THE POWER OF TRANSFORMATION: A GROUNDED THEORY STUDY OF
CULTIVATING TEACHER GROWTH MINDSET TOWARDS
STUDENT INTELLIGENCE

by

Judith Swanson Bethge

Liberty University

A Dissertation Presented in Partial Fulfillment
Of the Requirements for the Degree

Doctor of Education

Liberty University

2018
THE POWER OF TRANSFORMATION: A GROUNDED THEORY STUDY OF CULTIVATING TEACHER GROWTH MINDSET TOWARDS STUDENT INTELLIGENCE

by Judith Swanson Bethge

A Dissertation Presented in Partial Fulfillment Of the Requirements for the Degree Doctor of Education

Liberty University, Lynchburg, VA

2018

APPROVED BY:

Ellen Lowrie Black, Ed. D., Committee Chair

Lynn Swaner, Ed. D, Committee Member

Melissa Tucker, Ed. D, Committee Member
ABSTRACT

The purpose of this systematic grounded theory study is to explain the process that teachers experience to transform their mindset regarding student intelligence from fixed towards growth, including effective transformation approaches and obstacles. This study focuses on the transformation experiences of 14 teachers in grades 9-12 from schools in the Midwest region of the United States. Dweck’s mindset theory, Wenger’s communities of practice, Mezirow’s Transformative Learning Theory, and Bandura’s Social Cognitive Theory guided the conceptual framework for developing a theoretical model to explain the process of teacher mindset transformation. Data collected using Dweck’s Mindset Instrument, King’s Learning Activities Survey, interviews, and activities including a metaphor tool were analyzed systematically and a model of transformation emerged. Themes of the model include: a moment of realization, experiences including experimenting and reflection, equipping activities, empowerment, application, extending, and a core category of relationships throughout the model. The model is visualized through metaphor. Implications for further research include expanded populations and use of metaphor in grounded theory studies.

Keywords: growth mindset, implicit theories, transformative learning theory, teacher mindset transformation, intelligence, metaphor
Dedication

To my dear husband, a true partner. You have shared your own journey of transformation with me; I dedicate this work to you. My love and gratitude to you is boundless. You embody a life transformed—with courage, vulnerability, and authenticity.

You are iron that sharpens iron.

Thank you for being the man in the arena with me—we have dared greatly!

Love always.

---------------------------------------

It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst,

if he fails, at least fails while daring greatly,

so that his place shall never be with those cold and timid souls

who neither know victory nor defeat.

-Teddy Roosevelt, April 23, 1910
Acknowledgments

There is no greater threat to the critics and cynics and fearmongers than those of us who are willing to fall because we have learned how to rise.—Brené Brown

I want to acknowledge the team who has helped me learn to rise through this process. To my committee chair, Dr. Ellen L. Black, you have helped me to not just start my doctoral journey strong, but to finish this process as a woman who cannot be stopped by anything. I am so grateful to you for entrusting me with your wisdom and insight. I think of you often when I need to feel wise, strong, and unafraid. You are a bright light pointing right back to our Lord.

To my committee members, Dr. Lynn Swaner and Dr. Melissa Tucker, your feedback and insights have made me a better student and researcher. Thank you for your commitment to my success in this process.

To professors who mentored me along the way, Dr. Spaulding and Dr. Milacci, you inspired in me a love of story and the beauty of qualitative process.

To my participants—you brave teachers who have dared to transform—your stories are inspiring. You are bright lights—keep burning strong. Thank you.

To my first principal, Kent, your influence and leadership imprinted my vision with the enduring beauty of what is possible for students and teachers. You are part of my transformation story. Your faithfulness to God’s calling in your life gives me hope for my own.

To my parents and family, your support means the world. Love you! Especially to my dear sister, Jennifer, thank you for coining me “Dr. Dr.”—it gave me hope and inspiration when the journey was hard. We Swanson sisters are a force to be reckoned with in this world! Pressing forward—I have no doubt our best chapters are ahead.
To my husband and sons, I’m finally done! No really—I am! Thank you for giving me the encouragement, space, and time to travel this road. You are my driving force. I hope that the struggle and sacrifice will be an inspiration that nothing is impossible in your own lives. I love you—always!

Finally, none of this would be possible without the power of God in my life. You created me, know me, love me, redeemed me, transformed me, empower me, lead me, carry me, and forgive me. Lord, establish the work of my hands. Christ in me, the hope of glory.

_Yours, O LORD, is the greatness, the power, the glory, the victory, and the majesty. Everything in the heavens and on earth is yours, O LORD, and this is your kingdom. We adore you as the one who is over all things._ 1 Chronicles 29:11 (NLT)
Table of Contents

ABSTRACT ........................................................................................................................................... 3
Copyright Page ...................................................................................................................................... 4
Dedication ............................................................................................................................................ 5
Acknowledgments ................................................................................................................................. 6
List of Tables ......................................................................................................................................... 14
List of Figures ....................................................................................................................................... 15
List of Abbreviations .......................................................................................................................... 16

CHAPTER ONE: INTRODUCTION ................................................................................................. 17
  Overview ............................................................................................................................................ 17
  Background ....................................................................................................................................... 19
    History of Intelligence ..................................................................................................................... 20
    IQ as Intelligence ............................................................................................................................ 24
    Critique of IQ as Intelligence .......................................................................................................... 25
    IQ and Rationality ............................................................................................................................ 25
    Intelligence and Mindset .................................................................................................................. 26
  Situation to Self ................................................................................................................................. 30
    Philosophical Assumptions and Worldview .................................................................................... 30
    Professional and Educational Positioning ....................................................................................... 32
    Suspending Judgment ..................................................................................................................... 32
  Problem Statement ............................................................................................................................. 33
  Purpose Statement .............................................................................................................................. 34
  Significance of the Study .................................................................................................................... 35
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Questions</td>
<td>37</td>
</tr>
<tr>
<td>Definitions</td>
<td>39</td>
</tr>
<tr>
<td>Summary</td>
<td>40</td>
</tr>
<tr>
<td><strong>CHAPTER TWO: LITERATURE REVIEW</strong></td>
<td>42</td>
</tr>
<tr>
<td>Overview</td>
<td>42</td>
</tr>
<tr>
<td>Organization of the Review</td>
<td>44</td>
</tr>
<tr>
<td>Related Literature</td>
<td>45</td>
</tr>
<tr>
<td>Defining Mindset</td>
<td>45</td>
</tr>
<tr>
<td>Mindset Misunderstandings</td>
<td>53</td>
</tr>
<tr>
<td>Mindset Studies Differentiated from Pygmalion Effect Studies</td>
<td>55</td>
</tr>
<tr>
<td>Mindset Studies Differentiated from Attitude Studies</td>
<td>57</td>
</tr>
<tr>
<td>Mindset Studies Differentiated from Self-Efficacy Studies</td>
<td>58</td>
</tr>
<tr>
<td><strong>Conceptual Framework</strong></td>
<td>60</td>
</tr>
<tr>
<td>Social Cognitive Theory</td>
<td>62</td>
</tr>
<tr>
<td>Cultivating a Mindset</td>
<td>63</td>
</tr>
<tr>
<td>Implicit Theories of Intelligence</td>
<td>65</td>
</tr>
<tr>
<td>Communities of Practice</td>
<td>67</td>
</tr>
<tr>
<td>Transformative Learning Theory</td>
<td>68</td>
</tr>
<tr>
<td>Transformation of Beliefs</td>
<td>70</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>77</td>
</tr>
<tr>
<td><strong>CHAPTER THREE: METHODS</strong></td>
<td>79</td>
</tr>
<tr>
<td>Overview</td>
<td>79</td>
</tr>
<tr>
<td>Design</td>
<td>80</td>
</tr>
</tbody>
</table>
Research Questions .................................................................................................................. 82
Setting ...................................................................................................................................... 82
Participants ................................................................................................................................. 83
Procedures ................................................................................................................................. 86
The Researcher's Role .................................................................................................................. 88
Data Collection ......................................................................................................................... 90
Surveys/Questionnaires ............................................................................................................. 91
Interviews ................................................................................................................................. 94
Teacher-Selected Photograph and Reflection ......................................................................... 97
Metaphor Constructed Response ......................................................................................... 97
Recommendation of Professional Development ...................................................................... 98
Data Analysis ............................................................................................................................ 99
Quantitative Instrument Data ............................................................................................... 100
Coding ....................................................................................................................................... 100
Coding Paradigm ..................................................................................................................... 103
Rater Test .................................................................................................................................. 104
Constant Comparison ............................................................................................................. 105
Trustworthiness ....................................................................................................................... 106
Credibility .................................................................................................................................. 107
Dependability .......................................................................................................................... 107
Confirmability ............................................................................................................................ 108
Transferability ........................................................................................................................... 109
Ethical Considerations ............................................................................................................. 110
Core Category .............................................................................................................126
Central Question ......................................................................................................136
Theoretical Model Themes ......................................................................................137
Unexpected Themes or Codes .................................................................................159
LAS Instrument (King, 2009) .....................................................................................160
Supporting Question 1 (SQ1) ..................................................................................166
Supporting Question 2 (SQ2) ..................................................................................172
Supporting Question 3 (SQ3) ..................................................................................178
Summary ..................................................................................................................185

CHAPTER FIVE: CONCLUSIONS ............................................................................189
Overview ..................................................................................................................189
Summary of Findings ...............................................................................................189
Discussion ...............................................................................................................192

Bandura’s Social Cognitive Theory .........................................................................192
Dweck’s Implicit Theories of Intelligence .................................................................193
Wenger’s Communities of Practice and Identity Formation .............................197
Mezirow’s Transformative Learning Theory ............................................................198

Implications .............................................................................................................201

Theoretical ...............................................................................................................201
Empirical ..................................................................................................................204
Practical .....................................................................................................................205

Delimitations and Limitations ..................................................................................207

Recommendations for Future Research .................................................................208
List of Tables

Table 1. Summary of Participant Demographics......................................................................... 85
Table 2. Enumeration of Codes Themes in Process of Mindset Change................................. 158
Table 3. Correlation of LAS Change Aspects Responses with Mezirow Stages and Theoretical Model .................................................................................................................. 162
Table 4. LAS Change Aspects-Responses by Participant ....................................................... 164
List of Figures

Figure 1. An incandescent light bulb diagram (Kushwaha, 2011). .................................................. 123
Figure 2. An Edison incandescent light bulb aglow used as metaphor for theoretical model. . 124
Figure 3. Theoretical Model of Teacher Mindset Transformation (Bethge, 2018). ............... 125
Figure 4. Aggregate counts of participant responses to LAS (King, 2009) Change Aspects sub
questions. ........................................................................................................................................ 161
Figure 5. Contributors of Change (LAS, King, 2009) by Participant........................................... 166
Figure 6. Visualization of SQ1-Qualities of Transformation Process. ........................................ 172
Figure 7. Visualization of SQ2-Factors of Transformation Process............................................. 178
Figure 8. Visualization of SQ3-Outcomes of Transformation Process. .................................... 185
List of Abbreviations

Grade Point Average (GPA)
Institutional Review Board (IRB)
Intelligence Quotient (IQ)
Learning Activities Survey (LAS)
Scholastic Aptitude Test (SAT)
Social Cognitive Theory (SCT)
Transformative Learning Theory (TLT)
CHAPTER ONE: INTRODUCTION

Overview

Since Dweck’s (2006) popular publication, *Mindset: The New Psychology of Success*, educators and school districts have utilized the theory of growth mindset as a framework for professional development and student achievement reform. Growth mindset is the name given to a person’s deeply held belief that the concept of intelligence is changeable and can be developed through effort, experience, and strategies rather than a fixed and unchangeable quality about a person. For policymakers who are looking to improve educational outcomes, the use of mindset interventions is powerful when implemented correctly and can reduce achievement gaps particularly among at-risk groups (Rattan, Savani, Chugh, & Dweck, 2015). Mindset influences the level of challenge and difficulty of learning a student will attempt (Ehrlinger, Mitchum, & Dweck, 2016). The shift to Common Core State Standards and 21st Century Learning Skills seeks to push students towards higher-level thinking, deeper understanding, and stronger problem-solving skills (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010; Partnership for 21st Century Skills, 2015). If curriculum calls for more rigor and deeper understanding, mindset transformation is an important factor in shifting students towards the difficult learning opportunities necessary to reach the rigor required by our world (Ehrlinger et al., 2016; Yeager & Dweck, 2012). Students holding a fixed mindset are more likely to divert their attention and focus away from the difficult aspects of the task onto the easier components, which promotes an overconfident belief in intellectual performance and ability (Ehrlinger et al., 2016).

This disconnect in accurate assessment of intellectual performance may be pervasive in not only individual student overconfidence but also an endemic problem in the accuracy of the
assessment of curriculum outcomes in the United States. A lack of correlation between state proficiency standards and benchmarked international proficiency standards illustrates the problem of systemic overconfidence and diverted attention (American Institutes for Research, 2014). For a multitude of reasons beyond the scope of this study, the United States school system is not accurately assessing performance, which inflates a sense of actual learning reality. In 2011, the Illinois state performance standard for 8th grade math deemed 86% of students proficient in the state while the international benchmark standards considered only 34% of the same students proficient (American Institutes for Research, 2014). If system-wide improvement in academic outcomes is desired, then improving accuracy in self-assessments of learning progress and reducing academic overconfidence through mindset formation is an important step in really moving student learning forward. The most recent policy recommendations from researchers include “teaching growth and belonging academic mindsets to students during the course of other school programming” and to “choose textbooks and learning materials that effectively integrate growth and belonging mindsets” (Rattan et al., 2015, p. 723). Utilizing growth mindset interventions to improve student outcomes, reduce achievement gaps, and increase the accuracy of perceptions regarding the current performance levels of students presents an opportunity to shift the focus and efforts of school reform; however, absent from the analysis is the role of the teacher in this process.

Lacking in the landscape of research and interventions surrounding mindset is a focused effort on understanding and growing the mindset of teachers towards student intelligence—one of the biggest influencers on student mindset and outcomes (Gutshall, 2013). Even the minimal existing research demonstrates the influence of teacher mindset (Brooks & Goldstein, 2008; Gutshall, 2013; Rattan, Good, & Dweck, 2012) and teacher self-efficacy beliefs (Schunk &
Pajares, 2005; van Uden, Ritzen, & Pieters, 2014) on a student’s own mindset and achievement outcomes. Therefore, adult teachers could benefit from understanding how to change mindset beliefs about intelligence, especially as it relates to their own views of student intelligence.

This introduction chapter provides a background context, problem statement and rationale for this study of the transformation of teacher mindset. I first review the contentious historical views of intelligence before situating the discussion in the context of beliefs about the changeability or malleability of intelligence. From there, I connect the general conversation on intelligence and beliefs about the changeability of intelligence into the classroom context, highlighting the importance of student beliefs about intelligence and the significance of teacher mindset beliefs about student intelligence. I identify a gap in the literature in terms of teacher mindset transformation. Philosophical and theoretical frameworks as well as the situation to self provide insight into the approach I use in this study. The problem is identified as well as the significance of the study empirically, theoretically, and practically. Finally, I present and position the research questions in the literature to drive this study.

**Background**

Thinking around the concept of *intelligence* has changed over time between a simple quotient into a multi-dimensional and dynamic process. At various times, educators, researchers, and the public have identified intelligence as a quantifiable construct measured through IQ tests, GPA, standardized tests for aptitude and achievement like the SAT, or other measures. Intelligence has been viewed in strictly academic terms represented by the statistical abstraction of *g* while other researchers argue for creation of a more elaborate definition and understanding (Detterman, 2000). Within the common experiences of people, intelligence in the popular genre has been dichotomized (e.g., right vs. left brain intelligence based on split-brain research of
Gazzaniga, 1967), gendered (e.g., Mars and Venus; Gray, 1993), compartmentalized (e.g., multiple intelligences; Gardner, 1998), and racialized (e.g., *The Bell Curve*; Herrnstein & Murray, 1996). Intelligence is commonly described as smarts, ability, know-how, and aptitude. However, no definitive definition of intelligence exists among scholars, but rather is more like the Justice Stewart “I know it when I see it” characterization of obscenity in *Jacobellis v. Ohio* (1964). For purposes of this study, the concept of intelligence will be simplified to *the ability to think and learn as well as to apply the learning* (Breakspear, 2013). The amorphous nature of defining and understanding the concept of intelligence may reflect the competing tensions surrounding societal assumptions of intelligence (Roberts, 2015), including whether intelligence is a fixed entity or changeable construct.

**History of Intelligence**

The understanding of human intelligence reflects philosophical assumptions and social values within the historical context. The ancients located intelligence in the soul. The modern debates about intelligence reflect recycled and repolished arguments about the *nature vs. nurture* debate (Winzer, 1993). Is intelligence quantified or constructed? In the modern era, the IQ measurement became synonymous with understandings of intelligence in many circles (Roberts, 2015). Another competing measurement was that of general intelligence, or *q*, identified by Spearman in the early 1900s to reflect a correlative factor that represented many more aspects of intelligence than just a single factor (Plucker & Shelton, 2015). However, both measurements were unitary metric methods of quantitative assessment of intelligence. In the post-modern world, intelligence encompasses not just cognitive measures of memory but represents a multi-faceted and culturally contextualized concept (Sternberg, 2005). However, “the history of IQ is a history of social ideology” (Staub, 2016, p. 76) and understandings of intelligence reflect what a
society determines to be of value and priority in a given historical context. The modern history of intelligence as a concept follows the prevailing philosophical assumptions and societal values that influenced social and political policy.

**Genetic determinism.** During the 20\textsuperscript{th} century, social Darwinism and genetic determinism significantly influenced the intelligence research and findings of studies (Winzer, 1993). The presuppositions that intelligence is a genetic quality permeated the academic discussions and supported eugenics policies as well as educational and social segregation policies (Roberts, 2015; Winzer, 1993). People with low IQs were deemed to be less “socially valuable” than people “deemed to be more intelligent” (Roberts, 2015, p. S50). Genetics determined worth and possibility, marked the social dividing lines, and directed priorities and resources towards what was valued.

**Racialization of genetics.** United States immigration policies in the early 1900s reflect the low assessment of immigrant populations’ intelligence through testing and strict quotas to reduce undesirable populations of newcomers (Winzer, 1993). In their view, no one in power was inclined to add more objectionable people to existing low-performers. Even research in 1971 focused on a genetic racialization of intelligence to explain the variations between IQ scores of African Americans and Caucasians based on “racial differences in brain anatomy” and that “nature has color-coded groups of individuals so that statistically reliable predictions of their adaptability to intellectually rewarding and effective lives can easily be made and profitably be used by the pragmatic man-in-the-street” (Shockley, 1971, p. 375). As much as social Darwinists and genetic determinists sought to ignore the impact of historical and social contexts, these arguments reflecting innate race-based differences in intelligence cannot be understood outside of long historical and cultural systems that impacted individual lives, opportunities, and
experiences (Roberts, 2015).

**Modern genetics.** The genetic argument for intelligence as an inherited and biological factor is still strong with poignant and targeted attacks against environmentalist or nurture theories, even of the interactionist variety (Gottfredson, 2016). Providing a definitive answer to the nature versus nurture question in this dissertation is impossible. However, even when the most ardent critics of the malleability of intelligence focus on “biological constraints to intelligence” and state that “intelligence, like all abilities, is a maximal trait,” where a personal best performance depends on optimal human conditions, this same critic still admits that “behaviors and environments that downgrade the brain are malleable” (Gottfredson, 2016, p. 122). The genetic argument still depends on environmental conditions and behaviors, supporting the later discussion of Social Cognitive Theory (Bandura, 1986) and its use in this research project.

**Impulse-control dictating intelligence.** In the 1960s and 1970s, the direction of intelligence testing and research focused on capacity for impulse-control and self-discipline with the famous Mischel marshmallow tests of young children (Staub, 2016). Through the marshmallow tests, a group of experiments to test capacity for delayed gratification, socioeconomic status morphed from a correlational variable to a direct predictive causal factor in intelligence status and impulse-control, with the middle and upper classes demonstrating higher scores in both areas (Staub, 2016). In fact, “Mischel himself had initially proposed in 1962 that high delayers were on the whole more intelligent than poor delayers” (Staub, 2016, p. 72). Even modern research associates higher self-control or self-discipline with higher intelligence (e.g., meta-analysis of self-control and intelligence, \( N = 26, r = -.23, p < .0001; \) Shamosh & Gray, 2008). The meta-analysis conducted by Shamosh and Gray (2008) only included studies that
measured intelligence with an IQ test or another test that could be converted into an IQ, and specifically excluded any study where the participants were instructed to use specific strategies during the delay discounting (DD) activity measuring impulse control because it could “dramatically and systematically influence performance on DD tasks” (Shamosh & Gray, 2008, p. 294). This mere fact that sharing a strategy for better performance with a participant can dramatically improve performance on a task begs the question of this study in whether intelligence is a fixed or malleable concept.

