagues or mentor teachers who were reluctant to grow or to collaborate. Morrison

noted that the participants felt like their training had been “surpressed” (p. 221) and therefore recommended that pre-service teachers “need to be explicitly taught how to maneuver and adapt their training and paradigmatic conceptions of innovative, creative, and engaging instructional processes within the confines of standards, prescribed curriculum, and mandated policies” (pp. 224-225).

Gero (2013) investigated how implicit theories of intelligence and a variable that he developed based on Dweck’s (2000) research called “teacher mindset” influenced elementary teachers’ professional development in the Los Angeles Unified School District. Gero found that the variables of teacher mindset and teacher learning goal orientation (performance-goal orientation or learning goal orientation) were significant predictors of teachers’ professional learning activities and that overall improvement of teachers may depend on their mindsets. He concluded that teacher attitudes, not their abilities, were critical factors in teacher professional learning and development.

As Gero (2013) noted, public schools have recently increased the number and quality of resources for professional learning and development, as well as access to instructional mentors, coaches, and the quality of programs. However, he emphasized that, “Unless teachers are predisposed to improving—that is, unless they have adopted an incremental teacher mindset—they will be much less likely to reflect upon and integrate the learning into their practice and make significant improvement over time” (p. 138). Therefore, Gero recommended the following: (a) to promote incremental teacher mindsets in teacher education programs; (b) to adopt Dweck’s (2006) *Mindset* as part of the standard curriculum for students; (c) to adopt continuous improvement frameworks in teacher evaluation and support programs to focus on continual growth; (d) to

implement collaborative curriculum planning and decision-making methods; (e) to cultivate cultures of trust in schools so that teachers feel safe taking instructional risks; (f) to “re-professionalize” (p. 148) teaching so that teachers feel respected and so that they are motivated to improve beyond minimal requirements, and (g) to conduct research on the implicit theories of intelligence of teachers and teacher mindsets in other settings. For this dissertation study, Gero’s research was important because it directly linked the implicit theories of teachers with openness to change and growth in their own learning and practice. It also affirmed the issue as worthy of more research in other settings.

Other dissertation studies (Altendorff, 2012; Klein, 1996; Vander Ploeg, 2012) found that teacher implicit theories have implications for instructional practices. Klein studied the relationship between teacher efficacy and the achievement of at-risk students at an urban university in northern Ohio. Among the variables Klein used was Dweck’s (2000) implicit theory of intelligence in relation to teacher efficacy. Her findings included an observation that math instructors who had “an entity theory of intelligence were more likely to lecture rather than provide opportunity for their students to apply concepts” (p. 73) and did not implement diverse and engaging instructional strategies recommended or required by the state of Ohio at the time. Klein recommended professional development for university instructors in understanding what intelligence is.

Altendorff (2012) used mixed methods to study factors that facilitated or constricted teacher adoption of “Complex Instruction” (CI) methodologies in math classes in secondary schools in England. According to Altendorff, CI methodologies emphasized effort over ability, as well as problem-solving and collaborative group work (a learning goal orientation model), rather than methodologies that emphasize math rules

and procedures (a performance goal orientation model). Altendorff used Dweck's (2000) "*Kind of Person*" *Implicit Theory*—"Others" scale (which this study did not address) to understand teacher beliefs and whether they influence math instruction. The findings showed that many teachers using the new CI methodologies still adhered to entity theories and felt vulnerable about administrative review of student state exams. Moreover, Altendorff observed that having supportive and collaborative department members and ongoing professional development opportunities could mitigate teacher fears about student performance or how that performance was feared to reflect on them. Altendorff's observations about the vulnerability and fear that entity theorists feel when implementing an academic change in instruction were pertinent insights for the study at hand.

Vander Ploeg (2012) investigated whether there was a relationship between the implicit theories of intelligence of K-12 online teachers and their students' academic gains. Using Dweck's (2000) *Implicit Theory of Intelligence* scale, the researcher found that there is a positive relationship between incremental theories of intelligence among online teachers and student achievement in literacy, and subsequently in math. She also concluded that incremental theories of intelligence among teachers, along with measures of their confidence, contributed to greater numbers of interactions between teachers and students in online classes, especially through one-to-one web-based conferences.

On the other hand, Vander Ploeg found that online teachers with entity theories tended toward somewhat fewer interactions between teachers and students and preferred group web-based conferences. As a result, Vander Ploeg recommended using the *Implicit Theory of Intelligence* scale in processes for hiring online teachers because of the

strong correlation between incremental theories of intelligence held by online teachers and student gains in literacy through one-to-one instruction. This recommendation suggested implications for hiring processes, especially in Catholic schools, and Lasallian schools in particular, in which the personal relationship and interactions between students and teachers are placed at a high value (Bryk, Lee, & Holland, 1993; Brothers of the Christian Schools, 1996, 1997, 2008, 2015; CCE, 2014; De La Salle 1730/1994, 1731/1994; Van Grieken, 1999).

When comparing implicit theories of teachers to other variables, Bartee (2011), Chaucer (2013), and Williams (2013) found that the other variables had greater impact on student learning than did the implicit theories of teachers. Bartee found that teachers' levels of hope, optimism, self-efficacy, and resiliency on the Psychological Capital (PsyCap) Questionnaire (Luthans, Youssef, and Aviola, 2007) were more strongly related to students' academic success than teachers' implicit theories. Chaucer's findings revealed a weak relationship between principals' implicit theories and student growth scores on the New York Regents Exams, and that there was a strong inverse relationship between student poverty rates and student growth scores. Williams (2013) observed that teachers hold beliefs about their students' intelligence based on context, situational demands, and prior training, and that implicit theories were not consistent predictors of either teacher emotions or their beliefs about their students.

Change in Curriculum, Instruction, and Assessment in Catholic Education

*Standards of Academic Excellence in Catholic Education*

A hallmark of Catholic schools is their committed focus on academic excellence (Bryck, Lee & Holland, 1993; Code of Canon Law, 1983; CCE, 1988, 1997, 2014; Francis, 2014; NCCB, 1973; Ozar & Weitzel-O'Neill, 2012; SCCE, 1982; Shimabukuro, 2007; Second Vatican Council, 1965a). Bryck, Lee, and Holland observed that this dedication to academic excellence was pervasive in school culture in Catholic education and the result of Catholic schools' philosophy of caring for students as a community. For Bryck et al., "At root here... is an educational philosophy of person-in-community that sees the full intellectual development of each person as a foundational human right and as the central aim of education" (p. 124).

At a minimum, the Code of Canon Law (1983) stipulated that, "Directors of Catholic schools are to take care under the watchfulness of the local ordinary that the instruction which is given in them is at least as academically distinguished as that in the other schools of the area" (Canon 806 #2). At the same time, academics in Catholic schools are not truly excellent unless they are infused with Christian faith and values within a caring community (CCE, 1988, 1997, 2014; Francis, 2014; NCCB, 1973; Ozar, 1994; Ozar & Weitzel-O'Neill, 2012; SCCE, 1982; Shimabukuro, 2004a, 2007; Second Vatican Council, 1965a, Swallow, 2015). As the CCE (1988) declared:

Intellectual development and growth as a Christian go forward hand in hand. As students move up from once class to the next, it becomes increasingly imperative that a Catholic school help them become aware that a relationship exists between faith and human culture. Human culture remains human, and must be taught with scientific objectivity. But the lessons of the teacher and the reception of those students who are believers will not divorce faith from this culture; this would be a major spiritual loss. (¶ 51)

The problem this dissertation addressed is teacher beliefs about change and their perceptions about academic changes in curriculum, instruction, and assessment as Catholic schools, specifically Lasallian secondary schools, strive to continually improve academic programs leading to student intellectual and spiritual development (Capelle, 2003; CCE, 2014; Christian Brothers Conference, 2011; Everett, 1996; Rummery, 2011; Swallow, 2015; Van Grieken, 1999).

In light of this call and challenge, and the need for accountability in meeting it, the National Standards and Benchmarks for Effective Catholic Elementary and Secondary Schools (NSBCS) (Ozar & Weitzel-O'Neill, 2012) established defining characteristics, standards, and benchmarks for excellence in all areas of Catholic school operations. According to Ozar (2012), the purpose of the NSBCS was to strengthen Catholic school accountability for excellence. Furthermore, Garanzini (2012) observed that the national standards themselves were an important change calling Catholic schools to “demonstrate in concrete and measurable ways how and why [Catholic] schools deserve the support they require in order to remain quality institutions” (p. 8). The NSBCS were the result of several years of collaboration among Catholic university scholars and leaders, Catholic school practitioners, the National Catholic Educational Association (NCEA), diocesan personnel, and a national taskforce (Ozar, 2012; Weitzel-O'Neill & Torres, 2011).

Two of the standards in the NSBCS (Ozar & Weitzel-O'Neill, 2012) related directly to curriculum, instruction, and assessment: Standard 7 which stated that, “An excellent Catholic school has a clearly articulated, rigorous curriculum aligned with relevant standards, 21<sup>st</sup> century skills, and Gospel values, implemented through effective

instruction” (p. 11); and Standard 8 which stated that, “An excellent Catholic school uses school-wide assessment methods and practices to document student learning and program effectiveness, to make student performances transparent, and to inform the continuous review of curriculum and the improvement of instructional practices” (p. 12). Several of the benchmarks for academic excellence under Standards 7 and 8 were pertinent to Part II of the survey in this study (see Appendix B), related to curriculum, instruction, and assessment and are summarized with related survey items in Table 3.

Table 3

*NSBCS Benchmarks Related to Curriculum, Instruction, and Assessment and Relevant Survey Items*

Benchmarks	Curriculum, Instruction, and Assessment	Relevant Survey Items
7.1, 7.2	Curriculum is aligned to appropriate standards and is organized in a coherent sequence in all subjects and integrated with religious, spiritual, and moral dimensions	13, 14
7.4	Curriculum and instruction are characterized by 21 <sup>st</sup> century learning skills with students becoming “expert users of technology” (p. 11) to create and to communicate	15
7.6	Instruction is designed to engage and motivate all students with diverse needs, with teachers differentiating and making accommodations as necessary	16, 18
8.1	Data from a variety of assessments are used to monitor, evaluate, and improve curricular programs and to monitor student growth	18, 20
8.3	Teachers use a variety of assessments aligned with learning outcomes and instruction to assess student learning	18
8.4	Criteria for evaluation of student work and grading practices are fair, valid, consistent, and transparent	20
8.5	Teachers collaborate to monitor student learning through common assessments and rubrics	19

*Note.* NCSBS benchmarks are summarized based on Ozar & Weitzel-O’Neill (2012)

It is important to note, however, that Part II of the survey was not based on the NSBCS. Instead, it was developed based on information provided by Lasallian secondary principals in the SFNO District about academic changes occurring in their schools (see Appendix A). Nonetheless, the NSBCS lent credibility to Part II of the survey and to the academic changes underway in Lasallian secondary schools in the SFNO District. The remainder of this section of the literature review focuses on research and practices related to academic changes in curriculum, instruction, and assessment that move Catholic schools closer to fulfilling Standards 7 and 8 in the NSBCS.

### *Changes in Curriculum in Catholic Education*

Since the early 1990s, Catholic schools prioritized a backward-design approach to curriculum design (Ozar, 1994; Shimabukuro, 2004b, 2004c, 2007) based on the work of Wiggins (1993) and Wiggins & McTighe (2005). Although the term “curriculum” can refer to both overt and covert aspects of what students learn (Shimabukuro, 2004a), this dissertation study referred to the overt aspects of curriculum and curriculum design. Shimabukuro (2004a) described the dimensions of overt or explicit curriculum in Catholic schools as follows: “Student learning goals and outcomes as delineated by the school; the actual subject area/courses that constitute each student’s educational plan; and the knowledge, skills, and attitudes that teachers desire their students to acquire” (p. 202). She added that these goals are usually transparent to all stakeholders in a Catholic school community through “curriculum guides, course descriptions, teachers’ written plans, texts, and other curricular materials” (p. 202).

Ozar (1994) compiled a handbook for Catholic school educators to design curriculum. Her contribution was to shift the focus of curriculum development in

Catholic schools from teacher input and objectives to student learning outcomes. Ozar thereby urged adoption of a backward design process in Catholic schools, consistent with the work of Wiggins (1993) and Wiggins and McTighe (2005). For Ozar, teachers and departments were tasked with articulating course and departmental student learning outcomes aligned with (a) the school's stated mission, philosophy, and school-wide learning outcomes; and (b) national or state learning standards. She also encouraged teachers to collaborate to design curriculum as a means toward greater alignment (a) among the written curriculum, assessment, and instructional practices with school-wide learning outcomes, and (b) among teachers of the same course and in the same department. Ozar acknowledged that greater collaboration among teachers was potentially a major and challenging change and explained that, "People with a fairly strong tolerance for ambiguity will find curriculum writing easier than folks who prefer logical sequences" (p. 108). Nonetheless, Ozar's recommendations for greater collaboration in curriculum, instruction, and assessment design were similar to those advocated and developed by Dufour & Eaker (1998) who proposed the Professional Learning Communities® model.

Shimabukuro (2007) designed a practical model of curriculum development for Catholic schools that outlined practical steps for teachers in designing curriculum and aligning it to both school-wide learning outcomes and national or state standards, as well as within an academic department. Her insight for this dissertation study was two-fold. First, Shimabukuro endorsed and applied the three-step process of backward design or Understanding by Design® as developed by Wiggins and McTighe (2005): (a) "identify desired results;" (b) "determine acceptable evidence;" and (c) "plan learning experiences"

(Shimabukuro, p. 19). Secondly, Shimabukuro specified steps for designing learning outcomes that stimulate higher order thinking based on the taxonomies of Anderson and Krathwohl (2001), Bloom, Engelhart, Furst, Hill, and Krathwohl (1956), and Marzano (2001).

Although backward design and alignment of curriculum has been recommended in Catholic schools since at least the publication of Ozar's (1994) work, the researcher's email communication with 10 principals of Lasallian secondary schools in the SFNO District in October 2014 (see Appendix A) indicated that work toward curriculum alignment, including alignment with the Common Core of State Standards (CCSS), had been a major change and adaptive challenge in their schools for as long as nine years and as recently as a year or shorter. In other words, for many Lasallian secondary schools in the SFNO District, curriculum alignment work was a new or ongoing change, especially in light of the 21<sup>st</sup> century understandings and skills of creativity, collaboration, analytical reading across all subjects, problem solving, and critical thinking, that are emphasized in the CCSS.

Robelen (2012) reported that since 2010, over 100 Catholic dioceses and an unknown number of independent Catholic schools adopted or were adopting the CCSS. Even though 130 Catholic university scholars opposed the CCSS on grounds that they believed the CCSS will not prepare students for college and that it favors standardization over effective education (Strauss, 2013), the NCEA (2013) affirmed the potential value of the CCSS as follows:

The Common Core State Standards are a set of high-quality academic expectations that all students should master by the end of each grade level. The standards establish consistent learning goals for all students that focus on preparing them to succeed in college and careers in a globally competitive

workplace. The standards define and clearly communicate grade-specific goals and inform parents about learning outcomes, making it easier for parents to collaborate with teachers in helping their children achieve success... The Common Core represents a fundamental shift in the teaching and learning process. The Common Core establishes clear, measurable goals for students that assist teachers in making instructional decisions. The standards place emphasis on creativity, critical and analytical thinking and application to curriculum content. The Common Core is not a national curriculum. It guides the way that instruction takes place in each classroom, allowing the Catholic school to develop its own curriculum content. (para. 3, 5)

As McDonald (2013) clarified, the CCSS did not mandate a change in Catholic school curriculum. However, in referring to NSBCS Standard 7, she observed that the CCSS provided a challenge and opportunity for Catholic schools to reconsider how to foster skills that will prepare students for college and careers in the 21<sup>st</sup> century. McDonald explained,

Catholic schools can continue to implement their own curriculum. The key for successful adoption of the standards is the manner in which the content is delivered and in what expectations are set for learning activities and outcome expectations students will experience. The goal of the standards movement is to prepare students with the knowledge and skills they need to succeed in college and work by emphasizing cognitive tasks that demand application of thinking skills, creativity, collaboration, communication to rigorous content. (para.7-8)

Therefore, as both the NCEA (2013) and McDonald conveyed, Catholic schools have considerable freedom in how they implement the CCSS as part of their curriculum. At the same time, the CCSS represents an adaptive challenge for Catholic schools, including Lasallian secondary schools in the SFNO District, and a major change toward greater attention to building stronger 21<sup>st</sup> century skills such as creativity, innovation, critical thinking, problem solving, literacy in informational text, communication, and collaboration (Christian Brothers Conference, 2011; Fullan & Langworthy, 2014; Jacobs, 2010; Swallow, 2015; Trilling & Fadel, 2009).

The review of literature revealed scant research on the aforementioned academic changes in curriculum in Catholic schools. Hurst (2015) studied to what extent pre-calculus teachers in the secondary schools of the Archdiocese of Washington aligned curriculum with CCSS and with each other, as well as the extent to which the teachers' stated curricula matched the assessed curricula. The researcher found that (a) math teachers received little guidance from the archdiocese; (b) the pre-calculus teachers had widely varying content and approaches, with little alignments among the teachers; (c) the teachers assessed the curriculum fairly based on their self-designed curriculum and did not assess CCSS standards; and (d), the pre-calculus teachers taught less than 50 percent of topics prescribed by CCSS, slighting especially the topics of probability and statistics. Hurst's study provided one example of teachers in Catholic secondary schools not implementing academic changes in curriculum and of perhaps not having adequate guidance or support to do so.

#### *Changes in Instruction in Catholic Education*

As with research in curricular changes in Catholic schools, there was very limited research on contemporary instructional practices in Catholic education (Kennedy, 2012; Nuzzi, Frabutt, & Holter, 2012; O'Keefe & Goldschmidt, 2014; Swallow, 2015), and some researchers (Kennedy; O'Keefe & Goldschmidt; Swallow) asserted that if Catholic schools do not research existing practices and change outdated models of instructional practices, they might not survive. This dissertation study investigated the perceptions of teachers in Lasallian secondary schools related to changes in instructional practices and whether there was a correlation between those perceptions and their implicit theories. This review of literature on current instructional practices in Catholic education revealed

some successes among teachers, many areas for further change and growth in this academic realm, and implications for professional development. For the purposes of this dissertation study, instruction is defined as the learning activities and teaching strategies designed to facilitate student mastery of learning goals, standards, and enduring understandings (Wiggins & McTighe, 2005).

White (2011) surveyed and interviewed department chairs in Lasallian secondary schools across the United States to determine the frequency with which they practiced Lasallian pedagogy and the degree to which Lasallian pedagogy informed their design of curriculum and instruction. White described Lasallian pedagogy as having seven components: (a) student-centeredness, (b) holistic education, (c) constructive scaffolding, which he defined as linking prior knowledge and challenging pre-conceptions to engage students in higher order thinking, (d) collaboration of teachers, (e) integration of social justice education throughout the curriculum, (f) relevancy of curriculum connected to the lived experience of students, and (g) discipleship, whereby students are mentored by their teachers. The researcher found a high frequency of the components of student-centeredness, holistic education, and constructive pedagogy. The notable weaknesses or gaps in Lasallian pedagogy and practice among the participants were a low frequency of collaboration among teachers, as well as a low frequency of relevant connections in the curriculum. White recommended increased time and training for professional collaboration and an increase in the use of artistic and kinesthetic modalities of learning.

LaMaster (2012) documented her experience leading the integration of technology in instructional practices at a Catholic Jesuit high school. She attributed her

successes to immersing herself in the Jesuit spiritual heritage and pedagogy. By focusing on three strategies: (a) growing relationships with teachers through formation programs that promoted Jesuit pedagogy and heritage, (b) extending those relationships through Jesuit values of care for persons and committing herself to meeting teachers wherever they are in their learning process and technology use, and then (c) developing a technology professional development program based on the Ignatian Pedagogical Paradigm of Context, Experience, Reflection, Action, and Evaluation, she reported that she quickly advanced the frequency and effectiveness of teacher integration of technology in their instructional practices.

Lambert (2014) described steps taken by a Catholic secondary school in England to increase students' intrinsic motivation for learning by integrating principles from Dweck's (2006, as well as the visible learning framework of Hattie (2012). The teachers and administrators sought to reverse what they perceived as a lack of urgency among students about their own learning. Some of the strategies the school implemented were: (a) giving effort grades to accompany mastery grades at the end of each term; (b) engaging students in metacognitive discussions in class about what is preventing them from trying harder; (c) training teachers in how to give growth mindset-oriented praise; (d) requiring students to write self-assessments and reflections about their learning processes; and (e) holding schoolwide assemblies on the subject of persistence.

Medeiros (2014) surveyed teachers in Catholic middle and secondary schools in Hawai'i to see if there was a correlation between professional development to implement differentiated instruction strategies and teacher self-efficacy for differentiated instruction. Medeiros found that teachers were much more likely to differentiate instruction in their

classes when they had received high quality professional development. He also found that the teachers were more likely to differentiate instruction with the use of educational technology to assist differentiation. Medeiros concluded that adult learners of any new strategy need to know why something is important to learn, that what is being learned has immediate value, and that through experiential learning, teacher self-efficacy will grow.

Swallow (2015) conducted a two-year qualitative study of eight teachers in two Catholic middle schools where she was the professional development coach. She sought to understand (a) how teachers used technology in their instructional practices, and (b) whether their instructional practices supported the teachers' stated 21<sup>st</sup> century learning goals of creativity, critical thinking, communication, and collaboration. Swallow found that the teachers attempted a degree of creativity in their teaching practices but did so using lower order cognitive skills. Additionally, Swallow observed that even when teachers implemented creative teaching practices, their assessments remained traditional in format and were not informed by inquiry-based forms of assessments. The teachers in the study felt they could not implement change toward more innovative, 21<sup>st</sup> century pedagogy unless there were more abundant resources for technology. However, Swallow also found that the religion teachers in her study were the most successful in integrating 21<sup>st</sup> century learning skills such as reflection, application, collaboration, and inquiry, even though they rarely used technology in instruction. Swallow's observations matched those of Kennedy (2012); Nuzzi, Frabutt, & Holter (2012); and O'Keefe & Goldschmidt (2014) who also identified an urgent need for updated instructional practices in Catholic schools, driven by the Catholic commitment to strong relationships within the schools. She agreed with these authors in concluding, "Teachers will not change their practices

without developing an understanding of good teaching in their specific contexts, and how those contexts are evolving in a digital culture” (p. 130).

*Changes in Assessment in Catholic Education*

Assessment, according to Wiggins and McTighe (2005), is the evidence that students have mastered the enduring ideas, understandings, skills, and knowledge that are specified by the goals, standards, and criteria of the curriculum. Guskey (1996) called for grading practices to be accurate communications of student achievement of learning criteria. A literature review of current and changing assessment and grading practices in Catholic schools revealed that research in this area is minimal and that for schools implementing new assessment and grading practices, the changes constitute major adaptive challenges that potentially upend educators’ beliefs and practices. In studies on assessment practices in Catholic schools (Garcia, 2013; Imperial, 2011; Italiano & Hine, 2014; McDonald, 2011), assessment and the correlative practice of grading have several implications including: (a) measuring student growth against agreed upon learning outcomes or standards, (b) using data from assessment results to inform improvements in curriculum and instruction, and (c) reporting results to school stakeholders including parents and benefactors.

Garcia (2013) documented examples of efforts in Catholic elementary schools in the Diocese of Raleigh, North Carolina, to set benchmarks based on the CCSS and create their own summative assessments to measure them. The teachers whom Garcia interviewed were engaged in designing, creating, and evaluating a variety of summative assessments—some multiple choice-type tests and many different kinds of projects and performance tasks in which students were required to demonstrate higher order thinking.

Garcia's article offered an example of efforts toward a changed model of assessment aligned with new curricular standards that required professional collaboration among teachers who had the permission and willingness to make mistakes in the process.

Imperial's (2011) study of the grading practices of 486 Catholic high school teachers in California, Nevada, and Hawai'i, connected grading practices to the assessment of student mastery of learning criteria. Imperial found that among his sample, there was a wide variety of grading practices. Furthermore, he observed that, although the majority of participants stated that the purpose of grading is to communicate academic achievement, in practice, over half of the participants included other factors in grades such as disciplinary behavior, completion or non-completion of homework, and participation and effort scores. Furthermore, his study showed that a majority of Catholic high schools did not have a statement of purpose for grading. Therefore, Imperial urged Catholic schools to move toward consistent grading practices within schools that are based in communicating student mastery of learning criteria.

Imperial's research was grounded in the conceptual framework of grading according to Guskey (1996). In basing his research in Guskey, Imperial demonstrated how changes in grading practices are an adaptive challenge that often requires teachers to self-reflect and shift their long-held beliefs and practices. In drawing from the insights of several researchers on grading and assessment (Brookhart, 2009; Guskey, 1996; Guskey & Bailey, 2001; Marzano, 2000; O'Connor, 2002; Stiggins, 2000), Imperial summarized the considerable changes necessary for greater reliability in reporting student achievement:

Guskey (1996) recommended that schools abide by three guidelines to ensure grading that is fair and useful to students, parents, and educators: (a) develop a

clear statement of purpose addressing why grading is done, for whom the information is intended, and what the desired results are; (b) provide accurate descriptions of what students know and can do that receivers of information can understand; and (c) use grading and reporting methods to enhance, not hinder, teaching and learning. Guskey and Bailey (2001) later noted that this third guideline highlights a major obstacle to reform, as it requires the elimination of some common practices that teachers have employed for decades. These practices include averaging scores to obtain a student's grade, assigning a score of zero to work that is late or not submitted, weighting assessments differently from teacher to teacher, lowering grades because of behavioral infractions, providing extra credit opportunities that do not provide evidence of achievement of learning outcomes, grading on a curve, and giving group grades in cooperative learning environments. (pp. 13-14)

Following Guskey (1996), O'Connor (2002), and Stiggins (2001), Imperial concluded that these grading practices weaken the reliability of grades in Catholic schools to communicate student achievement of learning criteria, as well as the ability to use the data from those grades to improve curriculum and instruction. Moreover, Imperial stressed that these practices impede Catholic schools from their mission to meet the needs of students.

Italiano and Hine (2014) described efforts in Catholic secondary schools in Perth, Western Australia, to direct assessment and grading practices more consistently toward measuring student mastery of learning criteria. In interviews with deputy principals, the researchers found that administrators and teachers successfully used student achievement data from assessments to inform curricular and instructional practices. They observed that the deputy principals valued strategic use of assessment data as an important step in helping teachers make informed decisions about improvements in curriculum and instruction. Italiano and Hine also noted achievement results were communicated effectively among all stakeholders, and that celebration of achievement was a lived-out value in the schools in the study. At the same time, levels of teacher collaboration

centered on examining the results of assessments varied, and the researchers could not ascertain whether there was a high degree of accountability for using assessment data to make curricular improvements. Italiano and Hine cited agreement with Bruniges (2012) in asserting that effective use of data depends on the attitudes and skills of the teachers; their study also showed the importance of teacher openness to growth and to greater use of assessments as indicators of student growth and achievement.

Both McDonald (2011) and Kennedy (2013) emphasized the importance of Catholic schools using assessment data to inform improvements in curriculum and instruction, as well as the necessity of demonstrating student results in communicating with parents, benefactors, and policy-makers. McDonald stressed, “US Catholic schools must place greater value on data-driven analysis to inform the teaching and learning process, and to influence public policy” (p. 120). She maintained that using data from assessments has been inconsistent in Catholic schools due to ambivalent feelings about using assessments to measure student growth, especially when Catholic schools focus on growth in non-cognitive as well as cognitive areas. Nonetheless, McDonald affirmed the necessity of using a variety of assessments to indicate and communicate student growth, citing the NativityMiguel Network of middle schools. (Miguel Schools are Lasallian middle schools that serve students from low socioeconomic backgrounds.) Both McDonald and Kennedy cited an imperative to train teachers in processes to select, analyze, interpret, and use data to improve curriculum and instruction.

## Summary

This review of literature revealed that in Catholic schools generally and Lasallian schools specifically, teachers have the chief responsibility to carry out the Church's educational mission and ministry. As such, teachers have a call to renew and adapt their practices based on sound pedagogy in order to deliver academic excellence in the 21<sup>st</sup> century. Lasallian schools in particular have a long history and heritage of supporting the importance and dignity of teachers, as well as calling teachers to change their methods in order to meet the changing, practical needs of their students. The present dissertation study also sought to contribute to research in Catholic and Lasallian contexts related to the beliefs and practices of teachers as they strive to answer the call toward greater academic excellence through changing practices in curriculum, instruction, and assessment.

The research of Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck & Leggett, 1988; Dweck, Chiu, & Hong, 1995; Hong, Chiu, Dweck, Lin, & Wan, 1999) on implicit theories in the domains of intelligence, the world, and morality was well-founded in the psychological fields of social cognitive theory and attribution theory, and in the philosophy of ontology and epistemology. Recent studies used the implicit theories framework to investigate teachers' beliefs about learning, especially as related to their students and their own professional development. The present dissertation study sought to contribute to the body of research on the implicit theories of teachers as related to their perceptions of the academic changes in curriculum, instruction, and assessment.

Finally, the aforementioned studies about recent academic changes in curriculum, instruction, and assessment reported attempts to understand and implement those changes in Catholic schools. The findings of the research regarding the effectiveness of implementing academic changes toward greater integration of 21<sup>st</sup> century teaching and learning were mixed, thus far. The present dissertation study investigated a possible window into why academic changes are often challenging to implement in Catholic schools, by researching the implicit theories of teachers. This study also sought to contribute to the body of limited research on Catholic academic practices in curriculum, instruction, and assessment.

## CHAPTER III

### METHODOLOGY

#### Restatement of the Purpose of the Study

The purpose of this study was to investigate the extent to which teachers in Lasallian secondary schools in the San Francisco New Orleans (SFNO) District have either entity (fixed) or incremental (growth) theories in the domains of (a) intelligence, (b) the world, and (c) morality. Additionally, the study examined the extent to which teachers in Lasallian secondary schools in the SFNO District have favorable perceptions about implementing academic changes in (a) curriculum, (b) instruction, and (c) assessment. Finally, the study examined whether there is a correlation between the implicit theories of teachers in Lasallian secondary schools in the SFNO District and their perceptions about implementing the aforementioned academic changes.

#### Research Design

This quantitative study used an online survey research method to measure and report (a) the implicit theories (entity and incremental theories) of teachers in Lasallian secondary schools in the SFNO District of the Lasallian Region of North America (RELAN) of the Institute of the Brothers of the Christian Schools, (b) the degree to which they have favorable perceptions about implementing academic changes, and (c) the relationship between their implicit theories and their perceptions about implementing academic changes. Creswell (2008) asserted that survey research is appropriate when (a) the researcher wants to describe attitudes, opinions, behaviors, or characteristics of a

population; (b) quantitative, numbered data will be collected and analyzed statistically to study variables addressed in the research questions; and (c) the researcher seeks to describe trends in the data to answer the research questions. For Creswell, survey research is especially appropriate for measuring current attitudes and beliefs and for collecting data in a short amount of time. According to Fink (2013) and Fowler (2009), a self-administered online survey is the preferred methodology when (a) the sample population includes a large number of participants that is both widely dispersed geographically and accessible; (b) results from the survey are needed quickly; (c) a standardized set of questions for all participants provides consistency in the study's design; (d) participants' right to confidentiality is ensured when answering questions of a sensitive nature; (e) participants have a likely interest in the research problem; and (f) all members of the sample population have access to a computer or mobile device, a working email address, and the technical and literacy skills necessary for completing the survey online.

Administration of an online survey presents advantages to both the researcher and participants. According to Fowler (2009), for the researcher, the method: (a) facilitates potentially quick responses from participants; (b) likely increases the validity of responses since participants do not have to share any sensitive information in person; (c) provides easy means to get the survey to participants if email addresses are easily available and are working; (d) minimizes the turnaround time between reception and completion of the survey; and (e) has a low cost compared to other survey methods such as mail surveys and personal interviews when the large sample is dispersed across a large geographic region. For survey participants, the online survey method: (a) can be

administered conveniently where participants are, for example, where they work and have access to computers or mobile devices; (b) provides time for participants to give thoughtful answers; (c) provides the opportunity to give direct input regarding a particular issue within a limited time; and (d) provides a degree of anonymity not enjoyed during personal interviews (Fowler).