**Intelligence, social class, and criminality connections.** By the 1980s, this research path justified the cognitive deficit theory that linked low impulse control and IQ to criminal behavior within the United States population (Staub, 2016). This path of thinking harkened back the same arguments of policy makers and researchers about low IQ and criminality amongst immigrants in the early 1900s (Winzer, 1993). Social class stratification, reflecting criminalization theories of the lower class and lack of intelligence and impulse control, permeated the genetics-based arguments that higher IQ scores of the upper-class were the result of breeding (Staub, 2016). Staub (2016) noted that “brainy (and successful) parents quite simply produced brainy (and successful) children” (p. 73). At the core, this philosophical worldview and research path prioritized the nature component of human development to the exclusion of the nurture factors.

**Developmental perspective.** Not all researchers supported the nature-dominant narrative of intelligence. Gottfredson (2016) recounts in a historical overview that some American social scientists in the 1960s believed the differences in intelligence at both the group and individual levels, between different racial and socioeconomic groups, were the result of educational and economic disadvantage and that intelligence was malleable or changeable. Newer theories of human nature emerged as society entered the 21st Century, reflecting the ability of human beings
to change by themselves (Staub, 2016). This cognitive hypothesis coincided with significant developments in neuroscience, moving the focus from raw IQ as the predictor of success in life towards self-regulation and self-discipline with a dose of positive psychology (Duckworth & Seligman, 2005; Staub, 2016). The early research on impulse control from Mischel and the marshmallow tests was given a new non-IQ based veneer to avoid the elitism and racial overtones of the prior studies (Staub, 2016).

**IQ as Intelligence**

Many researchers and social policy makers of the 20th and 21st centuries in the United States viewed IQ testing as the means to scientifically measure and quantitatively rank the mental status of individuals against peer groups (Shamosh & Gray, 2008; Winzer, 1993). The IQ test, originally developed by Alfred Binet in France as a method to measure individual learning differences within a child to help direct remediation efforts, quickly morphed away from its original intent to inform and improve the education of students with disabilities into mainstream and widespread group usage (Carson, 2014; Winzer, 1993). During the early 1900s, the IQ test was a measurement of intelligence that determined social hierarchy, “fitness in humans,” and “moral worth as well as cognitive capacity” (Roberts, 2015, p. S51). Testing for intelligence through IQ tests provided the fuel for social and educational segregation policies based on a deterministic or fixed view of intelligence (Winzer, 1993). An alternative account of IQ testing and policy used a functional explanation of the ordering of IQ with the social status of jobs to argue that society needed to recruit individuals with higher IQ into the most consequential and complex jobs to explain social hierarchy by IQ (Gottfredson, 2016). In many ways, IQ became an equivalent substitute for intelligence in the understanding of both researchers, policy makers, and the general population.
Critique of IQ as Intelligence

Some researchers did not view the IQ test as the remedy to understanding and segmenting the masses (Winzer, 1993). As research began to understand the complexities of the concept called intelligence, researchers moved away from a quantitative IQ measurement as a sufficient representation of intelligence towards a more holistic understanding. IQ was seen as “singular, hierarchical, and unidimensional” (Carson, 2014, p. 254). Many cautioned against the misuse of IQ testing outside of the original intention and design of the test (Carson, 2014; Winzer, 1993) and the danger of “conflating of a construct with a measure of that construct” (Plucker & Shelton, 2015, p. S22). Operationalized definitions of intelligence using proxy measures such as IQ, q, or even Scholastic Aptitude Test (SAT) scores may introduce additional confounding variables into studies by adding the noise of test preparation or curriculum differences rather than actual intelligence (Plucker & Shelton, 2015). This reality was the basis of exclusion in Shamosh and Gray (2008 for any study that suggested the use of strategies to improve performance on the task as it may substantially interfere with the relationship to IQ.

IQ and Rationality

Many people commonly assume that IQ testing reflects the level of a person’s good thinking and can operate as a proxy measure for decision-making skills and judgment (Stanovich & West, 2014). Many people, regardless of low or high performance on IQ testing, fall victim to the same heuristic and biases in their thinking processes noted by Nobel Prize winner Kahneman (2011). Perceptions of intelligence as a construct may conflate IQ with rationality; they are separate concepts and “high intelligence is no inoculation against many of the sources of irrational thought” (Stanovich & West, 2014, p. 266). Stanovich and West (2014) argue to limit the definition of intelligence to the cognitive and quantified concept measured by IQ testing and
other psychometric studies. This debate in the literature surrounding the definition and understanding of intelligence reflects the constant negotiation between the academic and practitioner world.

**Intelligence and Mindset**

Fomenting under the surface of society’s views of intelligence are assumptions or implicit beliefs about the concept of intelligence that are not openly scrutinized. However, for over 30 years, Stanford University researcher Carol Dweck has examined the assumptions people hold about the malleability of intelligence, especially among student populations, and the impact of those beliefs on life and learning outcomes (Dweck, 1986, 2000, 2006; Dweck, Chiu & Hong, 1995; Yeager & Dweck, 2012). Belief about the malleability or changeability of intelligence reflects a person’s implicit theory or assumption regarding whether intelligence is a fixed concept that is stable or rather something able to be changed and grown (Dweck et al., 1995). Today, the literature uses the terms *fixed* and *growth mindset* to describe these different views of the changeability of intelligence (Dweck, 2006).

Dweck’s work on fixed and growth mindset has focused on the significant impact of student mindset regarding intelligence on a student’s academic outcomes, motivation to learn, and behaviors in the face of academic challenge and failure (Dweck, 1986, 2006; Dweck et al., 1995; Yeager & Dweck, 2012). Dweck leads the way in making these research findings regarding the impact of student mindset on achievement outcomes accessible for classroom teachers (Yeager & Dweck, 2012). In fact, Dweck created an online mindset intervention program for students (Mindset Works, Inc., 2012) and leads a department at Stanford that investigates the impact of mindset on human performance as well as interventions to cultivate growth mindset beliefs in students (Dweck, 2006).
Research demonstrates the influence of a student’s fixed and growth beliefs on student learning outcomes (Dweck, 2015a; Gutshall, 2013), motivation, effort (Dweck, 1986; Ehrlinger et al., 2016; Sevincer, Kluge, & Oettingen, 2014), and persistence in the face of challenge (Sevincer et al., 2014). Mindset interventions are being examined for effectiveness on changing mindset beliefs in student populations, at both small (e.g., reading passages in Ehrlinger et al., 2016; Sevincer et al., 2014; weekly emails to students throughout the school year in Yeager & Dweck, 2012; and 6-week online training module in Esparza, Shumow, & Schmidt, 2014; Mindset Works, Inc., 2012) and larger scales (e.g., multi-district implementation in Rattan et al., 2015) with the hopes of being highly successful in school reform and student learning initiatives. Recent work on the use and scalability of mindset interventions in schools across the United States indicates a positive change and influence in student mindset beliefs (Paunesku et al., 2015). School districts and classroom teachers promote growth mindset as the new mantra for improving student outcomes (Schmidt, Shumow, & Kacker-Cam, 2015). Most of the studies utilize computer-based activity interventions designed by researchers and do not entail teacher created or directed interventions. These studies and interventions focus on cultivating a growth mindset in the students themselves without reference to any process of cultivating the mindset of the teacher in the classroom.

While the current effort on cultivating growth mindset for students remains ongoing, researchers are now beginning to turn their attention to the mindset of teachers in the classroom and in cultivating a growth mindset in teachers (Gutshall, 2013; van Uden et al., 2014). While those few studies demonstrate that teacher mindset matters, little consideration is given to describing or understanding the process that teachers experience to transform their mindset about student intelligence. Teachers who do not hold a growth mindset towards student intelligence or
who are not even aware of their mindset have no tools to help shift their own mindset towards student intelligence. This study provides an opportunity to examine the mindset transformation process in teachers and develop a model to explain the process. Development of a model, grounded in the data, will provide guidance to the evolution of professional learning opportunities to influence teacher mindset.

Change in adult thinking and beliefs are different from the process in adolescents due to life experiences, the passage of time, and established patterns of thinking. Transformative Learning Theory (Mezirow, 1991, 2000, 2003) provides a framework from adult learning theory that may provide insight into the mindset transformation process. The scholarly conversation around Transformative Learning Theory demonstrates the continued emergence of understanding around the transformation process, and this study joins that conversation by examining the process of mindset transformation in the context of teachers. The current critique of Transformative Learning Theory questions whether it can even be considered a theory because of its lack of power to predict transformation, the varied processes that adults experience during changes in belief or thinking, and whether transformation just in fact reflects good learning and not a separate concept to be studied (Arends, 2014; Dirkx, 2012; Kucukaydin & Cranton, 2013; Mälkki, 2010; Newman, 2012a, 2012b, 2014). Since this research study presented an opportunity to examine a change process within the framework of a theory itself that is under construction and discussion in the literature, I will be able to join that scholarly conversation through dissemination of this study’s findings.

To position this study and the discussion surrounding both the implicit theories of intelligence and the process of transformation of beliefs, several theories will serve as lenses through which to understand and examine the learning process in adults that results in a
transformed understanding of student intelligence. Bandura’s (1986) Social Cognitive Theory provides a general grounding framework to understand the process of change in mindset beliefs of teachers about their students’ intelligence. Social Cognitive Theory reflects the reciprocal relationships between the cognitive, behavioral, and environmental factors in understanding human behavior (Bandura, 1986). Dweck’s implicit theories of intelligence grow out of the cognitive context of Bandura (1991). Layered as an additional lens is Mezirow’s (1991, 2000, 2003) Transformative Learning Theory which examines the process of transformation in adults through the learning process. Wenger’s (1998) communities of practice and identity formation provide a different insight into the learning and transformation in thinking of adult professionals within their communities. By examining Bandura’s categories of thinking, actions, and context in understanding transformation of mindset beliefs, I explored the understanding of transformation from multiple lenses that can give different insights into the process of mindset transformation.

Each theorist provides different emphases and ways to understand the mechanisms of thinking, action, and context. For example, Mezirow’s (1991, 2000, 2003) process of transformative learning is more linear in its presentation than Bandura’s (1986) triadic reciprocal approach to understanding human behavior. Yet, even the most recent scholarly contribution in Transformative Learning Theory embraces the dynamic nature of the journey, the uniqueness of the individual’s experience, and the nature of progress on the transformative journey as “neither linear nor predictable” (King, 2017, p. 172). However, learning and transformation does not happen in isolation, and the impact of the group (professional educators) influences the learning and dynamics of meaning. Therefore, Wenger’s (1998) theory explores the subtleties of learning
experienced by adult professionals in communities of practice and how membership in this community shapes the identity of those professionals.

**Situation to Self**

As a qualitative research design was selected, it is important for me to outline my philosophical assumptions and the worldview through which I approached this study as the human instrument of the research. I include my beliefs about the nature of reality, knowledge, and knowing as well as my spiritual values as they relate to transformation. I include my educational and professional background as an attorney and my career-change to education as both influencing my impetus and approach to this study, providing more details in Chapter Three, Role of the Researcher. Finally, while I am the human instrument in the study, I discuss in this section the necessity of suspending judgment in this research process and my skills to do so. My goal in this section is to provide the reader a better understanding of who I am as the researcher and how my experiences and identity influence my understanding of the mindset transformation process.

**Philosophical Assumptions and Worldview**

I assumed a critical realist perspective in this study. This perspective is framed by both a realist ontology and constructivist epistemology that sees the existence of a real world but the knowledge of that world as constructed through human experience (Maxwell, 2012). I embrace the tension between these positions, situating myself not only as a human instrument in my research but also as a human instrument in constructing my own experience with the reality that is separate in existence from my own. Ontology and epistemology are distinct concepts but interact in understanding the world (Sayer, 2000). The major frameworks encountered through
this study reflect the constructivist nature of knowing the world and the concept of transformation as re-constructing knowledge through new experience.

As part of the design and methodology, I initiated the dialogue and built a theory grounded in the real world but constructed through the experiences of the participants and myself. Corbin and Strauss (2015) discuss the constructivism inherent in the knowledge-making process that is “constructed by researchers out of stories that are constructed by research participants who are trying to explain and make sense out of their experiences and lives, both to the researcher and themselves” (p. 26). I inserted myself through the process of memoing as theories emerged in the process. The language of the study reflects the meaning making of the participants and their voices with my role as the researcher to construct a whole-view model or theory across their many voices. On the constructive nature of grounded theory research, Charmaz (2014) stated that “we construct our grounded theories through our past and present involvements and interactions with people, perspectives, and research practices” (p. 17). I was part of the interchange of ideas and experiences with my participants as I built a grounded theory from their narratives and perspective vis-à-vis my own self.

Finally, the values I hold deeply relate to my own spiritual transformation and faith journey with Jesus Christ. For me, the idea of transformation is not just an alteration in view or belief, but a fundamental shift. In the biblical Scriptures, the life and letters of Paul are instructive. The Damascus Road encounter recorded in Acts 9 details the conversion experience of Paul from chief persecutor of Christians to follower of Christ. The Apostle Paul later writes instructions for thinking differently saying, “do not be conformed to this world, but be transformed by the renewal of your mind” (Romans 12:2, English Standard Version [ESV]). Paul describes this process as one of putting off the old self and putting “on the new self, which is
being renewed in knowledge after the image of its creator” (Colossians 3:10, ESV). In this transfiguration experience, a fundamental change in identity and thinking is shared from Paul to his audience—in some ways dramatic and jarring and in other ways slow and continual. For me, the transformative process is at the heart of my own spiritual identity and thinking and therefore motivates me to discover the work of transformation in others.

**Professional and Educational Positioning**

As the human instrument of this study, my background as both an attorney and educator influence the manner in which I approached this study. My first career was practicing law as a prosecutor for the state and then in private practice. In my mid-thirties I transitioned from the legal profession and became an educator of students in grades 6-12. I returned to school and obtained a Master of Arts in Teaching (M.A.T.) and license to teach. Early in my role as a classroom teacher I experienced this process of mindset transformation regarding my students’ intelligence. I shifted from saying that I believed all students could learn and achieve to living and instructing that belief within my classroom. It is this experience that propels me to understand and explain this process through the stories and experiences of others with the intention to share these insights with the profession and researchers. My hope is that educators, trainers, mentors, and coaches find value in the process of mindset transformation within themselves that changes the possibilities and outcomes for the individuals with whom they interact.

**Suspending Judgment**

I assume transformation is possible because I have personally experienced a shift from a more fixed mindset towards a growth mindset. But, I also know teachers who have fixed mindsets towards students. I have observed several teachers on a transformational journey and
want to better understand my own process and theirs in order to provide support and partnership in the transformation process. However, I needed to suspend my judgments and the impact of my own experiences to the best of my ability on the data and analysis through the epoche process, using a disciplined journal system to keep my own experiences separated, but heard, in a reflective journal. Corbin and Strauss (2015) asserted that “researchers are there to gather information and not to make judgments” (p. 13). I have had significant experience and training as an attorney in suspending judgment while advocating for the interests and rights of my clients. My prior professional experience and education assists me in the data collection and analysis process required herein by grounded theory.

**Problem Statement**

Growth and fixed mindset are the labels given to the implicit theories of intelligence popularized by Dweck (2006) about whether people believe that their intelligence is something about them that can be changed or is static (Haimovitz & Dweck, 2016; Yeager & Dweck, 2012). Student mindset significantly impacts student achievement outcomes (Ehrlinger et al., 2016; Gutshall, 2013; Sevincer et al., 2014). Prior research demonstrates the significant impact of teacher mindset (Gutshall, 2013; Hohnen & Murphy, 2016; Rattan et al., 2012) as well as a teacher’s self-efficacy beliefs (Schunk & Pajares, 2005; van Uden et al., 2014) on student beliefs about a student’s own intelligence and effort. Lacking in all the research and interventions on mindset is a focus on the transformation of teacher mindset, which significantly influences students in a classroom (Gutshall, 2013). In a recent interview with *The Atlantic* (Gross-Loh, 2016, December 16) Dweck recognized an emerging problem of the disconnect between professed growth mindset beliefs in teachers while maintaining fixed mindset actions and methodologies in the classroom—evidence of a blockage impeding mindset transformation (e.g.,
phenomenon noted in Schmidt et al., 2015; Varlas, 2016). Changing the old habits of fixed mindset thinking may be a difficult barrier to authentic transformation in a teacher’s mindset regarding student intelligence (Snyder, 2011). I have yet to find any studies conducted on the process used by teachers to change or reframe their mindset regarding student intelligence. As a result of this significant gap in the literature, further research was needed to develop a model to explain how adult teachers authentically transform their mindset from fixed towards growth.

**Purpose Statement**

The purpose of this systematic grounded theory study was to explain the process that teachers experience in the transformation of their mindset regarding student intelligence from fixed towards growth, including effective transformation approaches and obstacles. This study focused on teachers in grades 9-12 from schools in the Midwest region of the United States. Transforming mindset was understood as a transformational process of reframing beliefs and thoughts about whether intelligence is a fixed concept or a quality that can grow and change through hard work and effort. In the literature, the terms *fixed* and *growth mindset* are now used to describe these respective beliefs (Dweck, 2006; Yeager & Dweck, 2012).

The theories guiding this study included Transformative Learning Theory (Mezirow, 1991, 2000, 2003) as it reflected the ability of adults to change their beliefs and orientations towards concepts through reflective practices and implicit theories of intelligence which informed the understanding and framing of mindset and beliefs about intellectual ability (Dweck, 1986; Dweck, 2006; Dweck et al., 1995; Yeager & Dweck, 2012). Communities of practice (Wenger, 1998) provided insights into the social context of learning as professionals, in this case teachers, and the impact that this community factor had in the learning process and identity formation of teachers within the community. This study was also grounded in a conceptual
framework of Social Cognitive Theory (Bandura, 1986) which reflected the interaction of personal-cognitive (thoughts), environmental, and behavioral (actions) factors on learning and perception of the world.

**Significance of the Study**

This study adds to the current understanding of growth mindset development by focusing on the process through which adults, specifically teachers, experience transformation in their mindset beliefs about student intelligence. The literature already reflects significant progress in understanding growth mindset in adolescents and quantifying the effectiveness of mindset interventions in student populations (Dweck, 2015a; Paunesku et al., 2015; Rattan et al., 2015). However, this study focused on the transformation of mindset within an adult population of teachers, which had not yet been investigated. The literature revealed a dearth of studies focused on transformation of mindset in the teacher population who act as learning gatekeepers in their classrooms. Both Gutshall (2013) and van Uden et al. (2014) called for this path of research inquiry. This study also provides direction for additional research to clarify findings or replicate in new populations such as school administrators.

An additional theoretical contribution of this study is to the literature on Transformative Learning Theory by joining the current conversation around adult transformation through learning and providing insight into a model or process of change applicable to teachers. Taylor (2000) suggested the exploration and future research into “theoretical comparisons” to help answer questions about “transformative learning that cannot be answered by the present model proposed by Mezirow” (p. 317). The goal of this study was to develop a model to explain the transformation process in teachers. Taylor (2000) also recommended exploration of new and varied methods of data collection in regards to transformative learning and this study used a
constructed response with metaphor as part of the data collection that was not widely used but supported in the literature in Chapter Three. Once a model is developed, additional quantitative research could be conducted to test the empirical validity and explanatory value of the model. Then, additional studies can be conducted to investigate if there is a causal or predictive relationship between teacher mindset transformation and student outcomes.

The potential practical implications of this study include insight into leveraging the influence of teacher mindset in the classroom on student achievement outcomes. Rattan et al. (2015) presented a comprehensive list for consideration of recommendations and potential influences of the current body of growth mindset research on educational policy. For example, to address the issue of teachers lacking essential training in academic mindsets, Rattan et al. (2015) proposed to “use or develop validated programs to instruct teachers on how to effectively foster growth and belonging mindsets among students” as well as “propose, develop, implement, and test teacher training materials . . . [and] offer validated training to teachers during existing professional development” (p. 723). Curriculum for pre-service teacher education programs can be developed in conjunction with the model. This study could also inform the creation and implementation of professional development and coaching-mentoring relationships in schools for teachers to help them transform their mindset and grow as teachers. Insights from this study could aid with the implementation and study of programs, curriculum, and learning experiences for teachers that are effective. Finally, the model produced in this study could help teachers develop the mindset to better maximize professional development opportunities and feedback in their professional roles. As an essential step to implementing the recommendations in Rattan et al. (2015), this study could equip teachers with a model or pathway for their own purposeful mindset transformation in order to lead students in that same direction towards a growth mindset.
Research Questions

In this study, the impact of a student’s mindset regarding intelligence is acknowledged as a driving force in student outcomes and achievement (Dweck, 1986, 2006; Dweck et al., 1995; Schunk & Pajares, 2005; Yeager & Dweck, 2012). Fundamental to the process of improving student outcomes is the cultivation of a growth mindset within teachers. To this end, I answered the following four research questions with the first being the central question and the subsequent questions being sub-questions:

Central Question (CQ): How do high school teachers’ mindsets transform from fixed to growth regarding student intelligence?