### Setting

The setting of this study was 14 secondary schools in the San Francisco New Orleans (SFNO) District of the Lasallian Region of North America (RELAN) of the Institute of the Brothers of the Christian Schools. The Center for Applied Research in the Apostolate (CARA) (2016) described Lasallian secondary schools as those offering grades 7-12, 8-12, and 9-12. In the academic year of 2015-2016, a total of 17 SFNO District secondary schools operated in the states of Arizona, California, Colorado, Louisiana, New Mexico, Oregon, Texas, and Washington, with 854 full-time faculty and administrators serving 11,682 students (District of San Francisco New Orleans, 2016). One of the schools participated in the pilot study, and two schools did not opt into the study. The 14 secondary schools in the SFNO District participating in the study operate with a President-Principal model of governance. Two of the participating schools (Archbishop Rummel High School in Metairie, Louisiana and Sacred Heart Cathedral Preparatory School in San Francisco, California) are owned by their local archdiocese, and the remaining 12 participating schools are owned by the Brothers of the Christian Schools through the Lasallian Educational Corporation (LEC). Of the 14 participating schools, three have all-male student bodies, and 11 schools are coeducational. Although

there are two other Districts in the RELAN, for the purposes of this study, only 14 secondary schools of the SFNO District were included because they provided a convenient sample of a reasonable size, and because the principals of those 14 schools granted permission for the study (see Appendix C). For the purposes of this study, the faculty size of each of the 14 participating schools was determined according the number of personnel administrators reported inviting to take the survey. Table 4 presents the names, locations, grade levels, and enrollment as reported by the District of San Francisco New Orleans (2016), and faculty size as reported by the administration at each of the 14 secondary schools in the SFNO District included in the study.

### Population

This study was limited to investigation of teachers in Lasallian secondary schools in the San Francisco New Orleans (SFNO) District in three ways: (a) their implicit theories (entity or incremental theories); (b) the degree to which they have favorable perceptions about implementing academic changes in curriculum, instruction, and assessment; and (c) the relationship between their implicit theories and their perceptions about implementing academic changes. For the purposes of this study, a “teacher” was defined as anyone who provides classroom, online, or blended instruction for at least one class period in the term in which the survey was administered, in grades 7-12, 8-12, or 9-12, depending on the secondary school’s grade levels (see Table 4). Therefore, administrators, counselors, and directors of student activities, campus ministry, athletics, and other on- site programs were included in the study if they taught at least one class period. School personnel who did not teach at least one class period were not included in

Table 4

*Names, Locations, Grade Levels, Enrollment, and Faculty Size of Secondary Schools in the San Francisco New Orleans District, 2015-2016, Participating in the Study*

School Name	Location	Grade Levels	Enrollment	Faculty
Archbishop Rummel High School	Metairie, LA	8-12	678	48
Christian Brothers High School	Sacramento, CA	9-12	1106	73
De La Salle High School	Concord, CA	9-12	1040	67
De La Salle High School	New Orleans, LA	8-12	556	38
De La Salle North Catholic High School	Portland, OR	9-12	311	26
J. K. Mullen High School	Denver, CO	9-12	802	61
La Salle Catholic College Preparatory	Milwaukie, OR	9-12	683	51
La Salle High School	Pasadena, CA	9-12	651	49
La Salle High School of Yakima	Union Gap, WA	9-12	222	19
Sacred Heart Cathedral Preparatory School	San Francisco, CA	9-12	1297	89
Saint Mary's College High School	Berkeley, CA	9-12	630	46
St. Michael's High School	Santa Fe, NM	7-12	569	39
St. Paul's Catholic School	Covington, LA	8-12	870	64
San Miguel High School	Tucson, AZ	9-12	345	31

the study and were eliminated through the second question of the survey asking how many class periods respondents taught. The reason for this exclusion was because teachers who provide instruction for at least one class period have primary responsibility for implementing academic changes in curriculum, instruction, and assessment. Only teachers who taught at least one class period were allowed to proceed to complete the rest of survey and comprised the sample of the study.

The population was based on the number of teachers invited to take the survey through two means. First, at the request of the administrations of five schools, administrators at those schools distributed a weblink to their personnel in the context of faculty meetings or in-services; 283 personnel were invited to take the survey through a weblink. Second, using the SurveyMonkey® email function and the email addresses provided by administrators at nine schools, the researcher emailed the survey to 418 personnel. Thus, 701 personnel were invited to take the survey. The elimination question removed from the population 25 respondents who reported teaching “0” courses, and five respondents who did not answer the question. Subsequently, these 30 respondents were eliminated from the study, bringing the population to 671 teachers. A representation of participants’ teaching experience, academic departments, other roles held in their schools, degrees and credentials, high school background, religious background, lay or vowed religious status, gender, and knowledge of characteristics of Lasallian education was gathered in the demographics section of the survey.

On October 17, 2014, the Director of the Office of Education for the SFNO District granted permission to the researcher to conduct the study in the Lasallian secondary schools of the SFNO District (see Appendix D). Also, in October 2014, the

researcher obtained further permission from the superintendents of the Archdiocese of New Orleans and the Archdiocese of San Francisco to conduct the study at Archbishop Rummel High School in Metairie, Louisiana, and Sacred Heart Cathedral Preparatory in San Francisco, California, respectively, since these two schools are sponsored by the Brothers of the Christian Schools and governed by their respective archdiocese (see Appendix E).

In order to gain support for the survey, the researcher sent a letter to the principals of the secondary schools of the SFNO District describing in lay terms the purpose and nature of the study and asking them to give permission for the study at the June 2015, meeting of the Secondary Schools Administrators Association (SSAA). At that meeting the researcher presented in person to the SFNO District principals, the purpose and rationale for the study and its significance for Lasallian education. Furthermore, the researcher sought the principals' written permission to conduct the study at their schools. In an effort to ensure a sizeable sample, the researcher asked the principals who agreed to the study for school email addresses of their teachers, as well as contact information for their technology staff members who could ensure that the online survey would pass through email security filters to the participants. Twelve principals provided written permission, and one principal emailed permission for the researcher to conduct the study at their schools and provided contact information of staff members to assist with email access for the online survey; one school gave permission earlier via email in December 2014 (see Appendix C).

The researcher administered the survey through two means. First, at the request of the administrations at five schools, the researcher provided a weblink to administrators

to be distributed during faculty meetings or in-services. Through the weblink means, 283 personnel were invited to take the survey. Second, using the SurveyMonkey® email function and the email addresses provided by administrators at nine schools, the researcher emailed the survey to 418 personnel. As stated previously, of those invited to participate in this survey (701), only 671 aligned with the population's criterion. Out of this total (671), 384 teachers consented to take the survey and qualified by self-reporting that they taught one or more courses in the term in which the survey was completed. Three hundred sixty-six respondents completed every survey item, thus providing the researcher a 55% rate of response.

The first page of the online survey was a formal introduction of the survey and stated the following: (a) an introduction of the researcher, (b) an explanation of the purpose and significance of the study, (c) a request for the teachers' participation in the study, as well as a statement regarding the voluntary nature of the study, (d) the assurance of confidentiality of the data gathered from the survey, (e) description of the expected length of time to complete the survey, and (f) a statement that permission to conduct the survey was granted by the Director of the Office of Education for the SFNO District and the Institutional Review Board for the Protection of Human Subjects (IRBPHS) at the University of San Francisco (see Appendix G). By clicking a box "Yes," respondents indicated their agreement to participate and entered the online survey. After clicking "Yes," a second question asked how many class periods respondents taught. Those who did not teach at least one class period (n=30) were excluded from the rest of the survey and sent to a "thank you" page. Those who taught one period or more (N=384) proceeded to the rest of the survey.

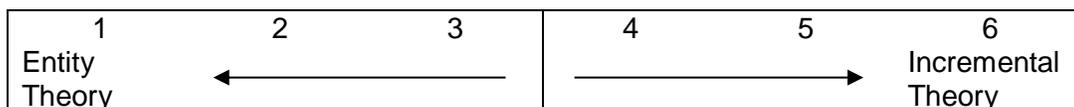
## Instrumentation

The online survey instrument entitled *Teacher Beliefs and Perceptions About Academic Changes* (see Appendix B) consisted of three parts: (a) survey items published by Chiu, Dweck, Tong, and Fu (1997) and re-published by Dweck (2000) to measure implicit theories (entity or incremental theories) in the domains of intelligence, the world, and morality; (b) survey items developed by the researcher to assess the degree to which teachers have favorable impressions about implementing academic changes in curriculum, instruction, and assessment; and (c) demographic questions.

Part I utilized the following measures published by Chiu, Dweck, Tong, and Fu (1997) and re-published by Dweck (2000): (a) *Theories of Intelligence Scale—Self Form for Adults*, (b) *Implicit Theory of the World for Adults*, and (c) *Implicit Theories of Others' Morality (for Adults)*. In June 2014, permission was granted by Dweck (see Appendix H) for the researcher to use the three aforementioned measures plus a fourth measure, *Kind of Person" Implicit Theory—For Adults*. However, in consultation with her dissertation chair, the researcher decided to focus the scope of the study solely on the three implicit theory domains of intelligence, the world, and morality, since they were more pertinent relative to academic changes in curriculum, instruction, and assessment. Part I consisted of nine Likert-scale items, three for each measure. The items were scored on a 6-point Likert scale that provided participants with the following options: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, and 6 = strongly disagree.

It is important to note, that in pilot studies, Dweck (2000) and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, Chiu, & Hong, 1995) found that participants were

drawn toward agreement with the incremental theory when items were phrased to explicitly represent the incremental (growth) theory because the incremental theory items appeared to be more socially acceptable. Thus, Dweck and colleagues used items representing only the entity (fixed) theory in subsequent administrations of the measures to counteract this phenomenon, and likewise, all nine items in Part I of this survey followed Dweck's design. Furthermore, agreement with the items indicated endorsement of the entity theory in the respective domain, and disagreement indicated endorsement of the incremental theory in the respective domain (Chiu et al., 1997; Dweck 2000; Dweck et al., 1995). Chiu, et al. designated 3.5 as the midpoint on a scale of 1 to 6. Respondents scoring lower than the midpoint (3.5, range from 1 to 6) were entity theorists in the respective domain, and respondents who scored higher than the midpoint were incremental theorists in the respective domain (Chiu, et al.). (See Figure 1.)



*Figure 1:* Implicit theories scale. According to Chiu et al. (1997), scores below 3.5 indicate an entity theory and scores above 3.5 indicate an incremental theory in the domains of intelligence, the world, and morality.

Part II utilized items developed by the researcher to measure the extent to which respondents had favorable perceptions about academic changes in curriculum, instruction, and assessment. This section of the survey consisted of nine items, three for each variable, based on information provided by Lasallian secondary principals in the SFNO District about academic changes occurring in their schools (see Appendix A). The items were scored on a 5-point Likert-scale that provided respondents with the following

options: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Respondents whose scores averaged lower than the midpoint (3) in each domain of curriculum, instruction, and assessment were designated as having favorable perceptions about implementing academic changes in the respective domain, and those scoring higher than the midpoint in each domain were designated as having unfavorable perceptions about implementing academic changes in the respective domain.

Part III consisted of eight demographic questions which asked respondents to identify: (a) years of teaching experience, (b) academic departments, (c) other roles in the school, (d) degrees and credentials, (e) high school background, (f) religious background, (g) lay or vowed religious status, and (h) gender. Additionally, based on the recommendation of her dissertation committee and the review of literature, the researcher developed a demographics question asking respondents to identify their knowledge about characteristics of Lasallian education related to academic changes in curriculum, instruction, and assessment.

Table 5 presents the implicit theory domains, the areas of academic changes, and demographics corresponded with survey items and the research questions.

### Limitations

This study was limited in its scope, the setting, its sample, the instrument, and the researcher. The scope of this study was limited to three domains of implicit theories (Dweck, 2000): intelligence, the world, and morality. Dweck (2000, 2006) primarily applied the implicit theory framework to the field of education as it relates to students

Table 5

*The Implicit Theory Domains, the Areas of Academic Change, and Demographics Items Corresponded with Survey Items and Research Questions*

	Items	Research Questions
Statement of Consent	1	
Number of Class Periods Taught	2	
Part I: Implicit Theory Domains		
Intelligence	3, 4, 5	1a
The World	6, 7, 8	1b
Morality	9, 10, 11	1c
Part II: Academic Changes		
Curriculum	12, 13, 14	2a
Instruction	15, 16, 17	2b
Assessment	18, 19, 20	2c
Part III: Demographics		
	21-29	

*Note.* In this study, implicit theories are either entity or incremental theories.

and their openness to learning and change; Rattan, Good, and Dweck (2012) investigated math teachers' implicit theories in the domain of intelligence related to the types of feedback they give students. However, this study was limited to the study of the implicit theories of teachers related to their perceptions of academic changes in curriculum, instruction, and assessment. Furthermore, implicit theories are only one aspect of how teachers perceive and interact with change. In this vein, the study was also limited to teacher perceptions about implementing academic changes in the areas of curriculum, instruction, and assessment.

Also, the ability to generalize from this study is limited to the sample of respondents who completed all the items on the survey (n=366) with a 55% response rate from the original population (N=671). The sample was limited to teachers who took the survey and who taught one or more class periods in the term in which the survey was

administered, in 14 Lasallian secondary schools in the SFNO District, described by CARA (2016) as schools with grades 7-12, 8-12, or 9-12.

Additionally, this study used a self-administered online survey instrument, and the limitations of this method may have affected the findings (Fink, 2013; Fowler, 2009). Although Dweck's (2000) survey items have been tested for reliability and validity, and although the questions developed by the researcher related to teachers' perceptions about implementing academic changes were tested for internal consistency and content validity, according to Fowler, the survey was susceptible to self-reporting bias and social desirability bias. In other words, there is no guarantee that responses to the survey reflected the actual implicit theories and perceptions about the favorability of implementing academic changes held by teachers in Lasallian secondary schools who participated in this study.

Furthermore, even though the right of confidentiality of responses was guaranteed, there may have been a tendency for social desirability whereby participants attempted a more favorable portrayal of themselves. Moreover, online self-administration of the survey may have been a hurdle for some participants because of lack of technical skill. However, because of the universal availability and use of computer or tablet technology and email and universal access to the internet in the Lasallian secondary schools of the SFNO District, the effects of this limitation should have been minimal (Fink, 2013; Fowler, 2009).

The researcher is an administrator at a Lasallian secondary school and a former teacher at another Lasallian secondary school. She has also been a frequent participant in several SFNO District-wide trainings, meetings, and retreats. In these roles, she

personally knows some of the respondents and some of the principals and other administrators who facilitated access for the study. However, the researcher reassured respondents of the right of confidentiality and security of their responses and based her findings solely on the statistical analysis of the survey results.

### Validity

Part I used measures developed by Chiu, Dweck, Tong, and Fu (1997) and re-published by Dweck (2000) to assess participants' implicit theories in intelligence, the world, and morality. The measures of intelligence, the world, and morality were tested for convergent and discriminant validity (Chiu et al., 1997; Dweck, Chiu, & Hong, 1995). Chiu et al., found that,

As far as convergent validity is concerned, each implicit theory predicts theoretically meaningful patterns of judgments, inferences, and responses. For example, agreement with an entity theory of morality positively related to the tendency to infer fixed moral traits from moral behavior. (p. 926)

With regards to discriminant validity, Dweck, Chiu, & Hong found that the measures of intelligence, the world, and morality are independent of respondents' sex, age, political affiliation, and religious preferences. They also found that the measures of intelligence, the world, and morality do not correlate with measures of cognitive ability, self-presentation concerns, self-esteem, or political attitudes. Based on these findings, the researcher utilized this validation for Part I of the survey instrument.

A panel of 10 experts (see Appendix I) reviewed and approved the content validity of Part II of the survey and the face validity of the entire survey. The panel included individuals whose background or expertise in: (a) Catholic secondary education; (b) Lasallian education; (c) development of curriculum, instruction, and assessment; (d)

leadership of teacher professional development; (e) graduate level studies in a relevant field (such as educational leadership, curriculum and instruction, or psychology); (f) graduate level instructional experience in a relevant field (such as teacher education, statistics, research methodologies, educational leadership, curriculum and instruction, or psychology); (g) academic research or statistics; or (h) Dweck's theory.

An introductory email was sent to the panel of experts requesting their participation in assessing the survey's content and face validity. The researcher then emailed each panelist a letter stating the purpose of the study and a link to the study's survey in Survey Monkey® with a validity evaluation form (see Appendix J). The letter requested their review of Part II only for content validity and of the entire survey for face validity. No incentives or compensation was offered to the panelists for their participation, and there were no costs incurred for the panelists. The right of confidentiality was assured to each panel member. The suggestions of the validity panel were then reviewed and evaluated in collaboration with the researcher's chairperson. Those suggestions that added clarity and increased the validity of the instrument were incorporated into the final draft of the survey.

The validity panel members affirmed the structure and layout of the survey in Survey Monkey® as being easy to navigate and follow; one validity panel member commented on the ease of having only three pages to click through, one for each part of the survey. Another noted that the length of the survey would be effective in facilitating responses and would not contribute to survey fatigue. Panel members indicated that the survey items in Part II clearly represented the respective areas of curriculum, instruction, and assessment and that the survey was well-aligned with the study's research questions.

The researcher incorporated suggestions by the validity panel members in two ways in order to improve clarity and to facilitate more accurate responses from participants. First, three members of the panel recommended revisions to items about academic changes in Part II to be less abstract and more specific and contextualized. One validity panel member suggested that by changing the wording to make the size and impact of academic changes more clearly challenging, participants would be less likely to just go along with the statements. Thus, although the researcher kept most of the original wording of the items in Part II in order to maintain alignment with the areas of curriculum, instruction and assessment, she revised several statements to give greater context to the impact of academic changes.

Secondly, two validity panel members commented that the original Likert scale that was drafted in Part II to measure the ease or difficulty of implementing academic changes could be misconstrued and lead to inaccurate responses. Both panel members noted that it is possible to be open to an academic change or to be willing to implement it but still find implementation difficult because of the time, resources, or training needed. Both validity panel members and one other member suggested that the survey ask participants only about their attitudes toward change, rather than the perceived ease or difficulty. Based on this feedback and in consultation with her chairperson, the researcher revised the items and the Likert scale to ask specifically the degree to which teachers favor or oppose implementing academic changes in curriculum, instruction, and assessment.

In addition to the feedback of the validity panel, the pilot study conducted with 60 teachers at Justin-Siena High School, a Lasallian secondary school in Napa, California,

allowed teachers to give feedback on their experience of taking the survey. Five participants commented that they did not understand what was meant by “the world” domain. Subsequently, in consultation with her chairperson, the researcher revised the directions for each subsection of Part I to provide a description for each domain: (a) intelligence, (b) the world, and (c) morality.

### Reliability

Part I of the survey was subject to test-retest reliability and tests of internal consistency for the three measures of intelligence, the world, and morality. Table 6 reports the reliability statistics as indicated by Cronbach’s alpha for the measures of intelligence, the world, and morality.

Table 6

*Test-Retest and Internal Consistency Reliabilities for the Measures of Intelligence, the World, and Morality*

Measure	Survey Items	Test-Retest $\alpha =$	Internal Consistency $\alpha =$
Intelligence	3, 4, 5	.80	.94 - .98
The world	6, 7, 8	.79	.86
Morality	9, 10, 11	.80	.85 - .94

*Note.* Chiu, Dweck, Tong, & Fu, 1997, and Dweck, Chiu, & Hong, 1995a.

A test of internal consistency established the reliability of Part II of the survey. The participants in this pilot study were 60 teachers at Justin-Siena High School, a Lasallian secondary school in Napa, California. Using Survey Monkey®, the teachers were invited to participate in the pilot study via email, throughout a 16-day period, from May 20, 2015 through June 5, 2015. Thirty-eight respondents who taught at least one class during the term in which the survey was administered completed the survey. Table

7 reports the reliability statistics as indicated by Cronbach's alpha for the measures of perceptions of curriculum, instruction, and assessment.

Table 7

*Internal Consistency Reliabilities for the Measures of Perceptions of Curriculum, Instruction, and Assessment*

Measure	Survey Items	Internal Consistency $\alpha =$
Curriculum	12, 13, 14	.70
Instruction	15, 16, 17	.72
Assessment	18, 19, 20	.80

#### Data Collection

The researcher received permission from the Director of the Office of Education of the San Francisco New Orleans (SFNO) District to conduct the survey in the secondary schools of the SFNO District (see Appendix D). Additionally, she also received approval from the superintendents for the Archdioceses of San Francisco and New Orleans (see Appendix E) to conduct the survey at Sacred Heart Cathedral Preparatory and Archbishop Rummel High School respectively, both Archdiocesan secondary schools that are sponsored by the Brothers of the Christian Schools. Final written approval was sought from the SFNO secondary school principals at their June 2015, meeting in Napa, California (see Appendix C). Finally, the researcher received approval from the University of San Francisco Institutional Review Board for the Protection of Human Subjects to conduct the study (see Appendix G).

After receiving approval of the dissertation proposal from her committee, the researcher administered the survey through two means. First, five schools opted to distribute the survey via a SuveyMonkey® weblink to 283 personnel. From the weblink,

respondents clicked to the survey's introductory page. In the second means of administering the survey, the researcher used the SurveyMonkey® email function and the email addresses provided by nine schools, to send the survey directly to 418 personnel. The introductory email invited teachers to participate in this doctoral study regarding their beliefs about intelligence, the world, and morality and their perceptions about implementing academic changes. The email also included the anticipated time needed to complete the survey and emphasized its voluntary nature. From that introductory email (see Appendix F), respondents clicked to the online survey (see Appendix B) which began with the same formal introductory page as the respondents who accessed the survey through the weblink.

The introductory page emphasized the purpose of the study, permissions for the study, and assurance of each participant's right of confidentiality. It also included the anticipated time needed to complete the survey and emphasized its voluntary nature. The introductory page included a consent option at the bottom of the page that, by clicking "Yes," the respondents entered the survey through Survey Monkey® for its administration. After clicking "Yes," a second question asked how many class periods respondents taught in the current term. Those who did not teach at least one class period were excluded from the rest of the survey and sent to a "thank you" page. Those who taught one period or more proceeded to the rest of the survey.

Because the online survey was accessed either through a weblink or through an email sent to respondents' school email addresses, issues related to online access were minimal. Additionally, because the link to the Survey Monkey® online survey was distributed through an online link at a faculty meeting or in-service and was embedded in

the body of the introductory email sent from the researcher's email address, the likelihood of the survey being blocked by email security filters was minimized. A further safeguard was taken by contacting the technology staff at each school to ensure that SurveyMonkey® and the researcher's email address were approved senders.

At five schools on five different dates suited to the schools' convenience between January 3, 2016 and February 12, 2016, principals or their designated administrator distributed the survey weblink to their personnel in the context of faculty meetings or in-services. On their own initiative, two administrators sent emails to remind their personnel to take the survey.

For respondents taking the survey through unique email links, a three-week window for survey completion was allowed starting January 20, 2016 and running through February 9, 2016. The researcher indicated this time frame in the introductory email (see Appendix F). Subsequently, the researcher sent three email reminders on January 28, February 2, and February 8; the researcher also contacted principals in the nine schools opting for email administration to request that they also send a reminder to their teachers to take the survey. Based on the advice of two principals and the researcher's dissertation chair, the survey was extended through February 19, to accommodate the Mardi Gras/Ash Wednesday holiday break in the Louisiana schools (February 8-12) and to increase the response rate. Thus, the researcher sent two more reminder emails on February 16, and February 18. The survey was closed February 19.

## Data Analysis

The survey gathered data necessary to answer the three research questions (see Chapter 1) and was analyzed using SYSTAT 13 software. In analyzing the data, the researcher employed descriptive and inferential statistics to answer Research Questions #1 and #2 and inferential statistics to answer Research Question #3.

To answer the first research question regarding implicit theories in the domains of intelligence, the world, and morality, the researcher followed the scoring and descriptive statistics procedures used by Chiu, Dweck, Tong, and Fu (1997). Respondents' Likert scale responses relative to the items within each implicit theory domain were averaged to derive a score for each domain: (a) intelligence, (b) the world, and (c) morality. Scores below the midpoint (3.5) indicated the entity (fixed) theory in each domain, and scores above the midpoint (3.5) indicated the incremental (growth) theory in each domain (see Figure 1). In answering the first research question, first, all analysis was completed relative to the total number of respondents. Secondly, the data was analyzed relative to the following demographic variables: (a) years experience, (b) academic department, and (c) gender. Additionally, univariate F-tests were employed to determine whether there was a significant difference in responses among subgroups in the demographic categories of years of experience and gender, and multivariate ANOVAs (MANOVAs) to determine whether there was a significant difference among groups of respondents by academic department. Chi-square tests were also used to determine whether there was a significant difference in responses within demographic categories.

To answer the second research question (see Chapter 1) regarding perceptions about implementing academic changes in the areas of curriculum, instruction, and

assessment, respondents' Likert scale responses for each item were analyzed. Furthermore, respondents' Likert scores for items within each area of academic change were averaged to derive a score for each area: curriculum, instruction, and assessment. Scores below the midpoint (3) indicated favorable perceptions about implementing academic changes in each area of academic change. Scores above the midpoint (3) indicated unfavorable perceptions about implementing academic changes in each area of academic change. In answering the second research question, first, all analysis was completed relative to the total number of respondents. Secondly, the data was analyzed relative to the following demographic variables: (a) years experience, (b) academic department, and (c) gender. Additionally, univariate F-tests were employed to determine whether there was a significant difference in responses among subgroups in the demographic categories of years of experience and gender, and multivariate ANOVAs (MANOVAs) to determine whether there was a significant difference among groups of respondents by academic department. Chi-square tests were also used to determine whether there was a significant difference in responses within demographic categories.

To answer the third research question, chi-square tests were analyzed to determine significant or insignificant relationships between the implicit theories of respondents and their favorable or unfavorable perceptions about implementing academic changes. First all correlations were analyzed relative to the total number of respondents. Secondly, the correlations were analyzed relative to the following demographic variables: (a) years experience, (b) academic department, and (c) gender.

Additionally, the researcher analyzed the results of  $t$  tests for independent samples and chi-square tests to determine whether there was a significant difference between the responses received through the weblink and email means of data collection.

## CHAPTER IV

### RESULTS

#### Overview

The purpose of the study was to investigate the extent to which teachers in Lasallian secondary schools in the San Francisco New Orleans (SFNO) District have entity theories (fixed mindsets) or incremental theories (growth mindsets) in the domains of (a) intelligence, (b) the world, and (c) morality based on the implicit theory domains developed by Dweck and colleagues (Chiu, Dweck, Tong, and Fu, 1997; Dweck, 2000, 2006; Dweck, Chiu, & Hong, 1995; Dweck and Leggett, 1988) (Table 1). The study also investigated the extent to which teachers in Lasallian secondary schools in the SFNO District have favorable perceptions about implementing academic changes in (a) curriculum, (b) instruction, and (c) assessment. Furthermore, the study examined whether there is a correlation between the implicit theories of teachers in Lasallian secondary schools in the SFNO District and their perceptions about implementing academic changes.

The data gathered for this study was analyzed to answer the following research questions:

- 1) To what extent do teachers in Lasallian secondary schools in the SFNO District have entity or incremental theories in the following domains:
  - a. Intelligence
  - b. The World
  - c. Morality

- 2) To what extent do teachers in Lasallian secondary schools in the SFNO District have favorable perceptions about implementing academic changes in the following areas:
  - a. Curriculum
  - b. Instruction
  - c. Assessment
- 3) Is there a correlation between the implicit theories of teachers in Lasallian secondary schools in the SFNO District and their perceptions about implementing academic changes in their schools?

#### Population and Survey Administration

This study investigated the beliefs and perceptions about academic changes held by teachers in Lasallian secondary schools in the SFNO District. For the purpose of this study, “teacher” was defined as anyone who taught one or more courses in the term in which the survey was given.

The study’s survey (See Appendix B) was administered through SurveyMonkey® by two means. First, at the request of administrators at five schools, the survey was distributed via a weblink given to each school’s personnel (n=283) in the context of faculty meetings or in-services. Second, using the SurveyMonkey® email function and the email addresses provided by the remaining nine participating schools, the researcher emailed the survey to 418 personnel. Thus, collectively 701 personnel were invited to take the survey.

The second survey question asked the invitees to identify how many courses they taught in the term in which the survey was given. Twenty-five invitees selected “0” courses, and five invitees did not answer this question. Subsequently, these 30 individuals were eliminated from the study, bringing the population to 671. A total of 384 respondents consented freely to participate in the study by clicking “yes,” on the first question, and indicated they taught one or more courses on the second question. Of the 384 participants, only 366 respondents completed all 28 questions. Therefore, the response rate for the complete survey was 55%. However, 18 additional respondents answered *most* of the survey items. Thus the data responses per item ranged from a total N of 366 to a total N of 384. In consultation with the researcher’s dissertation chair, it was decided to report all responses per item with notation of the appropriate N. This action allowed all recorded perceptions to be conserved and reported.

In order to determine whether there was a significant difference in responses gathered by the two means of distribution, the weblink and email collectors, *t*-tests for independent samples were applied to the quantitative measures for implicit theory domains (intelligence, the world, and morality) and to the perceptions of academic changes (curriculum, instruction, and assessment), and the demographic item related to knowledge about characteristics of Lasallian education (see Appendix B, survey item # 29) (see Appendix K, Table K 1 for calculations). Additionally, chi-square tests of independence were used to test for differences between responses to demographic items based on collector. No significant differences were found in the means of demographic variables by collector (see Appendix K, Table K2 for calculations). Therefore, demographic data sets from the weblink and email collectors were able to be combined

for reporting responses to several demographic questions on the survey related to the teachers.

### Demographics

As stated above and reported in Table 8, 384 Lasallian “teachers” freely consented to participate in the survey and self-identified as having taught one or more courses in the term in which the survey was administered. Three hundred seventy-two respondents completed all survey items. The number of respondents per survey question ranged from 372 to 381. Table 8 indicates the respondents (n=384) by the number of courses taught. It notes that the largest group of respondents (n=141, 37%) taught three to four courses. In general, it indicates that most respondents taught multiple courses.

Table 8

*Frequencies and Percentages of Respondents by Number of Courses Taught (N=384)*

Courses	N	%
1 to 2	120	31
3 to 4	141	37
5	109	28
More than 5	14	4
Total	384	100

All of the study’s participants (N=384) did not answer all of survey’s demographic questions. Gender was identified by 97% of the respondents (n=379), noting 42% as females and 58% as males. In regards to years of teaching experience, 381 or (99%) of the teachers responded; their data are listed in Table 9. Of this total, the largest group (n=83, 22%) reported having 26 or more years of teaching experience.

Table 9

*Frequencies and Percentages of Respondents by Years of Teaching Experience (N=381)*

Years	n	%
1 to 5	56	15
6 to 10	63	17
11 to 15	68	18
16 to 20	76	20
21 to 25	35	9
26+	83	22
Total	381	100

Table 10 ranks the frequencies and percentages of the academic departments that 378 or 98% of the respondents reported working in. The greatest number of teachers (n=73) worked in Social Studies/History departments, and the least number of teachers (n=16) worked in Physical Education departments.

Table 10

*Frequencies and Percentages of Respondents by Academic Departments (n=378)*

Department	n	%
Social Studies/History	73	19
Mathematics	69	18
Science/Engineering	69	18
English	67	18
Religious Studies/Theology	55	15
Arts	48	13
World Languages/LOTE	31	8
Other	25	7
Computer Science/Technology	19	5
Physical Education	16	4

*Note.* Of these 378 participants, 78% or 296 teachers taught in only one department, whereas 22% or 82 teachers worked in more than one department.

Ninety-five percent or 366 teachers answered the demographic question regarding other areas in their schools in which they worked in addition to classroom instruction.

Table 11 summarizes this data, and reports that most teachers were involved in several co-curricular school activities. The largest group of teachers (n=129, 35%) assisted with school clubs, whereas the second largest group (n=87, 24%) was involved in athletics and coaching. Of the 366 teachers who responded to this question, 157 of them (43%) reported working in more than one area, while 154 of them (42%) selected one area.

Table 11

*Frequencies and Percentages of Respondents by Other Areas Worked in Their Schools (N=366)*

Areas	n	%
Clubs	129	35
Athletics/Coaching	87	24
Dept. Chair/Academic Council	63	17
None	54	15
Other Program	46	13
Student Activities	45	12
Campus Ministry	44	12
Administration	32	9
Performing Arts (co-curricular)	31	8
Technology	24	7
Counseling	22	6
Student Government	16	4
Student Publications	10	3
Development/Advancement	9	2
Admissions	6	2
Library	3	1

The participants in this study were well educated. Of the 381 (N=381) who reported their educational background, 67% of respondents (n=255) held a Masters degree, and 61% (n=232) earned a teaching credential. Seven percent (n=27) held doctorates, while six percent (n=23) held Administrative Credentials. Ninety-three percent or 360 teachers identified their degrees and the educational institutions attended. Table 12 presents the frequencies and percentages of the respondents' degrees and credentials from Catholic, other private, and public colleges and universities.