Teacher mindset regarding student intelligence is viewed as a significant factor affecting student mindset and affects student outcomes (Brooks & Goldstein, 2008; Gutshall, 2013; Rattan et al., 2012). Transformative Learning Theory (Mezirow, 1991, 2000, 2003) seeks to explain the process of changing frames of understanding within adult populations. Communities of practice (Wenger, 1998) provide context within which professional educators experience learning and negotiate new meanings. In this case, understanding how adults shifted their mindset beliefs about intelligence provided insight into building a model to understand the process for others.

Sub-Question 1 (SQ1): How do high school teachers experience the process of mindset transformation?

Transformative Learning Theory (Mezirow, 1991, 2000, 2003) presents a 10-phase process of transformation that results in a changed frame of reference, but there is some discussion in the literature about its predictive value and whether it wholly describes the process of belief transformation. Therefore, investigating how Transformative Learning Theory captured the experience of transformation in the teacher population around mindset transformation was
important. Communities of practice (Wenger, 1998) also provide insight into the experiences of professionals within the larger social context through the negotiation of meaning experienced in the duality of participation and reification. Grounded theory seeks to produce, refine, or extend a model or theory to explain the process that is lived and experienced by the actual participants.

Sub-Question 2 (SQ2): What factors influence the process of mindset transformation in high school teachers?

Some of the scholarly dialogue surrounding Transformative Learning Theory (Mezirow 1991, 2000, 2003) discussed the de-emphasis of the emotional components of change, and since Mezirow was a secular theorist, very little view is given to whether there is a spiritual component to change in the research. Since the most current voices in the literature seek a more holistic view of transformation, then all factors that influence the process should be explored. Wenger (1998) describes how communities of practice give rise to the meaningfulness of experience or being held hostage by experiences, implying that there are both helpful and hindering experiences.

Sub-Question 3 (SQ3): How do high school teachers describe the outcomes of the mindset transformation process for their practice, especially as it relates to the role of professional development?

Authentic transformation must manifest itself in changed behaviors and perspectives. Mezirow (1991) notes in his transformation process that perspective shift and action based on the new understanding are present. Kegan (2000) argues that transformative learning results not in an increase of quantity in knowledge, but a deepening how or increased capacity for knowing. This question explores how the shift in perspective or new knowledge impacted the actions taken and the new manner of thinking in the teacher. Wenger (1998) provides insights into the formation of identity and how identity is represented in different modes of belonging within the community,
including engagement, imagination, and alignment. Professional development’s role in helping
to imagine and align identity into a new mode of belonging to the community of practice was an
interesting perspective to explore.

**Definitions**

The following terms and concepts are presented during this study and defined herein for the sake of clarity and understanding.

1. *Fixed Mindset* - a person’s beliefs and thoughts that intelligence is a fixed concept (Dweck, 1986; Dweck et al., 1995; Yeager & Dweck, 2012).

2. *Growth Mindset* - a person’s beliefs and thoughts that intelligence is a quality that can grow and change through hard work and effort (Dweck, 1986; Dweck et al., 1995; Yeager & Dweck, 2012).

3. *Implicit Theories* - the core beliefs and assumptions that people make about themselves and the world around them which frame the way they interpret and interact in life (Dweck et al., 1995).

4. *Intelligence* - the ability to think and learn as well as to apply the learning (Breakspear, 2013). However, the precise understanding is not clearly defined and is a source of contention in the literature. A more comprehensive definition from Sternberg (2005) states that intelligence is:

   1) the ability to achieve one’s goals in life, given one’s sociocultural context; 2) by capitalizing on strengths and correcting or compensating for weaknesses; 3) in order to adapt to, shape, and select environments; and 4) through a combination of analytical, creative, and practical abilities. (p. 189)
5. **Intelligence Quotient (IQ)**- numerical expression of the relationship between an individual’s mental age to his or her chronological age (MA/CA X 100 = IQ; Winzer, 1993).

6. **Malleability of Intelligence**- changeability of intelligence (Dweck et al., 1995; Dweck, 2006; Yeager & Dweck, 2012). Incrementalists view intelligence as a characteristic that can be changed or grown through experience and feedback. Entity theorists view intelligence as a fixed or unchangeable quality that was bestowed by genetics.

7. **Mindset Transformation**- a shift or change in habit of mind or paradigm that is characterized by a sudden shift or dramatic “reorienting insight” in belief (epochal) or a series of progressive transformations (incremental) “in related points of view that culminate in a transformation in habit of mind” (Mezirow, 2000, p. 21). In this study, mindset refers to growth or fixed mindset beliefs about intelligence.

8. **Theory**- A theory is a systematic way to connect well-developed categories in “terms of their properties and dimensions and interrelated through statements of relationship” (Corbin & Strauss, 2015, p. 62).

**Summary**

This grounded theory study explored the process of transformation in teacher mindset regarding student intelligence. The power of mindset, whether intelligence is a fixed concept or a trait that can be developed, is very popular in the current conversation in education. The popular literature uses the terms fixed and growth mindset to distinguish the two sets of assumptions. Many studies confirm the impact and importance of what students believe about their intelligence on their academic performance, motivation, and resilience in the face of setback (Dweck, 1986; Dweck, 2015a; Ehrlinger et al., 2016; Haimovitz, Wormington, & Corpus, 2011;
Sevincer et al., 2014; Yeager & Dweck, 2012). Research also demonstrates the impact of teacher mindset on student beliefs about their intelligence and resulting behaviors (Dweck, 1986; Gutshall, 2013; Rattan et al., 2012; Hohnen & Murphy, 2016; Yeager & Dweck, 2012).

However, little research examined the process adult teachers experience in transforming or changing their mindset regarding their students’ intelligence. This study focused on Dweck’s (1986, 2006) mindset theory, Mezirow’s (1991, 2000, 2003) Transformative Learning Theory, Wenger’s (1998) communities of practice and identity formation, and Bandura’s (1986) Social Cognitive Theory as the framework for developing a grounded theory primarily from teacher interviews describing the process of mindset transformation.
CHAPTER TWO: LITERATURE REVIEW

Overview

Students’ mindset beliefs about their own intelligence influence their cognitive growth and learning (Gutshall, 2013). A student’s fixed mindset promotes patterns of motivation and behavior that are maladapted towards growth and achievement (Dweck, 1986; Ehrlinger et al., 2016; Haimovitz et al., 2011; Sevincer et al., 2014). In fact, a fixed mindset erodes intrinsic motivation and also correlates with declining indicators of learning (Haimovitz et al., 2011). Growth mindset orients a person towards learning as opposed to simply validating the status quo (Ehrlinger et al., 2016). Students with growth mindset are also more likely to engage in remedial action to improve learning skills if their performance was unsatisfactory, use deeper study strategies, and plan more (Sevincer et al., 2014). Acquiring a growth mindset creates the greatest gains in academic outcomes and learning of the most at-risk students (Dweck, 2015).

Even among gifted students, a fixed mindset is likely a contributor to underachievement, whereas a growth mindset orients the gifted student to seek out risk and challenge without fear of being relabeled as average when encountering challenge (Esparza et al., 2014).

Mindset beliefs impact not just student achievement outcomes, but also the teacher in the classroom. The teacher’s own beliefs about the intelligence of students in the classroom acts as a ceiling to the achievement possibilities and growth potential of students (Dweck, 1986; Gutshall, 2013; Rattan et al., 2012; Hohnen & Murphy, 2016; Yeager & Dweck, 2012). A growth mindset is one of the characteristics that effective teachers bring to the classroom (Jones, Bryant, Snyder, & Malone, 2012). Teacher beliefs shape how the teacher engages students in the curriculum and the teacher’s approach to instruction (Olson & Knott, 2012). Teacher beliefs also impact the way in which students engage emotionally with the teacher in the classroom (van Uden et al., 2014).
Mindset influences not just the instructional techniques and pedagogical approach, but also the problems posed to students by teachers (Olson & Knott, 2012). Teachers ask questions that flow from their mindset concerning intelligence and beliefs about teaching and learning (Olson & Knott, 2012).

People who hold a fixed mindset are less likely to invest in the improvement and development of another person’s skills and performance if they believe that substantial change in that person is unlikely (Heslin & VandeWalle, 2008). Teachers ask different questions and seek different outcomes for students based upon the teacher’s mindset (e.g. messages of ability implied through feedback type in Rattan et al., 2012). Teachers with a fixed mindset towards student intelligence are less likely to pedagogically invest in a struggling student because of their mindset beliefs. The mindsets of students and teachers influence achievement outcomes in the classroom, likely through the way in which mindset shapes perceptions of effort, challenge, and risk-taking as outlined below in this review. Cultivating a growth mindset is not just vital for the success and well-being of students in the 21st century, but also for the teachers of these students who must meet a multitude of changing pedagogical and learning-outcome demands (Yorks & Nicolaides, 2013). The most current research calls for understanding teacher beliefs in the classroom and asking “teachers about their beliefs and experiences” (van Uden et al., 2014, p. 30). Teacher beliefs and behaviors flow from mindset theories about intelligence (Gutshall, 2013; Rattan et al., 2012; Schmidt et al., 2015). Therefore, attention should be given to the process through which teachers can transform their mindset beliefs about student intelligence. An empirical and theoretical gap in the literature exists surrounding the process of mindset transformation in teachers. This review seeks to bring a new voice to join the scholarly conversation of Transformative Learning Theory (Mezirow, 1991, 2000, 2003) by weaving a
tapestry of theoretical and conceptual frameworks regarding mindset and transformation with empirical findings from the field of secondary education.

**Organization of the Review**

This review first establishes the empirical basis for mindset and mindset transformation as an essential and important phenomenon to study. In the second section of the review, Bandura’s (1986) Social Cognitive Theory is presented as a conceptual framework for organizing both the theoretical constructs and empirical evidences around the transformation of teacher mindset. The third section focuses on the theoretical constructs for understanding the concepts of mindset and transformation. Dweck’s (1986, 2006) implicit theories of intelligence or mindset are explored first as they grow directly out of Bandura’s social-cognitive work (Bandura, 1986). Wenger’s (1989) theory addressing communities of participation and identity formation are examined as another useful lens through which to understand learning and transformation within a professional community of teachers. Then, Mezirow’s (1991, 2000, 2003) Transformative Learning Theory provides another theoretical framing to the literature about mindset and transformative change in adults. The theories about mindset and transformation are explained and discussed to prepare for synthesis. The fourth section provides the application of Transformation Learning Theory, as it has been refined, with empirical studies regarding change to explore factors and processes that may be involved in mindset transformation for adults. In the conclusion, the review demonstrates the need to extend the conversation around transformation theory towards exploring the concept of *embodiment* as a way to understand learning that authentically transforms.
Related Literature

This section provides a synthesis of the current research regarding growth mindset. Terminology and definitions are explained as well as the significance of the mindset beliefs on both students and teachers. Mindset is differentiated from other studies and concepts to provide distinction and nuance to the position of mindset in the existing literature. I also explore the tendencies in terms of mindset within the population, its amenability to change, and practical significance on school reform efforts.

Defining Mindset

Growth and fixed mindset are the labels given to the implicit theories of intelligence popularized by Dweck (2006) about whether people believe that their intelligence is something about them that can be changed or is static (Yeager & Dweck, 2012). Mindset research focuses around two diverging viewpoints about the malleability or changeability of intelligence (Dweck et al., 1995; Dweck, 2006; Yeager & Dweck, 2012). Incrementalists view intelligence as a characteristic that can be changed or grown through experience and feedback. Entity theorists view intelligence as a fixed or unchangeable quality that is inherited and stable. Mindset becomes a lens through which to interpret life experiences as stories “about the transformative power of effort . . . to change your ability and to change you as a person” (Dweck, 2006, p. 42). Generally, in the literature, a growth or incremental mindset is considered to be an adaptive quality while a fixed or entity mindset is seen as a maladaptive quality (Sevincer et al., 2014).

Mindset matters. Mindset impacts motivation and achievement (Haimovitz & Dweck, 2016) as well as the way individuals elaborate on ideas and goals for themselves, which reveal how they deal with setbacks (Sevincer et al., 2014). Holding a fixed mindset also makes one more likely to be judgmental and have low expectations for themselves and others’ performance
based off a single incident of low performance (Rattan et al., 2012). People who hold a fixed mindset are less likely to invest in another person’s improvement and development via coaching or mentoring if they believe that substantial change in that person is unlikely (Heslin & VandeWalle, 2008). In a recent survey of 603 teachers across multiple grade levels, Education Week Research Center (2016) found that 98% of teachers believed that using growth mindset in the classroom would lead to better instruction by teachers and learning outcomes for students. Mindset beliefs influence whether people undertake performance-focused goals to validate their set beliefs of their abilities or mastery-focused to learn and expand their abilities (Haimovitz et al., 2011; Huang, 2011; King, 2012). In turn, the motivation for action grounded in the mindset influences the behaviors and attitudes undertaken.

**Impact on effort, challenge, and risk.** Mindset impacts the way in which individuals pursue goals which may lead to better goal-getting behaviors for growth mindset holders (Sevincer et al., 2014). Mindset predicts a wide range of adjustment and well-being outcomes, including personal and collective self-esteem, relationship harmony, emotions in school, and academic achievement (King, 2012). Especially during typical periods of academic motivational decline in middle school, a growth mindset can protect intrinsic academic motivation while holding a fixed mindset predicts decline (Haimovitz et al., 2011).

**Impact on failure and overconfidence.** Mindset also informs how individuals perceive failure. What people perceive about themselves greatly affects both outlook and response, especially in the face of adversity (Schunk & Pajares, 2005). For fixed mindset holders, “failure may reveal permanent inadequacies that cannot be remedied through personal effort. This can lead to a lower level of overall well-being” (King, 2012, p. 708). Children may form their mindset from the way in which they perceive their parents’ beliefs about failure (Haimovitz &
Dweck, 2016). Additionally, fixed mindset holders are most likely the “lion’s share” of the overconfidence effect seen in many studies, which means that they overestimate their abilities much more so than their growth mindset counterparts (Ehrlinger et al., 2016, p. 98). This means that mindset impacts the accuracy of people’s judgments about themselves and has implications on the strategies, or lack thereof, employed towards reaching goals.

**Mindset across domains.** Mindset influences all domains of life including school, sports, personal relationships, business, and leadership (Dweck, 2006). A person may hold conflicting or differing mindset beliefs about intelligence or ability in different domains. For example, a student may hold a different mindset about academic ability as opposed to athletic ability (Sevincer et al., 2014). Within the school environment, students may also experience different mindsets depending on the content area or class—especially in math (Yeager & Dweck, 2012). There can even be a difference in mindset based on role, with teacher-coaches having a stronger growth mindset than general classroom teachers (Stenzel, 2015). When a person justifies his or her level of competency in a domain based on an innate level of talent, such statements reveal a potential stronghold of fixed mindset. Dweck (2015b) acknowledges that people are likely a mixture of both fixed and growth mindsets. However, mindset may indeed have a spill-over effect between domains, over-all wellbeing, and adjustment (King, 2012). For teachers and parents, the key to growing an authentic growth mindset, according to Dweck (2015b), is being in touch with the fixed mindset triggers and thoughts in order to cultivate an authentic growth mindset.

**Mindset tendencies.** Research exists that suggests teachers trend towards a growth mindset. Gutshall (2013) noted in her study ($N = 238$) that $1/3$ ($n = 89$) of teachers had a fixed or neutral mindset, and $2/3$ ($n = 149$) self-reported a growth mindset. Other researchers reported
that 77% of pre-service and in-service teachers self-report a growth mindset (Jones et al., 2012). However, the desire to socially please and be acceptable in self-reporting may be a problem in teachers. Teachers who report a growth mindset may behave in ways that significantly undermine their espoused belief (e.g., focusing on recordkeeping tasks rather than student engagement during class time; pre-framing tasks as easy or hard; rewarding academic competition between students or classes over individual efforts at growth; Schmidt et al., 2015).

**Cognitive bias in attribution.** In the Education Week Research Center (2016) study ($N = 603$) reporting teacher perspectives on mindset, 77% of respondents indicated that they personally were either familiar or very familiar with the concept of growth mindset while the respondents indicated that only 39% of teaching colleagues in their school were either familiar or very familiar with the concept of growth mindset. The Education Week Research Center (2016) did not address what may have accounted for the divergent view between the personally held beliefs and the respondents’ judgment of the beliefs held by other teachers within their schools. This interesting phenomenon of overestimating a positive attribute or characteristic about yourself personally relative to others is a cognitive bias called *illusory superiority*. Dunning, Meyerowitz, and Holzberg (1989) investigated the cause of this cognitive bias and noted that self-assessments were more self-serving when the quality to be assessed was more ambiguous in definition and more open to interpretation. Given the misunderstandings around mindset addressed below, teachers may be aware of the terminology of growth mindset as a concept, but they may not understand the nuances or the shape of the concept at the margins. This leaves them vulnerable to attribute the positive qualities of growth mindset to themselves while denying the attributes to others under the illusion of superiority.
Contradictory behaviors and belief. Teachers with a fixed mindset are more likely to judge and label a student as low ability after just one poor performance (Rattan et al., 2015). Additionally, the comments and type of feedback given to students may not emphasize effort or the importance of challenge in the learning process and unintentionally serve to demotivate students to avoid effort and challenge (Schmidt et al., 2015). This contradictory behavior between mindset belief and action is different from the comforting behaviors demonstrated by teachers holding fixed mindsets who believe their comfort feedback is helpful (Rattan et al., 2012). Schmidt et al. (2015) found the teacher may not have been aware of the impact of her instructional act given her relative lack of experience, while in Rattan et al. (2012), the teachers knew they were using the comforting feedback strategy with good intentions, but did not realize that it was not helpful. The fixed mindset may serve a deep need for worth and validation that is developed during youth; “over time, the fixed traits may come to be the person’s sense of who they are, and validating these traits may come to be the main source of their self-esteem” (Dweck, 2006, p. 225). There may be triggers that shift a person back towards more fixed mindset beliefs, but this area of study is not yet explored (Varlas, 2016). Adults are more likely to exhibit a mindset that is resistant to change or adjustment of initial impressions or beliefs due to more years of experience and entrenched schema of belief (Dweck, 2006; Heslin & VandeWalle, 2008).

Contradictory literature regarding age and mindset. In looking for information on the age or longevity of the teacher and mindset tendencies, the literature is inconclusive and contradictory. Older and more experienced teachers may hold a fixed mindset over newer and less experienced teachers (Gutshall, 2013). However, the findings in Schmidt et al. (2015) and Jones et al. (2012) contradict Gutshall (2013) in this regard, as both the older and younger
teacher in the study self-reported a growth mindset while only the older teacher actually implemented pedagogical and instructional interactions in the classroom consistent with a growth mindset. Given the rise in false growth mindsets noted by both Dweck (2015b, 2016) and Varlas (2016), this is an area that needs further research. False growth mindset reflects an oversimplified belief that growth mindset can be developed through praise for effort regardless of learning or progress, blaming student mindset when expectations are not met, and telling students they can do anything without helping them build the skills and strategies to reach their goals (Dweck, 2016).

**Transferability of mindset.** Not only do teacher mindsets influence their pedagogical decisions and beliefs towards students, but teachers can transfer their own mindsets onto their students (Jones et al., 2012; Rattan et al., 2015). Adult feedback can “unintentionally undermine resilience” and “lead students to adopt more of a fixed mindset” (Yeager & Dweck, 2012, p. 310). A teacher’s good-hearted attempts at comfort feedback for low student performance actually reinforces an entity belief in ability and promotes maladaptive responses in the student (Rattan et al., 2015). Dweck (2006) sees the shift in mindset framework from a judge-and-be-judged attitude towards a learn-and-help-learn attitude. Therefore, careful attention should be focused on developing a model to help teachers authentically transform their mindsets towards student intelligence.

The issue of transferability of mindset is in flux and needs further research to understand how mindsets are communicated and transferred to students. Haimovitz and Dweck (2016) studied the influence of parents’ mindsets on their children and found—surprisingly to the researchers themselves—that parental mindset about intelligence is not necessarily a good predictor of children’s mindsets about intelligence. Haimovitz and Dweck (2016) introduced a
concept of failure mindset, or whether a parent views failure as debilitating or enhancing, as a more visible transmitter of parental belief about their child’s intelligence. The parent’s mindset around failure was a better predictor of child mindset regarding intelligence than the parent’s own mindset about intelligence (Haimovitz & Dweck, 2016). The researchers note that “it may not be sufficient to teach parents a growth mindset and expect that they will naturally transmit it to their children. Instead, an intervention targeting parents’ failure mindsets could teach parents how failure can be beneficial, and how to react to their children’s setbacks so as to maintain their children’s motivation and learning” (Haimovitz & Dweck, 2016, p. 867).