Table 12

*Frequencies and Percentages of Respondents by Degrees and Credentials at Catholic, Other Private, and Public Colleges and Universities (N=381)*

Degree	Catholic		Other Private		Public		Total	
	n	%	n	%	n	%	n	%
Bachelors	95	25	72	19	193	51	360	94
Teaching Credential	74	19	42	11	117	31	233	61
Administrative Credential	5	1	3	1	13	3	21	6
Masters	87	23	69	18	98	26	254	67
Doctorate	4	1	9	2	12	3	25	7
Other	12	3	9	2	10	3	31	8

Ninety-eight percent or 378 teachers reported their religious background: 272 (72%) as Catholic, and 106 (28%) as non-Catholic. Ninety-seven percent or 371 teachers identified their ecclesial status: 352 (95%) as lay persons, seven (2%) as Brothers of the Christian Schools, and 11 (3%) as vowed religious from other religious orders. Ninety-nine percent or 380 teachers identified their high school background: 201 (55%) attended Catholic high schools, and 179 (47%) attended non-Catholic high schools.

The last item in the demographics portion of the survey asked respondents to report their knowledge of six characteristics of Lasallian education related to curriculum, instruction, and assessment. Three hundred eighty teachers responded to this item (N=380), and the data collected from their responses are presented in Table 13. As indicated in Table 13, respondents reported being somewhat knowledgeable to very knowledgeable about all six characteristics of Lasallian education. The item on which respondents identified the *least* knowledge was “evaluating and revision of educational programs.”

Table 13

*Means and Standard Deviations of the Respondents' Knowledge of Six Characteristics of Lasallian Education (N=380)*

Characteristic	n	M	SD
Responsiveness to the practical needs of students	380	1.54	0.60
Creativity	374	1.75	0.68
Integration of human and Christian education	377	1.64	0.68
Continual growth and learning of teachers	380	1.61	0.60
Evaluation and revision of educational programs	379	1.94	0.73
Teaching and education adapted to the needs of time and place	380	1.70	0.65

*Note. Likert Scale: 1= Very Knowledgeable; 2= Somewhat Knowledgeable; 3= Not Very Knowledgeable; 4= Not Knowledgeable at All*

*Summary of Demographic Variables*

The respondents to the survey for this study were teachers in 14 Lasallian secondary schools in the SFNO District who taught one or more courses in the term in which the survey was administered. Sixty-eight percent taught more than three courses. The respondents were female and male and represented a broad range of academic

departments and years of teaching experience, with the largest group having 26 or more years of teaching experience. A large majority (95%) were lay persons with two percent of respondents identifying as Brothers of the Christian Schools. When asked to identify the extent of their knowledge of six characteristics of Lasallian education related to curriculum, instruction, and assessment, on average, respondents reported being somewhat knowledgeable to very knowledgeable.

### Research Question 1

*To what extent do teachers in Lasallian secondary schools in the SFNO District have entity or incremental theories in the following domains: (a) intelligence, (b) the world, and (c) morality?*

The results for Research Question 1 are reported below in the domains of (a) intelligence, (b) the world, and (c) morality relative to all the respondents, as well as by the following demographic variables: (a) teaching experience, (b) academic department, and (c) gender.

#### *Implicit Theories of Intelligence*

The survey data collected regarding Research Question 1a related implicit theories of intelligence suggest that as a group, 300 or (79%) respondents held incremental theories in this domain, while 80 or (21%) respondents held entity theories in it. Table 14 reports the means and standard deviations of the implicit theories for the 380 teachers who answered survey items 3-5 on the survey. Overall, the respondents' mean score for each indicator was above 3.5, indicating an incremental theory (growth mindset). The cumulative mean and standard deviation scores in the intelligence domain for the group (M=4.42, SD=1.13) also indicated that respondents held incremental theories in the

intelligence domain. However, the large standard deviations associated with the three items measured indicated much variability in both the responses and intelligence scores overall.

Table 14

*Means and Standard Deviations of the Implicit Theories of Respondents in the Intelligence Domain Overall (N=380)*

Survey Item	M	SD
3. You have a certain amount of intelligence and you really can't do much to change it.	4.45	1.19
4. Your intelligence is something about you that you can't change very much.	4.45	1.17
5. You can learn new things, but you can't really change your basic intelligence.	4.34	1.20
Intelligence Domain Cumulative Score	4.42	1.13

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below* 3.5 indicate an *entity theory*. Scores *above* 3.5 indicate an *incremental theory*.

Tables 15, 16, and 17 present the data collected for Research Question 1a pertaining to the domain of intelligence and the respondents classified by (a) their years of teaching experience, (b) the academic departments in which they work, and (c) their gender. In each demographic category, respondents reported having an incremental theory (growth mindset) in the domain of intelligence. However, the large standard deviations indicated much variability in both their responses and cumulative intelligence scores in each demographic category.

Table 15

*Means and Standard Deviations of the Implicit Theories of Respondents in the Intelligence Domain by Years of Experience (N=377)*

Survey Item	1-5 years n=56		6-10 years n=62		11-15 years n=67		16-20 years n=76		21-25 years n=35		26+ years n=81	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
3. You have a certain amount of intelligence and you really can't do much to change it.	4.71	1.02	4.44	1.32	4.46	1.20	4.34	1.14	4.43	1.24	4.35	1.21
4. Your intelligence is something about you that you can't change very much.	4.64	1.05	4.60	1.18	4.39	1.28	4.45	1.08	4.37	1.21	4.30	1.25
5. You can learn new things, but you can't really change your basic intelligence.	4.59	1.09	4.37	1.31	4.32	1.25	4.24	1.08	4.29	1.30	4.27	1.19
Intelligence Domain Cumulative Score	4.65	1.00	4.47	1.23	4.39	1.19	4.34	1.01	4.36	1.19	4.32	1.19

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below 3.5* indicate an *entity theory*. Scores *above 3.5* indicate an *incremental theory*.

Table 16

*Means and Standard Deviations of the Implicit Theories of Respondents in the Intelligence Domain by Academic Department (N=468)*

Survey Item	Arts n=48		Comp. Sci/Tech n=19		English n=67		Mathematics n=67		PE n=16	
	M	SD	M	SD	M	SD	M	SD	M	SD
3. You have a certain amount of intelligence and you really can't do much to change it.	4.73	1.20	4.53	1.20	4.46	1.06	4.48	1.16	4.88	0.89
4. Your intelligence is something about you that you can't change very much.	4.67	1.21	4.42	1.35	4.48	1.09	4.48	1.12	4.81	0.83
5. You can learn new things, but you can't really change your basic intelligence.	4.62	1.18	4.42	1.39	4.27	1.24	4.48	1.17	4.69	0.79
Intelligence Domain Cumulative Score	4.67	1.11	4.46	1.14	4.40	1.05	4.49	1.11	4.79	0.79
Survey Item	Rel. Studies n=55		Science/Engin. n=67		Soc. St./Hist n=73		World Lang n=31		Other n=25	
	M	SD	M	SD	M	SD	M	SD	M	SD
3. You have a certain amount of intelligence and you really can't do much to change it.	4.29	1.23	4.35	1.27	4.48	1.18	4.03	1.11	5.00	1.00
4. Your intelligence is something about you that you can't change very much.	4.31	1.20	4.33	1.26	4.49	1.17	4.13	1.12	5.00	0.91
5. You can learn new things, but you can't really change your basic intelligence.	4.33	1.11	4.22	1.29	4.36	1.08	4.00	1.15	4.68	1.28
Intelligence Domain Cumulative Score	4.31	1.12	4.30	1.24	4.44	1.10	4.05	1.09	4.89	0.99

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below* 3.5 indicate an *entity theory*. Scores *above* 3.5 indicate an *incremental theory*. Twenty-two percent of survey respondents (n=82) identified one or more departments.

Table 17

*Means and Standard Deviations of the Implicit Theories of Respondents in the Intelligence Domain by Gender (N=375)*

Survey Item	Female n=158		Male n=217	
	M	SD	M	SD
3. You have a certain amount of intelligence and you really can't do much to change it.	4.52	1.11	4.38	1.25
4. Your intelligence is something about you that you can't change very much.	4.51	1.08	4.40	1.25
5. You can learn new things, but you can't really change your basic intelligence.	4.36	1.12	4.31	1.26
Intelligence Domain Cumulative Score	4.46	1.06	4.37	1.18

*Note.* Survey Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores below 3.5 indicate an *entity theory*. Scores above 3.5 indicate an *incremental theory*.

Further analysis was conducted to determine whether there were significant differences within each demographic category of (a) years of teaching experience, (b) academic department, and (c) gender with respect to the domain of intelligence. Univariate F-tests were conducted with intelligence as the dependent variable, and years of teaching experience and gender as independent variables. No significant effect was found for years of teaching experience or for gender with respect to the domain of intelligence. Additionally, because 82 respondents taught in more than one academic department, separate multivariate ANOVAs (MANOVAs) were performed with the six scale measures of the study (intelligence, the world, morality, curriculum, instruction, and assessment) as dependent variables, and years of teaching experience, gender, and each academic department as independent variables. The MANOVAs tests revealed that there was no significant effect for academic department with respect to the domain of intelligence, except for the department of World Languages/Languages Other Than

English (LOTE). Although respondents who identified as teaching World Languages/LOTE had incremental theories on average, they had significantly lower intelligence scale scores compared to those who did not teach in that department, ( $F=5.72, p=0.02$ ). This finding indicated that teachers in World Languages/LOTE had a greater frequency of responses related to entity theories (fixed mindsets) in the domain of intelligence than teachers in other departments.

Chi-square tests were also conducted to determine whether the demographic categories of (a) years of teaching experience, (b) academic departments, and (c) gender had a significant relationship to implicit theories in the domain of intelligence. (See Appendix L, Tables L1, L2, and L3 for calculations.) In order to ensure sufficient cell contributions and valid analysis in the years of teaching experience category, five levels of years of teaching experience were collapsed into three levels. The analysis found no significant relationship between the domain of intelligence and years of teaching experience ( $\chi^2=2.39, df=4, ns$ ). Similarly there was no significant relationship found between the domain of intelligence and gender ( $\chi^2=6.42, df=1, ns$ ).

Because the respondents taught in more than one department, separate omnibus Chi-square tests were used to determine relationships with implicit theories of intelligence. These tests found no significant relationship between implicit theories in the domain of intelligence and whether respondents taught in a specific department or not. (See Table L2 in Appendix L for calculations.)

#### *Summary of Findings in the Intelligence Domain*

Overall, with respect to Research Question 1a, respondents to the survey for this study held incremental theories (growth mindsets) in the domain of intelligence. Likewise,

they held incremental theories in the domain of intelligence when responses were analyzed by the demographic variables of (a) years of teaching experience, (b) academic department, and (c) gender. Teachers of World Languages/LOTE had a greater frequency of responses related to entity theories (fixed mindsets) in the intelligence domain compared to teachers in other academic departments.

#### *Implicit Theories of the World*

The survey data collected regarding Research Question 1b relative to the world domain suggest that as a group, 71% or 269 respondents held incremental theories in this domain, while 29% or 108 respondents held entity theories in it. Table 18 reports the means and standard deviations of the implicit theories for the 377 teachers who answered survey items 6-8 on the survey (N=377). Overall, the respondents' mean scores for each indicator were above 3.5, indicating an incremental theory (dynamic worldview) in the world domain. The cumulative mean and standard deviation scores in the world domain for the group (M=4.08, SD=1.01) also indicated that respondents held incremental theories in this domain. However, the large standard deviations indicated much variability in both the responses and the world domain cumulative scores overall.

Tables 19, 20, and 21 present the data collected for Research Question 1b, as they relate to the world domain and the respondents classified by (a) their years of teaching experience, (b) the academic departments in which they work, and (c) their gender. In each demographic category, respondents held incremental theories (dynamic worldviews) in the world domain. At the same time, the large standard deviations indicated much variability in both the responses and the world scores in each demographic category.

Table 18

*Means and Standard Deviations of the Implicit Theories of Respondents in the World Domain Overall (N=377)*

Survey Item	M	SD
6. Though we can change some phenomena, it is unlikely that we can alter the core dispositions of our world.	4.09	1.11
7. Our world has its basic or ingrained dispositions, and you can't do much to change them.	4.15	1.04
8. Some societal trends may dominate for a while, but the fundamental nature of our world is something that cannot be changed much.	4.00	1.13
World Domain Cumulative Score	4.08	1.01

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below* 3.5 indicate an *entity theory*. Scores *above* 3.5 indicate an *incremental theory*.

Further analysis was conducted to determine whether there were significant differences within each demographic category of (a) years of teaching experience, (b) academic department, and (c) gender with respect to the domain of the world. Univariate F-tests were conducted with the world as the dependent variable, and years of teaching experience and gender as independent variables. No significant effect was found for years of teaching experience with respect to the world domain. However, relative to gender, females were found to have had significantly higher world scale scores compared to males ( $F=5.17, p=0.02$ ), indicating that female respondents had a greater frequency of responses related to incremental theories (dynamic worldviews) in the world domain. Additionally, MANOVAs tests found no significant effect for the demographic variable of academic department in the world domain.

Table 19

*Means and Standard Deviations of the Implicit Theories of Respondents in the World Domain by Years of Experience (N=374)*

Survey Item	1-5 years n=56		6-10 years n=61		11-15 years n=66		16-20 years n=74		21-25 years n=34		26+ years n=83	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
6. Though we can change some phenomena, it is unlikely that we can alter the core dispositions of our world.	4.23	0.93	4.48	1.15	3.89	1.27	3.97	1.01	4.03	1.22	3.98	1.07
7. Our world has its basic or ingrained dispositions, and you can't do much to change them.	4.23	0.93	4.49	1.15	3.99	1.14	4.04	0.88	4.14	1.14	4.07	1.00
8. Some societal trends may dominate for a while, but the fundamental nature of our world is something that cannot be changed much.	4.00	1.04	4.13	1.23	3.88	1.19	3.92	0.98	4.09	1.25	4.06	1.18
World Domain Cumulative Score	4.15	0.85	4.37	1.09	3.93	1.12	3.96	0.86	4.08	1.15	4.04	1.02

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below 3.5* indicate an *entity theory*. Scores *above 3.5* indicate an *incremental theory*.

Table 20

*Means and Standard Deviations of the Implicit Theories of Respondents in the World Domain by Academic Department (N=461)*

Survey Item	Arts n=46		Comp Sci/ Tech n=19		English n=63		Mathematics n=69		PE n=16	
	M	SD	M	SD	M	SD	M	SD	M	SD
6. Though we can change some phenomena, it is unlikely that we can alter the core dispositions of our world.	4.11	1.20	3.84	1.17	4.05	1.12	4.09	1.17	3.88	0.96
7. Our world has its basic or ingrained dispositions, and you can't do much to change them.	4.32	1.02	4.00	0.94	4.02	1.05	4.16	1.16	4.13	0.81
8. Some societal trends may dominate for a while, but the fundamental nature of our world is something that cannot be changed much.	4.02	1.24	3.95	0.97	3.89	1.11	4.01	1.24	3.88	0.96
World Domain Cumulative Score	4.14	1.06	3.93	0.89	3.98	1.00	4.09	1.14	3.96	0.70

Survey Item	Rel. Studies n=54		Sci/Engineer n=69		Soc'l St/Hist n=70		World Lang n=31		Other n=24	
	M	SD	M	SD	M	SD	M	SD	M	SD
6. Though we can change some phenomena, it is unlikely that we can alter the core dispositions of our world.	4.19	1.10	4.25	1.13	4.03	1.06	4.13	0.88	3.79	1.25
7. Our world has its basic or ingrained dispositions, and you can't do much to change them.	4.30	1.10	4.23	1.10	4.10	0.96	4.23	0.76	4.00	1.00
8. Some societal trends may dominate for a while, but the fundamental nature of our world is something that cannot be changed much.	4.15	1.06	4.14	1.13	3.97	1.02	4.10	1.11	3.96	1.17
World Domain Cumulative Score	4.21	1.00	4.21	1.07	4.03	0.90	4.15	0.84	3.90	1.05

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below* 3.5 indicate an *entity theory*. Scores *above* 3.5 indicate an *incremental theory*. Twenty-two percent of survey respondents (n=82) identified one or more departments.

Table 21

*Means and Standard Deviation of the Implicit Theories of Respondents in the World Domain by Gender (N=372)*

Survey Item	Female n=156		Male n=216	
	M	SD	M	SD
6. Though we can change some phenomena, it is unlikely that we can alter the core dispositions of our world.	4.26	1.00	3.95	1.18
7. Our world has its basic or ingrained dispositions, and you can't do much to change them.	4.33	0.96	4.01	1.08
8. Some societal trends may dominate for a while, but the fundamental nature of our world is something that cannot be changed much.	4.16	1.06	3.89	1.18
World Domain Cumulative Score	4.25	0.94	3.95	1.05

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below* 3.5 indicate an *entity theory*. Scores *above* 3.5 indicate an *incremental theory*.

Chi-square tests revealed a significant relationship between the demographic category of years of experience and implicit theories of the world ( $\chi^2=10.78$ ,  $df=4$ ,  $p<0.01$ ) (see Appendix L, Table L1 for calculations). In all three levels of years of teaching experience (1 to 10 years, 11 to 20 years, and 21 or more years), respondents were more likely to hold an incremental theory of the world (dynamic worldview) than an entity theory of the world (static worldview). Yet, relatively more respondents with 1 to 10 years of teaching experience (82.05%) held an incremental theory of the world compared to those with 11 to 20 years of teaching experience (68.57%) or those with 21 years or more of teaching experience (63.25%).

As explained above, separate omnibus chi-square tests were also used to determine the relationship between the demographic category of academic departments and the world domain. No significant relationship was found between implicit theories in

the world domain and whether respondents taught in a specific department or not. (See Table L2 in Appendix L for calculations.)

A significant relationship was found between gender and implicit theories held in the world domain ( $\chi^2=10.94$ ,  $df=1$ ,  $p<0.001$ ). Both females (80.82%) and males (64.35%) were more likely to hold an incremental theory (dynamic worldview) than an entity theory (static worldview) in the world domain. However, males (35.65%) were more likely than females (19.87%) to hold an entity theory in the world domain (see Table L3 in Appendix L for calculations).

#### *Summary of Findings in the World Domain*

Overall, with respect to Research Question 1b, respondents to the survey for this study held incremental theories (dynamic worldviews) in the world domain. However, significant differences were found relative to the demographic categories of years of teaching experience and gender. Although respondents within all levels of years of experience were more likely to hold incremental theories than entity theories (static worldviews), significantly more respondents with one to 10 years of experience held incremental theories compared to those with 11 to 20 years of experience and 21 or more years of experience. Relative to gender, females were more likely than males to have incremental theories in the world domain.

#### *Morality*

The survey data collected regarding Research Question 1c relative to the morality domain suggest that overall, 88% or 337 respondents held incremental theories in this domain, and 12% or 45 respondents held entity theories in it. Table 22 reports the means and standard deviations of the implicit theories for 382 teachers who answered survey items

9-11 on the survey (N=382). Overall the respondents' mean scores for each indicator was above 3.5, indicating an incremental theory (rights-based morality) in the morality domain. The cumulative mean and standard deviation scores in the world domain for the group (M=4.58, SD=0.93) also indicated that respondents held incremental theories in this domain. Although the standard deviations suggest variability among respondents in the morality domain, the responses predominantly reflected incremental theories.

Table 22

*Means and Standard Deviations of the Implicit Theories of Respondents in the Morality Domain Overall (N=382)*

Survey Item	M	SD
9. A person's moral character is something very basic about them and it can't be changed much.	4.60	1.03
10. Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much.	4.52	1.02
11. There is not much that can be done to change a person's moral traits (e.g. conscientiousness, uprightness, and honesty).	4.61	0.99
Morality Domain Cumulative Score	4.58	0.93

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below* 3.5 indicate an *entity theory*. Scores *above* 3.5 indicate an *incremental theory*.

Tables 23, 24, and 25 present the data collected for Research Question 1c pertaining to the domain of morality and the respondents classified by (a) their years of teaching experience, (b) the academic departments in which they work, and (c) their gender. In each demographic category, respondents held incremental theories in the morality domain. Univariate F-tests were conducted with morality as the dependent variable and years of teaching experience and gender as independent variables. No significant effects were found for years of teaching experience and gender with respect to the morality domain. Additionally, MANOVAs tests showed no significant effect for the

demographic variable of academic department in the domain of morality. Chi-square tests revealed no significant relationships between implicit theories in the domain of morality and the demographic categories of (a) years of teaching experience, (b) academic department, and (c) gender (see Tables L1, L2, and L3 in Appendix L for calculations).

Table 23

*Means and Standard Deviations of the Implicit Theories of Respondents in the Morality Domain by Years of Experience (N=379)*

Survey Item	1-5 years n=56		6-10 years n=63		11-15 years n=68		16-20 years n=74		21-25 years n=35		26+ years n=83	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
9. A person's moral character is something very basic about them and it can't be changed much.	4.38	1.15	4.73	1.10	4.60	0.87	4.59	0.92	4.57	1.29	4.66	0.98
10. Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much.	4.48	1.08	4.52	1.11	4.53	0.91	4.32	0.99	4.43	1.24	4.73	0.90
11. There is not much that can be done to change a person's moral traits (e.g. conscientiousness, uprightness, and honesty).	4.55	1.11	4.65	1.14	4.60	0.85	4.48	0.94	4.57	1.12	4.73	0.91
Morality Domain Cumulative Score	4.47	1.02	4.63	1.04	4.58	0.81	4.48	0.82	4.52	1.15	4.71	0.87

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below* 3.5 indicate an *entity theory*. Scores *above* 3.5 indicate an *incremental theory*.

Table 24

*Means and Standard Deviations of the Implicit Theories of Respondents in the Morality Domain by Academic Department (N=470)*

Survey Item	Arts n=47		Comp. Sci Tech n=19		English n=67		Mathematics n=69		PE n=16	
	M	SD	M	SD	M	SD	M	SD	M	SD
9. A person's moral character is something very basic about them and it can't be changed much.	4.68	1.09	4.58	1.02	4.60	0.82	4.49	1.04	4.31	1.01
10. Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much.	4.51	1.23	4.68	0.95	4.46	0.88	4.46	1.01	4.63	0.89
11. There is not much that can be done to change a person's moral traits (e.g. conscientiousness, uprightness, and honesty).	4.64	1.09	4.58	1.17	4.60	0.89	4.49	1.09	4.56	0.96
Morality Domain Cumulative Score	4.61	1.04	4.61	0.97	4.55	0.79	4.48	0.99	4.50	0.82
Survey Item	Rel. Studies n=55		Science/Engin n=69		Soc'l St./Hist n=72		World Lang n=31		Other n=25	
	M	SD	M	SD	M	SD	M	SD	M	SD
9. A person's moral character is something very basic about them and it can't be changed much.	4.80	0.99	4.55	1.08	4.50	1.10	4.74	0.86	4.56	0.92
10. Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much.	4.65	1.06	4.45	0.99	4.53	1.01	4.55	0.77	4.52	0.92
11. There is not much that can be done to change a person's moral traits (e.g. conscientiousness, uprightness, and honesty).	4.85	0.91	4.62	0.96	4.55	0.97	4.58	0.85	4.68	0.85
Morality Domain Cumulative Score	4.77	0.88	4.54	0.93	4.54	0.93	4.62	0.74	4.59	0.77

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below* 3.5 indicate an *entity theory*. Scores *above* 3.5 indicate an *incremental theory*. Twenty-two percent of survey respondents (n=82) identified one or more departments.

Table 25

*Means and Standard Deviations of the Implicit Theories of Respondents in the Morality Domain by Gender (N=377)*

Survey Item	Female n=158		Male n=219	
	M	SD	M	SD
12. A person's moral character is something very basic about them and it can't be changed much.	4.65	1.00	4.56	1.05
13. Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much.	4.56	0.91	4.48	1.10
14. There is not much that can be done to change a person's moral traits (e.g. conscientiousness, uprightness, and honesty).	4.65	0.98	4.57	1.01
Morality score (n=377)	4.62	0.88	4.54	0.97

*Note.* Likert Scale: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, 6 = strongly disagree. Scores *below* 3.5 indicate an *entity theory*. Scores *above* 3.5 indicate an *incremental theory*.

#### *Summary of Findings in the Morality Domain*

Overall, with respect to Research Question 1c, respondents to the survey for this study held incremental theories (rights-based moralities) in the morality domain. This finding was also true for respondents across the three demographic categories of (a) years of teaching experience, (b) academic department, and (c) gender.

#### *Summary of Findings for Research Question 1*

Overall, with respect to Research Question 1, respondents to the survey for this study held incremental (growth) theories in the domains of (a) intelligence, (b) the world, and (c) morality. Although teachers of World Languages/LOTE held incremental theories in the intelligence domain, they had a greater frequency of responses related to entity theories in this domain compared to teachers in other academic departments. In the world domain, there were significant differences in the findings relative to the demographic categories of years of teaching experience and gender. Although

respondents with all levels of years of experience were more likely to hold incremental theories, respondents with one to 10 years of experience were more likely to hold incremental theories, compared to those with 11 to 20 years of experience and 21 or more years of experience. With regards to gender, females were more likely than males to have incremental theories in the world domain.

### Research Question 2

*To what extent do teachers in Lasallian secondary schools in the SFNO District have favorable perceptions about implementing academic changes in the following areas: (a) curriculum, (b), instruction, and (c) assessment?*

The results for Research Question 2 are reported below in the domains of (a) curriculum, (b) instruction, and (c) assessment relative to all the respondents, as well as by their following demographic variables: (a) teaching experience, (b) academic department, and (c) gender.

#### *Perceptions of Academic Changes in Curriculum*

The survey data collected regarding Research Question 2a pertaining to perceptions of academic changes in curriculum suggest that as a group, 67% (n=254) of the respondents held favorable perceptions of academic changes, 16% (n=59) held neither favorable nor unfavorable perceptions of academic changes, and 17% (n=64) held unfavorable perceptions of academic changes. The large standard deviations indicated much variability in both the responses and curriculum scores overall. Table 26 reports the means and standard deviations to answer Research Question 2a for all respondents (N=377) relative to their perceptions of academic changes in curriculum. It shows that

the respondents' mean scores for survey items #12 and #14 were below 3.0 which suggest favorable perceptions of academic changes in curriculum related to (a) developing new courses in their respective subject areas when proposed by members of their departments, and (b) to being required to align their curriculum to new sets of standards in their respective subject areas. Respondents scored  $M=3.00$  ( $SD=0.97$ ) on item 13, indicating that they neither favored nor opposed developing new courses mandated by the administration or outside governing authority. The cumulative mean score, however, for perceptions of academic changes in curriculum ( $M=2.58$ ,  $SD=0.70$ ), indicated that on average the respondents held favorable perceptions of academic changes in that domain.

Table 26

*Means and Standard Deviation Respondents' Perceptions of Academic Changes in Curriculum (N= 377)*

Survey Item	M	SD
12. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area proposed by members of your department?	1.99	0.90
13. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area mandated by the administration or an outside governing authority?	3.00	0.97
14. To what extent would you favor a requirement to align the curriculum in your courses to a new set of academic standards in your subject area?	2.76	0.93
Cumulative Curriculum Score	2.58	0.70

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores *below 3.0* indicate *favorable perceptions*. Scores *above 3.0* indicate *unfavorable perceptions*. Scores *of 3.0* indicate *neither favorable nor unfavorable perceptions*.

Tables 27, 28, and 29 address Research Question 2a concerning respondents' perceptions about academic changes in curriculum related to their (a) years of teaching

experience, (b) academic departments, and (c) gender. In all three demographic categories, respondents had mean curriculum scores below 3.0, indicating overall favorable perceptions of academic changes in curriculum on items #12 and #14. Item #13 was the only item in the curriculum domain on which scores varied within the demographic categories. In all three demographic categories for item #13, respondents indicated favorable, neither favorable nor unfavorable, and unfavorable perceptions of developing new courses mandated by the administration or an outside governing authority.

Further analysis was conducted to determine whether there were significant differences within each demographic variable of (a) years of teaching experience, (b) academic department, and (c) gender with respect to perceptions of academic changes in curriculum. Univariate F-tests were conducted with curriculum as the dependent variable, and years of teaching experience and gender as independent variables. No significant effects for years of teaching experience and gender were found with respect to perceptions of academic changes in curriculum. Additionally, MANOVAs tests showed no significant effect for the demographic variable of academic department concerning perceptions of academic changes in curriculum. Likewise, chi-square tests revealed no significant relationships between perceptions of academic changes in curriculum and the demographic categories of (a) years of teaching experience, (b) academic department, and (c) gender (see Tables L4, L5, and L6 in Appendix L for summaries of calculations).

Table 27

*Means and Standard Deviations of the Respondents' Perceptions of Academic Changes in Curriculum by Years of Teaching Experience (N=377)*

Survey Item	1-5 years n=56		6-10 years n=62		11-15 years n=66		16-20 years n=76		21-25 years n=34		26+ years n=83	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
12. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area proposed by members of your department?	1.82	0.79	1.98	0.93	2.03	0.90	2.00	1.02	1.89	0.83	2.10	0.88
13. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area mandated by the administration or an outside governing authority?	2.89	1.02	3.06	0.90	3.00	0.83	2.96	1.08	3.15	0.99	3.00	0.99
14. To what extent would you favor a requirement to align the curriculum in your courses to a new set of academic standards in your subject area?	2.68	1.01	2.73	0.89	2.75	0.97	2.85	0.90	2.83	0.98	2.74	0.87
Curriculum Cumulative Score	2.46	0.70	2.59	0.66	2.59	0.67	2.60	0.80	2.63	0.72	2.61	0.65

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores below 3.0 indicate favorable perceptions. Scores above 3.0 indicate unfavorable perceptions. Scores of 3.0 indicate neither favorable nor unfavorable perceptions.

Table 28

*Means and Standard Deviation of the Respondents' Perceptions of Academic Changes in Curriculum by Academic Department (N= 467)*

Survey Item	Arts n=48		Comp. Sci Tech n=19		English n=66		Mathematics n=69		PE n=16	
	M	SD	M	SD	M	SD	M	SD	M	SD
12. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area proposed by members of your department?	1.73	0.68	1.74	0.81	1.88	0.90	2.22	0.89	2.00	0.89
13. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area mandated by the administration or an outside governing authority?	1.60	0.74	2.68	1.16	3.21	0.93	2.93	0.86	2.69	1.30
14. To what extent would you favor a requirement to align the curriculum in your courses to a new set of academic standards in your subject area?	2.27	0.84	2.74	1.05	2.84	0.86	2.72	0.94	2.75	1.00
Curriculum Cumulative Score	1.87	0.59	2.39	0.71	2.65	0.67	2.62	0.68	2.48	0.83
Survey Item	Rel. Studies n=54		Sci/Engin. n=67		Soc. St./Hist n=73		World Lang n=30		Other n=25	
	M	SD	M	SD	M	SD	M	SD	M	SD
12. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area proposed by members of your department?	1.95	0.87	2.01	0.89	1.92	0.98	2.13	1.06	2.00	1.12
13. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area mandated by the administration or an outside governing authority?	3.13	0.98	2.93	0.83	3.01	1.12	2.73	1.14	3.24	1.01
14. To what extent would you favor a requirement to align the curriculum in your courses to a new set of academic standards in your subject area?	2.76	0.89	2.69	0.82	2.92	1.06	2.58	0.96	2.88	0.93
Curriculum Cumulative Score	2.60	0.66	2.54	0.63	2.61	0.80	2.49	0.95	2.71	0.75

*Note.* Survey responses: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores below 3.0 indicate favorable perceptions. Scores above 3.0 indicate unfavorable perceptions. Scores of 3.0 indicate neither favorable nor unfavorable perceptions.

Table 29

*Means and Standard Deviation of the Respondents' Perceptions of Academic Changes in Curriculum by Gender (N=374)*

Survey Item	Female n=157		Male n=217	
	M	SD	M	SD
12. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area proposed by members of your department?	1.94	0.92	2.02	0.89
13. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area mandated by the administration or an outside governing authority?	3.00	0.94	3.00	0.99
14. To what extent would you favor a requirement to align the curriculum in your courses to a new set of academic standards in your subject area?	2.68	0.86	2.82	0.97
Curriculum Cumulative Score	2.54	0.71	2.61	0.69

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores *below 3.0* indicate *favorable perceptions*. Scores *above 3.0* indicate *unfavorable perceptions*. Scores *of 3.0* indicate *neither favorable nor unfavorable perceptions*.