The impact of the Haimovitz and Dweck (2016) study brings up questions about how children are socialized to internalize intelligence mindsets from parents and may be informative to the area of teacher transferability of mindset and influence on student beliefs about intelligence. Additionally, the idea of interventions with adults about how to best process and respond to failure and setback in children echoes the benefits of well-designed and planned professional development for classroom teachers around mindset. This research by Haimovitz and Dweck (2016), which seems to demonstrate that intelligence mindset cannot be transmitted by osmosis, further supported the rationale for this dissertation study to gain insight into the process of mindset transformation in a qualitative manner.

**Mindset is stable.** Change in mindset seen for children, adolescents, and young adults may not translate to effective change interventions in adult mindsets. Adults bring a longer pattern of thinking and validation of schema that “might preclude them from being open to new learning” in the same way that adolescents and children may be more malleable because of less experience and time (Snyder, 2011, p. 244). Earlier mindset research on college students conducted in 1992 observed the stability of mindset within the individual over time (Robins &
Pals, 2002). Absent any intervention and in a real-world setting, Robins and Pals (2002) found that college students maintained consistent and stable mindset tendencies over a four-year period of normal college experiences as a group and individually ($N = 508$; all $t < 1.2$, n.s.). Robins and Pals (2002) also noted that the stability of mindset beliefs solidifies as children enter adolescence and then adulthood. The stability noted by Robins and Pals (2002) in the 1992 population of younger adults attending college reflects a pre-digital revolution era participant, and the findings of that study would be interesting to replicate in college students experiencing the current milieu of innovation, change, and technological advancement to see if mindset about intelligence is still as stable. Regardless, the implication is that even with the real-world experiences and learning environment of college, young adult mindset in general remains relatively stable, absent targeted interventions or some other transformative experience.

**Mindset is changeable.** Even though transformation may be hard in adults, the change is not impossible, as research suggests self-concept change among professionals transitioning from other careers into teaching can occur, albeit with great effort and struggle (Snyder, 2011; Snyder, Oliveira, & Paska, 2013). Regardless of the trend, research indicates that mindset does not have to be or remain fixed. In fact, Dweck (2015b) states that the “path to a growth mindset is a journey, not a proclamation” and a person cannot simply will a shift but must experience an awareness and struggle through fixed-mindset triggers and tendencies along the path (para. 11). Understanding how the process unfolds and identifying a pathway for mindset transformation is a critical gap in the literature.

Even though mindsets may be difficult to transform in adults, Conklin and Hartman (2014) noted that, in general, mindsets are amenable to change. While many studies show mindset shifts over short-term periods (e.g., mindset manipulation during study in Rattan et al.,
2012; Sevincer et al., 2012), other studies show change over longer periods, including a semester in high school (Paunesku et al., 2015), a year in middle school (Good, Aronson, & Inzlicht, 2003), and in seventh grade science classes at several months post-intervention (Schmidt et al., 2015; See also Yeager & Dweck, 2012). Researchers have used short reading passages to manipulate and alter mindset beliefs for experimental purposes (Sevincer et al., 2014). Online modules from Brainology (Mindset Works, Inc., 2012) were used to shift student mindset (Esparza et al., 2014; Schmidt et al., 2015). Even larger-scale online modules have shifted student mindsets in a wide variety of contexts, demonstrating a 6.4% increase in student achievement over the course of a semester across 13 different schools (Paunesku et al., 2015). “Building an environment where mind-sets are available for inspection and change opens the doors for students to see new interpretations for action in their lives” (Conklin & Hartman, 2014, p. 292). Mindsets of students have been changed in both the laboratory setting and in classroom settings. However, studies targeting the transformation of adult mindsets about intelligence represent a significant gap in the literature.

**Mindset Misunderstandings**

Dweck (2017) recently commented in her blog on the state of growth mindset research over the past 30 years and the misunderstandings and applications of well-intended but naïve interventions by teachers and parents. Although the research team under Dweck was initially optimistic about the abilities of teachers and parents to transmit growth mindset principles to students,

we began to learn things that tempered this optimism . . . We began to see and accumulate research evidence that the growth mindset concept was poorly understood by many parents and educators and that adults might not know how to pass a growth mindset
on to children, even when they reported holding it for themselves. (Dweck, 2017, January 18)

Not only is the problem of false growth mindsets Dweck (2016) and Varlas (2016) mentioned hereinabove an issue, but the misunderstanding of what constitutes a growth mindset as well as naïve attempts of lay people to transmit growth mindset to students creates additional need for understanding the process of mindset transformation in teachers from fixed toward growth. While Dweck (2016) addresses the problem of teachers who possess a false growth mindset due to their oversimplification of the concept, I believe that a teacher should not attempt to instill a mindset into a student that the teacher does not believe or understand. Therefore, understanding the mindset transformation process within teachers contributes an important aspect to the research conversation around growth mindset cultivation in students.

Growth mindset is not fostered by just increasing the amount of praise on students (Dweck, 2000; Rattan et al., 2012). In fact, students may believe teacher praise is disingenuous and it actually undermines motivations for learning, such as not taking risks to avoid appearing non-intelligent, losing affirmation from the teacher, and performance-focused goals rather than learning-oriented goals (Mueller & Dweck, 1998). Dweck (2015b) warns that too often in the name of growth mindset, “praise is given to students who are putting forth effort, but not learning, in order to make them feel good in the moment” and perpetuating the failed self-esteem movement. Mindset is not an issue of self-esteem and accolades.

Efforts at school reform, increasing overall student achievement, and reducing achievement gaps between groups through mindset intervention will not be successful in the long-term if they focus solely on the student component of the equation to the exclusion of the teacher in the classroom. Dweck (2015b) argues that “the growth mindset was intended to help
close achievement gaps, not hide them. It is about telling the truth about a student’s current achievement and then, together, doing something about it, helping him or her become smarter.”

If a teacher does not accurately understand what it means to hold a growth mindset perspective about students and how that translates into the classroom instructional process, the teacher will struggle to leverage the power of a growth mindset framework to drive positive achievement outcomes. Student mindset matters; but it is greatly influenced and supported by the teacher in the classroom. In order to most effectively address student achievement outcomes, cultivating growth mindsets in both students and teachers alike will provide a comprehensive approach to improving the U.S. educational landscape.

**Mindset Studies Differentiated from Pygmalion Effect Studies**

The famous Pygmalion studies by Rosenthal and Jacobson (1968a) focused on the impact of teacher expectation on student achievement outcome. The study showed how informing teachers that certain students in their classrooms could be expected to make significant growth in learning during the year positively impacted student achievement outcomes even though the students were randomly identified as such. Teachers were told that these students would *bloom* or *spurt* (Rosenthal & Jacobson, 1968a). This concept of a self-fulfilling prophecy, that a person fulfills the expectations of another, seems on the face to be similar in nature to the concept of mindset in that it is an expectation about intelligence.

However, the Rosenthal and Jacobson (1968a) Pygmalion effect studies operated within the fixed mindset framework regarding intelligence as a concept that is “evaluated and labeled” (Dweck, 2000, p. 117) and so the solution proposed was positive labeling practice. The rise to expectation in this framework should result from the *smart or intelligent* label given to the student rather than from a mindset belief about the nature of intelligence. Rosenthal and
Jacobson (1968b) posit that students in their Pygmalion studies grew “not because they necessarily are more malleable but rather because they are believed by teachers to be more malleable” (p. 20). The teachers believed the labels given to them by the researchers rather than believing that all students were capable of growing their intelligence. Interestingly, the effects were most pronounced in the youngest students and less in older students who may have already been known by the teachers or had developed a reputation with the teacher as a learner since the teachers were less likely to believe the reported expectation in previously known students (Rosenthal & Jacobson, 1986b). In other words, the teacher’s level of belief in the credibility of a label empowers the achievement outcome rather than an actual belief in the ability of students to grow their intellectual abilities.

Dweck (2000) postulates that terminology used to prompt the teachers in the Rosenthal and Jacobson (1968a) Pygmalion studies, that students would bloom academically, actually reveals the power of a teacher’s expectation of growth in the student over a pure performance expectation that the student was smart. However, Rosenthal and Jacobson’s (1968a) research progeny are used to support a line of research and interventions around positive labeling interventions. The idea of labeling as an intervention supports a performance-oriented motivation and reflects a fixed mindset framework for understanding intelligence.

One example of labeling is ability grouping, either within a classroom or between classrooms. Students are sometimes tracked or placed in high, average, or low-ability groupings for math or reading. Smith et al. (1998) examined the influence of different configurations of ability grouping in students to determine if the institutional labeling of students mediated the teachers’ perceptions of student achievement outcomes. The institutional label becomes the self-fulfilling prophecy above the teachers’ initial levels of perception of student ability. Smith et al.
(1998) examined 1701 students and 97 teachers, looking at different types of grouping situations and different levels of ability grouping with the goal of identifying whether self-fulfilling prophecies or teacher perceptual bias was a better predictor of student achievement. The researchers found that teacher perceptual bias of ability was a predictor of a third of the outcome for students ($b = .53, \beta = .16$) when no grouping was used, and students of all levels were mixed within a classroom in a heterogeneous composition of ability (Smith et al., 1998). Smith et al. (1998) also reported that teacher beliefs of students labeled as a low-level classroom group strongly predicted student achievement outcomes on standardized testing ($b = 1.00, \beta = .21$) indicating a self-fulfilling prophecy effect. Overall, the conclusions of Smith et al. (1998) include the fact that self-fulfilling prophecies are seldom very powerful.

**Mindset Studies Differentiated from Attitude Studies**

The changeability of attitudes of teachers towards other aspects of students in the classroom including inclusion of students with disabilities, race, and gender may provide insight into the issue of teacher mindset transformation about student intelligence. In the area of inclusion and students with disabilities, teacher attitudes towards inclusion present a significant barrier to effective implementation of inclusion policies (Vaz et al., 2015). In a recent study of primary school teachers, Vaz et al. (2015) found four factors, “age, gender, teaching self-efficacy, training—collectively explained 42% of the variability in teachers’ attitude towards including students with disabilities ($F[7, 46] = 4.37, p < .001$)” (p. 5). Older teachers (over 55 years old), male teachers, and teachers with low self-efficacy had significantly more negative views of inclusion than younger (35-55 years old), female, and high self-efficacy teachers (Vaz et al., 2015). Teachers with training in teaching students with disabilities reported significantly higher positive attitudes towards inclusion than their counterparts with less training (Vaz et al.,
Training does not necessarily have to be a specialized degree, but even a course module significantly increases a teacher’s positive attitude towards inclusion (Boyle, Topping, & Jindal-Snape, 2013).

Attitudes towards inclusion vary depending on the age of the teacher, with younger teachers tending to show more acceptance while older teachers show less acceptance (Vaz et al., 2015). This decline in an accepting attitude may be related to cumulative years of experience dampening teacher openness towards inclusion (Boyle et al., 2013; MacFarlane & Woolfson, 2013; Vaz et al., 2015). Boyle et al. (2013) found a significant difference between attitudes towards inclusion in teachers on their probationary period and every other period of teacher service, although there was no difference between other periods of service. These studies on teacher attitudes towards inclusion inform questions about how teacher age and service length may influence the change process in teacher mindset about intelligence during the course of their teaching careers.

**Mindset Studies Differentiated from Self-Efficacy Studies**

Past studies of self-efficacy in teachers focus on teacher perceptions and beliefs in their abilities to change and influence students. For example, high teacher self-efficacy towards inclusive practices is related to increased openness towards inclusion and more positive attitudes towards inclusion (MacFarlane & Woolfson, 2013; Vaz et al., 2015). The idea of self-efficacy is a cyclical reinforcement of belief, proficiency performance, and mastery in one’s skills (Bandura, 1986; Vaz et al., 2015). Self-efficacy is a “generative capability” that is functionally related to action—that is a person’s judgment of their capabilities to muster their skills towards a specific end successfully (Bandura, 1986, p. 391). A literature review of teacher self-efficacy research ($N = 218$) over the period of 1998-2009 discussed the prolific research into student self-
efficacy but continued need for better and varied research into teacher self-efficacy (Klassen, Tze, Betts, & Gordon, 2011). Although increasing in volume, Klassen, Tze, Betts, and Gordon (2011) recommend further research into the sources of teacher self-efficacy, creating better measures of teacher self-efficacy, and more research connecting teacher self-efficacy to individual student outcomes at the classroom level rather than building-wide. While closely related to mindset beliefs about intelligence, self-efficacy beliefs depend first on whether or not a person even believes that growth or improvement is possible, even before the person assesses whether or not he or she can successfully muster his or her skills towards an end goal.

Mindset beliefs are precursors to self-efficacy and motivation factors. In Social Cognitive Theory (Bandura, 1986), “perceived self-efficacy operates as one common mechanism of behavioral change” but it is not exclusive (p. 425). Mindset beliefs precede self-efficacy or motivational beliefs and actions (Miele, Finn, & Molden, 2011; Miele & Molden, 2010; Miele, Son, & Metcalfe, 2013). Mindset beliefs about intelligence in both adults and children interpret or make meaning of their “experiences of effort or difficulty when making judgments of comprehension and memory” and reflect the influence on mindset beliefs about intelligence on the way that people metacognitively assess their learning (Miele et al., 2013, p. 1880). In a study of elementary children (N = 51) by Miele et al. (2011), positive beliefs about the role of effort significantly mediated the effect of the child’s theory of intelligence (entity or incremental) on the child’s judgment of reading comprehension performance from .35 (p < .05) to .24 (n.s.; the effect of theory of intelligence on positive effort beliefs was -.35, p < .05). The theory of intelligence showed itself in the way the children interpreted the role of effort in their judgment of reading comprehension performance. This same relationship was observed in middle school student math achievement as it related to the student’s theory of intelligence (Blackwell,
Trzesniewski, & Dweck, 2007). Blackwell, Trzesniewski, and Dweck (2007) found that four variables mediated the relationship between an incremental theory of intelligence in the student and improved grades. The four related variables in Blackwell et al. (2007) included positive effort beliefs, and learning goals (as opposed to performance goals), which in turn led to fewer ability-based helpless attributions and engaging more positive strategies for learning.

Research is steadily moving closer to the core assumptions and schema teachers hold in order to better understand the mechanisms and drives of teacher behaviors and student outcomes, specifically in terms of concepts surrounding teacher self-efficacy (Klassen et al., 2011) and attitudes towards inclusion of students with disabilities (Vaz et al., 2015). So, while studies show the occurrence of changes in teacher attitudes towards students with special needs as well as the importance of teacher self-efficacy beliefs, mindset studies are differently focused on the because of mechanism of change—mindset.

**Conceptual Framework**

Corbin and Strauss (2015) do not advocate the use of a theoretical framework in grounded theory studies because the “whole purpose of doing a grounded theory is to develop a theoretical explanatory framework” (p. 52). However, in this case the related theories are used to justify the choice of methodology, build upon the existing research, and offer an alternative explanation or perspective in a new situation (Corbin & Strauss, 2015). A theory is a systematic way to connect well-developed categories in “terms of their properties and dimensions and interrelated through statements of relationship” (Corbin & Strauss, 2015, p. 62). Since grounded theory is used to construct new theories or refine and extend existing theories, familiarity with relevant theories through their concepts, constructs, and propositions is necessary in order to differentiate and interpret my data rather than simply restating current theory. Concepts are the
basic descriptions or names given to phenomena and provide meaning to the phenomena. A construct is created at a higher level of abstraction from grouping the concepts. By situating observations of concepts into broader sets, the constructs are formed and their conceptual boundaries are drawn and redrawn based on the commonalities between the concepts (Tavory & Timmermans, 2014). Propositions represent the connection of two or more constructs in a meaningful statement. Tavory and Timmermans (2014) discuss the need for grounded theorists to be familiar with a broad range of existing theories so as to not simply re-describe the world as it is already but in order to be surprised when some new insight arises.

Wide knowledge of other theories provides both a familiarity with the literature and intellectual positioning within the field to utilize abductive reasoning most effectively (Tavory & Timmermans, 2014). General theory knowledge provides more opportunity for informed and insightful constant comparison at the theory construction stage. Charmaz (2014) notes that the constant comparative method in grounded theory does not just apply to the data analysis but also informs the literature review and theoretical framework. Specifically, “through comparing other scholars’ evidence and ideas with your grounded theory, you may show where and how their ideas illuminate your theoretical categories and how your theory extends, transcends, or challenges dominant ideas in your field” (Charmaz, 2014, p. 305). The following review and synthesis of Social Cognitive Theory (SCT; Bandura, 1986), implicit theories of intelligence (Dweck, 1986, 1995, 2006), communities of practice and identity formation (Wenger, 1998), and Transformative Learning Theory (TLT; Mezirow, 1991, 2000, 2003) provides support for the use of grounded theory in this study, insight for further research, and as a theoretical base for extending TLT into teacher mindset transformation. These existing theories also provide a basis
for comparison and challenge to my own grounded theory that emerges from the data in this research study.

**Social Cognitive Theory**

Bandura’s (1986) social-cognitive framework for understanding motivation and behavior provides the conceptual framework for this review but is also a direct foundation to the research into mindset. Social Cognitive Theory (Bandura, 1986) focuses on three main determinants governing human motivation, thought, and action. Bandura identified environmental events, cognitive and other personal factors, and behavior as the key constructs of his triadic-shaped model. The environmental factors include the social interactions and physical structures with which the individual interacts. The cognitive and personal factors include thoughts, personality, beliefs, goals, and emotions as well as cognitive competencies and physical characteristics of the individual. Behavior represents the actions taken by the individual within the environment including the action of selective attention and choosing on what to focus within the environment. The constructs interact with each other in a self-reciprocating manner; these bi-directional interactions constitute the propositions of how the three key constructs relate to each other (Bandura, 1986). Within the triadic self-enforcing framework of the relation between behavior, environment, and personal-self factors, Bandura pays special attention to the motivational power of beliefs people have in their capabilities (Bandura, 1986; Wood & Bandura, 1989).

What makes Social Cognitive Theory different from other meta-theories of understanding human behavior is the way that the three determinants influence each other in a bi-directional manner and the inclusion of thought and cognitive processes in regulating behaviors (Bandura, 1986). This is not a model of “simultaneous wholistic interaction,” and so inquiry into the nature of the bi-directional relationships is possible (Bandura, 1986, p. 25). These beliefs in the power
of the self to effectuate a change or order skills and personal resources towards success reflect the concept of self-efficacy (Wood & Bandura, 1989). The ability to learn through observation and modeling, as opposed to only direct experience, also informs Bandura’s (1986) theory as it relates to mindset in a significant manner and provides justification for the value of coaching and mentoring discussed later in the review (Bandura, 1986). Wenger’s (1989) theory of communities of practice provides deeper insights into the context of community and role of relationships in adult learning and will be addressed below.

The major lines of theory involved in this review of literature involve Dweck’s (1986, 2006) implicit theories of intelligence or mindset, and Mezirow’s (1991, 2000, 2003) Transformative Learning Theory. For this review, both Mezirow and Dweck are analyzed with insights from the conceptual framework of Social Cognitive Theory (Bandura, 1986), which reflects the impact of behavioral, personal, and environmental factors on the self (Schunk & Pajares, 2005). Wenger’s (1998) communities of practice and identity formation theory present a social emphasis to help elucidate other aspects of the transformation process that may not be as prominent in other theories. When read together using the three categories of Social Cognitive Theory as a base frame, Dweck’s research into the power of implicit theories of intelligence in an individual’s life provide the why and what of this review, Mezirow’s work on transformative learning provides the how of the process of transformation, and Wenger’s (1998) communities of practice theory situates the where.

Cultivating a Mindset

Social, cognitive, and emotional factors shape a person’s mindset over time (Bandura, 1986). These factors play an important and powerful role in molding the mindsets of both adolescents and adults. While Bandura’s (1986) Social Cognitive Theory presents a general
model of understanding learning and behavior, it provides some useful insights into understanding the process of mindset transformation about intelligence.

**Social.** Bandura’s (1986) Social Cognitive Theory discusses the impact of social environments as constraining or supporting an individual’s motivation and behavior. The impact of social influence, especially modeling of behaviors by other more experienced and skilled individuals, is particularly relevant when a person is not confident in his own skill level or has limited prior experience from which to draw upon (Schunk & Pajares, 2005). Another significant impact on self-perception is the role played by “social persuasions and verbal judgments” that help the individual cultivate a belief in his or her capabilities and envision a successful future (Schunk & Pajares, 2005, p. 87). Modeling, feedback, and word choice are significant social factors in shaping mindset (e.g., teacher word-choice during feedback in Rattan et al., 2012; teacher instructional choices as modeling in Schmidt et al., 2015).

**Cognitive.** Cognitive thinking systems, as stated in Bandura’s (1986) Social Cognitive Theory, are an influence on the formation of mindset and perceptions of self. Kahneman (2011) investigated the effects of two systems of mind, denoted the *fast* and *slow* systems, that affect thinking and shape the decision-making process of individuals. The *fast* system is the predominant thought system, utilizing heuristics and schema to make rapid decisions, which also result in the propensity for overconfidence and bias (Kahneman, 2011). The propensity for overconfidence is seated in the fixed mindset (Ehrlinger et al., 2016). This means that individuals must fight the propensity and power of the predominant thought system, which likely operates in a fixed heuristic. Mindset and preconception of belief greatly impact rational thinking, generating an illusion of validity and a propensity to suppress doubt and evidence that contradicts the held beliefs (Kahneman, 2011). The inclination for mindset, especially in adults
with deeply entrenched heuristics of thought, is towards a fixed mindset that resists revision of impressions or initial beliefs (Heslin & VandeWalle, 2008). These cognitive processes and thinking biases impact mindset formation and may likely influence the way in which the adult brain experiences mindset transformation. Mezirow (1991, 2000, 2003) positions himself strongly in the cognitive corner of change.

**Emotional.** Feelings, not just rational thoughts, also impact mindset. Any theory of mindset shift that focuses solely on the rational is incomplete, as change is not possible without emotion and is inconsistent with “neurological research showing that human rationality and decision making are dependent on emotions, more specifically emotion centers of the brain” (Snyder et al., 2013, p. 618). In fact, the primacy of the rational or cognitive components of transformation while overlooking the emotional components of change is not helpful (Snyder et al., 2013). Cultivating a transformed mindset also requires attending to the feelings that influence the perceptions and mindsets of the individual.

Many times, an emotion precedes a transformational experience and must not be discounted in the shaping of mindset (Arends, 2014). A significant emotion that is universally experienced and impacts an individual’s mindset is shame (Brown, 2012). Shame may be present when an individual is seeking to embrace a mindset that “tells you to embrace all the things that have felt threatening: challenge, struggle, criticism, setbacks” (Dweck, 2006, p. 225). Shame rears especially when people experience failure and struggle—when worthiness is based on performance rather than growth (Brown, 2012). To understand mindset transformation requires an understanding of the emotional landscape shaping the perceptions and beliefs about the self.

**Implicit Theories of Intelligence**

Implicit theories are the core beliefs and assumptions people make about themselves and
the world around them which frame the way they interpret and interact in life (Dweck et al., 1995; Yeager & Dweck, 2012). These theories of self are called implicit because they are not made explicit, and operate at a deeper level of routine in the mind, often remaining unquestioned or unexamined in the everyday milieu of life (Bandura, 1986; Yeager & Dweck, 2012). In examining these deeply held beliefs, “Dweck’s theoretical model has long proposed that goals are the mechanism through which intelligence beliefs shape behavioral outcomes” (Haimovitz et al., 2011, p. 748). The implicit theories reflect a sense of self that is not a “monolithic” quality but rather “self-beliefs and self-relevant goals” that can be domain-specific, situation-sensitive, and malleable over time” (Dweck, 2000, p. 138). For the purpose of this review, the implicit theory regarding intelligence is examined. Sometimes the contrasting implicit theories of intelligence are also referred to as incremental and entity theories.

People with an incremental theory—believing in the malleability of their abilities—are primarily concerned with learning and expanding their abilities . . . people with an entity theory—believing in the stability of their abilities—are primarily concerned with documenting their abilities. (Sevincer et al., 2014, p. 36)

Dweck’s theory on mindset flows from the research on implicit theories of intelligence (Bandura 1986; Dweck et al., 1995).

adults shifting their frames of reference. Wenger’s (1998) communities of practice and identity formation provide insight into the contextual factors of learning and changing as an adult member of a profession. Wenger (1998) connects with Dweck’s (2000) recognition that mindset is situated within a context and our implicit beliefs are shaped and formed under the surface of our daily life (Yeager & Dweck, 2012).

**Communities of Practice**

Wenger (1998) presents a social theory of learning and identifies *communities of practice* as the context in which people “develop, negotiate, and share” their ways of understanding the world (p. 47). Through the community of practice, the individuals and group form an identity that is informed by and through their community of practice. Wenger (1998) distinguishes three dimensions of practice within the community: (a) mutual engagement, (b) a joint enterprise, and (c) a shared repertoire. Mutual engagement reflects the complex negotiation of meanings within the group by the people actually engaged within the community (Wenger, 1998). The development of identity within the community of practice through mutual engagement reflects a unique place for each member and unique formation of identity of each member within the community that is integrated and defined through the community, but not fused (Wenger, 1998). The joint enterprise is a negotiated endeavor of the community participants that “reflects the fully complexity of mutual engagement” (p. 77) and takes into account the demands of the broader constraints in terms of the larger industry, historical context, and influence of the more immediate institution (Wenger, 1998). Central to the joint enterprise is the mutual accountability between the community participants that outlines what does and does not matter to the community and guides the appropriateness of actions (Wenger, 1998). Lastly, Wenger (1998) recognizes that over time, a community of practice develops a shared repertoire of resources that
develop from the joint enterprise and negotiation of meaning. The shared repertoire reflects both the shared history of the community and is also opened for interpretation and negotiation (Wenger, 1998). Communities of practice become manifested “in two ways: their ability to give rise to an experience of meaningfulness; and, conversely, to hold us hostages to that experience” (Wenger, 1998, p. 84). Learning in communities reflects a duality of participation and reification over time (Wenger, 1998).

For Wenger (1998), learning is an experience of identity encompassing both process and place. Identity is not separate from learning, practice, or community (Wenger, 1998). Identity reflects the negotiated meaning of a person’s experience of membership in social communities (Wenger, 1998). As related to this study, the interplay of the teacher participants within their communities of practice shapes their individual identities, as does the converse, and can be both enhancing and conflicting experiences. Identity and practice run parallel (Wenger, 1998), and are reflected not just in the words used to describe the self but rather in the “full, lived experience of engagement in practice” (p. 150). Membership within the community constitutes identity—shaped by the competence experienced within the practice. Identity is not static but forms trajectories over time and space, shaped by the histories and offers of possible futures (Wenger, 1998).

**Transformative Learning Theory**

Mezirow (1991, 2000, 2003) presents Transformative Learning Theory as a way to understand how adults learn, especially using the power of reflective judgment to take on new perspectives. Detailing the process through 10 phases of transformation, Mezirow (1991) outlined a process that adults utilize as they deal with reframing patterns of thinking that no longer serve as useful to the individual. Mezirow’s (1991) phases of transformation are as
Mezirow (2003) details the nature of transformative learning as “learning that transforms problematic frames of reference—sets of fixed assumptions and expectations (habits of mind, meaning perspectives, mindsets)—to make them more inclusive, discriminating, open, reflective, and emotionally able to change” (p. 58). These frames of reference reflect habits of mind through which “we filter and make sense of our world” (Taylor, 2000, p. 293).

The three main components to Mezirow’s (1991, 2003) Transformative Learning Theory include a (a) disorienting dilemma, (b) critical reflection, and (c) rational discourse. The interplay between reflection and discourse is the mechanism of change and rethinking assumptions to form a new frame of reference (Mezirow, 2003). Adults bring a dramatically different set of experiences, assumptions, preconceptions, and frameworks that have had time to
solidify and be self-validated within the adult learner which are not present in adolescents or children (Snyder, 2011). The process of critical reflection makes meaning of experiences but is highly influenced by meaning perspectives that have developed over time (Mezirow, 2003). Therefore, understanding the transformative power of learning and change of beliefs for adults is imperative to exploring how to cultivate a growth mindset in teachers.

Mezirow’s (1991) Transformative Learning Theory has been discussed in the literature as being overly focused on the rational-cognitive component of critical reflection while minimizing the power of emotion in the reflective process (Arends, 2014; Mälkki, 2010). Direct rational appeal does not necessarily lead to motivating change but requires a person to feel self-persuaded towards change (Aronson, 1999; Heslin, Latham, & VandeWalle, 2005; Heslin & VandeWalle, 2008). Change or transformation in adults elicits unexpected and significant levels of emotional distress and angst that many are unprepared to deal with in shifting longstanding schema and thought patterns (Snyder, 2011; Snyder et al., 2013). Mälkki (2010) recognized that the transformative learning process requires emotional maturity and management of emotions as a necessary precursor to transformation of mindset. The relational connection and emotional support in a collaborative partnership may be key for successful transformation (Swartz & Triscari, 2011). The power of community support in change must also be explored as an important feature of the transformation process. Wenger’s (1998) communities of practice emphasizes this social context within which change and learning occurs and can provide illumination on this point.

**Transformation of Beliefs**

The idea of profound change in a person’s beliefs and mindsets during adulthood is a rich area of research and inquiry as it relates to understanding the change process and aiding
participants on a transformation journey. With so much at stake in the rapidly accelerating world of business and education, success and human performance that produces measurable gains and tangible positive outcomes may need to focus on optimizing the individual as the genesis of these outcomes. A powerful source of individual performance resides in the person’s mindset or beliefs. This section will review the emerging research of transformation or change in beliefs and integrate the implications for the mindset transformation process in teachers.

**The process of change.** While Mezirow (1991, 2000, 2003) offered an early framework on the transformational power of adult learning, more recent research illuminates how the transformation process is effectuated. Taylor (2000) notes that there is “much support for Mezirow’s theory, but at the same time there is a need to reconceptualize the process of a perspective transformation” (p. 322). None of the research directly contradicts Mezirow, but rather offers a more nuanced understanding of the mechanisms of becoming transformed. Kegan (2000) recognized that “as the language of transformation is more widely assimilated it risks losing its genuinely transformative potential” (p. 47). This observation compelled Kegan (2000) to distinguish transformational learning from mere informational learning and recognize that genuine transformational learning is an epistemological change rather than merely an increase in knowledge quantity or behavior adjustment. The epistemological change Kegan (2000) focused on was related to the concept of self-authoring in adulthood against the cultural context, which may add nuance to the more general epistemological change or perspective transformation noted by Mezirow.

**Change is contextual.** Context and culture play a significant role in the transformative learning process and should not be ignored (Taylor, 2000). Recognizing the impact of sociocultural contexts and awareness of background factors at play in the process gives insight
into a person’s readiness for transformation or understanding the emotional meaning of change (Taylor, 2000). Even the cultural milieu created by the digital technological revolution is a contextual factor that impacts how adults navigate the experience of perspective change. King’s (2017) most recent work focuses on Transformative Learning Theory in the context of digital technology in adult learning. King (2017) notes that Transformative Learning Theory provides “a valuable framework for adults to understand how they can navigate” the challenges of constant innovation and change due to digital technology as well as “valuable coping skills that can support the process” (p. 171).

Current contextual applications of transformative learning to the process of mindset transformation in adults focuses on manager beliefs about employees in the workplace and undergraduates in a leadership course. I have not yet found a study that applies transformative learning theory to teacher growth mindset beliefs about student intelligence. The closest related research concerns studies of interventions in business to change a manager’s mindset beliefs regarding workplace employees (Heslin et al., 2005; Heslin & VandeWalle, 2008; Heslin, VandeWalle, & Latham, 2006) and the use of transformative learning pedagogy to reframe beliefs of undergraduate students in a leadership course (Haber-Curran & Tillapaugh, 2015). However, the current understanding of Mezirow’s transformative learning theory provides an interesting opportunity to investigate the mechanisms and processes of transformation.

Current reconceptions of transformation. Rhodes (2013) proposed a four-part lens to understand transformation, which includes the individual’s sense of self, personal capacities, mindset, and worldview. Rhodes (2013) seems to inform the process that Mezirow (1991, 2003) calls critical judgment, which leads to the reframe and new understandings. Gore and Cross (2014) present a three-part theoretical framework from the review of literature on self-concept
change: reward, social comparison, and cognitive accessibility elements. These three components align with the triadic relationship between Bandura’s (1986) cognitive self-factors, environmental and behavioral determinants. Therefore, Social Cognitive Theory provides an overarching organizational structure to understanding change.

**Change is non-linear.** Transformation in thinking and mindset is not a linear progression but a complex process that reflects differences in individual situations (Rhodes, 2013). The process takes time to unfold (e.g., 3-year study of self-concept transformation in Snyder et al., 2013). Dweck (2006) noted “this commitment is to growth, and growth takes plenty of time, effort, and mutual support” (p. 244). However, changes in “points of view and habits of mind hold much promise as a key locus of transformation” (Rhodes, 2013, p. 9). Bandura’s (1986) Social Cognitive Theory brings the idea of a triadic non-linear self-reinforcing model that may serve as a different representation of the transformation process than the more linear model originally presented by Mezirow (1991). Taylor (2000) characterizes the journey of transformation as “less linear in nature than recursive” (p. 291). King (2007) likewise “embraces an open-ended journey” (p. 30). Wenger (1998) also notes that meaning for a community of practice is constantly negotiated. The complexity and lack of an existing theory of teacher mindset transformation justifies the need for more research.

**Change in self-concept.** Transformation of self-concept, especially in individuals who experience a major-life event such as becoming a parent or changing careers, provides a closely related transformative experience that has been studied in the past and provides guidance to the instant topic (Gore & Cross, 2014; Rhodes, 2013; Snyder, 2011; Snyder et al., 2013). Bandura’s (1986) triad again provides a model for contextualizing the influences on self-concept change, including the interaction of individual’s beliefs, environment, and behaviors. The reframing
process must involve creating and embodying a new identity so that the transition is a rebirth rather than the death of the former self (Snyder et al., 2013). A more linear process like Mezirow’s (1991, 2000, 2003), even in an iterative progression, evokes the distancing away from the former towards a new identity while Bandura’s triad and bi-directional reinforcement provokes an image of a continual cycle and rebirth. Gore and Cross (2014) note that there is typically a driving primary element to change with the other two elements playing a secondary role. This triadic representation may also better reflect the reality of change as an individualized experience rather than a normative prescribed linear process. This review demonstrates that theories of adult self-concept change can inform the process of mindset transformation in teachers. Additionally, the prior research on change in self-concept for professional identity may provide insights into the reframing and transformation process of mindset for teachers who must embrace new patterns of thinking while laying aside the old.

Change is emotional. Change is not a process without cost to the individual, especially in terms of emotional toll. Working through the feeling components of change “seems to be more significant to change” than other phases or components (Taylor, 2000, p. 292). Individuals on a journey of transformation frequently experience feelings of frustration, anxiety, vulnerability, self-doubt, and lowered self-esteem (Rhodes, 2013; Snyder, 2011; Snyder et al., 2013). Tension from time and family expectations experienced by teachers in a doctoral program as they transformed their identities from teachers to researchers (Rhodes, 2013) or from STEM professionals to teachers (Snyder, 2011; Snyder et al., 2013). Mezirow (2000) recognizes that “the most personally significant and emotionally exacting transformations involve a critique of previously unexamined premises regarding one’s self” (p. 21-22). The emotional experience of transformation is real and visceral, with the negative emotions typically being experienced
before the positive (Snyder et al., 2013). Refusal to deal with the emotional or feeling components of change may often lead to a barrier in the transformative learning process (Kucukaydin & Cranton, 2013; Taylor, 2000). Therefore, the use of other theories to provide a richer picture of the transformation process is necessary.

**Change is communally supported.** Support from peers or mentors during a transformation process provides positive influence on the journey (Rhodes, 2013; Snyder et al., 2013). In fact, the building of a *community of care* within a group or social context that is characterized by trust, vulnerability, and mutual support provided the final impetus for a shift to transformed learning and a reframed perspective of themselves as learners in a study of college-aged students in a leadership course (Haber-Curran & Tillapaugh, 2015, p. 75). Wenger (1998) notes that within a community of practice, characterized in part by the joint enterprise undertaken and negotiated between the members, is a mutual accountability of what matters and what does not matter to the community. Wenger (1998) also recognizes that the community of practice builds a repertoire of resources that can be accessed by the community to support the constant processes of change and learning at work within the community. Transformative learning is relational in nature and within these relationships are the pre-conditions essential for the rational discourse within the process (Taylor, 2000). The power of relationship in the transformation process was detailed in the review of Gore and Cross (2014) on self-concept change. Transformation comes in the soil of high-trust community-minded relationships.

**Empathy.** Recognizing the power of emotion in the transformation process, Brown (2006) identified empathy, or “the ability to perceive a situation from the other person’s perspective” (p. 47), as the key to resilience against feelings of shame that paralyze and immobilize individuals from transforming beliefs and actions. In Brown’s (2006) study,
participants \((N = 215)\) identified experiencing empathy as the opposite of experiencing shame. Empathy’s power of creating connection with another person fills in the gaps of over-rational and cognitive focused frameworks that only mention the power of interpersonal relatedness (Deci & Ryan, 1985) or the emotional connection needed for transformation (Arends, 2014; Brooks & Goldstein, 2008; Brown, 2012). In fact, transformation may be an empathy-laden process that must occur within a relationship context to be successful (Swartz & Triscari, 2011). Brown (2006) found that the experience of empathy from another person during shame experiences provided the most powerful resiliency response as opposed to only self-empathy. Taylor (2000) also argues that transformative learning is more than a rational activity and relies on the affective domain, especially the development of an empathic view of other perspectives. Empathy’s power is in understanding and sitting with the feelings of another—an act that is done in community rather than in isolation.

**Embodiment.** The concept of embodiment as a process of transformative change in mindset is emerging in the research and may present an interesting direction for investigation and application to teacher mindset transformation. Authentic long-term transformation may require an embodied process that includes emotion, empathy, and relationship to last (Arends, 2014). Studies demonstrate the successful short-term effects of mindset interventions being effective at six weeks post-intervention (Heslin & VandeWalle, 2008) and several months post-intervention (Paunesku et al., 2015). Change in perspective involves not just revising the frame of reference but also the “willingness to act on the new perspective” (Taylor, 2000, p. 297). In the end, the process of thinking differently may be a necessary but insufficient component of transformation of mindset. Wenger (1998) notes, “because learning transforms who we are and what we can do, it is an experience of identity . . . a process of becoming” (p. 214). To truly transform beliefs may
require the embodiment of transformation as a holistic experience—in essence: becoming different.

Summary

Given the positive impact of holding a growth mindset evidenced across a wide spectrum of beneficial outcomes and the impact of teacher’s mindset beliefs on students in the classroom (Dweck, 1986; Gutshall, 2013; Jones et al., 2012; Rattan et al., 2012; Hohnen & Murphy, 2016; Yeager & Dweck, 2012), the urgency to understand how the transformation process of teacher mindset functions is all the more pressing. But, the population who may benefit the most from a transformation in mindset may be the hardest to reach. Fixed mindset may be a stronghold to change. Fixed mindset holders are more likely to be overconfident in their abilities relative to their peers and at the same time divert their attention away from difficulty and challenge towards paths of ease (Ehrlinger et al., 2016). This means that the fixed mindset teacher, when given autonomy over his or her attention, will feel less in need of change and more likely to focus away from the challenge of transformation absent some other overriding or intervening factor. The emotional toll of change is real and felt. However, empathy and community can catalyze the process forward. This is why looking at the process of mindset transformation through multiple theoretical lenses may present a way to understand teacher mindset transformation that is more representative of the experiences and contexts of the individuals involved. In the end, true change may not be just about thinking differently but embodying the transformation by becoming different.

The process of mindset transformation is not well-studied in the teacher population, and current theories about adult transformative learning have not been applied in the context of teacher mindset about student intelligence. While studies relating to teacher attitudes, especially
about race or special needs, may help inform the conversation and understanding around mindset transformation regarding student intelligence, teacher attitude studies cannot be an equivalent substitute for research in this area. If cultivating a growth mindset in students is an educational policy priority for improving educational outcomes and decreasing achievement gaps, and teacher mindsets are key to the mindset development of students in the classroom, then focusing on how teachers’ mindsets transform towards student intelligence is an important factor in influencing student mindset in the classroom. This study seeks to create a grounded theory depicting the process of mindset transformation experienced by teachers who have transformed from fixed towards growth in order to create a model of teacher mindset transformation about student intelligence. By studying the stories of transformation from a wide range of secondary education teachers, I will create a model of the transformational journey within the context of education and mindset beliefs about intelligence. The outcome of this study may inform the creation of professional development and teacher mentoring programs to help teachers on their journeys of transformation.
CHAPTER THREE: METHODS

Overview

The purpose of this systematic grounded theory study was to explain the process that teachers experience in the transformation of their mindset regarding student intelligence from fixed towards growth, including effective transformation approaches and obstacles. Growth mindset theory is making an impact on parlance in education (Dweck, 1986, 2006; Dweck et al., 1995; Yeager & Dweck, 2012). However, are teachers now simply proficient in using the popularized terminology of growth mindset theory without possessing this mindset for themselves? Changing the old habits of fixed mindset thinking may be a difficult barrier to authentic transformation in a teacher’s mindset regarding student intelligence (Snyder, 2011). Few, if any, studies investigate how teachers change or reframe their mindset regarding student intelligence. As a result of this significant gap in the literature, further research was needed to develop a model on how adult teachers authentically transform their mindset.