*Summary of Findings Regarding Perceptions of Academic Changes in Curriculum*

With regards to Research Question 2a relative to curriculum, in general, respondents favored academic changes. No significant differences were found in the area of curriculum with regards to the demographic categories of (a) years of experience, (b) academic department, and (c) gender. However, respondents neither favored nor opposed the academic change expressed in item #13 which stated, “To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area mandated by the administration or an outside governing authority?”

*Perceptions of Academic Changes in Instruction*

With respect to Research Question 2b, the survey data collected regarding perceptions of academic changes in instruction suggest that overall, 88% (n=333) of

respondents held favorable perceptions, 6% (n=24) held neither favorable nor unfavorable perceptions, and 6% (n=21) held unfavorable perceptions. Table 30 reports means and standard deviations to answer Research Question 2b related to respondents' (N=378) perceptions of academic change in instruction. In general, respondents scored below 3.0 for items #15, #16, and #17, indicating favorable perceptions of academic changes in instruction. However, the mean (2.29) and the standard deviation (1.01) for item #17 indicate less favorable perceptions of academic changes among respondents regarding receiving feedback about their instruction through a new evaluation method that is aligned with national, research-based definitions of good teaching.

Table 30

*Means and Standard Deviations of the Respondents' Perceptions of Academic Changes in Instruction (N=378)*

Survey Item	M	SD
15. To what extent would you favor incorporating digital tools that would foster student creativity (i.e., the process of developing original ideas that have value) in your courses? (n = 380)	1.90	0.80
16. To what extent would you favor customizing learning activities to address students' individual learning needs? (n = 380)	1.80	0.77
17. To what extent would you favor receiving feedback about your instruction through a new evaluation method that is aligned with national, research-based definitions of good teaching? (n = 378)	2.29	1.01
Instruction Cumulative Score	2.00	0.68

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores *below 3.0* indicate *favorable perceptions*. Scores *above 3.0* indicate *unfavorable perceptions*. Scores *of 3.0* indicate *neither favorable nor unfavorable perceptions*.

Tables 31, 32, and 33 address Research Question 2b with regards to respondents' perceptions of academic changes in instruction relative to their (a) years of teaching experience, (b) academic department, and (c) gender. In all three demographic categories, respondents' mean instruction scores were below 3.0, indicating favorable

perceptions of academic changes in the domain of instruction. Compared to items #16 and #18, respondents held less favorable perceptions ( $M=2.29$ ,  $SD=1.01$ ) on item #17 which asked, “To what extent would you favor receiving feedback about your instruction through a new evaluation method that is aligned with national, research-based definitions of good teaching?” Also, as shown in Table 33, male respondents ( $M=2.46$ ,  $SD=1.07$ ) gave the least favorable responses on item #17 compared to other demographic groups.

Further analysis was conducted to determine whether there were significant differences within all three demographic variables with respect to perceptions of academic changes in instruction. Univariate F-tests were conducted with perception of academic change in instruction as the dependent variable, and years of teaching experience and gender as independent variables. No significant effect was found for years of teaching experience with respect to perceptions of academic changes in instruction. However, relative to gender, females were found to have had significantly lower instruction scale scores compared to males ( $F=7.94$ ,  $p=0.01$ ), indicating relatively more favorable perceptions of academic changes in instruction among female respondents than male respondents. Additionally, MANOVAs tests showed no significant effect for the demographic variable of academic department relative to perceptions of academic changes in instruction.

Chi-square tests also showed no significant relationships between the instruction domain and the demographic categories of years of experience and academic departments (see Tables L4 and L5 in Appendix L for calculations). However, in contrast to the univariate F-test findings above, chi-square tests revealed no significant relationship

between the instruction domain and gender (see Table L6 in Appendix L for calculations.)

*Summary of Findings Regarding Perceptions of Academic Change in Instruction*

With regards to Research Question 2b relative to perceptions of academic changes in instruction, in general, respondents held favorable perceptions. However, compared to items #15 and 16, on item #17 (see Table 30), respondents were the least favorable toward the idea of receiving feedback about instruction through a new evaluation methods aligned with national research-based definitions of good teaching. Significant differences were found with respect to gender; female respondents were found to be more favorable to academic changes in instruction than male respondents.

Table 31

*Means and Standard Deviations of Respondents' Perceptions of Academic Changes in Instruction by Years of Teaching Experience (N=377)*

Survey Item	1-5 years n=54		6-10 years n=62		11-15 years n=67		16-20 years n=76		21-25 years n=35		26+ years n=83	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
15. To what extent would you favor incorporating digital tools that would foster student creativity (i.e., the process of developing original ideas that have value) in your courses?	1.61	0.78	1.97	0.68	1.81	0.65	2.00	0.94	1.91	0.70	2.01	0.85
16. To what extent would you favor customizing learning activities to address students' individual learning needs?	1.81	0.83	1.75	0.74	1.67	0.66	1.80	0.75	1.91	0.70	1.92	0.86
17. To what extent would you favor receiving feedback about your instruction through a new evaluation method that is aligned with national, research-based definitions of good teaching?	2.09	1.08	2.13	0.91	2.31	0.97	2.39	1.19	2.31	0.80	2.42	0.96
Instruction Cumulative Score	1.85	0.67	1.95	0.60	1.93	0.58	2.07	0.75	2.05	0.59	2.12	0.74

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores below 3.0 indicate favorable perceptions. Scores above 3.0 indicate unfavorable perceptions. Scores of 3.0 indicate neither favorable nor unfavorable perceptions.

Table 32

*Means and Standard Deviations of Respondents' Perceptions of Academic Changes in Instruction by Academic Department (N=467)*

Survey Item	Arts n=48		Comp. Sci./ Tech n=19		English n=66		Mathematics n=68		PE n=16	
	M	SD	M	SD	M	SD	M	SD	M	SD
15. To what extent would you favor incorporating digital tools that would foster student creativity (i.e., the process of developing original ideas that have value) in your courses?	1.73	0.68	1.63	0.68	2.04	0.93	1.87	0.80	1.81	0.66
16. To what extent would you favor customizing learning activities to address students' individual learning needs?	1.60	0.74	1.79	0.79	1.89	0.73	1.76	0.74	2.00	0.73
17. To what extent would you favor receiving feedback about your instruction through a new evaluation method that is aligned with national, research-based definitions of good teaching?	2.27	0.84	2.11	0.99	2.30	1.02	2.20	1.01	2.31	1.40
Instruction Cumulative Score	1.87	0.59	1.84	0.59	2.08	0.71	1.96	0.67	2.04	0.80
Survey Item	Rel. Studies n=55		Sci./Engin. n=68		Soc. St./Hist n=72		World Lang n=31		Other n=24	
	M	SD	M	SD	M	SD	M	SD	M	SD
15. To what extent would you favor incorporating digital tools that would foster student creativity (i.e., the process of developing original ideas that have value) in your courses?	1.95	0.76	1.90	0.77	1.94	0.85	2.03	0.87	1.68	0.69
16. To what extent would you favor customizing learning activities to address students' individual learning needs?	1.78	0.71	1.84	0.75	1.81	0.84	1.87	0.92	1.75	0.61
17. To what extent would you favor receiving feedback about your instruction through a new evaluation method that is aligned with national, research-based definitions of good teaching?	2.44	0.98	2.06	0.84	2.42	1.26	2.29	0.90	2.36	1.22
Instruction Cumulative Score	2.05	0.64	1.94	0.65	2.06	0.79	2.06	0.72	1.96	0.60

*Note.* Survey responses: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores below 3.0 indicate favorable perceptions. Scores above 3.0 indicate unfavorable perceptions. Scores of 3.0 indicate neither favorable nor unfavorable perceptions.

Table 33

*Means and Standard Deviation of Respondents' Perceptions of Academic Changes in Instruction by Gender (N=378)*

Survey Item	Female n=159		Male n=219	
	M	SD	M	SD
15. To what extent would you favor incorporating digital tools that would foster student creativity (i.e., the process of developing original ideas that have value) in your courses?	1.84	0.75	1.94	0.82
16. To what extent would you favor customizing learning activities to address students' individual learning needs?	1.72	0.72	1.87	0.79
17. To what extent would you favor receiving feedback about your instruction through a new evaluation method that is aligned with national, research-based definitions of good teaching?	2.06	0.88	2.46	1.07
Cumulative Instruction Score	1.87	0.64	2.10	0.70

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores *below 3.0* indicate *favorable perceptions*. Scores *above 3.0* indicate *unfavorable perceptions*. Scores *of 3.0* indicate *neither favorable nor unfavorable perceptions*.

#### *Perceptions of Academic Changes in Assessment*

The survey data collected regarding Research Question 2c relative to perceptions of academic changes in assessments suggest that overall, 84% (n=317) of respondents held favorable perceptions of academic changes, 9% (n=34) held neither favorable nor unfavorable perceptions of academic changes, and 7% (n=26) held unfavorable perceptions of academic changes. Table 34 answers Research Question 2c in relation to perceptions of academic changes in assessment held by all respondents (N=377). In general, respondents scored below 3.0 on items #18, #19, and #20 (see Table 34), indicating favorable perceptions of academic changes in assessment. However, the large standard deviations indicated much variability in both the responses and assessment scores overall. The score on item #20 (M=2.51, SD=1.08) indicated that respondents

were least favorable toward implementing new schoolwide standards-based grading practices compared to other academic changes surveyed in items #18 and 19.

Table 34

*Means and Standard Deviations of Respondents' Perceptions of Academic Changes in Assessment (N=377)*

Survey Item	M	SD
18. To what extent would you favor providing students multiple and varied types of formative and summative assessments? (n = 378)	1.79	0.73
19. To what extent would you favor collaborating with department members in designing identical assessments for your courses? (n = 382)	2.23	1.04
20. To what extent would you favor implementing new schoolwide standards-based grading practices (with achievement indicated by student proficiency of content standards rather than by a traditional percentage system)? (n = 379)	2.51	1.08
Assessment Cumulative score	2.17	0.69

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores *below 3.0* indicate *favorable perceptions*. Scores *above 3.0* indicate *unfavorable perceptions*. Scores *of 3.0* indicate *neither favorable nor unfavorable perceptions*.

Tables 35, 36, and 37 address Research Question 2c regarding the demographic categories of (a) years of experience, (b) academic department, and (c) gender. In all three demographic categories, respondents had mean assessment scores below 3.0, indicating overall favorable perceptions of academic changes in the domain of assessment. At the same time, the large standard deviations indicated much variability in both the responses and the cumulative assessment scores in each demographic category. Responses on item #20 indicated that implementing new schoolwide standards-based grading practices was the least favorable academic change in assessment across all three demographic categories.

Further analysis was conducted to determine whether there were significant differences among the respondents relative to their (a) years of teaching experience, (b)

academic department, and (c) gender with respect to perceptions of academic changes in assessment. Univariate F-tests were conducted with assessment as the dependent variable, and years of teaching experience and gender as independent variables. No significant effect was found for years of teaching experience relative to perceptions of academic changes in assessment. Regarding gender, females were found to have a significantly lower assessment scale scores compared to males ( $F=5.05$ ,  $p=0.03$ ). This finding suggested more favorable perceptions of academic changes in instruction among female respondents than male respondents. Also, MANOVAs tests showed no significant relationship between the demographic variable of academic department and perceptions of academic changes in assessment. Chi-square tests showed no significant relationship between the assessment domain and the demographic variable of years of teaching experience and academic department (see Tables L4 and L5 in Appendix L for calculations). However, in contrast to the univariate F-test findings above, chi-square tests measured no significant relationship between the assessment domain and gender (see Table L6 in Appendix L for calculations).

Table 35

*Means and Standard Deviations of Respondents' Perceptions of Academic Changes in Assessment by Years of Teaching Experience (N=377)*

Survey Item	1-5 years n=56		6-10 years n=61		11-15 years n=67		16-20 years n=75		21-25 years n=35		26+ years n=82	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
18. To what extent would you favor providing students multiple and varied types of formative and summative assessments?	1.75	0.79	1.72	0.61	1.75	0.63	1.73	0.70	1.91	0.78	1.89	0.83
19. To what extent would you favor collaborating with department members in designing identical assessments for your courses?	2.27	1.21	2.21	0.90	2.25	1.04	2.21	1.06	2.03	0.79	2.30	1.08
20. To what extent would you favor implementing new schoolwide standards-based grading practices (with achievement indicated by student proficiency of content standards rather than by a traditional percentage system)?	2.32	1.03	2.54	1.04	2.45	1.16	2.61	1.09	2.40	1.06	2.61	1.07
Assessment Cumulative Score	2.11	0.74	2.15	0.59	2.15	0.67	2.17	0.68	2.11	0.65	2.26	0.78

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores below 3.0 indicate favorable perceptions. Scores above 3.0 indicate unfavorable perceptions. Scores of 3.0 indicate neither favorable nor unfavorable perceptions.

Table 36

*Means and Standard Deviation of Respondents' Perceptions of Academic Changes in Assessment by Academic Department (N=465)*

Survey Item	Arts n=48		Computer Sci Tech n=19		English n=65		Mathematics n=68		PE n=16	
	M	SD	M	SD	M	SD	M	SD	M	SD
18. To what extent would you favor providing students multiple and varied types of formative and summative assessments?	1.73	0.68	1.74	0.65	1.71	0.70	1.82	0.73	2.00	0.82
19. To what extent would you favor collaborating with department members in designing identical assessments for your courses?	2.27	1.05	2.26	1.24	2.31	1.06	2.12	1.04	2.19	1.05
20. To what extent would you favor implementing new schoolwide standards-based grading practices (with achievement indicated by student proficiency of content standards rather than by a traditional percentage system)?	2.35	1.18	2.53	1.31	2.63	1.13	2.51	1.08	2.87	1.15
Assessment Cumulative Score	2.12	0.73	2.18	0.71	2.19	0.67	2.14	0.66	2.35	0.70
Survey Item	Rel. Studies n=55		Science/Engin n=68		Soc. St./Hist. n=71		World Lang n=30		Other n=25	
	M	SD	M	SD	M	SD	M	SD	M	SD
18. To what extent would you favor providing students multiple and varied types of formative and summative assessments?	1.80	0.70	1.81	0.76	1.76	0.66	1.93	0.91	1.88	0.88
19. To what extent would you favor collaborating with department members in designing identical assessments for your courses?	2.62	1.08	2.10	0.88	2.47	1.23	1.94	0.96	1.92	0.76
20. To what extent would you favor implementing new schoolwide standards-based grading practices (with achievement indicated by student proficiency of content standards rather than by a traditional percentage system)?	2.38	1.08	2.49	1.11	2.61	1.01	2.40	0.86	2.72	1.21
Assessment Cumulative Score	2.27	0.70	2.14	0.71	2.27	0.71	2.06	0.70	2.17	0.68

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores *below 3.0* indicate *favorable perceptions*. Scores *above 3.0* indicate *unfavorable perceptions*. Scores *of 3.0* indicate *neither favorable nor unfavorable perceptions*.

Table 37

*Means and Standard Deviation of Respondents' Perceptions of Academic Changes in Assessment by Gender (N=374)*

Survey Item	Female n=158		Male n=216	
	M	SD	M	SD
18. To what extent would you favor providing students multiple and varied types of formative and summative assessments?	1.73	0.69	1.83	0.75
19. To what extent would you favor collaborating with department members in designing identical assessments for your courses?	2.13	0.91	2.30	1.12
20. To what extent would you favor implementing new schoolwide standards-based grading practices (with achievement indicated by student proficiency of content standards rather than by a traditional percentage system)?	2.37	1.07	2.61	1.08
Assessment score (n=374)	2.07	0.65	2.25	0.72

*Note.* Likert Scale: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Scores *below 3.0* indicate *favorable perceptions*. Scores *above 3.0* indicate *unfavorable perceptions*. Scores *of 3.0* indicate *neither favorable nor unfavorable perceptions*.

#### *Summary of Findings Regarding Perceptions of Academic Change in Assessment*

In regards to Research Question 2c relative to teachers' perceptions of academic changes in assessment, in general, respondents held favorable perceptions. Although there were no significant differences in the findings with respect to the demographic categories of years of teaching experience and academic department, with regards to gender, female respondents were significantly more favorable to academic changes in assessment than male respondents.

#### *Summary of Findings for Research Question 2*

In general, with respect to Research Question 2, respondents to the survey for this study held favorable perceptions of academic changes in (a) curriculum, (b) instruction, and (c) assessment. The findings were consistent for eight of the nine survey items

measuring perceptions of academic change. On item #13 related to academic changes in curriculum, which stated, “To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area mandated by the administration or an outside governing authority,” respondents held neither favorable nor unfavorable perceptions. Although both male and female respondents held favorable perceptions about academic change in instruction and assessment, female respondents were found to be more favorable to those changes than male respondents.

### Research Question 3

*Is there a correlation between the implicit theories of teachers in Lasallian secondary schools in the SFNO District and their perceptions about implementing academic changes in their schools?*

To answer Research Question 3, chi-square tests were used to examine the relationships between respondents’ implicit theories of (a) intelligence, (b) the world, and (c) morality and the respondents’ perceptions of academic change in (a) curriculum, (b) instruction, and (c) assessment. Chi-square tests were also used to examine the aforementioned relationships relative to the respondents’ demographic variables of (a) years of teaching experience, (b) academic department, and (c) gender.

#### *Implicit Theories of Intelligence*

Analysis of the statistical data regarding Research Question 3 suggested that there were no significant relationships between implicit theories of intelligence and the respondents’ reported perceptions of academic change in (a) curriculum, (b) instruction, and (c) assessment. These findings are presented in Table 38.

Table 38

*Chi-Square Scores and Their Degrees of Freedom Regarding the Relationships Between Implicit Theories in the Domain of Intelligence with Perceptions of Academic Changes in Curriculum, Instruction, and Assessment*

Area of Change	Perception of Change	Implicit Theory		Test Results <sup>b</sup>	
		Entity <sup>a</sup>	Incremental <sup>a</sup>	$\chi^2$	df
Curriculum	Favorable	49 (62.03%)	202 (68.71%)		
	Neither Favorable nor Unfavorable	13 (16.46%)	46 (15.65%)		
	Unfavorable	17 (21.52%)	46 (15.65%)		
	<i>Total (n=373)</i>	79 (100%)	294 (100%)	1.71	2, ns
Instruction	Favorable	68 (87.18%)	262 (88.51%)		
	Neither Favorable nor Unfavorable	3 (3.85%)	21 (7.09%)		
	Unfavorable	7 (8.97%)	13 (4.39%)		
	<i>Total (n=374)</i>	78 (100.0%)	296 (100.0%)	3.45	2, ns
Assessment	Favorable	63 (80.77%)	250 (84.75%)		
	Neither Favorable nor Unfavorable	12 (15.38%)	22 (7.46%)		
	Unfavorable	3 (3.85%)	23 (7.80%)		
	<i>Total (n=373)</i>	78 (100.0%)	295 (100.0%)	5.75	2, ns

Note. <sup>a</sup> n (%)

<sup>b</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.0167 was used for statistical tests.

Likewise, when the data was analyzed by the demographic variable of years of teaching experience, there was no significant relationship between implicit theories of intelligence and reported perceptions of academic changes in (a) curriculum ( $\chi^2=1.80$ ,  $df=2$ , ns), (b) instruction ( $\chi^2=3.62$ ,  $df=2$ , ns) and (c) assessment ( $\chi^2=5.20$ ,  $df=2$ , ns) (see Appendix L for Table L1 for calculations regarding the relationship between years of

teaching experience and implicit theories and Table L4 for calculations regarding the relationship between years of experience and perceptions of academic changes).

With regards to the demographic variable of academic department, because respondents could have taught in more than one department, separate omnibus chi-square tests were used to determine relationships between implicit theories of intelligence and perceptions of academic change by department, with levels “in the department” and “not in the department.” However, low numbers of respondents per category would not allow valid analyses. Hence, tests for significant relationship between the respondents’ academic department, their implicit theories of intelligence, and their perceptions of academic changes in curriculum, instruction, and assessment were not performed.

When the data was analyzed by the demographic variable of gender, there were no significant relationships between implicit theories of intelligence and reported perceptions of academic changes in (a) curriculum ( $\chi^2=1.08$ ,  $df=2$ , ns), (b) instruction ( $\chi^2=2.41$ ,  $df=2$ , ns), and (c) assessment ( $\chi^2=5.63$ ,  $df=2$ , ns) (see Appendix L for chi-square test results in Table L3 for the relationship between gender and implicit theories, and Table L6 for the relationship between gender and perceptions of academic changes).

#### *Summary of Research Question 3 Results Related to Implicit Theories of Intelligence*

With regards to Research Question 3, analysis of the results of this study found that there was no correlation between respondents’ implicit theories of intelligence and their reported perceptions of academic changes in (a) curriculum, (b) instruction, and (c) assessment. Moreover, there was no correlation among these variables with regards to the demographic variables of years of teaching experience and gender. Testing for significant relationships between the respondents’ academic department and their implicit

theories in intelligence, instruction, and assessment were not performed because low numbers of responses per chi-square category did not allow valid analyses.

### *Implicit Theories of the World*

Analysis of the statistical data regarding Research Question 3 suggested that there were significant relationships between the respondents' implicit theories of the world and their reported perceptions of academic changes in curriculum and assessment. These findings are presented in Table 39, which suggest that respondents with incremental theories (dynamic worldviews) of the world were more likely to hold favorable perceptions of academic changes in curriculum and assessment compared to those with entity theories (static worldviews). Respondents with an entity theory of the world were more likely to be neither favorable nor unfavorable toward academic change in assessment. No significant relationship was found between implicit theories in the world domain and perceptions of academic change in instruction.

When the data was analyzed by the demographic variable of years of teaching experience, there was a significant relationship between implicit theories of the world and perceptions of academic changes in curriculum ( $\chi^2=12.31$ ,  $df=2$ ,  $p<0.01$ ) and assessment ( $\chi^2=15.21$ ,  $df=2$ ,  $p<0.001$ ). As reported above, no significant relationship was found between years of teaching experience and perceptions of academic change in curriculum, instruction, or assessment. However, a significant relationship was found between years teaching experience and implicit theories of the world ( $\chi^2=10.78$ ,  $df=2$ ,  $p < 0.01$ ). Regardless of the number of years of teaching experience, respondents were more likely to hold an incremental theory (dynamic worldview) than an entity theory (static worldview) of the world. Yet, a relatively greater number of respondents with 1 to 10

years of teaching experience held an incremental theory of the world compared to those with 11 to 20 and 20 or more years teaching (see Appendix L for Table L1 for calculations regarding the relationship between years of teaching experience and implicit theories, and Table L4 for calculations regarding the relationship between years of teaching experience and perceptions of academic changes).

Table 39

*The Relationships Between Implicit Theories in the Domain of the World and Respondents' Perceptions of Academic Changes in Curriculum, Instruction, and Assessment with Their Corresponding Chi-Square Scores*

Area of Change	Perception of Change	Implicit Theory		Test Statistic <sup>b</sup>	
		Entity <sup>a</sup>	Incremental <sup>a</sup>	$\chi^2$	df
Curriculum	Favorable	58 (55.24%)	192 (72.18%)	14.82	2, $p < 0.001$
	Neither Favorable nor Unfavorable	17 (16.19%)	41 (15.41%)		
	Unfavorable	30 (28.57%)	33 (12.41%)		
	<i>Total (N=371)</i>	105 (100.0%)	266 (100.0%)		
Instruction	Favorable	89 (83.96%)	237 (89.43%)	2.13	df=2, ns
	Neither Favorable nor Unfavorable	9 (8.49%)	15 (5.66%)		
	Unfavorable	8 (7.55%)	13 (4.91%)		
	<i>Total (N=371)</i>	106 (100.0%)	265 (100.0%)		
Assessment	Favorable	79 (73.83%)	232 (88.21%)	15.47	2, $p < 0.001$
	Neither Favorable nor Unfavorable	19 (17.76%)	14 (5.32%)		
	Unfavorable	9 (8.41%)	17 (6.46%)		
	<i>Total (N=370)</i>	107 (100.0%)	263 (100.00%)		

Note. <sup>a</sup> n (%)

<sup>b</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.0167 was used for statistical tests.

With respect to the demographic variable of academic department, as noted above, low numbers of respondents per category did not allow valid analyses with

omnibus chi-square tests. Hence, tests for significant relationship among the respondents' academic department, their implicit theories of the world, and their perceptions of academic changes in curriculum, instruction, and assessment were not performed.

When the data were analyzed by the demographic variable of gender, no relationship between implicit theories of the world and reported perceptions of academic changes in instruction ( $\chi^2=0.81$ ,  $df=2$ , ns) was found. However, there were significant relationships between implicit theories of the world and perceptions of academic changes in curriculum ( $\chi^2=11.27$ ,  $df=2$ ,  $p<0.01$ ), and assessment ( $\chi^2=13.39$ ,  $df=2$ ,  $p<0.01$ ). As explained above, a significant relationship was found between gender and implicit theory in the world domain ( $\chi^2=10.94$ ,  $df=2$ ,  $p<0.001$ ). Even though both females and males were more likely to hold incremental theories (dynamic worldviews) of the world, comparatively more males than females held entity theories (static worldviews).

There were also significant relationships between implicit theories of the world and perceptions of academic changes in curriculum ( $\chi^2=11.38$ ,  $df=2$ ,  $p<0.01$ ) and assessment ( $\chi^2=11.15$ ,  $df=2$ ,  $p<0.001$ ) among males but not among females (see Tables L7 and L8 in Appendix L for chi-square test results). Although males with either entity or incremental theories of the world were more likely to have favorable perceptions of academic changes in curriculum and assessment, males with incremental theories (dynamic worldviews) were comparatively more likely than those with entity theories (static worldviews) to favor changes in curriculum and assessment. Males with entity theories of the world were more likely than those with incremental theories to have

neutral (neither favorable nor unfavorable) perceptions of academic changes in assessment (see Table L7 in Appendix L for calculations).

#### *Summary of Research Question 3 Results Related to Implicit Theories of the World*

Analysis of the results of this study found that there was a significant relationship between respondents' implicit theories of the world and their reported perceptions of academic changes in curriculum and assessment. Respondents with incremental theories (dynamic worldviews) of the world were more likely to hold favorable perceptions of academic changes in curriculum and assessment compared to those with entity theories (static worldviews) of the world. Analysis also found a significant correlation between implicit theories of the world and perceptions of academic changes in curriculum and assessment among respondents with 1-10 years of teaching experience. Likewise, there was a correlation between implicit theories of the world and perceptions of academic changes in curriculum and assessment among male respondents. There was no significant relationship between respondents' implicit theory of the world and their reported perceptions of academic changes in instruction.

#### *Implicit Theories of Morality*

Analysis of the statistical data regarding Research Question 3 suggested that there were no significant relationships between implicit theories of morality and the respondents' reported perceptions of academic change in (a) curriculum, (b) instruction, and (c) assessment. Table 40 presents the data for all of the variables examined. When analyzed by the demographic variable of years of teaching experience, no significant relationship between implicit theories of morality and (a) curriculum ( $\chi^2=5.75$ ,

$df=2$ , ns), (b) instruction ( $\chi^2=5.56$ ,  $df=2$ , ns), and (c) assessment ( $\chi^2=3.12$ ,  $df=2$ , ns) were found (see Appendix L for Table L1 for chi-square-test results for the relationship between years of experience and implicit theories, and Table L4 for chi-square test results for the relationship between years of experience and perceptions of academic changes).

Table 40

*The Relationships Between Implicit Theories of the World and Respondents' Perceptions of Academic Changes in Curriculum, Instruction, and Assessment with Their Corresponding Chi-Square Scores*

Area of Change	Perception of Change	Theory		Test Statistic <sup>b</sup>	
		Entity <sup>a</sup>	Incremental <sup>a</sup>	$\chi^2$	$df$
Curriculum	Favorable	26 (57.78%)	226 (68.48%)		
	Neither Favorable nor Unfavorable	6 (13.33%)	53 (16.06%)		
	Unfavorable	13 (28.89%)	51 (15.45%)		
	<i>Total (N=375)</i>	45 (100.0%)	330 (100.0%)	5.05	2, ns
Instruction	Favorable	36 (80.00%)	295 (89.12%)		
	Neither Favorable nor Unfavorable	4 (8.89%)	20 (6.04%)		
	Unfavorable	5 (11.11%)	16 (4.83%)		
	<i>Total (N=376)</i>	45 (100.0%)	331 (100.0%)	3.67	2, ns
Assessment	Favorable	34 (77.27%)	281(84.89%)		
	Neither Favorable nor Unfavorable	4 (9.09%)	30 (9.06%)		
	Unfavorable	6 (13.64%)	20 (6.04%)		
	<i>Total (N=375)</i>	44 (100.0%)	331 (100.0%)	3.50	2, ns

Note. <sup>a</sup> n (%)

<sup>b</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.0167 was used for statistical tests.

With respect to the demographic variable of academic department, as noted above, low numbers of respondents per category would not allow valid analyses with omnibus chi-square tests. Hence, tests for significant relationship between the respondents' academic department, their implicit theories of morality, and their perceptions of academic changes in curriculum, instruction, and assessment were not performed.

When analyzed by gender, no significant relationships were found between implicit theories of morality and reported perceptions of academic changes in (a) curriculum ( $\chi^2=4.02$ ,  $df=2$ , ns), (b) instruction ( $\chi^2=5.48$ ,  $df=2$ , ns), and (c) assessment ( $\chi^2=2.59$ ,  $df=2$ , ns) (see Appendix L for Table L3 for chi-square test results regarding the relationship between gender and implicit theories, and Table L6 in Appendix L for chi-square test results regarding the relationship between gender and perceptions of academic changes).

*Summary of Research Question 3 Results Related to Implicit Theories of Morality*

Analysis of the results of this study found that there was no correlation between respondents' implicit theories of morality and their reported perceptions of academic changes in (a) curriculum, (b) instruction, and (c) assessment. Moreover, there was no correlation among these variables with regards to the demographic variables of years of teaching experience and gender. Testing for significant relationships based on the demographic category of academic departments between implicit theories in morality and perceptions of academic changes in curriculum, instruction, and assessment were not performed because low numbers of responses per chi-square category did not allow valid analyses.

*Summary of Findings for Research Question 3*

Analysis of the results of this study regarding Research Question 3 found that there were no significant relationships between respondents' implicit theories of intelligence and their reported perceptions of academic changes in (a) curriculum, (b) instruction, and (c) assessment. Likewise, there were no significant relationships found between respondents' implicit theories of morality and their reported perceptions of academic changes in (a) curriculum, (b) instruction, and (c) assessment. However, a significant relationship was found between respondents' implicit theories of the world and their reported perceptions of academic changes in curriculum and assessment. Respondents with incremental theories (dynamic worldviews) of the world were more likely to hold favorable perceptions of academic changes in curriculum and assessment compared to those with entity theories (static worldviews) of the world. Analysis of the data by the demographic variables of years of teaching experience and gender found a similar correlation between implicit theories of the world and perceptions of academic changes in curriculum and assessment for respondents with 1-10 years of teaching experience and male respondents.

## CHAPTER V

### CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

#### Summary of the Study

The educational climate in the first quarter of the 21<sup>st</sup> century is characterized by rapid and dramatic disruption, disorder, shifts in social and political power structures, and new forms of labor and technology (Congregation for Catholic Education [CCE], 2014; Francis, 2014; Friedman, 2015; Fullan & Langworthy, 2014; Jacobs, 2010). A critical concern, therefore, is whether schools, and thus teachers, are preparing students with the necessary skills of critical thinking, communication, creativity, collaboration, self-reflection, empathy, and cultural understanding to be able to serve, manage, lead, and thrive in a constantly changing world (CCE, 2014; Francis, 2014; Jacobs, 2010; Swallow, 2015; Trilling & Fadel, 2009; Turkle, 2011, 2012, 2015a, 2015b; Zukowski, 1997).