As the literature review indicates, Social Cognitive Theory (Bandura, 1986), mindset theory (Dweck, 1986, 2006), communities of practice (Wenger, 1998), and Transformative Learning Theory (Mezirow 1991, 2000, 2003) all provide significant foundational histories in mindset. These theories provided a framework for constructing a grounded theory regarding the process of mindset transformation in teachers. This chapter provides the rationale for using grounded theory, a qualitative method, to conduct this study. The setting, participants, and procedures are outlined to contribute to an audit trail. I outline my role as the human instrument of this research and provide a detailed description of data collection and analysis. Finally, I address measures to increase trustworthiness and ethical considerations in the study.
Design

A qualitative methodology is especially helpful in exploring the mechanisms of change that reside at a deeply personal level within the individual that are not easily quantified. The most current research calls for understanding teacher beliefs in the classroom and asking “teachers about their beliefs and experiences” (van Uden et al., 2014, p. 30) and qualitative research provides the opportunity to deeply explore these beliefs and experiences. Qualitative research provides the opportunity to hear the voices of the teachers in a way that is not available in a quantitative methodology and provides a “legitimate mode of social and human exploration” in its own right (Creswell, 2013, p. 6). Furthermore, qualitative methods can be effective in studying transformative change (Christopher, Dunnagan, Duncan, & Paul, 2001).

Grounded theory is a valid design for this study because the focus was to understand the process that teachers experienced of mindset transformation by discovering common themes and understandings that may provide the basis of a theory (Age, 2011; Corbin & Strauss, 2015; Creswell, 2013). Grounded theory procedures allow a researcher to examine situations from many perspectives using the multiple voices of many participants to “gain insights into old problems as well as to study new and emerging areas in need of investigation” (Corbin & Strauss, 2015, p. 11). The topic of formation of a growth mindset in adults, specifically teachers, has not been studied widely in the literature and presented an opportunity to develop a new theory or model. Grounded theory is appropriate when exploring a phenomenon and seeking to develop a theory to explain the phenomena (Age, 2011; Corbin & Strauss, 2015; Creswell, 2013; Strauss & Corbin, 1998; Swartz & Triscari, 2011; Walker & Myrick, 2006). Mezirow and Marsick (1978) advocate grounded theory with Transformative Learning Theory studies (Howie & Bagnall, 2013). Grounded theory moves beyond just description of the phenomenon to
constructing an “overarching structure—the skeleton or framework that explains why things happen” (Corbin & Strauss, 2015, p. 12). In this study, the goal was to move beyond description towards development of a theory or model explaining the process that teachers experience in the transformation of their mindset regarding student intelligence from fixed towards growth, including effective transformation approaches and obstacles.

Systematic or evolved grounded theory provides a structure to the research and analysis process and permits the literature review to inform the research throughout the whole study (Corbin & Strauss, 2015; Strauss & Corbin, 1998). Especially for emerging researchers, the initial review of literature is helpful in formulating research questions and identifying a gap in the research. While there are several variations of approach to grounded theory, the most notable being the differences between Glasser and Strauss, which caused their divergence in style almost 30 years ago, I chose the approach of Corbin and Strauss (2015) because I felt more comfortable with the structured nature of the analysis process as a novice researcher and the encouragement to review the literature in the field beforehand. Even though Corbin and Strauss (2015) use a systematic approach, they note the need to embrace ambiguity and that students of this method must be “open to serendipity and flexible in their approach to data collection and analysis” (p. 9). For me, Corbin and Strauss’ (2015) approach provided the opportunity to engage in the grounded theory process while maintaining some structure for guidance.

Corbin and Strauss’ (2015) approach is characterized by applying analytic strategies to the data to sift the data for valuable insight while letting the noise filter out. To accomplish this, Corbin and Strauss (2015) encourage each analyst to develop his or her own style and “repertoire of strategies” (p. 89) as they analyze. As I read the entire piece to be analyzed for the first time, I listened to the voice of my participant and was able to see the world and perspective of the
participant through his or her own words. Initial coding broke the sections down into line-by-line coding opportunities, with opportunities to step back and identify main ideas or larger concepts emerging from the data. These initial concepts were checked and referenced against other sections. Constant comparison asked questions between sections, and eventually between participants. Concepts emerged and could be altered or amended as more information or further analysis was conducted. Theoretical comparisons created opportunities to ask what if and look at alternate word meanings. My analysis and thinking patterns were recorded in memos during the process. Diagrams were also helpful in visualizing and depicting relationships.

**Research Questions**

In this study, I explored the thinking, behaviors, emotions, and contexts within which change and transformation are experienced in order to develop a model of the process or theory that accounts for the process. Therefore, this study was guided by the following research questions:

CQ: How do high school teachers’ mindsets transform from fixed to growth regarding student intelligence?

SQ1: How do high school teachers experience the process of mindset transformation?

SQ2: What factors influence the process of mindset transformation in high school teachers?

SQ3: How do high school teachers describe the outcomes of the mindset transformation process for their practice, especially as it relates to the role of professional development?

**Setting**

The study setting was limited to high schools (Grade 9-12) in Illinois, United States. For convenience, I limited this study to an area that was drivable for me to conduct in-person interviews and to which I was able to use my relational network to gain access to potential
participants. According to the Illinois State Board of Education’s (2015-2016) Illinois Report Card, the composition of Illinois teachers ($N = 127,152$) in public school settings is overwhelmingly female (Female = 77%, Male = 23%), White (White = 83%, Black = 6%, Hispanic = 5.7%), and hold master’s degree or higher (61.4%). Student enrollment in Illinois public schools for 2016 ($N = 2,041,779$) reflects a more diverse picture, with White students making up an overall majority (White = 49%, Hispanic = 26%, Black = 17%, and Asian = 5%) but there being almost equal percentages between White students and students of color in aggregate as well as an equal division statewide of students from low socio-economic backgrounds (Illinois Report Card, 2016). Teacher participants in this study were overwhelmingly White (White = 13, White-Hispanic = 1).

Teachers were recruited from both public and private schools. I sought maximum variation in setting for the teacher participants to account for as many possible experiences, settings, and backgrounds. This would help provide transferability to the findings while reaching theoretical saturation. Additionally, the maximum variation in setting would provide credibility to my research and increases the reach of impact because the model can be applied in more settings with more teachers. I made contact with school principals or superintendents to gain permission to solicit and work with teachers within their schools.

**Participants**

I recruited teachers in Grades 9-12 who had experienced a change or transformation in mindset from fixed towards growth as determined by the Mindset Instrument (Dweck, 2000) and Learning Activities Survey (LAS; King, 2009). A summary of participant demographics is included in Table 1. To identify participants for more in-depth interviews for my study, I used the Mindset Instrument (Dweck, 2000) to screen potential participants for a current growth
mindset perspective regarding their students’ intelligences and used the question regarding participants’ experience of change in beliefs on the LAS (King, 2009) as another qualifying question for the study. This helped make sure I located and identified the teachers who had the stories and experiences to share regarding this study. I wanted to make sure that I respected the time of my potential participants and avoided interviewing teachers who did not fit the parameters. The Likert questions from Dweck (2000) were used to pre-screen participants so that I could focus on interviewing teachers who have both qualities: a growth mindset and have experienced a shift or transformation during their careers. The average of the mindset responses by participant are included in Table 1 as well. The heart of my study was to then interview these teachers who have experienced both phenomena with a semi-structured interview guide to dig deeper into their LAS (King, 2009) survey responses to better and more fully understand their journeys of transformation. Teachers who did not believe that they had experienced a change or shift were also excluded during the prescreening process.

Teachers who qualified then volunteered to participate in both the initial screening instrument and the follow-up interviews and reflective writings. I utilized sampling protocols, including purposeful theoretical selection and maximum variation. In order to gain access to Grades 9-12 teacher populations at a variety of schools, I leveraged my professional network of relationships to gain access to potential participants through membership in the Association of Christian Schools International (ACSI) and local public and private schools that use licensed teachers. I also selected participants using purposive criterion sampling. I sent the initial screening survey (Mindset Instrument and LAS) through school emails, via a gatekeeper at the school, to identify participants who have experienced the phenomenon of a change in mindset from fixed towards growth. I kept track of certain demographics including the type of setting,
gender of teacher, years teaching, race/ethnicity, and participant age to gain a broad representation of participants. Demographic figures are presented herein.

Table 1

*Summary of Participant Demographics*

<table>
<thead>
<tr>
<th>PRIVATE/ PUBLIC</th>
<th>Location</th>
<th>PS race/ethnicity</th>
<th>PS YEARS TEACHING</th>
<th>Gender</th>
<th>PS DI AVG Mindset</th>
<th>PS age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andre</td>
<td>Public</td>
<td>Z</td>
<td>White-Not Hispanic or Latino</td>
<td>10-15</td>
<td>Male</td>
<td>5</td>
</tr>
<tr>
<td>Brian</td>
<td>Private</td>
<td>Y</td>
<td>White-Not Hispanic or Latino</td>
<td>15-20</td>
<td>Male</td>
<td>5.5</td>
</tr>
<tr>
<td>Camille</td>
<td>Public</td>
<td>X</td>
<td>White-Not Hispanic or Latino</td>
<td>6-10</td>
<td>Female</td>
<td>6</td>
</tr>
<tr>
<td>Darren</td>
<td>Public</td>
<td>Z</td>
<td>White-Not Hispanic or Latino</td>
<td>6-10</td>
<td>Male</td>
<td>6</td>
</tr>
<tr>
<td>Energi</td>
<td>Public</td>
<td>W</td>
<td>White-Not Hispanic or Latino</td>
<td>21+</td>
<td>Female</td>
<td>4</td>
</tr>
<tr>
<td>Felicity</td>
<td>Public</td>
<td>W</td>
<td>White-Not Hispanic or Latino</td>
<td>10-15</td>
<td>Female</td>
<td>4.75</td>
</tr>
<tr>
<td>Goodall</td>
<td>Public</td>
<td>X</td>
<td>White-Not Hispanic or Latino</td>
<td>1-5</td>
<td>Female</td>
<td>6</td>
</tr>
<tr>
<td>Hannah</td>
<td>Private</td>
<td>Y</td>
<td>White-Hispanic or Latino</td>
<td>1-5</td>
<td>Female</td>
<td>4.75</td>
</tr>
<tr>
<td>Igor</td>
<td>Public</td>
<td>X</td>
<td>White-Not Hispanic or Latino</td>
<td>15-20</td>
<td>Male</td>
<td>6</td>
</tr>
<tr>
<td>Jo</td>
<td>Public</td>
<td>W</td>
<td>White-Not Hispanic or Latino</td>
<td>6-10</td>
<td>Female</td>
<td>6</td>
</tr>
<tr>
<td>Kelvin</td>
<td>Public</td>
<td>Z</td>
<td>White-Not Hispanic or Latino</td>
<td>6-10</td>
<td>Male</td>
<td>4</td>
</tr>
<tr>
<td>Lana</td>
<td>Private</td>
<td>V</td>
<td>White-Not Hispanic or Latino</td>
<td>6-10</td>
<td>Female</td>
<td>5.75</td>
</tr>
<tr>
<td>Maggie</td>
<td>Public</td>
<td>X</td>
<td>White-Not Hispanic or Latino</td>
<td>1-5</td>
<td>Female</td>
<td>6</td>
</tr>
<tr>
<td>Naomi</td>
<td>Public</td>
<td>U</td>
<td>White-Not Hispanic or Latino</td>
<td>10-15</td>
<td>Female</td>
<td>6</td>
</tr>
</tbody>
</table>

I anticipated a sample size of 10-30 participants, or until theoretical saturation was met (Creswell, 2013). Theoretical saturation is met once all the major categories are “fully developed, show variation, and are integrated” (Corbin & Strauss, 2015, p. 135). This means that enough variation has been sampled and the themes and nuances of the themes are sufficiently
established. In this study, I determined that I reached theoretical saturation prior to interview 13.

After interview 4, there was a clear repeating general pattern emerging that was confirmed during Interviews 5-12. Interviews 13 and 14 produced no altering to themes.

**Procedures**

Prior to finalizing the details of the study protocol and conducting this study, I reached out via email to Carol Dweck from Stanford University and gained permission to use her Mindset Instrument as a tool to screen for potential participants (see Appendix A). Then, I began reaching out to my professional network early on to locate gatekeepers and administrators who would be able to help me gain access to potential participants for this study. A copy of a sample email letter to gatekeepers is attached as Appendix C. I included a digital copy of my resume as an attachment to the email. I made initial inquiries to obtain insight into the process of gaining site approval and permissions as well as to gauge interest in the general topic of my study. No data were collected prior to IRB approval.

Realizing the need to customize the questions of the Mindset Instrument (Dweck, 2000), I reached out again to Dweck to seek further permission to use the customized version of the instrument (Appendix A). I also reached out via email to Kathleen King for permission to use the customized Learning Activities Survey (see Appendix E). King and I exchanged email correspondence to discuss the use of her instrument and to make sure that I was using it in a way that stayed faithful to its original purpose and desire to maintain the focus on the participants’ expressions of their qualitative experiences with transformative learning (K. P. King, personal communications, February 28, 2017 and March 12, 2017).

Upon approval of my research plan, I applied for and received approval from the Institutional Review Board of Liberty University. A copy of the approval is attached as
Appendix B. The audit trail is included in Appendix N. After obtaining IRB approval, I emailed the site contacts with the survey/questionnaire link to begin the process of collecting data by pre-screening potential participants. The sample email language with the online link is attached as Appendix J. Built into the survey/questionnaire is an online consent. Once the emails were sent out and potential participants were screened, I had the participants affirm another consent to participate in the main portion of the study. A copy of the second informed consent is listed in Appendix D. I sent electronic versions of the consent form to the participants to review prior to the interviews. I obtained the signed participant consent for the study at the start of the interview and activities. I scheduled face-to-face interviews, recorded them, and had them transcribed. At the end of the interview, I provided the participant with the reflective writing task to recommend a professional development activity that would have been helpful for transforming his or her mindset, with an explanation of why and how this recommendation would have been useful. I asked the participant to provide the recommendation within a week, with most writing it on the request form at the end of the in-person interview portion, or using the online link provided.

Using the constant comparison method, I began data analysis with memoing as soon as I completed an interview. As much of the process as possible was done electronically, including the initial survey/questionnaire and the written recommendation for professional development. Interviews were transcribed and then uploaded into Dedoose software for analysis. Memos and analysis were uploaded into Dedoose as well. Any other artifacts collected were digitized.

In the event that during the course of the study protocol I discovered that a participant appeared to not possess a growth mindset or had not experienced a shift of mindset, I committed to segregating that participant’s data from the analysis and consulting with my dissertation chair. I would either eliminate the participant’s data from the study entirely or use the participant’s data
during analysis and constant comparison to ask questions of or challenge the other data. Dweck (2015b, 2016) and Varlas (2016) noted the rise of the false growth mindset phenomenon and so I had to be aware that this situation might occur with a participant in this study. This ended up not being an issue during the actual data collection and analysis process, but I had made the decision ahead of time how to handle it just in case the need arose.

**The Researcher's Role**

As the human instrument of this study, I was an integral actor in the research process. Corbin and Strauss (2015) note that researchers bring many aspects of themselves and their experiences to the process. This study was constructed with the participants in an atmosphere of mutual trust, respect, and discussion. In grounded theory, I do not separate who I am from what I do—there is no dualism (Corbin & Strauss, 2015). Therefore, I needed to be self-reflective about how I influenced the research and in turn how the research influenced me. I kept a reflective journal during this process to help me process my own affective responses to the research. In this section, I explain and make conscious some of the aspects of my *self* and prior experiences that impacted this study.

My educational background played a significant role in my approach and analysis in this study. I went to Wheaton College for my undergraduate and earned a bachelor’s degree in political science with a Spanish minor. My studies reflected my curiosity about people and what motivates them. I enjoyed the Spanish literature courses and the stories of people in their own language and words. After I graduated from Wheaton, I attended law school. I hold a juris doctor (J.D.) from the University of Illinois College of Law, admission to the Illinois State Bar, and admission to the Northern District of Illinois federal court. This legal training and admission to the bar trained me to be a highly analytic person who is also reflective, curious, and open.
My first career was as an attorney, practicing in several areas of the law and in different roles. This experience helped me to understand the perspectives of others as I was duty bound to represent their interests to the best of my abilities. In my different roles in my legal career, I represented the state as a prosecutor in criminal matters and then transitioned to private practice in matters of criminal defense, family law, and other civil litigation. I was a guardian ad litem providing reports and recommendations to the court in child custody matters and for the elderly or other incompetent individuals for guardianship cases.

In my mid-thirties, I left my law practice and returned to school to become a licensed educator. I completed my Master of Arts in Teaching (MAT) from National-Louis University in 2013 and began this doctoral journey in 2014 through Liberty University. I spent the first four years of my teaching career at a small, private Christian K-12 school teaching and designing courses within the social sciences, communication, and technology spheres. I experienced a mindset transformation from fixed towards growth early in my own career and I became curious as to whether others had similar stories. My mindset transformation narrative, constructed during this study in my reflective journal, is included in Appendix T.

As a long-time student but relative newcomer to teaching, I have a unique perspective in this research study as someone who personally experienced a mindset shift in regards to student intelligence over the past three years of teaching. In an effort to understand my own reframing and mindset transformation, I sought to uncover the stories of other educators who experienced a similar transformation process. After spending nearly a decade in the legal profession, my mindset had become very much a judge-and-be-judged framework with little room to allow others to change from my initial perception. At the same time, I was dealing with the dissonance in my own worldview between the transformative power of the Gospel of Jesus Christ and my
reluctance to permit such a transformative power to change the way I viewed people in every sphere of my life—especially my students.

Through a series of encounters, learning experiences, and relationships, I found myself walking toward a process of transformation in my thinking about my own and other people’s intelligence—specifically my students. In the hopes of understanding the process in my own life, I did not hide the influence of my own story in this research study but rather made it plain for the audience to judge with the other data. I have a strong predisposition when it comes to this study because I believe that transformation is possible and there must be a theory to explain how such a change happens in adults. Eventually, I would like this study to help other teachers experience the power of a transformed mindset regarding their own students’ intelligence.

The choice of qualitative methodology and the grounded theory design is highly influenced by my legal background and training. The ability to build a whole case story from the separate pieces and parts was instrumental in my litigation experience. Interpreting words, asking questions, clarifying motives, and presenting the evidence in a coherent and compelling closing argument were skills honed throughout law school and legal practice. Grounded theory presents a systematic opportunity to build a theory or model from the evidence and reflects the way in which my mind was trained to think in law school. I selected this design because grounded theory provides an opportunity for the practical application of knowledge to positively influence people’s lives.

**Data Collection**

Several sources of data were collected, analyzed, and triangulated to build a model or theory about the process of mindset transformation in teachers regarding their students’ intelligence. Data triangulation provides a validation strategy that uses multiple sources of data
to corroborate or act as a check on each other (Creswell, 2013). Triangulation improves confidence in results and using multiple sources and modalities of data collection decreases the analytic bias residing in any one source (Patton, 2015). This justified my choice of multiple data sources that were not all similar in collection mode or the way that participants provided information. The items are listed in the chronological order in which I used them.

**Surveys/Questionnaires**

For this study, I obtained permission to use the Mindset Instrument (Dweck, 2000) and the Learning Activities Survey (King, 2009) from the creators (see Appendix A and E). As indicated by King (2009), I sought her permission to amend the questions from the LAS to apply to my context. Copies of the instruments as used are in Appendix F. This survey/instrument was given electronically using Google Forms, so the printed version in Appendix F does not show the progression in real time how a respondent would experience the questions. After the initial informed consents, demographic information, and Mindset Instrument questions were completed in the digital survey, the participant received the questions concerning transformative learning experiences. If the participant did not indicate that their beliefs had changed, the survey/questionnaire went to a completed screen thanking them for their responses. Since the experience of some change in belief was a necessary condition for participation, I limited the further collection of data to only individuals who indicated that they had experienced a change in beliefs. At the end of the completed surveys was the option to participate in the interview phase and provided a space to volunteer and provide contact information for follow-up.