Although all schools, if they are to be effective, must address the aforementioned challenge, Catholic schools and their teachers have a particular call to help students to engage with the changes of the world and to contribute toward its transformation (CCE, 1988, 1997, 2014; Francis, 2014; National Conference of Catholic Bishops [NCCB], 1973; Sacred Congregation for Catholic Education [SCCE], 1982; Second Vatican Council, 1965a, 1965b). Furthermore, the survival and success of Catholic schools may depend on their ability to adapt to and innovate in a changing cultural, economic, and academic landscape, particularly in curriculum, instruction, and assessment, in order to prepare students better (Alliance for Catholic Education [ACE], 2009, 2013; Heft, 2011; Kennedy, 2012; O’Keefe & Goldschmidt, 2014; Swallow, 2015; Zukowski, 1997).

Therefore, the CCE (2014) called for schools to enact fundamental shifts in curriculum and instruction away from simply the distillation of knowledge toward the development of students' skills for knowledge acquisition, reflection, global and intercultural citizenship, critical thinking, and taking action in well-formed values.

In Catholic schools, teachers have the chief responsibility to carry out the Church's mission and ministry of education (Benedict XVI, 2008; CCE, 1988, 1997, 2014; Francis, 2013b, 2014; NCCB, 1973; Pius XI, 1929; SCCE, 1982; Second Vatican Council, 1965a). Therefore, several ecclesial writings (CCE, 1997, 2014; Francis, 2014; NCCB, 1973; SCCE, 1982; Second Vatican Council, 1965a) emphasized the necessity for teachers to renew and adapt their practices based on sound pedagogical research. Similarly, teachers in Lasallian schools, Catholic schools that are owned and operated by the Brothers of the Christian Schools, are called to continually renew and adapt their practices in order to best serve students within the practical circumstances of their lives so that in turn, students will be able to make a living in their contemporary society and work for a more just world (Capelle, 2003; Fox, 2012; Brothers of the Christian Schools, 1997, 2008, 2015; Rummery, 2011).

Several theories exist as to why change is problematic in schools, and why teachers in particular often have a difficult time employing the many changes they are asked to implement. Some of the theories related to the changes themselves which are so fundamental and massive that they require teachers, staff, and administrators to learn in new ways by changing their attitudes, values, and behaviors about teaching and learning (Capelle, 2003; Fullan & Langworthy, 2014; Heifetz & Linsky, 2002; Jacobs, 2010; Wagner, et al., 2006; Zukowski, 1997). Others (Bridges 1986, 2004; Evans, 1996;

Fullan, 2001; Hargreaves & Fullan, 2012; Schneider, 2014; Senge, et al., 2000; Sergiovanni, 2009) examined the dynamics within and among the schools' organizational systems, leaders, and teachers. Evans' and Bridges' writings especially highlighted the importance of leaders needing to attend to individuals' interior experience of change. They contended that in the midst of change, some individuals hold a more rigid response to the loss involved in the change, while others are more adaptable.

The problem this study focused on was another aspect of implementing academic changes in schools: the fundamental beliefs and perceptions of teachers who are called to be agents of academic change in Lasallian schools. These beliefs and perceptions were examined through the psychological framework of implicit theories (Dweck, 2000, 2006; Kelly, 1955). In Catholic education, specifically Lasallian education, teachers bear much of the responsibility for academic changes in service to the students entrusted to their care. In this study, Dweck's (2000, 2006) theory of implicit theories provided a means to examine Lasallian teachers' beliefs and perceptions related to academic change.

Therefore, the theoretical rationale for this study was derived from Dweck (2000) and her colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988) who posited that people's overarching implicit theories about intelligence, the world, and morality directly impact their goals and their achievement patterns. Dweck (2000) contended that people hold either an *entity theory* in which they conceive of intelligence, the world, and morality as fixed entities, or an *incremental theory* in which they conceive of intelligence, the world, and morality as malleable. As Dweck (2000) explained, implicit theories are people's beliefs about themselves that "create different psychological worlds, leading them to think, feel, and act differently in

identical situations” (p. xi). In other words, implicit theories consist of basic, core assumptions in individuals’ belief or meaning systems that strongly influence their goals, achievements, and relationship patterns. Table 2 summarizes how implicit theories relate to social cognitive and attribution processes of individuals with entity theories and incremental theories in terms of: (a) their goals (whether they seek to prove competence or increase ability), (b) their reactions to setbacks (whether they interpret failure as proof of their incompetence or as an opportunity to learn), (c) their subsequent behavior (whether to shut down or seek to increase effort), and (d) their reactions to change (whether to refrain from change or to seek out and embrace change).

#### *Literature Review*

A review of the literature revealed that adaptability, creativity, and responsiveness to the practical needs of students are hallmarks of Lasallian education (Capelle, 2003; Fox, 2012; Brothers of the Christian Schools, 1997, 2008, 2015; Rummery, 2011; Van Grieken, 1999). Lasallian teachers, both Brothers and lay partners, have a sacred and dignified calling to “provide a human and Christian education to the young, especially the poor, according to the ministry which the Church has entrusted to it” (Brothers of the Christian Schools, 2008, 2015, ¶ 3). Since the founding of Lasallian schools in 17<sup>th</sup> century France, the Brothers of the Christian Schools and their partners have adapted techniques in curriculum, instruction, and assessment and implemented educational innovations in order to respond to the constantly changing needs of students in their respective societies (Brothers of the Christian Schools, 2008; Capelle; De La Salle 1720/1996; Kileen, 2013; Lauraire, 2004, 2013; Mann, 1996; Muñoz, 2013; Rummery; Van Grieken). The review of literature on the Lasallian tradition and practice of

education demonstrated that to be a Lasallian educator, one must be flexible, adaptable, and open to change as a result of responding to both a calling from God and to the practical needs of the students they serve (Muñoz; Rummery; Van Grieken).

The review of literature also revealed that empirical research regarding the implicit theories of teachers is focused predominantly on the influence teachers' implicit theories have on their instructional strategies and interactions with students (Altendorf, 2012; Bernardo, 2012; Epler, 2011; Garcia-Cepero & McCoach, 2009; Gutshall, 2013; Klein, 1996; Rattan, Good, & Dweck, 2012; Shim, Cho, & Cassady, 2013; Sweeny, 2013; Vander Ploeg, 2012). Three studies (Gero, 2013; Morrison, 2013; Poliquin, 2010) established implications of the implicit theories of teachers related to professional development and growth. This study sought to contribute to the body of research on the implicit theories of teachers.

The literature review also demonstrated that academic excellence through the implementation of rigorous and current academic standards is a hallmark of Catholic education (Bryck, Lee & Holland, 1993; Code of Canon Law, 1983; CCE, 1988, 1997, 2014; Francis, 2014; NCCB, 1973; Ozar & Weitzel-O'Neill, 2012; SCCE, 1982; Shimabukuro, 2007; Second Vatican Council, 1965a). Among the academic changes in curriculum that Catholic schools were contending with at the time of this study was designing curriculum to be aligned with new standards, especially the Common Core of State Standards (CCSS) (Hurst, 2015; McDonald, 2013; Ozar & Weitzel-O'Neill, 2012; Shimabukuro, 2007). Catholic schools were also implementing new instructional strategies designed to individualize their approach and to lead students to stronger 21<sup>st</sup> century skills such as creativity, collaboration, communication, and critical thinking

(Lambert, 2014; LaMaster, 2012; Swallow, 2015). The minimal research on changing assessment and grading in Catholic schools toward practices that are mastery-based revealed that the changes constitute major adaptive challenges that potentially upend educators' beliefs and practices (Garcia, 2013; Imperial, 2011; Italiano & Hine, 2014; McDonald, 2011). This study contributed to the body of literature on changes in curriculum, instruction, and assessment in Catholic schools by investigating whether there is a relationship between the implicit theories of teachers in Lasallian schools and their perceptions about academic changes in curriculum, instruction, and assessment.

#### *Participants and Methodology*

This quantitative study used an online survey research method and was administered in January and February, 2016, through SurveyMonkey® to 671 teachers in 14 Lasallian secondary schools in the San Francisco New Orleans District since they had primary responsibility for implementing academic changes in curriculum, instruction, and assessment. Of this population, a sample of 384 teachers consented to freely participate in the survey and reported teaching one or more courses, which qualified them to participate in the study. Table 4 describes the names, locations, grade levels, enrollments, and faculty sizes of the participating schools. Of the 384 teachers, who consented and qualified to participate, 366 completed *every item* on the survey contributing to a survey response rate of 55%. However, the remaining participants completed *most* of the survey items, and in collaboration with the researcher's chair, it was decided that all survey responses would be tabulated and reported per survey item with its corresponding number of respondents noted. Hence the sample in this study ranged from 366 to 384 respondents.

The study's respondents were inclusive of female and male Lasallian secondary teachers of the San Francisco New Orleans District. They represented a broad range of years of teaching experience and all academic disciplines including religious studies, with 67% holding Master's degrees or higher. Ninety-five percent of the respondents were lay persons, two percent were Brothers of the Christian Schools, and three percent were vowed religious persons from other religious orders.

The researcher created an online survey instrument called *Teacher Beliefs and Perceptions about Academic Changes*; it consisted of 29 total items and included an introduction page and three sections (see Appendix B). Part I utilized the following measures published by Chiu, Dweck, Tong, and Fu (1997) and by Dweck (2000): (a) *Theories of Intelligence Scale—Self Form for Adults*, (b) *Implicit Theory of the World for Adults*, and (c) *Implicit Theories of Others' Morality (for Adults)*. Dweck granted permission for the researcher to use these scales (see Appendix H). Part 1 of the survey consisted of nine Likert-scale items, three for each measure. The items were scored on a 6-point Likert scale that provided participants with the following options: 1 = strongly agree, 2 = agree, 3 = mostly agree, 4 = mostly disagree, 5 = disagree, and 6 = strongly disagree. Chiu et al. designated 3.5 as the midpoint on a scale of 1 to 6. Respondents scoring lower than the midpoint (3.5, range from 1 to 6) were entity theorists in the respective domain, and respondents who scored higher than the midpoint were incremental theorists in the respective domain (Chiu et al.) (see Figure 1).

Part II utilized items developed by the researcher to measure the extent to which respondents had favorable perceptions about academic changes in curriculum, instruction and assessment. This section of the survey consisted of nine items, three for each

variable, based on information provided by Lasallian secondary principals in the SFNO District about academic changes occurring in their schools (see Appendix A). The items were scored on a 5-point Likert-scale that provided respondents with the following options: 1 = strongly favor, 2 = favor, 3 = neither favor nor oppose, 4 = oppose, 5 = strongly oppose. Respondents whose scores averaged lower than the midpoint (3) in each domain of curriculum, instruction, and assessment were designated as having favorable perceptions about implementing academic changes in the respective domain, and those scoring higher than the midpoint in each domain were designated as having unfavorable perceptions about implementing academic changes in the respective domain.

Part III consisted of eight demographic questions which asked respondents to identify: (a) teaching experience, (b) academic departments, (c) other roles in the school, (d) degrees and credentials, (e) high school background, (f) religious background, (g) lay or vowed religious status, and (h) gender. This section also included a demographics question developed by the researcher asking respondents to identify their knowledge about six characteristics of Lasallian education related to academic changes in curriculum, instruction, and assessment.

### *Research Questions*

This dissertation study addressed the following research questions:

- 1) To what extent do teachers in Lasallian secondary schools in the SFNO District have entity or incremental theories in the following domains:
  - a. Intelligence
  - b. The World
  - c. Morality

- 2) To what extent do teachers in Lasallian secondary schools in the SFNO District have favorable perceptions about implementing academic changes in the following areas:
  - a. Curriculum
  - b. Instruction
  - c. Assessment
  
- 3) Is there a correlation between the implicit theories of teachers in Lasallian secondary schools in the SFNO District and their perceptions about implementing academic changes in their schools?

The findings of these three research questions are summarized below and synthesized with findings from the review of literature.

*Research Question 1a: Implicit Theories of Intelligence*

Three hundred eighty respondents (N=380) answered Research Question 1a concerning implicit theories of intelligence. A majority or 79% of them (n=300) were found to hold incremental theories (growth mindsets) of intelligence. Likewise, the majority of respondents held incremental theories in the domain of intelligence when responses were analyzed by the demographic variables of (a) years of teaching experience, (b) academic department, and (c) gender. Teachers of World Languages/Languages Other Than English were found to have had a greater frequency of responses related to entity theories in the intelligence domain compared to teachers in other academic departments.

As the research of Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu,

Dweck, Lin, & Wan, 1999) demonstrated, the results of this study suggested that the majority of respondents conceived of intelligence as a malleable capacity that can be developed. The results suggested further that the respondents were motivated by learning goals rather than performance goals; in other words, they were motivated by a desire to learn and were likely to perceive setbacks as opportunities for learning and improvement, and new challenges as opportunities to grow and thrive.

Conversely, the study's data found that 21.05% or 80 respondents had entity theories (fixed mindsets) of intelligence. As Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999) concluded, for these individuals, intelligence is a fixed entity. Therefore, these respondents were more likely motivated by performance goals such as positive evaluations by administrators and by the desire to prove their competence while avoiding the negative judgment of others. Unlike the incremental theorists who tend to seek out and thrive on change, entity theorists tend to avoid and resist change.

The results of this study are similar to results of other studies (Chaucer, 2013; Garcia-Cepero & McCoach, 2009; Gero, 2013; Gutshall, 2013; Vander Ploeg, 2012) that used the Theories of Intelligence Scale (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000) to measure the implicit theories of teachers. In this present study, the mean cumulative intelligence scores ( $M=4.42$ ,  $SD= 1.13$ ) indicated incremental theories held by teachers on average, with scores above 3.5 on a six-point Likert scale signifying incremental theories. Similarly, in Garcia-Cepero and McCoach's study of public school K-12 teachers, respondents had a mean score of 4.35 ( $SD=1.16$ ); in Gero's study of public high

school teachers, respondents had a mean score of 4.44 with no standard deviation reported. Table 41 compares the percentage of respondents with incremental theories and entity theories in this study compared to those of Vander Ploeg's, Chaucer's, and Gutshall's studies of the implicit theories of teachers. It shows that this study, like the other aforementioned studies, found that the respondents predominantly held incremental theories of intelligence.

Table 41

*Comparison of Implicit Theory of Teachers Studies by Population and Percentage of Incremental Theories, Entity Theories, and Disqualified Responses*

Study	Population	% Incremental Theories	% Entity Theories	% Disqualified
Vander Ploeg (2012)	K-12 Online Teachers (N=298)	72%	20%	8%
Chaucer (2013)	Public Elementary School Principals (N=192)	81 - 86%	n/a	n/a
Gutshall (2013)	Pre-K-12 Public School Teachers (N=238)	62%	26%	12%
Harrison (2016)	Teachers in Secondary Lasallian Schools (N=366)	79%	21%	

*Note.* Vander Ploeg and Chaucer utilized an earlier scoring method suggested by Dweck & Henderson (1989) rather than the one utilized in this study (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000). This earlier method disqualified responses between 3.0 and 4.0. Chaucer reported percentages on survey items, but not on overall cumulative scores for intelligence.

Finally, neither Klein's (1996) study nor this study found a significant relationship between years of teaching experience and their implicit theories of intelligence. Although this study confirmed the results of prior studies of the implicit theories of teachers in the domain of intelligence, it is the first study to employ the

Theories of Intelligence Scale (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000) to study the beliefs of teachers in Catholic secondary schools, particularly Lasallian secondary schools.

*Research Question 1b: Implicit Theories of the World*

Three hundred seventy-seven respondents (N=377) answered Research Question 1b concerning implicit theories of the world. A majority or 71% of them (n=269) were found to hold incremental theories (dynamic worldviews) of the world. However, there were some significant differences in the findings relative to the demographic categories of years of teaching experience and gender. Although respondents with all levels of years of teaching experience were more likely to hold incremental theories, relatively more respondents with one to 10 years of teaching experience held incremental theories compared to those with 11 to 20 years, and 21 or more years of teaching experience. Another significant difference in the world domain findings was in the demographic category of gender. Although both female and male respondents held incremental theories of the world, females were relatively more likely than males to have incremental theories of the world.

In light of the research on implicit theories of the world (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988), these findings suggested that overall, the teachers who responded to the world domain items tend to see reality as evolving and to seek to understand how the world changes. Specifically, they may be more interested in understanding processes and how things work than anticipating particular outcomes (Dweck, Chiu, and Hong). Furthermore, according to Dweck, Chiu, and Hong, individuals with incremental theories are less

likely to feel helpless in face of uncertainty of change and more likely to exhibit mastery-oriented responses to uncertainty and adversity.

However, 29% or 108 respondents held entity theories (static worldviews) in the domain of the world. As Dweck and Leggett (1988) concluded, entity theorists in the world domain hold back “the initiation and pursuit of change, even when an external attribute is judged negatively and improvement is seen as desirable” (p. 267). Because they believe fundamentally that the world does not change and that the nature of the world and the people in it are fixed, entity theorists in the world domain tend toward judging others and stigmatizing themselves (Dweck, Chiu, & Hong, 1995; Dweck & Leggett). They also tend to quantify and classify attributes of people, groups, and systems.

*Research Question 1c: Implicit Theories of Morality*

Three hundred eighty two respondents (N=382) answered Research Question 1c concerning implicit theories of morality. A majority or 88 % of them (n=337) were found to hold incremental (rights-based) theories of morality. This finding was also true for the majority of respondents across the three demographic categories of (a) years of teaching experience, (b) academic department, and (c) gender. Compared to the findings regarding implicit theories of intelligence and the world, the mean scores and frequencies for the morality domain were the highest, making the morality domain the strongest indicator of incremental theories in the study.

The aforementioned findings suggested that in general, the respondents believed in a malleable and evolving social-moral order in which the defining issue is whether existing systems, rules, and social arrangements support and protect people’s rights, a

result that affirms the work of Chiu, Dweck, Tong, & Fu, 1997. Incremental theorists in the morality domain tend to take moral action based on principles rather than rules, and they tend to believe that if someone's rights are infringed upon they should work for social change to protect those rights. They also tend to respond to violations of others rights through education and remediation, rather than through punishment (Chiu, Dweck, Tong, & Fu).

A review of literature related to the rights-based morality (Chiu, Dweck, Tong, & Fu, 1997; Dworkin, 1977) held by the majority of respondents in this study suggested an alignment with Church writings on Catholic education (CCE, 2014; Francis, 2013a, 2013b, 2014; NCCB, 1973; SCCE, 1982; Second Vatican Council, 1964, 1965a, 1965b; Vatican Radio, 2015) that called for teachers to help their students deepen their values, engage with the realities of the world, and take action to support human dignity, human rights, and social justice. The review of literature and the aforementioned findings in the domain of morality also demonstrated alignment with Lasallian writings (Brothers of the Christian Schools, 1996, 1997, 2003, 2008, 2015; Capelle, 2003; Christian Brothers Conference, 2011; De La Salle, 1720/1996, 1730/1994, 1731/1994; Fox, 2012; Killeen, 2013; Lauraire, 2004, 2013; Mann, 1996, 2006; Mueller, 2008; Muñoz, 2013; Rummery, 2011; Van Grieken, 1999) that place a primacy on teachers' calling to adapt their practices in response to the needs of students, especially those from backgrounds of economic poverty and other vulnerabilities so that they may grow in faith and their capacities to earn livings as adults.

Conversely, the findings relative to Research Question 1c suggested that 12% or 45 respondents with entity theories in the domain of morality believed in a stable or fixed

social moral order in which a priority is placed on conforming to established rules and accepted social norms (Chiu, Dweck, Tong, & Fu, 1997). As entity theorists in the morality domain, they may have tended to prioritize maintaining and fulfilling prescribed sets of duties and to expect that others do so as well. They may also have tended to believe that those who challenge the status quo should be sanctioned or punished (Chiu, Dweck, Tong, & Fu). In other words, if a prescribed change in a school setting violated entity theorists' understanding of the established rules or accepted norms of operation, not only could it violate their sense of security (Dweck, Chiu, Hong, 1995; Dweck & Leggett, 1988) it could also lead to a desire for sanctions against those who carry out the change. The review of the literature related to duty-based morality (Chiu, Dweck, Tong, & Fu, 1997; Dworkin, 1977) suggested alignment with some Church writings on Catholic education (Benedict XVI, 2008; CCE, 1988, 1997; Congregation for the Clergy, 1997) that emphasized teachers' calling to faithfully hand down the teachings of the Church so that students may assent to them.

*Research Question 2a: Perceptions of Academic Changes in Curriculum*

Three hundred seventy-seven (N=377) answered Research Question 2a concerning their perceptions of academic changes in curriculum. A majority or 67% of them (n=254) reported favoring academic curricular changes. No significant differences in the curriculum findings were observed with regards to the demographic categories of years of experience, academic department, and gender. However, respondents *neither favored nor opposed* the academic change expressed in item #13, which stated, "To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area mandated by the administration or an outside governing authority?"

In general, respondents favored developing new courses in their subjects if the courses were proposed by members of their departments; they also somewhat favored, aligning curriculum to new sets of academic standards (e.g., Common Core of State Standards [CCSS], Next Generation of Science Standards [NGSS], National Core Arts Standards, National Standards for Foreign Language Education, the USCCB *Doctrinal Elements of a Curriculum Framework*). However, if a new course were to be mandated by the administration or an outside governing authority, the responses were less favorable.

Even though the National Catholic Educational Association (NCEA) endorsed the kinds of skills and understandings called for by the CCSS (McDonald, 2013; NCEA, 2013; Robelen, 2012), the respondents in this study were not strongly favorable toward implementing those and other standards, especially if implementation resulted in new courses mandated by outside authorities. Likewise, even though curriculum alignment with authoritative state and national standards through a backward design approach has long been espoused as a best practice in Catholic schools (Ozar, 1994; Ozar & Weitzel-O'Neill, 2012; Shimabukuro, 2007; Wiggins, 1993), the findings of this study suggested that the respondents did not strongly favor the practice. Furthermore, the finding that teachers neither favored nor opposed developing new courses mandated by an outside entity also aligned with Fullan's (2001) and Sergiovanni's (2009) assertions that authoritarian approaches to implementing educational change may not result in internal commitment among those called to carry out the change.

*Research Question 2b: Perceptions of Academic Changes in Instruction*

Three hundred seventy-eight respondents (N=378) answered Research Question 2b concerning their perceptions of academic changes in instruction. A majority (88%) of the respondents (n=333) reported favoring academic instructional changes. Among the three areas of perceptions of academic changes in curriculum, instruction, and assessment, respondents were most favorable toward changes in the area of instruction. Significant differences were found in the instruction findings with respect to gender; female respondents were found to be more favorable to academic changes in instruction than male respondents. Among the three instruction items, respondents were the least favorable toward the idea of receiving feedback about instruction through new evaluation methods aligned with national research-based definitions of good teaching. They were most favorable to the idea of customizing learning activities to address students' individual learning needs.

Respondents' favorable perceptions of academic changes in instruction, particularly customizing learning activities to address students' individual learning needs, suggested an affinity with the call in Lasallian writings (Brothers of the Christian Schools 1997, 2008, 2015; Capelle, 2003; De La Salle 1720/1996, 1730/1994; 1731/1994; Everett, 1996; Fox, 2012; Lauraire, 2004, 2013; Muñoz, 2013; Rummery, 2011; Salm, 1996; Van Grieken, 1999) for teachers to adapt their methodologies to respond to and meet the needs of students, as well as the call to care individually about each student

At the same time, respondents held less favorable perceptions of the idea of receiving feedback about instruction through a new evaluation method that is aligned with national, research-based definitions of good teaching. This finding related to the

literature review in two ways. First, favorable perceptions of evaluations and receiving feedback are indicators of incremental theories in the domain of intelligence while unfavorable perceptions of evaluations and receiving feedback are associated with entity theories in the domain of intelligence (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988). Secondly, ensuring the quality of instruction and concurrent professional growth of teachers have been fundamental commitments of Lasallian schools since their founding in 17<sup>th</sup> century France (Brothers of the Christian Schools, 2008, 2015; De La Salle, 1720/1996; Lauraire, 2004; Mann, 1996; Mueller, 2006; Salm, 1996).

*Research Question 2c: Perceptions of Academic Changes in Assessment*

Three hundred seventy-seven respondents (N=377) answered Research Question 2c concerning their perceptions of academic changes in assessment. A majority (84%) of the respondents (n=317) reported favoring academic instructional changes. Although there were no significant differences in the findings with respect to the demographic categories of years of teaching experience and academic department, with regards to gender, female respondents were significantly more favorable to academic changes in assessment than male respondents.

Among ideas related to academic changes in assessment, respondents comparatively strongly favored the idea of providing students multiple and varied types of formative and summative assessments. Swallow (2015) found that even when the Catholic middle school teachers in her study's sample differentiated instructional practices, such as customized learning experiences based on student needs, they maintained use of traditionally formatted assessments. Conversely, this study of

Lasallian secondary teachers found that the respondents held favorable perceptions of both differentiated instructional and assessment practices.

Although respondents held somewhat favorable perceptions of the idea of implementing new schoolwide standards-based grading practices, the responses were less favorable compared to all other items related to academic changes in the areas of instruction and assessment. However, *The Conduct of the Christian Schools* (De La Salle 1720/1996), the original handbook for Lasallian schools that is still a foundational guide for Lasallian educators, proscribed a form of criterion-based assessment and grading. In a similar light, Imperial (2012) asserted that shifts to standards-based or criterion-based assessment and grading requires major re-thinking and re-shaping of teacher beliefs and practices and that those changes are critically important to make in order for Catholic schools to fulfill their mission. Likewise, Italiano and Hine (2014) found that teacher openness to using assessments as indicators of student mastery of learning criteria was vital to improving student learning in Catholic schools. This study's findings revealed that although the respondents were mostly favorable to shifting to standards-based assessment and grading practices, there was still ambivalence about these practices among many respondents.

### *Research Question 3*

This study found no significant relationship between respondents' implicit theories in the domains of intelligence and morality and their perceptions of academic changes in curriculum, instruction, and assessment. However, in this study, there were significant relationships between respondents' implicit theories of the world and their perceptions of academic changes in curriculum and assessment. Respondents who held

incremental theories of the world were more likely to hold favorable perceptions of academic changes in curriculum and assessment compared to those with entity theories of the world. Those with entity theories of the world were more likely to be neither favorable nor unfavorable toward academic changes in assessment. In particular, males who held incremental theories in the world domain were more likely than those holding entity theories to be favorable toward changes in curriculum and assessment. Males with entity theories in the world domain were more likely to have neutral (neither favorable nor unfavorable) perceptions of academic changes in assessment. Analysis also found a correlation between implicit theories of the world and perceptions of academic changes in curriculum and assessment among respondents with one to 10 years of teaching experience, whereby respondents with one to 10 years of teaching experience were more likely to hold incremental theories of the world than teachers with 11-20 and over 25 years of teaching experience.

Whereas other studies (Altendorff, 2012; Bartee, 2011; Bernardo, 2012; Chaucer, 2013; Garcia-Cepero & McCoach, 2009; Gero, 2013; Gutshall, 2013; Klein, 1996; Morrison, 2013; Poliquin, 2010; Rattan, Good, & Dweck, 2012; Shim, Cho, & Cassady, 2013; Vander Ploeg, 2012; Williams, 2013) focused on teachers' implicit theories in the domain of intelligence, this study also focused on teachers' implicit theories in the world and morality domains. It found that among respondents, implicit theories of the world had the widest variation of responses in the three domains and that the world domain was related to perceptions of academic changes in curriculum and assessment. In other words, this study found that respondents' core ontological assumptions about (a) whether reality is static or evolving, and (b) whether reality can be known by quantifying its fixed

nature or through analysis of its evolution (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988) were more closely related to their perceptions of academic changes than the intelligence and morality domains.

### *Additional Findings*

This study also found that respondents (N=380), generally, self-identified as being somewhat knowledgeable to very knowledgeable about characteristics of Lasallian education related to the problem this study addresses. Table 13 lists the mean scores for knowledge about each of the following six characteristics of Lasallian education based on the literature review: (a) responsiveness to the practical needs of students (Capelle, 2003; Fox, 2012; Killeen, 2013; Lauraire, 2004, 2013; Rummery, 2011; Van Grieken, 1999 ); (b) creativity (Rummery; Van Grieken); (c) integration of human and Christian education (Brothers of the Christian Schools, 1997, 2008, 2015; Lauraire, 2013; Muñoz, 2013); (d) continual growth and learning of teachers (Brothers of the Christian Schools, 1997, 2008, 2015; Mann, 2006; Mueller, 2006, 2008); (e) evaluation and revision of educational programs (Brothers of the Christian Schools, 2008); and (f) teaching and education adapted to the needs of time and place (Brothers of the Christian Schools, 1997, 2008, 2015; Killeen; Rummery; Van Grieken).

## Conclusions and Implications

### *Demographics*

An important demographic finding in this study was that while 95% of the respondents were lay teachers, three percent were members of a religious order other than the Brothers of the Christian Schools, and two percent were Brothers of the Christian

Schools, all three groups reported being somewhat knowledgeable to very knowledgeable of six characteristics of Lasallian education related to curriculum, instruction, and assessment: (a) responsiveness to student needs, (b) creativity, (c) integration of human and Christian education, (d) continual growth and learning of teachers, (e) evaluation and revision of programs, and (f) teaching adapted to the needs of the time and place (see Table 13). This finding has several implications.

First, this result implies that the formation in the Lasallian heritage and pedagogy among “partners,” that is, the laity and members of other religious orders who work in Lasallian schools, that the Brothers of the Christian Schools (1967, 1997, 2008, 2015) have called for, is taking root in the SFNO District. It also points to a developing understanding of the Lasallian heritage, which can serve as a foundation from which Lasallian schools can implement major academic changes in curriculum, instruction, and assessment in creative response to the practical needs of their students.

Secondly, it also points to the necessity of continually fostering and renewing among teachers in Lasallian secondary schools the understanding that adaptability, flexibility, and change in order to meet the practical needs of students are distinctly Lasallian characteristics (Capelle, 2003; Fox, 2012; Brothers of the Christian Schools 2008, 2015; Rummery, 2011; Van Grieken, 1999). For American Lasallian educators in particular, it may be instructive to examine the history of the “Latin Question” (Killeen, 2013), as a model of adapting vigorously held beliefs and practices in order to help students acquire skills necessary for earning a living and taking their place in society. Lasallian teachers could also be exposed continually to examples of innovation,

creativity, and adaptability of Lasallian schools and educators around the world (Capelle, Rummery, Van Grieken).

Likewise, this finding could point to the need for administrators, especially those responsible for teacher formation and professional development, to reiterate that an essential part of the vocation of Lasallian educators is to adapt, change, and grow. The work of Mueller (2006) supports this need, as he maintained that teachers in Lasallian schools, especially new teachers, are called by their vocation to continual growth and learning. He also called administrators, especially those who oversee teacher formation to be patient with teacher growth. Mueller wrote:

Not every new teacher, if any, is a finished product; most, if not all, are teachers in the making who will make mistakes and hopefully learn from those mistakes. The formator needs to be patient with the human process of growth, of learning from errors (sometimes the same error being made over and over again) with the different ways in which different people develop. (p. 5)

In a similar manner, and more broadly in Catholic education, the call to change and adapt extends to all teachers in Catholic schools (CCE, 2014; Francis, 2013a, 2013b, 2014; NCCB, 1973; SCCE, 1982; Second Vatican Council, 1964, 1965a, 1965b; Vatican Radio, 2015).

### *Research Question 1*

#### *Implicit Theories of Intelligence*

An important finding of this study was that most of the respondents (79% or 300 teachers) held incremental theories (growth mindsets) of intelligence. This finding suggests, according to Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999), that if faced with a change, these educators would likely be motivated by a

desire to learn and would likely perceive the risks of making mistakes or facing setbacks, as opportunities for growth and eventual mastery.

At the same time, 21% of the study's respondents (n=80) held entity theories (fixed mindsets) of intelligence. This finding suggests, according to Dweck and colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999), that if faced with a change, several respondents might be fearful of facing the negative judgment of others in the event that they make mistakes. They might also fear looking incompetent in front of peers and supervisors, and therefore avoid or resist the change.

One implication of this finding is that a large majority of respondents, those with incremental theories of intelligence, would likely favor academic change initiatives in their respective Lasallian schools in the SFNO District. Likewise, school administrators can trust that, assuming appropriate supports and professional development are in place to help teachers learn and master new skills, procedures, or systems, most of their teachers would be open to academic changes. However, as Morrison (2013) observed, teachers with incremental theories can be negatively influenced by colleagues who are reluctant to grow. Thus, Morrison recommended that teachers, especially pre-service or new teachers, be explicitly encouraged and taught how to implement innovative and creative academic practices.

Another implication is that a considerable minority of respondent teachers with entity theories of intelligence could be a potential roadblock to implementation of academic changes in their respective Lasallian schools in the SFNO District. As Dweck (2000) observed, entity theorists feel vulnerable, stressed, and anxious when they believe

that their limitations will be exposed or that they will fail at some endeavor. In order for such individuals to be more open to implementing academic changes, they need careful attention, support, and feedback from administrators. Moreover, Dweck, Chiu, and Hong (1995) found that by presenting fictitious readings containing compelling evidence for a particular change, they could influence individuals' implicit theories in the context of a specific issue or change. Thus, this research suggests that administrators leading academic changes could use illustrative examples of evidence showing the potential impact of the proposed change as a way to help teachers with entity theories of intelligence become more malleable in their beliefs about that change. Likewise, administrators could also directly acknowledge misconceptions and misapprehensions about a particular academic change and refute them with sound evidence. Poliquin (2010) recommended use of refutational texts with teachers with entity theories of intelligence, followed by structured discussions and teacher self-reflection to try to dislodge their fixed beliefs.

Another implication of the findings related to implicit theories of intelligence is the importance of administrators fostering a culture of trust among teachers so that (a) feedback is process-oriented and focused on continued improvement of teaching, and (b) feedback is regularly and collaboratively exchanged among colleagues. For Dweck (2000, 2006) process-oriented feedback entails praising effort and hard work in light of success and encouraging re-strategizing, problem-solving, and persistence in light of mistakes and setbacks. Hence, process-oriented feedback likely supports growth and eventual mastery of a new skill. Administrators seeking to implement academic change could practice process-oriented feedback as well as teach teachers how to give and

receive it collaboratively among themselves as a productive, healthy, and professional expectation in Lasallian schools. They can also state clearly with teachers that they expect and even encourage mistakes in implementing academic change as teachers learn new skills in the process. Furthermore, they can provide time, opportunities, training, and expectations for ongoing self-reflection and re-strategizing in implementing academic change.

As Gero (2013) recommended, administrative emphasis on continual improvement of teaching as well as teacher collaboration on curriculum, instruction, and assessment are imperative for both teacher professional growth and implementation of academic initiatives. Similarly, Altendorff (2010) observed that the fears of teachers who are entity theorists in the midst of new academic initiatives can be mitigated by having supportive and collaborative department members and ongoing professional development in the initiative. Therefore, administrators in Lasallian schools might advance academic changes more effectively, if they provide time, opportunities, training, and expectations for giving and receiving feedback among teachers whether in department groups, grade-level groups, or Professional Learning Communities® (DuFour & Eaker, 1998) as they collaborate on curriculum, instruction, and assessment.

Another implication is a caution from Sternberg (1985) who observed that changes in individuals' personal circumstances (e.g., serious illness, family emergencies, or financial hardships), as well as their past experiences with managing change can impede a person's ability to adapt to a new change. This observation serves as a reminder to administrators in Lasallian schools to pay attention to and to care for the whole person of each teacher while implementing academic changes. Fostering caring

relationships and forming community among teachers in a school is a hallmark of both Lasallian schools (Brothers of the Christian Schools, 1997, 2008, 2015; De La Salle, 1730/1994, 1731/1994; Kopra, 2012; Van Grieken, 1999) and Catholic schools (Bryk, Lee, & Holland, 1993; SCCE, 1982, NCCB, 1973; Second Vatican Council, 1965a;) so as to support one another in meeting the changing needs of students.

### *Implicit Theories of the World*

Other findings of this study were that a majority (71%) of respondents (n=269) held incremental theories (dynamic worldviews) of the world, that a sizeable minority (29% or 108 teachers) held entity theories (static worldviews) of the world, and that of the three domains measured in this study—(a) intelligence, (b) the world, and (c) morality—the most variation in responses occurred relative to the world domain. Based on the work of Dweck and her colleagues (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988) those in the study who were incremental theorists were likely to see the world as changing and to want to understand how the world evolves. In contrast, those who were found to be entity theorists were likely to see the world, as well as people, as fixed entities that can be quantified and measured.

The findings relative to implicit theories in the world domain have several implications. First, administrators can support teachers who are incremental theorists in the world domain in their desire to understand processes and to explore change. One way to do this would be to frame academic change initiatives in terms of essential questions such as those suggested by Wiggins and McTighe (2005, 2013). Essential questions are open-ended, lead to inquiry and research, require higher order thinking, and can be

revisited and revised over time. For example, essential questions for teachers undertaking academic changes, might be, “What do we want our students to know and understand, in light of our mission and the challenges they will face in college and the workforce? Are our students prepared for 21<sup>st</sup> century careers? How do effective Lasallian teachers implement rigorous expectations for student growth? Is technology a help or a hindrance in learning?” Likewise, a way to frame academic changes for teachers with incremental theories in the world domain may be to situate them in light of the major geopolitical, economic, technological, and labor shifts that students are facing in the first decades of the 21<sup>st</sup> century and are emphasized by the CCE (2014), Pope Francis (2014), Friedman (2015), Fullan & Langworthy (2014), and Jacobs, (2010).

Secondly, according to Dweck and Leggett (1988), a characteristic of incremental theorists in the world domain is their propensity to develop compassion and empathy for others because of their tendency to seek understanding of the dynamics of situations. Incremental theorist respondents who show compassion and empathy, exhibit traits that Catholic and Lasallian educators are called to develop in themselves and their students (Brothers of the Christian Schools, 1996, 2008, 2015; CCE, 1988, 1997, 2014; De La Salle, 1730/1994, 1731/1994; Francis, 2013b, 2014; Mueller, 2008; Rodrigue, 1994; SCCE, 1982; Second Vatican Council, 1965a; Van Grieken, 1999). Administrators in Lasallian schools can foster compassion and empathy among teachers by modeling the traits and by reminding teachers that these traits are constitutive of being educators in Catholic, Lasallian schools.

A third implication relates to teacher respondents with entity theories in the world domain. Individuals with entity theories of the world tend to see reality as fixed and are

interested in quantifying and measuring the world and the people in it. As Pepper (1942) noted, when a change disrupts the classifications previously established by individuals with fixed worldviews, they feel “discomfort and pain” (p. 179). Although administrators may not be able to completely soothe their anxieties about change, administrators in Lasallian schools might consider framing the change with well-researched, quantifiable, empirical evidence for the need for change, as a means to appeal to entity theorist teachers in the midst of academic changes. Likewise, administrators could set and communicate measurable benchmarks for progress and success.

Another implication for teachers with entity theories in the world domain is, as Heilbroner (1991) observed, that individuals with fixed worldviews value security very highly when faced with change. Therefore, they can anticipate and identify potential pitfalls and disasters better than those with malleable worldviews. An implication is that teachers with entity theories in the world domain can be an asset during academic change processes if administrators and other leaders invite them to identify potential drawbacks and obstacles.

Finally, the findings relative to the world domain imply another responsibility for administrators in working with entity theorists. As Dweck & Leggett (1988) and Dweck, Chiu, and Hong (1995) concluded, entity theorists in the world domain have tendencies toward judging others and stigmatizing themselves. If these traits result in a teacher stereotyping students or colleagues, limiting the growth of students or colleagues, or otherwise eroding the sense of a caring learning community toward which Lasallian and Catholic schools are called, administrators have a duty to respond appropriately and directly to the teacher.

The findings in the world domain also have implications for both incremental and entity theorists of the world. One of those implications is the importance of connecting current academic changes in Lasallian schools to what remains constant and unchanging, even in a new context: the mission and heritage of Lasallian and Catholic schools. For Lasallian and Catholic educators, innovation and change are means of fidelity to their mission (Capelle, 2003; Brothers of the Christian Schools, 2015; CCE, 2014; Francis, 2014; Rummery, 2011). For example, the NCCB (1973) called teachers in Catholic schools to be “faithful to the past and open to the future” (¶41), and Pope Francis called for the entire Church to remain fixed in faith in Christ while adapting attitudes to engage with the changing world (Vatican Radio, 2015). Likewise, Lasallian writers such as Van Grieken (1999), Capelle, Mueller (2006, 2008), Rummery, and Muñoz (2013) called for practical, creative, and adaptive responses to students’ changing needs as a means of being faithful to Christ and therefore, the Lasallian educational mission. Thus, for both incremental and entity theorist teachers in the world domain, Church teaching and the Lasallian heritage can be helpful sources of inspiration and reassurance of the mission and values that do not alter in the midst of academic changes.

In a similar light, several writers (Jacobs, 2010, Kelly, 1955, Sternberg, 1985, and Weiner, 1990) have commented on how the synthesis of insights from past experiences with present circumstances is a critical task when individuals face change. Kelly and Weiner observed that individuals’ personal constructs, based in past experience, can both facilitate and hinder their abilities to adapt. For Weiner, expectancies of the present and future are based on past experience and contribute to how individuals attribute their successes and failures in the present. Likewise, Sternberg contended that successful

change depends on individuals' ability to synthesize (a) past experience with (b) familiarity and unfamiliarity with a new situation, and (c) with the degree to which they are able to adapt to novelty. For Jacobs, this type of synthesis means that new academic initiatives that are part of a major paradigm shift "should begin with specific rethinking and examination of choices based on the tensions between critical points from our past practice and new challenges for the future" (p. 5).

Therefore, administrators leading academic changes contend with both the inspiration and burden of (a) the collective experience of the Church and Lasallian schools, and (b) teachers' individual past experiences, for both incremental and entity theorists in the world domain. Administrators might facilitate opportunities for teacher reflection about their past experiences with academic initiatives: what worked, what did not work, how students were impacted, how teachers felt, and how they responded to adversity in the past. They might also provide ongoing formation activities that require teachers to read, reflect, and discuss Catholic documents on education (CCE, 1988, 1997, 2014; CCE, 1988, 1997, 2014; Francis, 2014; NCCB, 1973; Pius XI, 1929; SCCE, 1982; Second Vatican Council, 1965a) and Lasallian readings (Capelle, 2003; Brothers of the Christian Schools, 2008, 2015; Killeen, 2013; Rummery, 2011; Van Grieken, 1999) that pertain especially to teachers' callings to adapt their methodologies to meet their students' changing needs.

#### *Implicit Theories of Morality*

A major finding of this study was that a large majority (88%, n=337) of responding Lasallian teachers held incremental theories of morality. This finding was the strongest indicator of incremental theories among the studied domains (intelligence, the

world, and morality). This finding implies that Lasallian teachers, as a whole, support fostering moral discernment and actions rooted in moral principles. They likely held a rights-based morality (Chiu, Dweck, Tong, & Fu, 1997; Dworkin, 1977) that is aligned with Church writings (CCE, 2014; Francis, 2013a, 2013b, 2014; NCCB, 1973; SCCE, 1982; Second Vatican Council, 1964, 1965a, 1965b; Vatican Radio, 2015) that call for Catholic schools and teachers to help their students deepen their values, engage with the realities of the world, and take action to support human dignity, human rights, and social justice. The reality that the Lasallian teachers who participated in this study held an incremental theory of morality suggested that they would have the tendency to respond flexibly to different moral situations.

At the same time, as teachers in Catholic schools, Lasallian teachers also have an obligation to bring students to a fuller understanding of the truth of the Gospel and to adherence to the teachings of the Church (Benedict XVI, 2008; CCE, 1988, 1997; Congregation for the Clergy, 1997), a notion that is more resonant with a duty-based morality, than a rights-based morality (Chiu, Dweck, Tong, & Fu, 1997; Dworkin, 1977). However, this duty-based moral disposition is not in concert with that of the CCE (2014), Pope Francis (2013a, 2013b, 2014; Vatican Radio, 2015), the NCCB (1973), the SCCE (1982), and the Second Vatican Council (1964, 1965a, 1965b). Therefore, disparate emphases exist within the Church's writings between rights-based and duty-based moralities, as well as a tension between (a) a priority for engaging with and transforming the contemporary world through the promotion of moral discernment and human rights and (b) a priority for ensuring assent with Church tradition. An implication is that this tension in Church writings may form a philosophical, moral, and even spiritual dilemma,

especially for Lasallian teachers who hold incremental theories of morality and who seek to implement academic changes in response to the needs of their students.

Administrators and teachers might directly acknowledge and wrestle with this tension by reading Catholic Church and Lasallian writings as part of their professional development and spiritual formation programs. They could reflect on and discuss the meaning of those writings for their vocation as Lasallian educators and their work in advancing academic changes in curriculum, instruction, and assessment.

### *Research Question 2*

#### *Academic Changes in Curriculum*

With regards to perceptions of academic changes in curriculum, two related findings emerged in this study. First, in general, respondents favored or mostly favored academic changes in curriculum. However, respondents neither favored nor opposed the idea of developing a new course mandated by the administration or an outside governing entity.

The implications are that there may be a tension between the mostly favorable to neutral perceptions of academic changes in curriculum held by the respondents and NCEA endorsement (McDonald, 2013; NCEA, 20103; Robelen, 2012) of the kinds of skills and understandings embedded in the Common Core of State Standards (CCSS), as well as the longstanding practice of backward design of curriculum in Catholic schools (Ozar, 1994; Ozar & Weitzell-O'Neill, 2012; Shimabukuro, 2004a, 2004b, 2004c, 2007; Wiggins, 1993; Wiggins & McTighe, 2005). Administrators and department chairs leading curriculum design might address any lukewarm sentiment about curriculum design and alignment directly and to explain why new academic standards are relevant

and how they will help students. They might ask teachers to analyze the skills and understandings embedded in the CCSS and standards in other disciplines such as the Next Generation Science Standards (NGSS), the World Readiness Standards for Learning Language, and the National Core Arts Standards, and to appropriate them to meet their students' needs. Moreover, they might also direct teachers to engage in curriculum design and alignment through a process such as Professional Learning Communities® (DuFour & Eaker, 1998) or Understanding by Design® (Wiggins & McTighe). Through these types of collaborative processes, administrators and department chairs can encourage teachers to select, analyze, and re-appropriate curricular standards to best meet the needs of the students in Catholic Lasallian schools; in this manner, teachers become the authorities and experts who design curriculum. Therefore, another implication of the findings in the area of academic changes in curriculum is the necessity for Lasallian administrators to provide time, structure, resources, and training to support teachers in implementing the changes.

#### *Academic Changes in Instruction*

This study found that the respondents in general favored academic changes in instruction. In particular, they favored the idea of customizing learning activities to address students' individual learning needs. The finding suggests an openness and desire to be flexible in response to student needs on the part of the teachers.

An implication of this finding is a need for administrators to encourage and foster the development, implementation, and integration of a variety of instructional strategies for the students, especially for those with different needs. They can also facilitate the exchange of instructional strategies among teachers through multiple means: (a) reading

groups, (b) peer observations and feedback, and (c) the sharing of best practices in faculty, department, and Professional Learning Community® meetings. During Lasallian formation experiences, they can continually expose teachers to the Lasallian heritage of implementing innovative and practical instructional strategies that respond to student needs.

Another finding related to academic changes in instruction was that respondents were less favorable to the idea of receiving feedback about their instruction through a new teacher evaluation tool. This finding might point to an area of dissonance for some respondents with the Lasallian tradition regarding teacher evaluation and supervision as a tool for growth and improvement of instruction (Mann, 2006; Mueller, 2006). The ability to receive feedback well and to learn from it is a characteristic of having an incremental theory of intelligence. Administrators and department chairs can provide training and practice to teachers in giving and receiving feedback that is process-oriented, growth-oriented, and constructive.

#### *Academic Changes in Assessment*

This study found that the respondents favored academic changes in assessment, especially the idea of providing students multiple and varied types of formative and summative assessments. This finding relates to the aforementioned findings about academic changes in instruction, in so far as the Lasallian teachers who responded to the survey favored flexible, responsive, and personal approaches to instruction and assessment.

As mentioned in regards to instruction, a similar implication for this finding about academic changes in assessment is that administrators and department chairs can

facilitate the exchange of assessment strategies among teachers through (a) reading groups, (b) peer observations and feedback, and (c) the sharing of best practices in faculty, department, and Professional Learning Community® meetings. They can make research about effective assessment a regular part of faculty professional development.

Another finding related to academic changes in assessment was that respondents held somewhat favorable perceptions of the idea of implementing new schoolwide standards-based grading practices focused on mastery. An implication is that some Lasallian teachers responding to this survey may hold beliefs about assessment that are contrary to the Lasallian tradition that pioneered criterion-based grading, so that grades matched what students learned. Administrators can work to dislodge deeply held beliefs and misconceptions about assessment by giving sound rationale for changes in assessment based in empirical research. They can also use a refutational strategy to expose misunderstandings about how traditional grading practices serve students by giving well-founded counterpoints on how they actually disserve students (Poliquin, 2010).

### *Research Question 3*

A major finding of this study was that respondents with incremental theories of the world were more likely than those with entity theories of the world to hold favorable perceptions of academic changes in curriculum and assessment. In other words, more than in the intelligence and morality domains, respondents' core ontological assumptions about the degree to which reality is changing or unchanging were a likely factor in their perceptions about changes in curriculum and assessment.

The finding is meaningful for a couple of reasons. First, the academic changes in curriculum and assessment being implemented in Lasallian secondary schools in the SFNO District are themselves evolutionary and in flux. For example, the academic changes in Lasallian secondary schools that were included in this study's survey were focused on facilitating students' growth and mastery of skills and knowledge (see Appendix B for the survey). Thus, teaching in Lasallian secondary schools in the SFNO District is in the process of moving away from presenting knowledge as fixed quantities of right and wrong answers that need to be obtained by students, an idea emphasized by Jacobs (2010). Furthermore, curriculum and assessment design requires ongoing discussion and revision through collaboration with colleagues. The process itself is evolutionary and flexible and in line with an incremental theory in the world domain.

Secondly and conversely, curriculum and assessment design that is focused on facilitating student growth toward mastery, and carried out collaboratively and flexibly, could be experienced as causing discomfort and tension for entity theorists in the world domain who fundamentally understand the world as fixed, unchanging, and quantifiable. As mentioned above, administrators leading academic changes in curriculum and assessment might help entity theorists in the change process by using well-researched, quantifiable data to make the case for the changes. They might also use refutational approaches to help dislodge fixed beliefs about curriculum and assessment, and ask teachers who resist the changes for their advice about potential pitfalls and setbacks.

However, if some teachers continue to resist growth and advancing a school's academic changes in curriculum and assessment, their teaching might not be in line with part of the purpose of Lasallian schools. Lasallian educators are called to be flexible,

adaptable, creative, and responsive to the practical needs of the students they serve and open to change as a result of responding to both a calling from God and to the practical needs of the students they serve (Capelle, 2003; Fox, 2012; Brothers of the Christian Schools, 1997, 2008, 2015; Rummery, 2011; Van Grieken, 1999). Administrators may need to release teachers from employment, if they are unable to fulfill these qualities even after considerable support, guidance, and opportunities to change.

Another implication of the findings related to Research Question 3 is in regards to empirical research in education in general, and in Catholic schools specifically. Although much research has been conducted with regards to implicit theories of teachers in the intelligence domain (Altendorff, 2012; Bernardo, 2012; Epler, 2011; Garcia-Cepero & McCoach, 2009; Gero, 2013; Gutshall, 2013; Klein, 1996; Morrison, 2013; Poliquin, 2010; Rattan, Good, & Dweck, 2012; Shim, Cho, & Cassady, 2013; Sweeny, 2013; Vander Ploeg, 2012), the findings of this study suggest that teachers' implicit theories in the world domain may be a factor in the degree to which they favor academic changes in curriculum and assessment. Therefore, more research could be conducted on teachers' implicit theories of the world in other settings: other Catholic schools, public schools, other private schools, and at elementary, middle, and post-secondary levels. Further research could investigate the degree to which teachers' implicit theories of the world relate to, for example, their perceptions of academic change, their beliefs about student potential, their instructional practices, their collegial practices, and their professional development.

## Recommendations

### *Recommendations for Future Research*

Based on the findings of this study, the following represent recommendations for future research:

1. Replicate this study in other educational settings: in other Catholic schools, in other private schools, in public schools, and among teachers at elementary, middle, and post-secondary levels.
2. Conduct further research on the implicit theories of teachers in the world and morality domains using the measures developed by Dweck and colleagues (Chiu, Dweck, Hong, & Fu, 1997; Dweck, 2000): the *Implicit Theory of the World for Adults* measure and the *Implicit Theories of Others' Morality (for Adults)* measure.
3. Conduct further research on the implicit theories of teachers in the world domain as they relate to gender and years of teaching experience.
4. Conduct a qualitative study of teachers in the SFNO District secondary schools to discern individual dynamics, beliefs, and perceptions of teachers with incremental and entity theories, especially among males, females, World Language/LOTE teachers, and teachers with 1-10 years of experience, as they implement academic changes.

### *Recommendations for Future Practice*

Based on the findings of this study, the following represent recommendations for future practices in Lasallian secondary schools in the SFNO District:

1. In considering formation activities for teachers offered by the SFNO District, it is recommended that District leaders incorporate greater use of Lasallian writings and reflections related to adaptability, creativity, and innovation in response to the practical needs of needs of students in Lasallian schools both (a) historically and (b) in contemporary settings around the world.
2. In considering formation activities for teachers offered in their local school settings, it is recommended that administrators and other faith leaders in the schools facilitate reading, reflection, and discussion about the following:
  - a. Adaptability, creativity and innovation in response to the practical needs of students in Lasallian schools both (a) historically and (b) in contemporary settings around the world.
  - b. The call of teachers in Catholic schools to change in order to meet the needs of their students more effectively and prepare them to serve and transform the world. In particular, administrators and other school faith leaders might facilitate reading, reflection, and discussion about the 2014 statement from the Congregation of Catholic Education (CCE, 2014) and Pope Francis' (2013a, 2013b, 2014; Vatican Radio, 2015) statements about education and the changing world.
  - c. The philosophical tension in Catholic Church teaching on education between (a) a calling and obligation to help students deepen their values, engage with the realities of the world, and take action to support human dignity, human rights, and social justice, and (b) a calling and obligation

to bring students to a fuller understanding of the truth of the Gospel and to fuller adherence to the teachings of the Church.

3. In considering the professional development and growth of teachers, it is recommended that administrators and department chairs incorporate reading and discussion of *Mindset* (Dweck, 2006), as well as watching and discussion of Dweck's (2014) TED Talk.
4. In considering the professional development and growth of teachers, it is recommended that administrators and department chairs foster a culture of trust among teachers that is based in supportive, process-oriented feedback which would include:
  - a. Explicit expectations that all teachers improve their practice
  - b. Explicit expectations about and support for feedback being regularly and collaboratively exchanged among colleagues
  - c. Explicit expectations and encouragement that teachers should try new things and learn from their mistakes in doing so
  - d. Frequent collegial conversations between administrators and teachers, between department chairs and teachers, and among teachers in order to praise meaningful effort about re-strategizing and problem-solving to address mistakes and setbacks
  - e. Clarity that process-oriented feedback is about helping teachers grow and improve and not about evaluation

- f. Time, opportunities, and training for administrators, department chairs, and teachers to give and receive process-oriented feedback focused on growth
5. In considering the professional development and growth of teachers, it is recommended that administrators and department chairs provide expectations and opportunities for teachers at all stages of their careers—new, mid-career, and late career—to learn how to implement innovative and creative instructional practices.
6. In considering the introduction to and implementation of academic changes, it is recommended that administrators and department chairs frame the changes in terms of: (a) essential questions and goal statements that might elicit excitement, curiosity, and a sense of opportunity to grow and explore among teachers, (b) empirically researched, quantifiable data to give evidence for the change, and (c) refutational texts, case studies, or fictitious readings to directly address possible misunderstandings about change and the need for it.
7. In considering the introduction to and implementation of academic changes, it is recommended that administrators and department chairs explicitly connect the changes to (a) the call of Lasallian teachers to be adaptive, creative, and innovative in response to the practical needs of their students, and (b) examples of change and innovation in the Lasallian heritage and in contemporary Lasallian schools around the world.
8. In considering the introduction to and implementation of academic changes, it is recommended that administrators explicitly connect the changes to reading and

research about the challenges students will face in the future related to geopolitics, the economy, technology, and the workforce.

9. In considering the introduction to and implementation of academic changes, it is recommended that administrators and department chairs facilitate opportunities for teachers to reflect on their past experiences with academic initiatives in terms of what worked, what did not work, how students were impacted, how teachers felt, and how they responded to adversity.
10. In considering the introduction to and implementation of academic changes, it is recommended that administrators and department chairs set and communicate measurable benchmarks and targets for growth, progress, and success.
11. In considering the professional development and growth of teachers, it is recommended that administrators and department chairs provide time, opportunities, and training and structure for collegial collaboration on curriculum, instruction, and assessment in groups such as academic departments, grade-level teams, and Professional Learning Communities®.
12. In considering the introduction to and implementation of academic changes, it is recommended that administrators and department chairs position teachers to select, analyze, and appropriate curricular standards collaboratively to best meet the needs of the students in Catholic Lasallian schools. In this manner, teachers could become the experts who design curriculum, even if there are specific requirements that they need to meet in that design.

13. In considering the introduction to and implementation of academic changes, it is recommended that administrators and department chairs seek from teachers their advice about potential pitfalls, obstacles, or setbacks.
14. In considering the introduction to and implementation of academic changes, it is recommended that administrators and department chairs facilitate opportunities for teachers to self-reflect and self-evaluate about their efforts, progress, and obstacles during the changes.
15. In considering the introduction to and implementation of academic changes, it is recommended that administrators stay attentive to, to care for the whole person of each teacher, and to recognize that resistance could be rooted in fear of appearing incompetent, difficulties in teachers' personal circumstances, or past experiences with change.
16. In considering employment practices, it is recommended that administrators focus on characteristics of incremental (growth) theories in hiring new teachers. They could look for, for example, characteristics such as the ability to persist when facing setbacks, a desire to continually learn and get better at teaching, an ability to identify areas for growth in one's own teaching, and a dynamic worldview.
17. In considering employment practices, it is recommended that administrators establish and implement evaluation and supervision processes that emphasize, reward, and hold teachers accountable for ongoing professional growth toward personal, departmental, and schoolwide goals.
18. In considering employment practices, it is recommended that administrators release teachers from employment if they have not demonstrated ongoing,

meaningful growth toward personal, departmental, or schoolwide goals, even with adequate support, training, guidance, and feedback.

### Closing Remarks

The seeds of this dissertation were planted when I first read and discussed Rummery's (2011) monograph on Lasallian creativity with colleagues in 2011. At the time, I taught religious studies courses and facilitated the school's strategic planning with the administration at a Lasallian high school. In those two roles, I was engaged in educational change on two levels: (a) as a teacher excited about working on academic initiatives in improving student critical thinking skills, integrating educational technology in instruction, designing reliable and valid assessments of student learning, and collaborating with colleagues on curriculum alignment, and (b) as a school leader focused on implementing school-wide change in academics and several other areas through the school's strategic planning process. Today in my role as an academic vice principal at another Lasallian school, I work with other members of the administration and with department chairs to facilitate academic changes in curriculum, instruction, and assessment. In both sets of roles and Lasallian schools, I have been curious and sometimes perplexed why some teachers have embraced academic changes and why others have resisted them.

In this context, Rummery's (2011) contention that adaptability, creativity, and innovation in response to student needs are hallmarks of Lasallian schools resonated with me deeply. His assertion has served as driving belief in my work as a school leader and as a scholar writing this study: To be Lasallian is to adapt in order to serve the students

in front of us. This study, to a great extent, was meant to find out, if Rummery's claim were to bear out in research, then what can be understood about teachers who do not adapt? Why do some teachers change and others do not? How do Lasallian school leaders help the teachers who struggle to change?

The topic of change in education is broad. Some theories of school change (Capelle, 2003; Fullan & Langworthy, 2014; Heifetz & Linsky, 2002; Jacobs, 2010; Wagner, et al., 2006; Zukowski, 1997) illustrated that the changes themselves are so enormous and potentially transformative that they require teachers, staff, and administrators to learn in new ways and to change their attitudes, values, and behaviors about teaching and learning. Evans (1996) and Bridges (1986, 2004) highlighted the importance of leaders needing to attend to individuals' interior experience of change. They contended that in the midst of change, some individuals hold a more rigid response to the loss involved in the change, while others are more adaptable.

This study focused on one aspect of school change and the interiority of teachers: the beliefs of the teachers called to implement academic changes in curriculum, instruction, and assessment. It used Dweck's and her colleagues' (Chiu, Dweck, Tong, & Fu, 1997; Dweck, 2000, 2006; Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988) theory of implicit theories to analyze whether the teachers in Lasallian secondary schools in the SFNO District have incremental (growth) theories or entity (fixed) theories in the domains of (a) intelligence, (b) the world, and (c) morality.

Previous studies of the implicit theories of teachers (Altendorff, 2012; Bernardo, 2012; Epler, 2011; Garcia-Cepero & McCoach, 2009; Gero, 2013; Gutshall, 2013; Klein, 1996; Morrison, 2013; Poliquin, 2010; Rattan, Good, & Dweck, 2012; Shim, Cho, &

Cassady, 2013; Sweeny, 2013; Vander Ploeg, 2012) focused on the intelligence domain. They found that, in general, teachers have incremental (growth) theories in the domain of intelligence. Likewise, this study found that, in general, the respondent teachers in the secondary schools of the SFNO District have incremental (growth) theories in the domain of intelligence, as well as the domains of the world and morality. Furthermore, it also found that the respondents were mostly favorable to the current academic changes in (a) curriculum, (b) instruction, and (c) assessment in Lasallian secondary schools in the SFNO District. Finally, it found that the respondents' implicit theories in the world domain were related to their perceptions of academic changes in curriculum and assessment.

Hence, these findings imply that, at least for the respondent teachers, their implicit theories of the world—whether (a) they see reality as evolving and seek to understand its dynamic processes or (b) they see reality as a static entity and seek to quantify and categorize its aspects—are factors in how they perceive academic changes. Thus, the study illustrated that the respondent teachers' core worldviews are factors in how they perceive some of the academic changes they are being asked to implement. Moreover, the study also gave insight into how some respondent teachers are adaptable and some are not.

The calling and task that teachers in Catholic and Lasallian schools have to adapt in order to meet their students' needs is substantial and complex. As stated by the CCE (2014), teachers in Catholic and Lasallian schools are called to shift their curriculum and instruction away from solely the distillation of knowledge, to developing students' skills of acquiring knowledge, reflection, global and intercultural citizenship, critical thinking,

and taking action in service to others. Moreover, teachers are called to become “communities that learn how to improve” (CCE, 2014, sec. III, ¶1c). Respondents who have dynamic worldviews (incremental theories in the world domain) are likely to embrace this calling. For those respondents with static worldviews (entity theories), this calling likely causes a degree of stress and anxiety because it disrupts established patterns, norms, and beliefs (Pepper, 1942), in this case, about what good curriculum, instruction, and assessment look like.

The good news is that in general, this study’s respondents held incremental theories (dynamic worldviews) in the world domain and are, therefore, likely to be favorable to the academic changes they are called to implement in the Lasallian secondary schools of the SFNO District. This is especially good news for administrators, department chairs, and other individuals called to lead the changes. They can be encouraged by the result that, in general, respondents in this study were found to have incremental theories in the domains of (a) intelligence (growth mindsets), (b) the world (dynamic worldviews), and (c) morality (rights-based moralities) and are, therefore, likely open to the changes they are called to implement.

At the same time, the findings present a challenge for administrators, department chairs and other leaders of academic changes in the Lasallian secondary schools of the SFNO District, especially when working with teachers who resist the changes. The challenge is to set clear expectations for all teachers implementing academic changes while remaining compassionate toward those who have difficulty doing so. According to Dweck (2000) and colleagues (Dweck, Chiu, & Hong, 1995; Dweck & Leggett, 1988; Hong, Chiu, Dweck, Lin, & Wan, 1999), resistance to new ways of doing things may be a

manifestation of fears of being judged as incompetent and of being ungrounded. This study implies, therefore, that administrators, department chairs, and other leaders of academic changes are called to give compassionate support and understanding to their teachers, clear and well-reasoned evidence for academic changes, guidance, and training in implementation of those changes.

Ultimately, however, an aspect of the call of teachers in Catholic Lasallian schools is to respond to the ever-changing needs of their students by adapting their methodologies. Even after being well-supported and guided, if some teachers cannot adapt to the changes to which they are called, they could face a clear question of whether they can remain teaching in Lasallian schools.

However, this study offers hope for Lasallian secondary schools in the SFNO District as they implement academic changes in curriculum, instruction, and assessment to better serve their students in a changing world. It concluded that, in general, the teachers who participated in the study have core beliefs about intelligence, the world, and morality that make them predisposed to carrying out the call of St. John Baptist de La Salle and that of the Church as expressed by Pope Francis (2014): “Today education is directed at a *changing* generation and, therefore, every educator—and the entire Church who is the mother educator—is called ‘*to change*’ or know how to communicate with the young people before them” (para. 5).