**Mindset Instrument.** The Mindset Instrument (Dweck, 2000) is a reliable and validated instrument used to measure self-reported beliefs about intelligence (Dweck et al., 1995). The instrument can be used to refer to the self and to others (Dweck, 2000). In this case, the questions
were preempted by the phrase “in thinking about your students” to guide participants’ minds of the other referenced to be their students rather than neighbors, acquaintances, or family-members. The instrument has a high internal reliability rating (Cronbach’s α = .94 to .98) and was validated over six studies (Dweck, Chiu, & Hong, 1995). The validity of the instrument to accurately measure implicit theories of mindset about intelligence is also demonstrated by Dweck, Chiu, and Hong (1995) over the multiple studies to be not significantly correlated with or to be independent of respondent sex, age, political affiliation, religion, self-presentation concerns, cognitive aptitude (SAT scores), confidence in intellectual ability, self-esteem, optimism in the world, social-political attitudes, political liberalism, and political conservatism. Multiple studies have used the instrument in both the short and standard format; it is well-known in the field of mindset research (Ehrlinger et al., 2016; Gutshall, 2013; Haimovitz et al., 2011; Jones et al., 2012; King, 2012; Paunesku et al., 2015; Sevincer et al., 2014).

**Learning Activities Survey (LAS).** The LAS (King, 2009) is a qualitatively validated survey used in numerous studies to assess the transformative learning process in adults. The original LAS was created and piloted through several studies for use in King’s (1997) original dissertation research. King also used a panel of experts to critique the tool to inform a final pilot of the original LAS (King, 2009). King (K. P. King, personal communications, February 28, 2017 and March 12, 2017) is committed to the inherent value of qualitative methodology and the use of the LAS in the pre-screening survey was not intended in any way to quantify the transformation experience of the participants. The phrasing of the statements in the LAS instrument (see Appendix F) were correlated pairwise with the 10 phases of perspective transformation presented by Mezirow (1991) and were found to represent the phases of transformation accurately (King, 2009). For purposes of my study, this correlated question to the
10 phases of Mezirow’s transformation was listed under question 14 on the Mindset Instrument/LAS used to pre-screen participants in my study. The addition of qualitative interview questions and member-checking further bolstered the internal validity of the LAS by providing triangulation of responses (King, 2009).

The LAS is a mix-methods based instrument and is keyed according to the 10 steps of Mezirow’s (1991) Transformative Learning Theory (King, 2009). The major purposes of the LAS are to identify “whether adult learners have had a perspective transformation in relation to their educational experience; and if so, determining what learning activities have contributed to it” (King, 2009, p. 14). As such, a scoring guide for both the quantitative and qualitative components of the survey is provided by King (2009) to maximize its usefulness to the researcher. The survey also provides permission to modify and use with permission from King. This survey was digitized into Google Forms and provided respondents with the ability to see one question at a time. The demographic information was moved from the end towards the beginning before the Mindset Instrument questions.

The questions on the LAS (King, 2009) address four different aspects of the perspective transformation process in adults: (a) stages of perspective transformation and participant described experience of same, (b) identification of which learning experiences may have promoted the perspective transformation, (c) identification of learning experiences the respondent participated in, and (d) demographic characteristics suggested by the Transformative Learning Theory field (King, 2009). Follow-up interview questions are suggested to help the researcher further probe and develop the description and meaning of the experience (King, 2009). This prescreening was utilized first to locate and identify appropriate participants who meet the intersection of growth mindset and experience of a changed mindset about student
intelligence.

**Interviews**

A semi-structured interview guide (see Appendix G) was created and used to probe areas of mindset belief and the transformation process. I chose to use this format of interview because it gave me the ability to “maintain some consistency over the concepts that are covered in each interview” (Corbin & Strauss, 2015, p. 39) but also the flexibility to ask additional questions, probe, and clarify responses. While Corbin and Strauss (2015) say that the open, unstructured interview provides the most fertile ground for development of a theory, I selected the semi-structured format instead because the Institutional Review Board (IRB) requires an interview guide to review for approval. The semi-structured interview format was also familiar to me, as I used this during my prior legal career to assist me in covering the areas of testimony needed at trial. The semi-structured format also provided me with the ability to more systematically analyze the responses across participants. While I had planned to follow up on some of the open-ended item responses from the LAS concerning change and factors influencing the change during the interviews, I ended up not doing that and used the open-ended responses during analysis to triangulate and support the analysis process.

The interviews produced such rich descriptions that I felt it too repetitive to conduct more questioning during the actual interview. The interviews were recorded in person using my iPhone voice recorder app and then later transcribed verbatim. After transcription, I reviewed the audio and written transcripts to ensure accuracy. Following the suggestions from Carlson (2010) for avoiding member checking pitfalls, filler language and minor grammatical errors were corrected. Any extraneous conversations will be maintained in the original master transcript file, but removed and noted with a bracketed statement for member checking purposes. Afterwards, I sent
the transcript to participants for member checking. Email directions are attached in Appendix K.

The following are the list of question prompts:

1. Teaching:
   a. Why did you become a teacher?
   b. How would you describe your teaching style?
   c. How do you view your purpose as a teacher?
   d. Describe what influenced you in becoming a teacher?
   e. What do you think has shaped your views of teaching and your role?

2. Mindset
   a. How do you view your students?
   b. What do you believe about student potential?
   c. How do you define intelligence?
   d. How would you describe your mindset today about student intelligence?
   e. Has that always been the case? If not, when did it change?
   f. How did your mindset change?
   g. What did you believe before about student’s intelligence?
   h. How would you characterize your own mindset?

3. Transformation factors
   a. Describe the process you experienced in that change?
   b. What do you think contributed to that change?
   c. How would you characterize the process of change?
   d. When did you first realize this change had happened?
   e. Did you encounter any difficulties in the process?
f. Describe these difficulties.

g. How did you overcome these difficulties?

h. What do you think was most instrumental?

i. How has this change affected your teaching?

The purpose of the questions pertaining to teaching were to gather information about the participants’ motivations and philosophies of teaching. By describing their roles, it provided insight into how the participants viewed the teacher-student relationship. This contextual bracketing in the experience of the teachers addressed the difficulty that Taylor (2000) notes in determining what constitutes a perspective transformation. Taylor (2000) suggests that defining the frame of reference, putting boundaries on it, and describing how it looks after the frame has been transformed are essential steps in addressing the difficulties. The format of the interview questions and other tools sought to bracket the frame of reference of the teacher participants, in this case their mindsets about student intelligence, establishing the boundaries of that frame, and seeking description of how the frame looks post-transformation.

The questions related to mindset sought to further probe the quantitative information gathered during the initial survey and gain more detailed insight into how teachers viewed their own mindsets and their beliefs about student intelligence. This also provided an opportunity to probe whether there had been a change, in fact, regarding mindset. The final set of questions regarding transformation probed the factors, processes, and challenges encountered during the change. The beginning questions about teaching provided an opportunity to build rapport and trust while the intensity of the questions increased during the interview flow, culminating with the transformation process.
Prior to using the interview-question guide in the field, I discussed the guide with more experienced researchers in grounded theory, namely my committee. Changes in substance to the question guide for clarity and word choice were made prior to submitting to the IRB for approval. The questions were then reviewed with former co-workers outside of the study sample to ensure clarity of wording and flow of the interview process.

Teacher-Selected Photograph and Reflection

During the course of an in-person interview, I asked the teacher to take a picture of something in their classroom or their classroom’s digital presence that reflected his or her current mindset view towards student intelligence. The exact wording of the prompt is listed in Appendix H. The teacher then described to me why he or she chose this and how it reflected the current mindset. Finally, I asked the teacher how it would have looked different if the teacher had not experienced a shift in his or her thinking. The purpose of this exercise was to see how the teacher views mindset today and what impact the change of mindset had on the teacher, providing insight into SQ3 about outcomes of the transformation process. Multimodal means of expression provide an opportunity to explore another meaning more readily and deeply than just through verbal response (Hamilton, 2016). The use of photo elicitation allows the participant an opportunity to extend and further illustrate the commentary about the topic or question (Hamilton, 2016).

Metaphor Constructed Response

At the end of the interview, I showed the participants, in person, five different images that represented different themes in nature. Copies of the five images presented for the metaphor constructed response activity are included in Appendix I. I asked the participants to select the image that best captured their transformation experience. The images had themes that could be
interpreted with different levels of time, intensity, duration, power, unfolding, and emotion. The participants were then asked to describe what it was about the selected image that resonated with them and if they would change anything in the image to make it more accurate. This provides an opportunity to hear in a metaphoric way the nature of the transformation process and how the change was experienced, providing insights into SQ1 and SQ3.

The use of metaphor or symbol in collecting qualitative data helped to reveal perceptions and interpret an issue using other conceptual categories available through metaphor or symbol (Arslan & Karatas, 2015). Metaphors are a powerful way in which to convey understanding and move beyond conscious awareness to uncover additional or deeper ways of knowing (Tait-McCutcheon & Drake, 2016); as such, “metaphors help to understand the thoughts of people” (Arslan & Karatas, 2015, p. 1470). Both the verbal descriptions of metaphor and pictorial evidence are rich for analysis (Tait-McCutcheon & Drake, 2016).

**Recommendation of Professional Development**

Finally, the teacher was asked to write a short description of a professional development experience that would have been helpful or beneficial to the teacher during the process of transformation. The question was phrased as, “If you could have experienced a professional development opportunity that you think would have been helpful or beneficial to you during your process of mindset transformation, what would it have involved? Please write a few sentences describing your ideas.” The goal was to gain insight into what supports from the professional community would be helpful in transformation and how changes in thinking could be supported and cultivated. King (2004) uses the power of professional development in the realm of educational technology to help teachers transform their frames of reference in regard to technology and develop new perspectives, not just more knowledge about technology.
Recommendations for professional development from teachers who have experienced transformation provide opportunity for the teachers to contribute in ways that are affirming and connecting the teacher with new perspectives (King, 2004). This also shifts the focus on the teacher from solely as acquirer of more knowledge and skill to “self-directed adult learner and professional” (King, 2007, p. 28). This activity gave insight into SQ2 by providing examples of what would have been helpful to positively influence the process of transformation as well as SQ3 and the impact of professional development. If needed for clarity or elaboration, I contacted participants for a brief follow-up interview to ask questions related to the recommendation of professional development.

**Data Analysis**

I utilized the data coding and analysis methodology of Corbin and Strauss (2015) to review the data. This process allows the researcher to analyze the transcript in a methodical manner to identify larger themes and important repeating concepts in pursuit of a theory grounded in the data. The construction of theory is an interpretive act of condensing the data and “developing concepts in terms of their properties and dimensions” (Corbin & Strauss, 2015, p. 62) while demonstrating the relationship between the concepts. Analysis in a grounded theory study is an ongoing process throughout the research and is generative in that it gives birth to meaning and explanation. The goal of analysis is to take “the time to consider all possible meanings” and “not jump to conclusions about the meaning of data” (Corbin & Strauss, 2015, p. 69). The following data analysis activities helped to elucidate the concepts and their relationships.
Quantitative Instrument Data

The quantitative and demographic data obtained from the Mindset Instrument and LAS were used for both descriptive purposes and as a confirmation that the participant experienced the transformation and leans towards growth mindset. The coding of that data was done in conformity with the scoring protocols developed for each and was synthesized with the rest of the qualitative data. The four parts of the instrument explored: (a) stages of perspective transformation and participant described experience of same, (b) identification of which learning experiences may have promoted the perspective transformation, (c) identification of learning experiences the respondent participated in, and (d) demographic characteristics suggested by the Transformative Learning Theory field (King, 2009). The stages in the instrument related to Mezirow’s (1991) 10-phases (though King [2009] uses the term stages in her work in reference to Mezirow). Identification of learning experiences helped me to triangulate responses of the participant during the interviews as well as observe what types of activities or experiences may be most common. Demographic characteristics helped to determine whether a wide range of participants would be included in the study. The areas of the LAS that provide qualitative data were coded using the protocol outlined below. I analyzed the participant interview with the corresponding LAS and mindset instrument in conjunction with each other.

Coding

Once the interviews were transcribed verbatim, I systematically coded the interview transcripts, teacher-selected photograph reflections, constructed response about the metaphor, and teacher recommendation for professional development. The quantitative data from the initial questionnaire/survey instrument were used to triangulate the information from the qualitative sources and act as a check on the qualitative analysis. The qualitative items in the LAS (King,
that pertain to the transformative process were coded for qualitative purposes and provided insight to semi-structured interview responses. I utilized a three-step coding process including open, axial, and selective phases of coding (Corbin & Strauss, 2015; Strauss & Corbin, 1998). Researchers note that “the lines between the three phases are somewhat artificial and that open, axial, and selective coding might even be carried out concurrently” (Walker & Myrick, 2006, p. 551).

**Open coding.** During open coding, coding categories emerged that were both categorical and dimensional (Strauss & Corbin, 1998; Walker & Myrick, 2006). Charmaz (2014) uses the term “focused coding” to describe a secondary step in the initial coding phase in which early initial codes are used to “sift through and analyze large amounts of data” (p. 138). This focused coding may involve coding the initial codes themselves to accomplish the analytical work in an expeditious manner (Charmaz, 2014). The open coding process assigned labels to identify categories, while the axial coding explored the relationships between the categories to understand and explain the way in which they related and interacted together (Corbin & Strauss, 2015). *In vivo* codes provided categories in the participants’ own words, which captured their voices in the research (Charmaz, 2014). Sometimes the participants’ own voices provided the most accurate and descriptive category code for a particular experience in the data.

I used Dedoose software to code the data and identify different emerging concepts as well as memoing notations in the margins electronically. As theoretical concepts emerged, I used analytical tools to remain sensitive to the theory that emerged, “including questioning; analysis of a word, phrases, or sentence; the flip-flop technique; making close-in and far-out comparisons; and waving the red flag” (Walker & Myrick, 2006, p. 553) in order to see what the data were saying rather than becoming mired in the process (Strauss & Corbin, 1998). The point...
in analysis was to consider the meaning given to the data from different aspects, to question assumptions, and to constantly compare the current data to new data for consistency.

**Axial coding.** I then continued to use the coding software during the axial phase where the data, categories, and subcategories were reconnected and integrated through their dimensions, relationships, and key properties. I included sample theoretical memos in Appendix M, including a narrative of internal dialogue during analysis process, images of handwritten notes, and an image of *in situ* memos from Dedoose that are linked to the data. I have also included in Appendix S the raw coding application and sample screenshots from Dedoose of the categories and themes. These reflect my thinking process and connection making between ideas, themes, and constructs in formation of the model. Appendix N is an audit trail. Corbin and Strauss (2015) recommend using the following categories: (a) causal conditions - factors that cause core, (b) intervening conditions - factors that influence core, (c) specific strategies - responsive actions to core concept, and (d) consequences - outcomes of strategies. These connections could be visualized in the software using webs or graphic representations for final analysis; however, I preferred to sketch by hand to visualize and manipulate the factors and connections before arriving at the final model.

**Selective coding.** In the final stage of coding, selective coding, the integration of ideas around a core category took place at a theoretical and abstract level of analysis (Strauss & Corbin, 1998; Walker & Myrick, 2006). In the final coding step in a Transformative Learning Theory study, Christopher, Dunnagan, Duncan, and Paul (2001) observed that the themes coded cut across all 10 interview questions in the study, and so the authors recoded their data based on common themes across their 10 interview questions rather than maintain the separate coding for the 10 questions. For Christopher et al. (2001), this process allowed researchers to make
connections of the data cross-wise instead of siloed underneath each individual interview question. A model emerged from the data at this stage. Concepts were organized into constructs and gave rise to propositions. The model focused on the constructs and the propositions as relationships between constructs gave a clear visual explanation of the theory structure to the audience.

After the model was created in this study using a horizontal coding analysis by question, the Process of Change interview question was used as the initial source of analysis to create the model. A list of the short codes with corresponding full questions from the data sources is listed for reference in Appendix Q. The model was then observed in relation to the other themes and concepts that emerged in relation to the other supporting research questions. The model was compared to the LAS (King, 2009) Change Aspects item from the pre-screening survey. Finally, I conducted a confirming vertical analysis of each participant to determine if the model held true throughout individual interviews and data collection. I cited to at least one question from the interview or activities that provided the response and a short summary of the data for reference. Enumeration of codes and resulting themes is listed in Table 2 located in Chapter Four. The vertical analysis is included in Appendix P.

Coding Paradigm

During the initial coding process, teachers responded with answers reflecting both a process of change and substance of change in response to the question “How did your mindset change?” I utilized some of the grounded theory analysis strategies enumerated hereinabove including asking questions of the data and looking for alternative meanings. Realizing that the participants had interpreted the question with two meanings for the word “how,” this idea of process and substance became a coding paradigm during the rest of the analysis process.
Transformation of beliefs was both a change process and a change in substance. The process made fundamental and deep change to the substance of the teacher participants’ beliefs and manifested in their actions. Tavory and Timmermans (2014) argue in regard to the process of theorizing qualitative research that “not only is it valuable to examine the consequences of theoretical constructs, but the effects are also constitutive of the concepts” (p. 68). The consequent change must also inform the understanding of the constituent constructs. These participants recognized through their responses this dual meaning of how beliefs change—through a journey and in essence—a matter of method and degree. During the remainder of the data analysis, the concepts of process and substance acted as guiding lenses in looking at and making sense of the data.

**Rater Test**

After the initial and secondary open and axial coding process, I utilized the rater test function within Dedoose to set up a test for Dr. Laura King to rate the application of the secondary open coding over the four most important interview questions. I identified the four interview questions that represented the heart of the study and selected 29 excerpts across those four questions for the rater test. I utilized the interview responses from Andre, Brian, Camille, Darren, Goodall, Kelvin, and Maggie to comprise 24 of the excerpts. The rater test feature in Dedoose requires at least two uses of a code in order to be valid, so five additional excerpts were selected to ensure a valid and functioning test from other participants. I met with Dr. Laura King and briefly reviewed with her my central research question, three supporting questions, and the general design of the study. I prepared a code sheet for her that listed the question, options for available code titles, and the description of the code. I reviewed the sheet with her and she was able to use it as an insight into my mind and meaning of the codes as she coded over the 29
excerpts. A copy of the code sheet utilized by Dr. Laura King during the rater test is attached in Appendix L.

Upon conclusion of the test, Dedoose calculated a pooled Cohen’s kappa statistic ($\kappa = .84$) as well as an individual kappa for each response. Agreement was determined to be substantial. Appendix O is a copy of the inter-rater report produced by Dedoose. Pooled kappa is an appropriate measure of inter-rater reliability with multiple codes rather than using a simple average with agreement being determined as “moderate” ($\kappa = 0.41 – 0.60$) or “substantial” ($\kappa = 0.61$ and $0.80$; de Vries, Elliott, Kanouse, & Teleki, 2008). Upon review of the inter-rater coding report, Dr. L. King did not apply the code for Support in any of the instances that I used the code for the question about contributions to the change in mindset. Upon consultation, she considered the code Dialogue to encompass the Support and did not see a substantial difference between the concepts as applied. I had defined Support as receiving help, ideas, assistance, encouragement, support from others. Dialogue was defined as conversation and input from others. Upon reflection, the Support mostly came in the form of Dialogue. Therefore, those categories were condensed. However, it did not impact the final analysis or model.

**Constant Comparison**

I used a systematic back and forth approach between the data and analysis in order to develop themes (Creswell, 2013). In constant comparison, the similarities and differences between the data are identified both within the same interview, between interviews, and sequential comparisons over time (Charmaz, 2014). This process allows the researcher to saturate the categories until no new or useful data are retrieved from participants. Memoing permits the researcher to continue to analyze the data for theory as the concepts emerge from the data. I constantly engaged in a recursive process of comparing new data to already coded data,
reviewing coded data in light of new data, and recoding when necessary. The analysis was a constant comparison between different types of data informed by other data sources, both siloed within an individual but also across and between individuals.

**Trustworthiness**

The integrity of the qualitative research process is assessed through the concept of trustworthiness, which seeks to maintain the “quality in qualitative research” (Corbin & Strauss, 2015, p. 341). While there is some discussion about what characteristics or words are used to establish these standards of both the creative and scientific final product of qualitative studies, the criteria must afford the final product credit as a study worthy of respect (Corbin & Strauss, 2015). Corbin and Strauss (2015) advocate the comprehensiveness of the criteria list and questions offered by Charmaz (2014). Charmaz (2014) uses the categories of (a) credibility, (b) originality, (c) resonance, and (d) usefulness in evaluating grounded theory specifically. For Charmaz (2014), “a strong combination of originality and credibility increases resonance, usefulness, and the subsequent value of the contribution” (p. 338). These categories identified by Charmaz (2014) are discussed in the four areas that generally represent the trustworthiness of qualitative research for purposes of this project: (a) credibility, (b) dependability, (c) transferability, and (d) confirmability (Patton, 2015).