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APPENDICES

APPENDIX A

Lasallian Principals in the SFNO District Reporting Adaptive Challenges

## Lasallian Principals in the SFNO District Who Reported Adaptive Challenges

October 2014

Name	Title	School	City, State
Mr. Michael Scalco	Principal/CEO	Archbishop Rummell High School	Metairie, LA
Br. John Montgomery, FSC	Principal	Cathedral High School	Los Angeles, CA
Br. Robert Wickman, FSC	Principal/Chief Operating Officer	De La Salle High School	Concord, CA
Dr. Myles Seghers, Ph.D.	Principal	De La Salle High School	New Orleans, LA
Mr. David Holquin	Interim Principal	Justin-Siena High School	Napa, CA
Br. Christopher Brady, FSC	Principal	La Salle High School	Pasadena, CA
Ms. Janell Kloosterman	Principal and Chief Academic Officer	Mullen High School	Denver, CO
Mr. Gary Cannon	Principal	Sacred Heart Cathedral Preparatory	San Francisco, CA
Dr. Peter Imperial, Ed.D.	Principal	St. Mary's College High School	Berkeley, CA
Mr. John Omernik	Principal	San Miguel High School	Tucson, AZ

APPENDIX B

Survey with Introduction and Option to Consent

## Introduction

### Researcher Contact Information:

Heidi M. Harrison  
University of San Francisco  
Email: [hmharrison@usfca.edu](mailto:hmharrison@usfca.edu)

### WELCOME

This survey offers you the opportunity as a Lasallian educator to share your beliefs about intelligence, the world, and morality, and your perceptions about implementing academic changes in curriculum, instruction, and assessment. Answers to this survey are based on your personal beliefs and experience; there are no right or wrong answers.

I am conducting this survey as part of my doctoral dissertation at the University of San Francisco. Participation in this research is strictly voluntary. Participants are guaranteed the right of confidentiality. The analysis of survey results will present findings only about patterns among responses of groups of participants; no individual responses or school associations will be reported. There are no known risks or costs to taking the survey. Results of the survey will be used solely for the purpose of the dissertation study.

If you have any further questions about any aspects of the study, you may contact the Institutional Review Board for Protection of Human Subjects (IRBPHS) at the University of San Francisco which is concerned with protection of volunteers in research projects. You may reach the IRBPHS office by e-mail at [IRBPHS@usfca.edu](mailto:IRBPHS@usfca.edu).

If you have questions about this research, you may also contact me via e-mail at [hmharrison@usfca.edu](mailto:hmharrison@usfca.edu).

It is my hope that you will participate to allow greater insights into the beliefs of Lasallian teachers and their perceptions about academic changes. If you are interested in reading the dissertation study once it is completed, please e-mail the researcher at [hmharrison@usfca.edu](mailto:hmharrison@usfca.edu).

### DIRECTIONS

Please complete this survey in the next two weeks by DATE. It will take approximately 10 minutes to complete. Note that you may begin and exit mid-survey, and return to it at a later point if necessary.

Please read each statement carefully and select the responses that best represent your beliefs and perceptions. You may begin and exit mid-survey, and return to it at a later point if necessary.

1. If you freely accept to participate in this survey, please check “Yes” to proceed:  
 Yes

2. How many courses do you teach this term? (Please select one.)

- 0
- 1-2
- 3-4
- 5
- More than 5

### Part I: Beliefs About Intelligence, the World, and Morality

This part of the questionnaire has been designed to investigate ideas about intelligence, the world, and morality. There are no right or wrong answers. The researcher is interested in your ideas.

#### A. Intelligence

In this section of the survey, “intelligence” refers to how people direct their mental activity.

Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements about **intelligence** by selecting the number that corresponds to your opinion.

3. You have a certain amount of intelligence and you really can't do much to change it.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

4. Your intelligence is something about you that you can't change very much.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

5. You can learn new things, but you can't really change your basic intelligence.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

## B. The World

In this section of the survey, “the world” refers to how people make philosophical assumptions about reality.

Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements about **the world** by selecting the number that corresponds to your opinion.

6. Though we can change some phenomena, it is unlikely that we can alter the core dispositions of our world.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

7. Our world has its basic or ingrained dispositions, and you really can't do much to change them.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

8. Some societal trends may dominate for a while, but the fundamental nature of our world is something that cannot be changed much.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

## C. Morality

In this section of the survey, “morality” refers to how people think about the rightness or wrongness of a moral act.

Using the scale below, please indicate the extent to which you agree or disagree with each of the following statements about **morality** by selecting the number that corresponds to your opinion.

9. A person's moral character is something very basic about them and it can't be changed much.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

10. Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much.

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

11. There is not much that can be done to change a person's moral traits (e.g. conscientiousness, uprightness, and honesty).

1	2	3	4	5	6
Strongly Agree	Agree	Mostly Agree	Mostly Disagree	Disagree	Strongly Disagree

## Part II: Perceptions about Implementing Academic Changes

This part of the questionnaire has been designed to investigate your perceptions about academic changes in curriculum, instruction, and assessment. There are no right or wrong answers. The researcher is interested in your perceptions.

### A. Curriculum

12. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area proposed by members of your department?

1	2	3	4	5
Strongly Favor	Favor	Neither Favor nor Oppose	Oppose	Strongly Oppose

13. To what extent would you favor developing (i.e., designing and teaching) a new course in your subject area mandated by the administration or an outside governing authority?

1	2	3	4	5
Strongly Favor	Favor	Neither Favor nor Oppose	Oppose	Strongly Oppose

14. To what extent would you favor a requirement to align the curriculum in your courses to a new set of academic standards in your subject area?

1	2	3	4	5
Strongly Favor	Favor	Neither Favor nor Oppose	Oppose	Strongly Oppose

**B. Instruction**

15. To what extent would you favor incorporating digital tools that would foster student creativity (i.e., the process of developing original ideas that have value) in your courses?

1	2	3	4	5
Strongly Favor	Favor	Neither Favor nor Oppose	Oppose	Strongly Oppose

16. To what extent would you favor customizing learning activities to address students' individual learning needs?

1	2	3	4	5
Strongly Favor	Favor	Neither Favor nor Oppose	Oppose	Strongly Oppose

17. To what extent would you favor receiving feedback about your instruction through a new evaluation method that is aligned with national, research-based definitions of good teaching?

1	2	3	4	5
Strongly Favor	Favor	Neither Favor nor Oppose	Oppose	Strongly Oppose

**C. Assessment**

18. To what extent would you favor providing students multiple and varied types of formative and summative assessments?

1	2	3	4	5
Strongly Favor	Favor	Neither Favor nor Oppose	Oppose	Strongly Oppose

19. To what extent would you favor collaborating with department members in designing identical assessments for your courses?

1	2	3	4	5
Strongly Favor	Favor	Neither Favor nor Oppose	Oppose	Strongly Oppose

20. To what extent would you favor implementing new schoolwide standards-based grading practices (with achievement indicated by student proficiency of content standards rather than by a traditional percentage system)?

1	2	3	4	5
Strongly Favor	Favor	Neither Favor nor Oppose	Oppose	Strongly Oppose

### Part III: Demographics

21. How many years teaching experience do you have, including this year? (Please select one.)

- 1-5
- 6-10
- 11-15
- 16-20
- 21-25
- 26+

22. In what academic departments do you teach? (Please check all that apply.)

- Arts (visual and performing arts)
- Computer Science/Technology
- English
- Engineering
- Mathematics
- Physical Education
- Religious Studies/Theology
- Science
- Social Studies/History
- World Languages/Languages Other Than English
- Other
- None

23. In what other areas do you work in the school? (Please check all that apply.)

- Administration
- Admissions
- Athletics/Coaching
- Campus Ministry
- Clubs
- Counseling (academic, college, personal, etc.)
- Department Chair/Academic Council
- Development/Advancement
- Library
- Performing Arts (co-curricular)
- Student Activities
- Student Government
- Student Publications (newspaper, literary magazine, etc.)
- Technology
- Other program
- None

24. What degrees and credentials have you earned?

Degree/Credential	N/A	From a Catholic college/university	From another private college/university	From a public college/university
Bachelors				
Teaching Credential				
Administrative Credential				
Masters				
Doctorate				
Other				

25. Did you attend a Catholic high school?

- Yes
- No

26. Religion:

- Catholic
- Non-Catholic

27. Are you:

- Lay person
- Christian Brother
- Other vowed religious
- Priest/deacon

28. Are you:

Female

Male

29. How knowledgeable are you about the following characteristics of Lasallian education related to curriculum, instruction, and assessment?

Characteristics	Very Knowledgeable	Somewhat Knowledgeable	Not Very Knowledgeable	Not Knowledgeable At All
Responsiveness to the practical needs of students				
Creativity				
Integration of human and Christian education				
Continual growth and learning of teachers				
Evaluation and revision of educational programs				
Teaching and education adapted to the needs of time and place				

Thank you for participating in this study. If you have any questions about this research, please contact the researcher, Heidi Harrison at [hmharrison@usfca.edu](mailto:hmharrison@usfca.edu).

APPENDIX C

Permission Letters from SFNO District Principals

**RE: Permission requested for doctoral research**

Heidi M. Harrison

**Sent:** Wednesday, December 03, 2014 7:23 PM**To:** Doug Neill [dneill@rummelraiders.com]**Cc:** <mscalco@rummelraiders.com>; Br. Gale Condit [brogale@rummelraiders.com]

Dear Doug,

Thank you so much for the email. I will be in touch sometime in the spring with details about the study which I plan to conduct in the early fall term 2015.

Thank you again and Advent blessings,

Heidi

Heidi M. Harrison  
 Vice Principal for Curriculum and Instruction  
 Justin-Siena High School  
 4026 Maher Street  
 Napa, CA 94558

ph: 707.255.0950, ext. 602

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**From:** Doug Neill [dneill@rummelraiders.com]

**Sent:** Monday, December 01, 2014 6:12 AM

**To:** Heidi M. Harrison

**Cc:** <mscalco@rummelraiders.com>; jlancaster@archdiocese-no.org; Br. Gale Condit

**Subject:** Permission requested for doctoral research

Good morning. My name is Doug Neill, and I am the assistant principal at Archbishop Rummel High School. Our principal, Mr. Scalco, forwarded me your request for doctoral research. We would like to be included in your study. Please let me know how we can help.

Thank you,

Doug Neill  
 Assistant Principal  
 Archbishop Rummel High School  
 504-834-5592 x216  
 dneill@rummelraiders.com

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at Christian Brothers High School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at Christian Brothers High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Rona Gordon: rgordon@cbhs-sacramento.org

Signed:

A handwritten signature in cursive script, appearing to read "Mary Hesser", is written over a horizontal line.

Mary Hesser  
Principal  
Christian Brothers High School  
Sacramento, CA  
Email: [mhesser@cbhs-sacramento.org](mailto:mhesser@cbhs-sacramento.org)

November 3, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at De La Salle High School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at De La Salle High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Dr. Elizabeth Berkes

Signed:

Brother Robert J. Wickman, F.S.C.

Br. Robert Wickman  
Principal  
De La Salle High School  
Concord, CA  
Email: [brotherrobert@dlsbs.org](mailto:brotherrobert@dlsbs.org)

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at De La Salle High School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at De La Salle High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

MIKE RIGAMER [mriganer@delasallenola.com](mailto:mriganer@delasallenola.com)

Signed:



Paul Kelly  
Principal  
De La Salle High School  
New Orleans, LA  
Email: [pkelly@delasallenola.com](mailto:pkelly@delasallenola.com)

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at De La Salle North Catholic High School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at De La Salle North Catholic High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Leslie Porter      lporter@dlsnc.org

Signed:

Tim Joy

Tim Joy  
Principal  
De La Salle North Catholic High School  
Portland, OR  
Email: [tjoy@dlsnc.org](mailto:tjoy@dlsnc.org)

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at J.K. Mullen High School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at J. K. Mullen High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Ami Zach zach@mullenhigh.com

Signed:



Janell Kloosterman  
Principal  
J.K. Mullen High School  
Denver, CO  
Email: [kloosterman@mullenhigh.com](mailto:kloosterman@mullenhigh.com)

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at La Salle Catholic College Preparatory to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at La Salle Catholic College Preparatory to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Georgia Bartel    gbartel@lsprep.org

Signed:

  
\_\_\_\_\_

Andrew Kuffner  
Principal  
La Salle Catholic College Preparatory  
Milwaukie, OR  
Email: [akuffner@lsprep.org](mailto:akuffner@lsprep.org)

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at La Salle High School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at La Salle High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

BR CHRISTOPHER BRADY ebrady@lasallehs.org

Signed:

Br. Christopher Brady

Br. Christopher Brady, FSC  
Principal  
La Salle High School  
Pasadena, CA  
Email: [ebrady@lasallehs.org](mailto:ebrady@lasallehs.org)

June 24, 2015

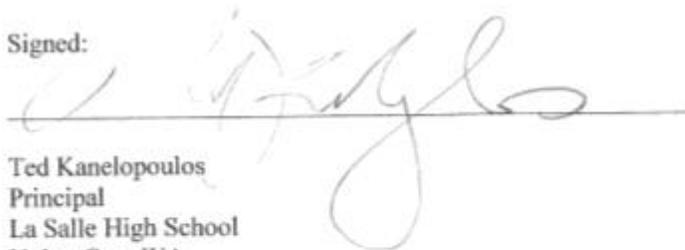
I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at La Salle High School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at La Salle High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Ted Kanelopoulos tedk@lasallevakima.org

Signed:



Ted Kanelopoulos  
Principal  
La Salle High School  
Union Gap, WA  
Email: [tedk@lasallevakima.org](mailto:tedk@lasallevakima.org)

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at Sacred Heart Cathedral Preparatory School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at Sacred Heart Cathedral Preparatory School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Debra Hayes dhayes@shcp.edu

Signed:

Gary Cannon

Gary Cannon  
Principal  
Sacred Heart Cathedral Preparatory School  
San Francisco, CA  
Email: [gcannon@shcp.edu](mailto:gcannon@shcp.edu)

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at St. Mary's College School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at St. Mary's College High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Me.

Signed:

Peter Imperial

Peter Imperial  
Principal  
St. Mary's College High School  
Berkeley, CA  
Email: [pimperial@stmchs.org](mailto:pimperial@stmchs.org)

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at St. Michael's High School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at St. Michael's High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

tsutton@stmikessf.org / Thomas Sutton

Signed:

Sam Govea

Sam Govea  
Principal  
St. Michael's High School  
Santa Fe, NM  
Email: [sgovea@stmikessf.org](mailto:sgovea@stmikessf.org)

June 24, 2015

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at St. Paul's Catholic School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at St. Paul's Catholic School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Mike Holmes      mikh@stpauls.com

Signed:

Trevor P. Watkins

Trevor Watkins  
St. Paul's Catholic School  
Covington, LA  
Email: [trevorw@stpauls.com](mailto:trevorw@stpauls.com)

**From:** Omernik, John [[omernikj@sanmiguelhigh.org](mailto:omernikj@sanmiguelhigh.org)]  
**Sent:** Tuesday, June 30, 2015 11:51 PM  
**To:** Heidi M. Harrison  
**Cc:** Erica Jacquez  
**Subject:** Re: FW: Principals' Breakout Session

Heidi -

Greetings! How exciting!

Please let me know before sending the email...maybe send a preview of what I could send to the faculty. That would be great.

---

I give permission to Heidi Harrison to contact the faculty (those who teach at least one class) at San Miguel High School to invite them to participate in the online survey, "Teacher Beliefs and Perceptions about Academic Changes," for the purpose of research for her doctoral dissertation study. I also give her permission to contact school personnel at San Miguel High School to obtain email addresses of teachers and ensure that the online survey passes through email security filters.

I understand that participation is voluntary and that all data collected from the survey will be held in confidence, kept secure, and used solely for the purpose of the dissertation study. I understand that all data will be analyzed collectively; no data regarding individuals or individual schools will be analyzed or reported.

Name of contact for assistance with email and email addresses:

Erica Jacquez at [itsupport@sanmiguelhigh](mailto:itsupport@sanmiguelhigh)

## APPENDIX D

Permission from the Director of the Office of Education of  
the San Francisco New Orleans District

BROTHERS OF THE CHRISTIAN SCHOOLS  
DE LA SALLE INSTITUTE

P.O. BOX 3720  
NAPA CALIFORNIA 94558-0372

TELEPHONE 707/252-0222  
PROVINCIAL OFFICE FAX 707/252-0407  
FINANCIAL OFFICE FAX 707/252-7046

October 17, 2014

Ms. Heidi M. Harrison  
Justin-Siena High School  
4026 Maher Street  
Napa, CA 94558

Dear Heidi,

Thank you for your email and letter dated October 17, 2014, requesting permission for your upcoming dissertation study on teacher openness to change in Catholic Lasallian secondary schools. I would like to grant you permission to work with the District of San Francisco New Orleans. Please feel free to contact high school principals in the District for background information and for assistance in facilitating the study. If the principals agree, you also have permission to contact teachers to participate in your online study.

I wish you success with your work and eventual dissertation.

Sincerely,



Gery Short  
Director, Office of Education

GS:jlb

APPENDIX E

Permission from the Superintendents of the Archdioceses of  
New Orleans and San Francisco

**Re: Permission requested for doctoral research**

Dr. Jan Lancaster [jlancaster@archdiocese-no.org]

**Sent:** Monday, December 01, 2014 6:08 PM

**To:** Doug Neill [dneill@rummelraiders.com]

**Cc:** Heidi M. Harrison; <mscalco@rummelraiders.com>; Br. Gale Condit [brogale@rummelraiders.com]

Dear Ms. Harrison,

As you can see, Archbishop Rummel wants to participate in your study. Thank you for this opportunity. Please be assured of my approval and support as you go through the process of this research. Good luck with your study.

God bless,

Jan

Dr. Jan Daniel Lancaster  
Superintendent of Catholic Schools  
Archdiocese of New Orleans  
504-388-5528  
Sent from my iPhone

> On Dec 1, 2014, at 8:12 AM, Doug Neill <dneill@rummelraiders.com> wrote:

>

> Good morning. My name is Doug Neill, and I am the assistant principal at Archbishop Rummel High School. Our principal, Mr. Scalco, forwarded me your request for doctoral research. We would like to be included in your study. Please let me know how we can help.

>

> Thank you,

>

>

>

> Doug Neill

> Assistant Principal

> Archbishop Rummel High School

> 504-834-5592 x216

> dneill@rummelraiders.com

>



## THE ARCHDIOCESE OF SAN FRANCISCO

DEPARTMENT OF CATHOLIC SCHOOLS

ONE PETER YORKE WAY, SAN FRANCISCO, CA 94109-6602 (415) 614-5660 FAX (415) 614-5664

November 24, 2014

Ms Heidi M. Harrison  
Justin-Siena High School  
4026 Maher Street  
Napa, CA 94558

Dear Heidi,

Thank you for your email and letter dated November 20, 2014, requesting permission for your upcoming dissertation study on teacher openness to change in Catholic Lasallian secondary schools. I would like to grant you permission to work with the administration and faculty of Sacred Heart Cathedral Preparatory. If the principal agrees, you have permission to contact teachers to participate in your online study.

Sincerely,

Ms Maureen Huntington  
Superintendent of Schools  
Archdiocese of San Francisco

APPENDIX F

Introductory Email

Dear Lasallian Colleague,

As part of my doctoral research in the School of Education at the University of San Francisco, I invite you to participate in my survey on Lasallian educators' beliefs about intelligence, the world, and morality, and their perceptions about implementing academic changes in curriculum, instruction, and assessment.

I have received approval to conduct this online survey from the Office of Education at the De La Salle Institute and your principal to invite you to participate in this study. It is my hope that you will participate to allow greater insights into the beliefs of Lasallian teachers and their perceptions about academic changes.

Mindful of how busy you are, I request that you please set aside 10 minutes to complete this survey in the next three weeks, by DATE. You may begin and exit the survey, and return to it at a later point if necessary through the button below. Thank you in advance for your help with this important piece of research on Lasallian education.

Please click the button below to read more about and to start the survey:

Sincerely,

Heidi M. Harrison  
Doctoral Student  
School of Education  
University of San Francisco  
[hmharrison@usfca.edu](mailto:hmharrison@usfca.edu)

APPENDIX G

Permission Letter from the IRBPHS

---

**Exemption Notification - IRB ID: 475**

1 message

**Christy Lusareta** <noreply@axiommentor.com>  
Reply-To: Christy Lusareta <calusareta@usfca.edu>  
To: hmharrison@usfca.edu

Wed, May 20, 2015 at 8:10 AM

*Protocol Exemption Notification*

To: Heidi Harrison  
From: Terence Patterson, IRB Chair  
Subject: Protocol #475  
Date: 05/20/2015

The Institutional Review Board for the Protection of Human Subjects (IRBPHS) at the University of San Francisco (USF) has reviewed your request for human subjects approval regarding your study.

Your project (IRB Protocol #475) with the title **Implicit Theories and Perceptions of Academic Changes Among Teachers in Lasallian Secondary Schools** has been approved by the University of San Francisco IRBPHS as **Exempt** according to 45CFR46.101(b). Your application for exemption has been verified because your project involves minimal risk to subjects as reviewed by the IRB on 05/20/2015.

Please note that changes to your protocol may affect its exempt status. Please submit a modification application within ten working days, indicating any changes to your research. Please include the Protocol number assigned to your application in your correspondence.

On behalf of the IRBPHS committee, I wish you much success in your endeavors.

Sincerely,

Terence Patterson, EdD, ABPP

Professor & Chair, Institutional Review Board for the Protection of Human Subjects

University of San Francisco

[irbphs@usfca.edu](mailto:irbphs@usfca.edu)

APPENDIX H

Permission Letter from Carol Dweck

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## Doctoral student studying self-theories

---

Carol S Dweck <dweck@stanford.edu>  
To: Heidi Harrison <hmharrison@usfca.edu>

Tue, Jun 24, 2014 at 3:14 PM

Dear Heidi,

You are most welcome to use these scales.

Sincerely,  
Carol Dweck

Lewis & Virginia Eaton Professor  
of Psychology  
Department of Psychology  
Stanford University  
Jordan Hall, Bldg. 420  
Stanford, CA 94305

— Original Message —

From: "Heidi Harrison" <hmharrison@usfca.edu>  
To: dweck@stanford.edu  
Sent: Tuesday, June 24, 2014 12:33:18 PM  
Subject: Doctoral student studying self-theories

Dear Dr. Dweck,

I'd like to thank you for your extensive research and work on self-theories. I am doctoral student in the Catholic Educational Leadership program at the University of San Francisco and an academic vice principal at Justin-Siena High School in Napa. On a daily basis I see entity and incremental theories manifest and play out among our students, teachers, and parents. Many of our faculty have read and discussed **\*Mindset\***.

For my dissertation, I am studying how open and adaptable teachers are when they face change in the context of Catholic secondary schools sponsored by the De La Salle Christian Brothers. With your permission, I would like to use your framework of self-theories as the lens to examine teacher openness to change and adaptability and thus bring your research into the realm of Catholic education. More specifically, I'd like to bring your theory into conversation with the Catholic Lasallian tradition of education which has placed a high priority on both innovation and concern for the inner person of the teacher for over 300 years. My goal is to deepen understanding among leaders in Catholic Lasallian schools about teacher beliefs during times of significant change. This study could have implications for teacher support, professional development, strategies for change initiatives, and teacher understanding of their own beliefs about learning, growth, and change.

I am asking please for your permission to use the following measures from Self-Theories (2000) in my dissertation study: Theories of Intelligence Scale—Self-Form for Adults, "Kind of Person" Implicit Theory—For Adults, the Implicit Theories of Others' Morality (for Adults), and the Implicit Theory of the World for Adults. I plan to use these measures to survey teachers in the 17 secondary schools of the San Francisco-New Orleans District of the De La Salle Christian Brothers in the states of Washington, Oregon, California, Arizona, New Mexico, Colorado, Texas, and Louisiana. The survey will investigate whether teachers hold entity or incremental theories in four domains: intelligence, morality, the person as a whole, and the world. All four domains are potentially meaningful areas of exploration in Catholic Lasallian education which has long emphasized education of the whole person intellectually, socially, morally, and spiritually for service to the world. In a time in which Catholic Lasallian schools are directing teachers to implement major changes in pedagogy, assessment, and use of technology, I am interested in studying teacher openness to change in these four domains.

I am still in the formation of my dissertation and hope to complete my proposal by May 2015 and administer my survey in the fall of 2015.

My current research questions are as follows:

- 1) To what extent do teachers in Catholic Lasallian secondary schools have an entity or incremental theory?
- 2) To what extent do teachers in Catholic Lasallian secondary schools have an entity or incremental theory in the domain of intelligence?
- 3) To what extent do teachers in Catholic Lasallian secondary schools have an entity or incremental self-theory in the domain of morality?
- 4) To what extent do teachers in Catholic Lasallian secondary schools have an entity or incremental theory in the domain of the person as a whole?
- 5) To what extent do teachers in Catholic Lasallian secondary schools have an entity or incremental theory in the domain of the world?

Thank you for your time and your consideration of my request. I look forward to hearing from you.

Kind regards,

Heidi M. Harrison

APPENDIX I

Validity Panel Members and Qualifications





APPENDIX J

Validity Evaluation Form

### Validity Panel Questionnaire and Evaluation Form

1. How long did it take to complete the survey? \_\_\_\_\_

#### Content Validity of Part II only

2. Are the items clearly expressed?	Yes	No
Comments:		

3. Are any items missing that should be surveyed?	Yes	No
Comments:		

4. Should any items be deleted?	Yes	No
Comments:		

5. Do survey items 12-14 appear to be a valid measure of academic changes in <b>curriculum</b> ?	Yes	No
Comments:		

6. Do survey items 15-17 appear to be a valid measure of academic changes in <b>instruction</b> ?	Yes	No
Comments:		

7. Do items 18-20 appear to be a valid measure of academic changes in <b>assessment</b> ?	Yes	No
Comments:		

8. Are there words or phrases in the survey that are unclear, ambiguous, or confusing?	Yes	No
Comments:		

9. Are there any inconsistencies in wording or language in this survey?	Yes	No
Comments:		

10. Does the survey contain items that are unnecessary to measuring teacher perception of the ease or difficulty of implementing academic changes?	Yes	No
Comments:		

### Face Validity of the Entire Survey

11. Are the instructions for completing the surveys clear?	Yes	No
Comments:		

12. Is the layout for the survey items conducive to participants completing the survey in a reasonable time?	Yes	No
Comments:		

13. Was it easy to navigate the survey online?	Yes	No
Comments:		

14. Do you have suggestions for improving the survey?	Yes	No
Comments:		

APPENDIX K

Analysis of Difference in Responses by Survey Collectors

Table K1

*Results of t-Tests for Independent Samples for Quantitative Measures of Knowledge of Characteristics of Lasallian Education, Implicit Theory Domains, and Perceptions of Academic Changes by Survey Collector, Means, Standard Deviation, Mean Difference, and Confidence Interval*

Variable	Survey Collector	N	Mean	Standard Deviation	Mean Difference	95.00% Confidence Interval		<i>t</i>	<i>df</i>	<i>p</i> -Value
						Lower Limit	Upper Limit			
Lasallian Responsiveness	Email	232	3.44	0.60	-0.03	-0.15	0.1	-0.46	313.47	0.65
	Weblink	148	3.47	0.60						
Lasallian Creativity	Email	231	3.22	0.70	-0.08	-0.22	0.06	-1.09	317.01	0.28
	Weblink	143	3.29	0.65						
Lasallian Integration	Email	230	3.33	0.72	-0.05	-0.19	0.08	-0.77	344.38	0.44
	Weblink	147	3.39	0.61						
Lasallian Teacher Growth	Email	232	3.40	0.62	0.02	-0.1	0.15	0.4	331.28	0.69
	Weblink	148	3.37	0.57						
Lasallian Evaluation	Email	232	3.06	0.77	0	-0.15	0.14	-0.01	346.4	0.99
	Weblink	147	3.06	0.65						
Lasallian Adaptivity	Email	232	3.31	0.68	0.02	-0.12	0.15	0.23	338.3	0.82
	Weblink	148	3.29	0.61						
Intelligence 1	Email	233	4.40	1.20	-0.12	-0.36	0.13	-0.95	325.25	0.34
	Weblink	151	4.52	1.17						
Intelligence 2	Email	232	4.39	1.20	-0.15	-0.39	0.08	-1.27	330.76	0.20
	Weblink	150	4.55	1.13						
Intelligence 3	Email	232	4.29	1.20	-0.13	-0.38	0.12	-1.04	316.77	0.30
	Weblink	150	4.42	1.21						
Intelligence Total	Email	231	4.36	1.15	-0.14	-0.37	0.09	-1.18	326.47	0.24
	Weblink	149	4.50	1.10						

Variable	Survey Collector	N	Mean	Standard Deviation	Mean Difference	95.00% Confidence Interval		<i>t</i>	<i>df</i>	<i>p</i> -Value
						Lower Limit	Upper Limit			
World 1	Email	228	4.08	1.15	-0.02	-0.24	0.21	-0.14	336.29	0.89
	Weblink	150	4.10	1.06						
World 2	Email	231	4.16	1.05	0.03	-0.18	0.24	0.29	327.12	0.77
	Weblink	150	4.13	1.01						
World 3	Email	232	3.95	1.14	-0.13	-0.36	0.11	-1.08	321.01	0.28
	Weblink	149	4.08	1.12						
World Total	Email	228	4.07	1.02	-0.03	-0.24	0.18	-0.26	320.98	0.80
	Weblink	149	4.10	1.00						
Morality 1	Email	233	4.55	1.11	-0.15	-0.35	0.05	-1.43	363.32	0.15
	Weblink	149	4.69	0.88						
Morality 2	Email	233	4.48	1.03	-0.09	-0.3	0.11	-0.88	328.99	0.38
	Weblink	150	4.57	0.99						
Morality 3	Email	233	4.55	1.06	-0.15	-0.35	0.04	-1.56	358.34	0.12
	Weblink	150	4.70	0.87						
Morality Total	Email	233	4.52	1.00	-0.14	-0.32	0.04	-1.49	359.47	0.14
	Weblink	149	4.66	0.81						
Curriculum 1	Email	231	2.01	0.94	0.06	-0.13	0.24	0.6	340.78	0.55
	Weblink	149	1.95	0.84						
Curriculum 2	Email	231	2.99	0.96	-0.02	-0.22	0.18	-0.22	314.04	0.83
	Weblink	149	3.01	0.97						
Curriculum 3	Email	232	2.74	0.97	-0.05	-0.24	0.13	-0.56	339.14	0.58
	Weblink	146	2.79	0.85						
Curriculum Total	Email	230	2.58	0.73	0	-0.14	0.14	0.01	335.61	0.99
	Weblink	147	2.58	0.65						

Variable	Survey Collector	N	Mean	Standard Deviation	Mean Difference	95.00% Confidence Interval		<i>t</i>	<i>df</i>	<i>p</i> -Value
						Lower Limit	Upper Limit			
Instruction 1	Email	232	1.84	0.79	-0.15	-0.32	0.01	-1.84	315.68	0.07
	Weblink	149	1.99	0.79						
Instruction 2	Email	232	1.75	0.77	-0.13	-0.29	0.03	-1.62	315.59	0.11
	Weblink	147	1.88	0.75						
Instruction 3	Email	233	2.25	1.02	-0.11	-0.31	0.10	-1.01	321.6	0.31
	Weblink	149	2.36	0.99						
Instruction Total	Email	231	1.95	0.69	-0.13	-0.27	0.01	-1.89	318.46	0.06
	Weblink	147	2.08	0.67						
Assessment 1	Email	230	1.75	0.73	-0.11	-0.26	0.04	-1.44	313.52	0.15
	Weblink	148	1.86	0.73						
Assessment 2	Email	233	2.23	1.05	0.01	-0.21	0.22	0.06	324.39	0.96
	Weblink	149	2.22	1.01						
Assessment 3	Email	231	2.50	1.06	-0.02	-0.24	0.21	-0.16	304.85	0.87
	Weblink	148	2.52	1.10						
Assessment Total	Email	230	2.15	0.67	-0.04	-0.19	0.10	-0.58	289.31	0.56
	Weblink	147	2.20	0.73						

Table K2

*Chi-Square Tests of Independence for Differences Between Responses to Demographic Variables by Level, Survey Collector, Count, Column Percentage, Expected Value, Deviate, and Standard Deviation*

Variable	Level	Collector	Count	Column %	Expected	Deviate	SD
Number of Courses Taught	1 to 2	Email	72	30.90129	72.8125	-0.81	-0.10
	1 to 2	Weblink	48	31.78808	47.1875	0.81	0.12
	3 to 4	Email	85	36.48069	85.55469	-0.55	-0.06
	3 to 4	Weblink	56	37.08609	55.44531	0.55	0.07
	5	Email	67	28.75536	66.13802	0.86	0.11
	5	Weblink	42	27.81457	42.86198	-0.86	-0.13
	More than 5	Email	9	3.862661	8.494792	0.51	0.17
	More than 5	Weblink	5	3.311258	5.505208	-0.51	-0.22
	No response	Email	1	0.429185	1.820313	-0.82	-0.61
	Missing	Weblink	2	1.324503	1.179688	0.82	0.76
Years Experience Teaching	1 to 5	Email	37	15.87983	33.97917	3.02	0.52
	1 to 5	Weblink	19	12.58278	22.02083	-3.02	-0.64
	6 to 10	Email	42	18.02575	38.22656	3.77	0.61
	6 to 10	Weblink	21	13.90728	24.77344	-3.77	-0.76
	11 to 15	Email	45	19.3133	41.26042	3.74	0.58
	11 to 15	Weblink	23	15.23179	26.73958	-3.74	-0.72
	16 to 20	Email	50	21.45923	46.11458	3.89	0.57
	16 to 20	Weblink	26	17.21854	29.88542	-3.89	-0.71
	21 to 25	Email	19	8.154506	21.23698	-2.24	-0.49
	21 to 25	Weblink	16	10.59603	13.76302	2.24	0.60
Arts	26+	Email	39	16.7382	50.36198	-11.36	-1.60
	26+	Weblink	44	29.13907	32.63802	11.36	1.99
	Missing	Email	207	88.8412	203.875	3.13	0.22
	Missing	Weblink	129	85.43046	132.125	-3.13	-0.27
Computer Science / Engineering	VPA	Email	26	11.1588	29.125	-3.13	-0.58
	VPA	Weblink	22	14.56954	18.875	3.13	0.72
	Missing	Email	219	93.99142	221.4714	-2.47	-0.17
	Missing	Weblink	146	96.68874	143.5286	2.47	0.21
English	CSTech	Email	14	6.008584	11.52865	2.47	0.73
	CSTech	Weblink	5	3.311258	7.471354	-2.47	-0.90
	Missing	Email	190	81.54506	192.3464	-2.35	-0.17
	Missing	Weblink	127	84.10596	124.6536	2.35	0.21
English	English	Email	43	18.45494	40.65365	2.35	0.37
	English	Weblink	24	15.89404	26.34635	-2.35	-0.46

Variable	Level	Collector	Count	Column %	Expected	Deviate	SD
Mathematics	Missing	Email	189	81.11588	191.1328	-2.13	-0.15
	Missing	Weblink	126	83.44371	123.8672	2.13	0.19
	Math	Email	44	18.88412	41.86719	2.13	0.33
	Math	Weblink	25	16.55629	27.13281	-2.13	-0.41
Physical Education	Missing	Email	224	96.13734	223.2917	0.71	0.05
	Missing	Weblink	144	95.36424	144.7083	-0.71	-0.06
	PE	Email	9	3.862661	9.708333	-0.71	-0.23
	PE	Weblink	7	4.635762	6.291667	0.71	0.28
Religious Studies / Theology	Missing	Email	202	86.69528	199.6276	2.37	0.17
	Missing	Weblink	127	84.10596	129.3724	-2.37	-0.21
	RSTheo	Email	31	13.30472	33.3724	-2.37	-0.41
	RSTheo	Weblink	24	15.89404	21.6276	2.37	0.51
Science	Missing	Email	190	81.54506	191.1328	-1.13	-0.08
	Missing	Weblink	125	82.78146	123.8672	1.13	0.10
	SciEng	Email	43	18.45494	41.86719	1.13	0.18
	SciEng	Weblink	26	17.21854	27.13281	-1.13	-0.22
Social Studies / History	Missing	Email	184	78.96996	188.7057	-4.71	-0.34
	Missing	Weblink	127	84.10596	122.2943	4.71	0.43
	SS/H	Email	49	21.03004	44.29427	4.71	0.71
	SS/H	Weblink	24	15.89404	28.70573	-4.71	-0.88
World Languages / LOTE	Missing	Email	213	91.41631	214.1901	-1.19	-0.08
	Missing	Weblink	140	92.71523	138.8099	1.19	0.10
	LOTE	Email	20	8.583691	18.8099	1.19	0.27
	LOTE	Weblink	11	7.284768	12.1901	-1.19	-0.34
Other Academic Department	Missing	Email	220	94.4206	217.8307	2.17	0.15
	Missing	Weblink	139	92.05298	141.1693	-2.17	-0.18
	Other	Email	13	5.579399	15.16927	-2.17	-0.56
	Other	Weblink	12	7.94702	9.830729	2.17	0.69
Administration	Missing	Email	213	91.41631	213.5833	-0.58	-0.04
	Missing	Weblink	139	92.05298	138.4167	0.58	0.05
	Admin	Email	20	8.583691	19.41667	0.58	0.13
	Admin	Weblink	12	7.94702	12.58333	-0.58	-0.16
Admissions	Missing	Email	230	98.71245	229.3594	0.64	0.04
	Missing	Weblink	148	98.01325	148.6406	-0.64	-0.05
	Admiss	Email	3	1.287554	3.640625	-0.64	-0.34
	Admiss	Weblink	3	1.986755	2.359375	0.64	0.42

Variable	Level	Collector	Count	Column %	Expected	Deviate	SD
Athletics / Coaching	Missing	Email	184	78.96996	180.2109	3.79	0.28
	Missing	Weblink	113	74.83444	116.7891	-3.79	-0.35
	AthlCch	Email	49	21.03004	52.78906	-3.79	-0.52
	AthlCch	Weblink	38	25.16556	34.21094	3.79	0.65
Campus Ministry	Missing	Email	210	90.12876	206.3021	3.70	0.26
	Missing	Weblink	130	86.09272	133.6979	-3.70	-0.32
	CamMin	Email	23	9.871245	26.69792	-3.70	-0.72
	CamMin	Weblink	21	13.90728	17.30208	3.70	0.89
Clubs	Missing	Email	165	70.81545	154.7266	10.27	0.83
	Missing	Weblink	90	59.60265	100.2734	-10.27	-1.03
	Clubs	Email	68	29.18455	78.27344	-10.27	-1.16
	Clubs	Weblink	61	40.39735	50.72656	10.27	1.44
Counseling	Missing	Email	221	94.84979	219.651	1.35	0.09
	Missing	Weblink	141	93.37748	142.349	-1.35	-0.11
	Couns	Email	12	5.150215	13.34896	-1.35	-0.37
	Couns	Weblink	10	6.622517	8.651042	1.35	0.46
Dept. Chair / Academic Council	Missing	Email	189	81.11588	194.7734	-5.77	-0.41
	Missing	Weblink	132	87.41722	126.2266	5.77	0.51
	DChairAC	Email	44	18.88412	38.22656	5.77	0.93
	DChairAC	Weblink	19	12.58278	24.77344	-5.77	-1.16
Development / Advancement	Missing	Email	227	97.42489	227.5391	-0.54	-0.04
	Missing	Weblink	148	98.01325	147.4609	0.54	0.04
	DevAdv	Email	6	2.575107	5.460938	0.54	0.23
	DevAdv	Weblink	3	1.986755	3.539063	-0.54	-0.29
Library	Missing	Email	233	100	231.1797	1.82	0.12
	Missing	Weblink	148	98.01325	149.8203	-1.82	-0.15
	Library	Email	0	0	1.820313	-1.82	-1.35
	Library	Weblink	3	1.986755	1.179688	1.82	1.68
Performing Arts (Co-Curricular)	Missing	Email	214	91.84549	214.1901	-0.19	-0.01
	Missing	Weblink	139	92.05298	138.8099	0.19	0.02
	PerArts	Email	19	8.154506	18.8099	0.19	0.04
	PerArts	Weblink	12	7.94702	12.1901	-0.19	-0.05
Student Activities	Missing	Email	207	88.8412	205.6953	1.30	0.09
	Missing	Weblink	132	87.41722	133.3047	-1.30	-0.11
	StuAct	Email	26	11.1588	27.30469	-1.30	-0.25
	StuAct	Weblink	19	12.58278	17.69531	1.30	0.31

Variable	Level	Collector	Count	Column %	Expected	Deviate	SD
Student Government	Missing	Email	225	96.56652	223.2917	1.71	0.11
	Missing	Weblink	143	94.70199	144.7083	-1.71	-0.14
	StuGov	Email	8	3.433476	9.708333	-1.71	-0.55
	StuGov	Weblink	8	5.298013	6.291667	1.71	0.68
Student Publications	Missing	Email	225	96.56652	226.9323	-1.93	-0.13
	Missing	Weblink	149	98.6755	147.0677	1.93	0.16
	StuPub	Email	8	3.433476	6.067708	1.93	0.78
	StuPub	Weblink	2	1.324503	3.932292	-1.93	-0.97
Technology	Missing	Email	219	93.99142	218.4375	0.56	0.04
	Missing	Weblink	141	93.37748	141.5625	-0.56	-0.05
	Tech	Email	14	6.008584	14.5625	-0.56	-0.15
	Tech	Weblink	10	6.622517	9.4375	0.56	0.18
Other Programs	Missing	Email	204	87.55365	205.0885	-1.09	-0.08
	Missing	Weblink	134	88.74172	132.9115	1.09	0.09
	Other program	Email	29	12.44635	27.91146	1.09	0.21
	Other program	Weblink	17	11.25828	18.08854	-1.09	-0.26
None	Missing	Email	198	84.97854	200.2344	-2.23	-0.16
	Missing	Weblink	132	87.41722	129.7656	2.23	0.20
	None	Email	35	15.02146	32.76563	2.23	0.39
	None	Weblink	19	12.58278	21.23438	-2.23	-0.48
Bachelors	Missing	Email	14	6.008584	14.5625	-0.56	-0.15
	Missing	Weblink	10	6.622517	9.4375	0.56	0.18
	CathU	Email	62	26.60944	57.64323	4.36	0.57
	CathU	Weblink	33	21.8543	37.35677	-4.36	-0.71
	PrivU	Email	49	21.03004	43.6875	5.31	0.80
	PrivU	Weblink	23	15.23179	28.3125	-5.31	-1.00
	PubU	Email	108	46.35193	117.1068	-9.11	-0.84
	PubU	Weblink	85	56.29139	75.89323	9.11	1.05
Teaching Credential	Missing	Email	85	36.48069	91.6224	-6.62	-0.69
	Missing	Weblink	66	43.70861	59.3776	6.62	0.86
	CathU	Email	40	17.16738	44.90104	-4.90	-0.73
	CathU	Weblink	34	22.51656	29.09896	4.90	0.91
	PrivU	Email	31	13.30472	25.48438	5.52	1.09
	PrivU	Weblink	11	7.284768	16.51563	-5.52	-1.36
	PubU	Email	77	33.04721	70.99219	6.01	0.71
	PubU	Weblink	40	26.49007	46.00781	-6.01	-0.89

Variable	Level	Collector	Count	Column %	Expected	Deviate	SD
Administrative Credential	Missing	Email	216	92.70386	220.2578	-4.26	-0.29
	Missing	Weblink	147	97.35099	142.7422	4.26	0.36
	CathU	Email	3	1.287554	3.033854	-0.03	-0.02
	CathU	Weblink	2	1.324503	1.966146	0.03	0.02
	PrivU	Email	2	0.858369	1.820313	0.18	0.13
	PrivU	Weblink	1	0.662252	1.179688	-0.18	-0.17
	PubU	Email	12	5.150215	7.888021	4.11	1.46
	PubU	Weblink	1	0.662252	5.111979	-4.11	-1.82
Masters	Missing	Email	79	33.90558	78.88021	0.12	0.01
	Missing	Weblink	51	33.77483	51.11979	-0.12	-0.02
	CathU	Email	43	18.45494	52.78906	-9.79	-1.35
	CathU	Weblink	44	29.13907	34.21094	9.79	1.67
	PrivU	Email	44	18.88412	41.86719	2.13	0.33
	PrivU	Weblink	25	16.55629	27.13281	-2.13	-0.41
	PubU	Email	67	28.75536	59.46354	7.54	0.98
	PubU	Weblink	31	20.5298	38.53646	-7.54	-1.21
Doctorate	Missing	Email	220	94.4206	217.8307	2.17	0.15
	Missing	Weblink	139	92.05298	141.1693	-2.17	-0.18
	CathU	Email	3	1.287554	2.427083	0.57	0.37
	CathU	Weblink	1	0.662252	1.572917	-0.57	-0.46
	PrivU	Email	3	1.287554	5.460938	-2.46	-1.05
	PrivU	Weblink	6	3.97351	3.539063	2.46	1.31
	PubU	Email	7	3.004292	7.28125	-0.28	-0.10
	PubU	Weblink	5	3.311258	4.71875	0.28	0.13
Other Degree	Missing	Email	215	92.27468	214.1901	0.81	0.06
	Missing	Weblink	138	91.39073	138.8099	-0.81	-0.07
	CathU	Email	8	3.433476	7.28125	0.72	0.27
	CathU	Weblink	4	2.649007	4.71875	-0.72	-0.33
	PrivU	Email	5	2.145923	5.460938	-0.46	-0.20
	PrivU	Weblink	4	2.649007	3.539063	0.46	0.25
	PubU	Email	5	2.145923	6.067708	-1.07	-0.43
	PubU	Weblink	5	3.311258	3.932292	1.07	0.54
Catholic High School Attendance	Missing	Email	2	0.858369	2.427083	-0.43	-0.27
	Missing	Weblink	2	1.324503	1.572917	0.43	0.34
	No	Email	115	49.35622	108.0052	6.99	0.67
	No	Weblink	63	41.72185	69.99479	-6.99	-0.84
	Yes	Email	116	49.78541	122.5677	-6.57	-0.59
	Yes	Weblink	86	56.95364	79.43229	6.57	0.74

Variable	Level	Collector	Count	Column %	Expected	Deviate	SD
Religious Background	Missing	Email	1	0.429185	3.640625	-2.64	-1.38
	Missing	Weblink	5	3.311258	2.359375	2.64	1.72
	Catholic	Email	171	73.39056	165.6484	5.35	0.42
	Catholic	Weblink	102	67.54967	107.3516	-5.35	-0.52
	Non-Catholic	Email	61	26.18026	63.71094	-2.71	-0.34
	Non-Catholic	Weblink	44	29.13907	41.28906	2.71	0.42
	Missing	Email	4	1.716738	7.888021	-3.89	-1.38
	Missing	Weblink	9	5.960265	5.111979	3.89	1.72
Lay / Religious Status	Christian Brother	Email	4	1.716738	4.247396	-0.25	-0.12
	Christian Brother	Weblink	3	1.986755	2.752604	0.25	0.15
	Lay person	Email	216	92.70386	214.7969	1.20	0.08
	Lay person	Weblink	138	91.39073	139.2031	-1.20	-0.10
	Other vowed religious	Email	9	3.862661	6.067708	2.93	1.19
	Other vowed religious	Weblink	1	0.662252	3.932292	-2.93	-1.48
	Missing	Email	3	1.287554	3.033854	-0.03	-0.02
	Missing	Weblink	2	1.324503	1.966146	0.03	0.02
Gender	Female	Email	108	46.35193	96.47656	11.52	1.17
	Female	Weblink	51	33.77483	62.52344	-11.52	-1.46
	Male	Email	122	52.36052	133.4896	-11.49	-0.99
	Male	Weblink	98	64.90066	86.51042	11.49	1.24

## APPENDIX L

Chi-Square Analysis Tables for Implicit Theories and Perceptions of Academic Changes  
by Demographic Categories

Table L1

*Relationship Between Years of Experience and Implicit Theories in the Domains of Intelligence, the World and Morality*

Domain	Theory	Years Experience <sup>a</sup>			Test Statistic <sup>c</sup>
		1 to 10 <sup>b</sup>	11 to 20 <sup>b</sup>	21+ <sup>b</sup>	
Intelligence (n=377)	Entity	26(22.03%)	31(21.68%)	23(19.83%)	
	Incremental	92(77.97%)	112(78.32%)	93(80.17%)	
	<i>Total</i>	118(100%)	143(100%)	116(100%)	$\chi^2=2.39, df=4, ns$
The World (n=374)	Entity	21(17.95%)	44(31.43%)	43(36.75%)	
	Incremental	96(82.05%)	96(68.57%)	74(63.25%)	$\chi^2=10.78, df=4,$
	<i>Total</i>	117(100%)	140(100%)	117(100%)	$p<0.01$
Morality (n=379)	1 to 10	18(15.13%)	15(10.56%)	12(10.17%)	
	11 to 20	101(84.87%)	127(89.44%)	106(89.83%)	
	<i>Total</i>	119(100%)	142(100%)	118(100%)	$\chi^2=2.39, df=4, ns$

Note<sup>a</sup> For chi-square tests in this study, five levels of years of experience were combined into three levels in order to ensure sufficient cell contributions and valid analysis in the years of experience category.

<sup>b</sup> n (%)

<sup>c</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.0167 was used for statistical tests.

Table L2

*Implicit Theories in the Domains of Intelligence, the World and Morality by Academic Department*

Domain	Dept.	Theory		Test Statistic <sup>b,c</sup>
		Entity <sup>a</sup>	Incremental <sup>a</sup>	
Intelligence	VPA	11(22.92%)	37(77.08%)	$\chi^2=0.08, df=1, ns$
	CS/Tech	3(15.79%)	16(84.21%)	Fishers exact test used, ns
	English	13(19.40%)	54(80.60%)	$\chi^2=0.19, df=1, ns$
	Mathematics	14(20.90%)	53(79.10%)	$\chi^2=0.01, df=1, ns$
	PE/Wellness	0(0.00%)	16(100.00%)	Fishers exact test used, ns
	Religion	12(21.82%)	43(78.18%)	$\chi^2=0.01, df=1, ns$
	Science/Eng.	19(28.36%)	48(71.64%)	$\chi^2=2.36, df=1, ns$
	Soc Studies	13(17.81%)	60(82.19%)	$\chi^2=0.69, df=1, ns$
	LOTE	8(25.81%)	23(74.19%)	$\chi^2=0.39, df=1, ns$
	Other	3(12.00%)	22(88.00%)	$\chi^2=1.40, df=1, ns$
The World	VPA	15(32.61%)	31(67.39%)	$\chi^2=0.31, df=1, ns$
	CS/Tech	8(42.11%)	11(57.89%)	$\chi^2=1.64, df=1, ns$
	English	20(31.75%)	43(68.25%)	$\chi^2=0.26, df=1, ns$
	Mathematics	22(31.88%)	47(68.12%)	$\chi^2=0.32, df=1, ns$
	PE/Wellness	4(25.00%)	12(75.00%)	Fishers exact test used, ns
	Religion	13(24.07%)	41(75.93%)	$\chi^2=0.78, df=1, ns$
	Science/Eng.	18(26.09%)	51(73.91%)	$\chi^2=0.38, df=1, ns$
	Soc Studies	18(25.71%)	52(74.29%)	$\chi^2=0.48, df=1, ns$
	LOTE	7(22.58%)	24(77.42%)	$\chi^2=0.70, df=1, ns$
	Other	8(33.33%)	16(66.67%)	$\chi^2=0.22, df=1, ns$
Morality	VPA	5(10.64%)	42(89.36%)	$\chi^2=0.06, df=1, ns$
	CS/Tech	2(10.53%)	17(89.47%)	Fishers exact test used, ns
	English	7(10.45%)	60(89.55%)	$\chi^2=0.12, df=1, ns$
	Mathematics	9(13.04%)	60(86.96%)	$\chi^2=0.15, df=1, ns$
	PE/Wellness	2(12.50%)	14(87.50%)	$\chi^2=0.01, df=1, ns$
	Religion	5(9.09%)	50(90.91%)	$\chi^2=0.43, df=1, ns$
	Science/Eng.	10(14.49%)	59(85.51%)	$\chi^2=0.64, df=1, ns$
	Soc Studies	9(12.50%)	63(87.50%)	$\chi^2=0.05, df=1, ns$
	LOTE	2(6.45%)	29(93.55%)	Fishers exact test used, ns
	Other	3(12.00%)	22(88.00%)	$\chi^2=0.01, df=1, ns$

Note. <sup>a</sup> n (%)<sup>b</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.005 was used for statistical tests.<sup>c</sup>  $\chi^2$  test of association or Fishers exact test where more than one-fifth of the fitted cells are sparse (frequency < 5). Comparison is with those who do not teach in the department.

Table L3

*Relationship between Gender and Implicit Theories in the Domains of Intelligence, the World and Morality*

Domain	Theory	Gender <sup>a</sup>		Test Statistic <sup>b</sup>
		Female	Male	
Intelligence ( <i>n</i> =375)	Entity	31 (19.62%)	49 (22.58%)	$\chi^2=6.42, df=1, ns$
	Incremental	127 (80.37%)	168 (77.42%)	
	<i>Total</i>	158 (100.0%)	217 (100.0%)	
The World ( <i>n</i> =372)	Entity	31 (19.87%)	77 (35.65%)	$\chi^2=10.94, df=1, p<0.001$
	Incremental	125 (80.82%)	139 (64.35%)	
	<i>Total</i>	156 (100.0%)	216 (100.0%)	
Morality ( <i>n</i> =377)	Entity	16 (10.13%)	29 (13.24%)	$\chi^2=0.85, df=1, ns$
	Incremental	142 (89.87%)	190 (86.76%)	
	<i>Total</i>	158 (100.0%)	219 (100.0%)	

Note. <sup>a</sup> n (%)<sup>b</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.0167 was used for statistical tests.

Table L4

*Relationship Between Years of Experience and Perception of Academic Changes in Curriculum, Instruction, and Assessment*

Area of Change	Perception of Change	Years of Experience <sup>a</sup>			Test Statistic <sup>c</sup>
		1 to 10 <sup>b</sup>	11 to 20 <sup>b</sup>	21+ <sup>b</sup>	
Curriculum (n=376)	Favorable	83(70.34%)	98(69.01%)	72(62.07%)	
	Neither Favorable nor Unfavorable	18(15.25%)	20(14.08%)	21(18.10%)	
	Unfavorable	17(14.41%)	24(16.90%)	23(19.83%)	
	<i>Total</i>	118(100%)	142(100%)	116(100%)	$\chi^2=2.39, df=4, ns$
Instruction (n=377)	Favorable	107(92.24%)	124(86.71%)	101(85.59%)	
	Neither Favorable nor Unfavorable	8(6.90%)	7(4.90%)	9(7.63%)	
	Unfavorable	1(0.86%)	12(8.39%)	8(6.78%)	
	<i>Total</i>	116(100%)	143(100%)	118(100%)	$\chi^2=8.14, df=4, ns$
Assessment (n=376)	Favorable	101(86.32%)	119(83.80%)	96(82.05%)	
	Neither Favorable nor Unfavorable	9(7.69%)	14(9.86%)	11(9.40%)	
	Unfavorable	7(5.98%)	9(6.34%)	10(8.55%)	
	<i>Total</i>	117(100%)	142(100%)	117(100%)	$\chi^2=1.15, df=4, ns$

Note. <sup>a</sup> For chi-square tests in this study, five levels of years of experience were combined into three levels in order to ensure sufficient cell contributions and valid analysis in the years of experience category.

<sup>b</sup> n (%)

<sup>c</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.0167 was used for all statistical tests.

Table L5

*Perception of Academic Changes in Curriculum, Instruction, and Assessment by Academic Department*

Area of Change	Dept.	Perception of Change <sup>a</sup>			Test Statistic <sup>b,c</sup>
		Favorable	Neither Favorable nor Unfavorable	Unfavorable	
Curriculum (n = 373)	VPA	35(72.92%)	6(12.50%)	7(14.58%)	$\chi^2=0.80, df=2, ns$
	CS/Tech	14(73.68%)	3(15.79%)	2(10.53%)	$\chi^2=0.64, df=2, ns^d$
	English	41(62.12%)	13(19.70%)	12(18.18%)	$\chi^2=1.25, df=2, ns$
	Mathematics	43(62.32%)	13(18.84%)	13(18.84%)	$\chi^2=1.04, df=2, ns$
	PE/Wellness	9(56.25%)	4(25.00%)	3(18.75%)	$\chi^2=1.29, df=2, ns^d$
	Religion	35(64.81%)	11(20.37%)	8(14.81%)	$\chi^2=1.20, df=2, ns$
	Science/Eng.	50(74.63%)	8(11.94%)	9(13.43%)	$\chi^2=2.00, df=2, ns$
	Soc Studies	49(67.12%)	8(10.96%)	16(21.92%)	$\chi^2=2.43, df=2, ns$
	LOTE	21(70.00%)	5(16.67%)	4(13.33%)	$\chi^2=0.34, df=2, ns^d$
Other	16(64.00%)	4(16.00%)	5(20.00%)	$\chi^2=0.17, df=2, ns^d$	
Instruction (n = 374)	VPA	46(95.83%)	1(2.08%)	1(2.08%)	$\chi^2=3.06, df=2, ns^d$
	CS/Tech	18(94.74%)	1(5.26%)	0(0.00%)	$\chi^2=1.25, df=2, ns^d$
	English	57(86.36%)	5(7.58%)	4(6.06%)	$\chi^2=0.33, df=2, ns^d$
	Mathematics	63(92.65%)	1(1.47%)	4(5.88%)	$\chi^2=3.15, df=2, ns^d$
	PE/Wellness	12(75.00%)	2(12.50%)	2(12.50%)	$\chi^2=2.84, df=2, ns^d$
	Religion	49(89.09%)	2(3.64%)	4(7.27%)	$\chi^2=0.98, df=2, ns^d$
	Science/Eng.	62(91.18%)	4(5.88%)	2(2.94%)	$\chi^2=1.15, df=2, ns^d$
	Soc Studies	57(79.17%)	8(11.11%)	7(9.72%)	$\chi^2=7.08, df=2, ns$
	LOTE	26(83.87%)	2(6.45%)	3(9.68%)	$\chi^2=1.07, df=2, ns^d$
Other	22(91.67%)	2(8.33%)	0(0.00%)	$\chi^2=1.67, df=2, ns^d$	
Assessment	VPA	41(85.42%)	3(6.25%)	4(8.33%)	$\chi^2=0.58, df=2, ns^d$
	CS/Tech	14(73.68%)	3(15.79%)	2(10.53%)	$\chi^2=1.72, df=2, ns^d$
	English	51(78.46%)	12(18.46%)	2(3.08%)	$\chi^2=10.24, df=2, ns^c$
	Mathematics	61(89.71%)	2(2.94%)	5(7.35%)	$\chi^2=3.60, df=2, ns^d$
	PE/Wellness	13(81.25%)	1(6.25%)	2(12.50%)	$\chi^2=0.88, df=2, ns^d$
	Religion	42(76.36%)	9(16.36%)	4(7.27%)	$\chi^2=4.60, df=2, ns^d$
	Science/Eng.	58(85.29%)	6(8.82%)	4(5.88%)	$\chi^2=0.15, df=2, ns^d$
	Soc Studies	59(83.10%)	5(7.04%)	7(9.86%)	$\chi^2=1.38, df=2, ns$
	LOTE	26(86.67%)	3(10.00%)	1(3.33%)	$\chi^2=0.69, df=2, ns^d$
Other	21(84.00%)	2(8.00%)	2(8.00%)	$\chi^2=0.06, df=2, ns^d$	

Note. <sup>a</sup> n (%)

<sup>b</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.005 was used for statistical tests.

<sup>c</sup>  $\chi^2$  test of association. Comparison is with those who do not teach in the department.

<sup>d</sup> More than one-fifth of the fitted cells are sparse (frequency < 5). Significance test computed is suspect.

Table L6

*Relationship Between Gender and Perception of Academic Changes in Curriculum, Instruction, and Assessment*

Area of Change	Perception of Change	Gender <sup>a</sup>		Test Statistic <sup>b</sup>
		Female	Male	
Curriculum ( <i>n</i> =374)	Favorable	117 (74.52%)	135 (62.21%)	
	Neither Favorable nor Unfavorable	18 (11.46%)	40 (18.43%)	
	Unfavorable	22 (14.01%)	42 (19.35%)	
	<i>Total</i>	157 (100.0%)	217 100.0%)	$\chi^2=6.42, df=1, ns$
Instruction ( <i>n</i> =375)	Favorable	145 (91.19%)	185 (85.64%)	
	Neither Favorable nor Unfavorable	9 (5.66%)	15 (6.94%)	
	Unfavorable	5 (3.14%)	16 (7.40%)	
	<i>Total</i>	159 (100.0%)	216 100.0%)	$\chi^2=3.53, df=1, ns$
Assessment ( <i>n</i> =373)	Favorable	140 (88.60%)	174 (80.55%)	
	Neither Favorable nor Unfavorable	12 (7.59%)	22 (10.18%)	
	Unfavorable	6 (3.79%)	20 (9.25%)	
	<i>Total</i>	158 (100.0%)	216 100.0%)	$\chi^2=5.29, df=1, ns$

Note. <sup>a</sup> n (%)<sup>b</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.0167 was used for statistical tests.

Table L7

*Relationships Between Implicit Theories in the World Domain with Perceptions of Academic Changes in Curriculum, Instruction, and Assessment (Males Only)*

Area of Change	Perception of Change	Theory		Test Statistic <sup>b</sup>
		Entity <sup>a</sup>	Incremental <sup>a</sup>	
Curriculum ( <i>n</i> =214)	Favorable	38(50.00%)	95(68.84%)	
	Neither			
	Favorable nor			
	Unfavorable	14(18.42%)	25(18.12%)	
	Unfavorable	24(31.58%)	18(13.04%)	
	<i>Total</i>	76(100%)	138(100%)	$\chi^2=11.38, df=2, p < 0.01$
Instruction ( <i>n</i> =212)	Favorable	60(80.00%)	121(88.32%)	
	Neither			
	Favorable nor			
	Unfavorable	7(9.33%)	8(5.84%)	
	Unfavorable	8(10.67%)	8(5.84%)	
	<i>Total</i>	75(100%)	137(100%)	$\chi^2=2.73, df=2, ns$
Assessment ( <i>n</i> =212)	Favorable	53(69.74%)	118(86.76%)	
	Neither			
	Favorable nor			
	Unfavorable	14(18.42%)	7(5.15%)	
	Unfavorable	9(11.84%)	11(8.09%)	
	<i>Total</i>	76(100%)	136(100%)	$\chi^2=11.15, df=2, p < 0.01$

Note. <sup>a</sup> n (%)

<sup>b</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.0167 was used for statistical tests.

Table L8

*Relationships Between Implicit Theories in the World Domain with Perceptions of Academic Changes in Curriculum, Instruction, and Assessment (Females Only)*

Area of Change	Perception of Change	Theory		Test Statistic <sup>b</sup>
		Entity <sup>a</sup>	Incremental <sup>a</sup>	
Curriculum ( <i>n</i> =154)	Favorable	20(68.97%)	95(76.00%)	$\chi^2=1.52, df=2, ns^c$
	Neither			
	Favorable nor			
	Unfavorable	3(10.34%)	15(12.00%)	
	Unfavorable	6(20.69%)	15(12.00%)	
	<i>Total</i>	29(100%)	125(100%)	
Instruction ( <i>n</i> =156)	Favorable	29(93.55%)	113(90.40%)	$\chi^2=1.30, df=2, ns^c$
	Neither			
	Favorable nor			
	Unfavorable	2(6.45%)	7(5.60%)	
	Unfavorable	0(0.00%)	5(4.00%)	
	<i>Total</i>	31(100%)	125(100%)	
Assessment ( <i>n</i> =155)	Favorable	26(83.87%)	111(89.52%)	$\chi^2=5.11, df=2, ns^c$
	Neither			
	Favorable nor			
	Unfavorable	5(16.13%)	7(5.65%)	
	Unfavorable	0(0.00%)	6(4.84%)	
	<i>Total</i>	31(100%)	124(100%)	

Note. <sup>a</sup> n (%)

<sup>b</sup> Applying a Bonferroni adjustment to control for Type 1 error across multiple tests, an alpha level of 0.0167 was used for statistical tests.

<sup>c</sup> More than one-fifth of the fitted cells are sparse (frequency < 5). Significance test computed is suspect.