In this section I address both the general qualitative criteria along with Charmaz’s (2014) specific criteria for grounded theory studies where the “lines become blurred between process and product” (p. 336). The end goal of the research study is the same: a quality process that produces a quality final product which makes sense to the audience.
Credibility

In qualitative research, the credibility of the research refers to the accuracy and believability of the research study. Charmaz (2014) focuses credibility on the sufficiency and range of the data collected, the systematic nature of comparisons between the observations and categories created, and the strength of the “logical links between the gathered data and your argument and analysis” (p. 337). I triangulated the data between the questionnaire/survey data with the interviews, both the photograph metaphor and artifact reflection activities, and the recommended professional development. I included substantial quotes from participants to provide room for their voices and stories and to bolster support of the analysis. Finally, member checking interview transcripts after transcription and reasonableness of the findings provided additional indicia of credibility to the model and analysis. The researcher takes findings and themes to the participant for the participant to comment and provide feedback to ensure that the researcher has adequately and faithfully represented the participant’s story and perspective (Creswell, 2013). In this case, I asked the participants during the member checking on transcripts to make sure that the ideas and information they shared reflected what they really felt and believed.

Dependability

In order for the analysis and findings to be assessed for my care to detail and faithful execution of the grounded theory design, I used an audit trail with descriptions of my research steps along with extensive appendices with samples. I also conducted a rater test to verify my coding reliability and accuracy of identifying meaning. Patton (2015) discusses that dependability is similar to the reliability concept in quantitative analysis and is “focused on the process of the inquiry and the inquirer’s responsibility for ensuring that the process was logical,
traceable, and documented” (p. 685). Charmaz (2014) focuses on the concept of originality, which connects with my dependability in the execution of grounded theory through the creation of fresh categories and new insights, analysis that provides “a new conceptual rendering of the data,” and a grounded theory that challenges, extends, or refines “current ideas, concepts, and practices” (p. 337). Through the faithful and detailed use of the grounded theory method, I demonstrated an analytic process that met the dependability criteria through the originality of the ideas and insights generated in the final product.

A detailed description and rationale for every step in the design collection and analysis process is noted in this study. The audit trail permits an independent review of the design, data collection, and analysis after the fact while looking at procedures and areas where the researcher’s bias may influence findings (Creswell, 2013). A rater test was conducted to help establish the dependability of the coding. The rater test used an independent rater who was trained by me to code a small percentage of the interview data. Any discrepancies were discussed together. Then the rater was given a sample of interview data that I also previously coded but without any of my codes. Using the software analysis program, the rater used the codes I had identified and independently coded the second sample of interview data. An analysis of the inter-rater reliability of our coding was calculated quantitatively to determine overlap of agreement. Outcomes of this process are included in Chapter Four. Finally, the level of detail of my methodology and analysis provide a road map for future replications of my study.

**Confirmability**

Confirmability is similar to the quantitative construct of objectivity and seeks to establish the data and interpretations within a rational and logical basis. This is accomplished by “linking assertions, findings, interpretations, and so on to the data themselves in readily discernable
Charmaz’s (2014) category of resonance aligns with concepts about confirmability, as resonance focuses on the meanings of categories, the fullness expressed by the categories and the experience studied, and whether the “grounded theory makes sense to your participants or people who share their circumstances” (p. 338). I focused on creating a clear audit trail with samples included in the appendices, extensive participant quotes throughout the analysis so that the words of the participants came forth through the analysis, and detailed descriptions of my actions and rationales. I also consulted with an external auditor to confirm the analysis actions, namely review by my research consultant. This external auditor is an accomplished academic scholar who has experience in qualitative research and grounded theory. This peer review affords an external perspective that in turn provides accountability and rigor to the researcher by a peer acting in the role as a “peer debriefer” (Creswell, 2013, p. 251). Member checking of the interviews and meanings provided accuracy in my capturing of participant words and meanings. Finally, the personal reflective narrative provided me with an outlet to share my own story and explore my own biases and subjective interpretations to arrive at an interpretation of the data that is interpreted as faithfully to the meanings given by the participants as possible.

**Transferability**

In order for the findings in this study to be judged for applicability to other situations, I used thick rich description provided in the analysis with multiple quotes from the participants. Patton (2015) calls this “case-to-case transfer” (p. 684). In the field of grounded theory, Charmaz (2014) refers to this as usefulness as it relates to how the interpretations can be used in people’s “everyday worlds” as well as sparking additional research “in other substantive areas” (p. 338). I also included maximum variation in sites and sample characteristics to make the findings as universally applicable as possible. Limitations in this regard are addressed in Chapter 5. The
descriptions and the variation in participants provides the audience with opportunity to apply the findings to other settings and determine whether the findings and theory apply to the new situation.

**Ethical Considerations**

Ethical considerations must be applied in the following three categories: participants, research, and the researcher (Corbin & Strauss, 2015). Before any research was conducted, approval of the Institutional Review Board (IRB) was obtained.

**Participants**

In regards to participants and sites, informed consent and permissions were obtained including a consent to record the interviews. A copy of the consent is attached as Appendix D hereto. Confidentiality of the participants was maintained through the use of pseudonyms, and sites were not named or identified except with general demographic and geographic indicators. Any reference to individual students during interviews was also changed to pseudonyms with no identification except general demographic and geographic indicators. All participation was voluntary and included the right to withdraw for any reason at any time. Confidentiality and security of research data was additionally maintained through the use of password protected data files and physical data secured in locked cabinets. A confidentiality and non-disclosure agreement was executed by the transcriptionist of the interviews.

**Research**

Integrity to the methodology of grounded theory, commitment of the time and resources to the process, and follow through to publishing the results are ethical obligations to the research (Corbin & Strauss, 2015). I let the model and theory arise from the analysis of the data in this case to produce a model grounded in the research. As with any endeavor, fidelity to the core
values of grounded theory and completion of the project with excellence are ethical obligations
to the profession and the stories of the participants. By finishing strong, I demonstrated respect
for this process and my participants.

**Researcher**

As a researcher embedded in the process, not only must the caliber of my research be the
highest quality, but I must also recognize and respect the tremendous burden of research (Corbin
& Strauss, 2015). To that end, I maintained a personal journal of the research process in order to
help provide me with self-care and an opportunity to process my feelings. This technique helped
me to maintain my emotional well-being and reduced the influence of my own narrative during
the analysis of the participants’ stories.

**Summary**

The purpose of this systematic grounded theory is to explain the process that teachers
experience in the transformation of their mindset regarding student intelligence from fixed
towards growth, including effective transformation approaches and obstacles. In this chapter I
identified the rationale for the qualitative method and specifically the systematic grounded theory
design. Since my role as the researcher influenced the choice of methodology, design, and
analysis, I provided a detailed account of my educational and professional background to
elucidate my personal approach to this study. I outlined the types of data I collected, the methods
of analysis used, and the trustworthiness elements to provide my audience with assurance as to
the quality and rigor of this study. Finally, I discussed ethical implications that were addressed
prior to the study.
CHAPTER FOUR: FINDINGS

Overview

The purpose of this systematic grounded theory study is to explain the process that teachers experience in the transformation of their mindsets regarding student intelligence from fixed towards growth, including effective transformation approaches and obstacles. In this chapter I present the analysis of data collected. Participant-selected pseudonyms identify the 14 teacher participants. I present their backgrounds without disclosing too much detail so as not to reveal their true identities or places of employment. I utilized Dedoose software to organize and analyze the pre-screening survey data from the Google form, semi-structured interviews, teacher artifact activities and photographs, metaphor activities, and the professional development recommendations from the 14 teacher participants. From the data analysis process, a theoretical model emerged in response to the central question of the study to explain how these teachers transformed their mindsets about student intelligence from fixed towards growth. A core category, relationships, also emerged from the data that undergirded the transformation experience in both process method and substance. The core category also informed the construction of the model and understanding of the theory of transformation that emerged. Aspects of the process including the mediums, influences, and outcomes are presented in response to the supporting questions used to guide the study.

Participants

A total of 14 participants contributed data to the results in this section, representing both public and private religious school settings. Teachers were originally recruited from six districts or school entities, representing nine high school buildings. However, final participants volunteered from only six high school buildings, with one district contributing no participants to
the study. Originally, the goal of this study was to interview at least 18 teachers who experienced a shift in their mindsets towards student intelligence and currently identified as possessing a growth mindset towards student intelligence. Of the initial pre-screening survey results, four teachers who took the survey did not qualify for the study since they indicated they did not experience a shift in their mindset beliefs, and one teacher who did qualify declined to participate for the interview portion, leaving the 14 remaining and included teacher participants. However, theoretical saturation was met within the participant group included in the study and is discussed later in this chapter. Participants selected their own pseudonyms, giving them greater voice in the research process. A brief overview of each participant begins this chapter and provides context for each teacher’s story of transformation.

Andre

Being bored and unchallenged in middle school led Andre to act out, earning 37 plus in-school suspensions in 7th grade, even though he was smart and in advanced classes. It was not until high school that Andre got heavily involved in sports. Some of his high school teachers challenged him to change his attitude, and by junior and senior years he was writing for the high school newspaper. He did not realize that he liked to write until high school and would have considered a career as a sports writer. As a teacher now, Andre is orderly and establishes routines in his classroom, but values a discussion-based classroom that prioritizes “being a little more cognizant of . . . who they are and where they’re at in the world.” Andre views his purpose as a teacher to get his kids to the next level of where they need to be and ready for the next stage of their lives. Andre credited his “really good high school experience” and influence of teachers within his family as the impact on his career direction.
Brian

Brian feels fulfilled and energized when he’s working with other people—especially kids. He also loves history and felt that teaching was “the best means to combine those two” passions. Brian brings energy to his classroom and tries to keep it interesting for his students by using a variety of teaching techniques. Brian calls it “eclectic” but he feels that kids learn best that way. Brian was influenced by teachers in his own family as well as his own teachers in school and professors to enter the profession. Brian’s purpose as a teacher is reflected in his choice to teach in a private Christian school setting, to not only teach content and critical thinking skills to his students, but also that his students “grow up to be people that are servants,” love Christ, and get along well with all other people.

Camille

Teaching found Camille after she realized that doing accounting work in offices with other people all day brought her no joy. “I hated it. It sucked. It was terrible.” What brought Camille joy, though, was numbers and working with kids. Her experiences from an early age as a camp counselor in training, camp counselor, and then being assigned a group of students who had been labeled “the difficult kids” brought her real enjoyment. She really connected with students who struggled with behavior or emotional issues and has found her “favorite thing ever” now. For Camille, every one of her students learns in a different way, and so she focuses on finding out how each of them learns and “then getting them to do it.” Camille wants her students to be functioning members of society and good people. Helping her students to overcome difficult situations and move forward towards success brings Camille purpose in her role as a teacher. A university professor’s story of influencing students in difficult circumstances left a lasting impression on Camille and eventually influenced her decision to become a teacher.
Darren

Darren always wanted to “impact lives in a positive way.” He posts that message in a quote on the front of his classroom door for everyone to see and tries to live it out with students every day. While Darren loves his content area, making a difference in student lives is first priority. Darren teaches with energy and passion in order to get his students engaged as much as possible. For him, creating a classroom culture where every student feels comfortable to “open up and grow” as students and individuals is a priority in his teaching style. Even after 10 years of teaching, Darren finds purpose and passion in helping each student grow as an individual. While he was influenced by his own positive experiences with teachers and coaches, the events of 9/11 during his junior year of high school solidified his decision to become a teacher of history specifically.

Energi

After college, Energi started subbing at the high school level and coaching sports. Having enjoyed school herself growing up, she realized that the high school level “suited her personality” since she is outgoing and worked hard. Wanting to help kids and figure out how to reach them, Energi went back to school and got her teaching certificate. In her classroom, Energi believes in differentiation and so she likes to “switch gears and do different things during the period”. She has high expectations for behavior in the classroom and would characterize herself as “firm but I’m warm.” Energi views her purpose as a teacher to help her students become much more independent learners. Growing up, Energi was influenced by her own positive experiences with teachers as well as the value her family put on education to go into teaching. While she felt too shy initially to become a teacher, by her mid-20s she had gone back to school to pursue this career.
Felicity

Felicity grew up watching the impact that her father, a teacher, made on the lives of others. Having her own positive personal experiences with teachers growing up, Felicity was inspired to become a teacher and make her own impression on students’ lives. She even still communicates with her own high school teacher, having just exchanged messages the day of our interview. While Felicity is a planner at heart and very deliberate in her approach, she remains flexible and open to saying yes whenever possible to cultivate creativity and ownership in her students. She strives “to be student led whenever possible.” Even though it sounds cliché, Felicity sees her purpose to change the world and make it a better place through her craft and students. As she looks around the world at many of the crazy events that happen and difficulties, she sees teaching as “a way of not being too late in the world” and influencing a younger generation to make an impact on these situations.

Goodall

Intending to attend med school with the goal of becoming a pediatrician, Goodall realized that a career in medicine would not be the “perfect mesh” between her passion to work with kids and the sciences. After shadowing doctors and seeing the limited time doctors actually had with their young patients, Goodall reconsidered her life path. She realized that teaching would give her the opportunity to form a real, meaningful relationship with kids and make a difference in their lives in the way that was lacking from medicine. In her classroom, Goodall really focuses on being student-centered and seeing her own role as a facilitator and guide in the discovery process. She sees her purpose as being a trusted adult in the lives of her students and a positive influence that is encouraging and a constant force moving them forward. In thinking about what
influenced her to go into teaching. Goodall recalled that her own role models growing up were her teachers rather than her pediatrician.

**Hannah**

Being homeschooled for the start of her education, Hannah was in high school when she first encountered a classroom teacher. In this context, she was very aware of the purposeful influence of these teachers in her life, which began her own interest in becoming a teacher. While she developed an interest in the wonders of the human body and workings of anatomy during high school that made her think a career in the medical field would be the direction she would pursue, other experiences caused her to realize that may not be for her. She also had the opportunity in her church to lead peer Bible studies and she enjoyed planning for them and engaging in purposeful dialogue with her peers. For Hannah, “those different pieces really were kind of the funnel that God used to point me in this direction.” Hannah describes her teaching style as messy and experiential, with definite structure but “opportunity to fail and try again.” Working in a private Christian school setting provides Hannah with the opportunity to disciple her students. Everything comes back to the first and second greatest commands “that we need to love the Lord our God with our heart, soul, mind, and strength, and then love our neighbor as ourselves.” She sees that her purpose as a teacher is to help her students know that Jesus loves them and to learn humility and appreciation for other people. Learning another language equips her students “to have meaningful relationships and conversations with people” as the world is much more globalized. Hannah credits her mom as her first teacher and then the teachers she had in high school with influencing her career direction. Although she did not know “at the beginning of that process that [she] much liked the idea of being a teacher,” she kept coming back to it and worked hard at it.
Igor

Having enlisted in the military at an older age than most recruits, Igor’s experiences teaching younger recruits started his path into a career in education. He enjoyed working with “fresh recruits out of high school” and brings that same passion to his classroom today. Igor describes his teaching style as “flexible yet rigid” with appropriate structure but simple as he helps struggling students “realize everything they can outside of the traditional classroom” setting. Igor’s first teaching position at an in-patient psych hospital was eye opening for him on the impact of emotion and trauma on student learning. He wants his students today to realize their potential and strengths as students and learners, citizens of their communities, and young adults. Igor credits the influence of his military service and his underlying curiosity to understand history and research in becoming a teacher. Through teaching, Igor has found yet another way to serve his community and help people.

Jo

Jo loves to learn and saw her experiences growing up as a student revealing the gaps in skills that were important to being successful but not routinely taught during school. This curiosity and desire to learn impacted Jo’s decision to become a teacher. She felt “like there are so many things that we can do in the school setting to help prepare our society and our world around us to be the best it could be.” Jo loves data and figuring out what works for each student’s success. While Jo believes in direct instruction and helping students by explicitly teaching skills that are embedded in content or taken for granted as things students should already know, her favorite part of learning opportunities is the experiential component. For Jo’s students in special education settings, this means that she is very purposeful in teaching the underlying skills for her students’ success as they work in groups, give feedback to a peer, or engage in a dialogue. Jo
sees her purpose as a facilitator of learning and giving students experiences where they will be able to learn. Although she started out in the business field, Jo soon realized from an opportunity working overseas in a school that being an educator in the school setting would give her the fulfillment she was lacking in her business career.

**Kelvin**

After realizing in college through an experience in business class that he would not enjoy that career path, Kelvin reflected on the teachers in his past that really helped him and decided to explore education. Kelvin “loved history” and felt encouraged by those teachers to try out an introduction to secondary education course and history courses in college. Through observation experiences and being able to interact with high school students, Kelvin realized that he had figured out what he wanted to do with his life. Kelvin describes his teaching style as keeping up with current methods, integrating technology, and changing it up. He wants students to use different technology platforms and be interactive as much as possible. Kelvin wants his students to look at his classes as more than just grades. He prioritizes the relationship aspect of teaching and sees his own purpose as helping to guide his students towards their own purpose. Even though he had family members in teaching, Kelvin remembers the impact of his own teachers in high school who stepped up and helped guide him as the main influence in his pursuit of a career in teaching.

**Lana**

Teaching found Lana about 10 years ago when her training position was no longer feeling like the right fit for her anymore. Growing up, Lana loved playing school but ended up not liking her own school experience from the second grade onwards. Upon graduation from high school, Lana went to work and her skill at training others caught the attention of the company. Lana
would travel and train others. As a single mom working full time, Lana went back to school to become a teacher and “loved it.” Lana describes her teaching style now as very engaging, and she mixes it up using different strategies to meet the different learners in her room. Lana has a keen awareness of difficult experiences that she endured during her own schooling and uses those to recognize the diverse learners in her room, especially “when it comes to reading strategies.” Lana sees her purpose as a teacher more from God than her own and says the fact that she is now teaching surprises people who knew her own experiences in school growing up. Lana credits a shaming experience by her teacher and principal in second grade as a struggling reader as a vivid reason why she “hated school from my second grade on” but also as the influential experience in her empathy and compassion as a teacher today.

Maggie

During high school, Maggie was drawn to history and social studies and decided she wanted to become a teacher. However, Maggie gave up on her dream when other people convinced her she could not get a job as a social studies teacher. Instead, she became a paralegal. After some time working as a paralegal, Maggie was not fulfilled in that career and decided to return to school to pursue her original passion to teach. Maggie considers her style of teaching grounded in relationship building with students and giving students opportunities to guide their own learning. Maggie uses a variety of activities to keep class from being static. Maggie views her purpose as a teacher to help students not only learn content but also develop skills “that after they leave the high school they’ll go off into the world and maybe they’ll become civically engaged or become interested in utilized skills.” Maggie credits her own high school history teacher with influencing her to go into teaching. Maggie was finding herself bored in history class and her teacher moved her up halfway through the year into AP. She saw her teacher as
“somebody kind of pushing me to believe in me” and Maggie thought that she “could have this impact on somebody too.”

**Naomi**

Naomi dreamed of being a teacher or doctor when she was little. In fact, her dad made her sister and Naomi a large desk to play school at. As Naomi grew, she realized how much she loved biology and learning. She could fulfill both dreams by “actually teaching kids who maybe wanted to go on and study medicine” and foster her love of learning. Naomi describes her teaching style as interactive and inquiry based, focusing on problem solving and application. She wants kids to discover and then connect their learning to the real world. Naomi views her purpose as a teacher to “really guide students to deeper understanding of the living world.” A high school English teacher and drama coach had a huge influence on Naomi pursuing teaching as a career. She noted his intentionality at developing relationships that inspired her current pursuit.

A summary of the participant demographics was previously included in Chapter Three. The demographics for each participant presented in Table 1 provide only part of the story of who these teachers are as individuals. Through their stories, each participant articulated a passion for learning, desire to engage with students, and vision for what is possible in the lives of their students and schools.

**Results**

The results section is organized to present the overall theoretical model of the transformation process that emerged from the data. This model is used to answer the central question (CQ): How do high school teachers’ mindsets transform from fixed to growth regarding student intelligence? Then the core category is addressed as it emerged throughout the analysis
A thorough treatment of the component themes from the theoretical model is explored and presented. Unexpected themes will also be addressed. Finally, the three supporting questions are answered and summarized from the data analysis and resulting theoretical model. The supporting questions include: (SQ1) How do high school teachers experience the process of mindset transformation? (SQ2) What factors influence the process of mindset transformation in high school teachers? (SQ3) How do high school teachers describe the outcomes of the mindset transformation process for their practice, especially as it relates to the role of professional development? Data from the pre-screening survey responses, semi-structured interviews, teacher artifact activity, metaphor activity, and professional development recommendation were used to justify and triangulate the theme development.

**Theoretical Model**

As the concepts, themes, and interactions of categories emerged from the data, the visualization of the model came to me in the form and function of an Edison incandescent light bulb. The resulting Theoretical Model of Teacher Mindset Transformation is shown in Figure 3 below. For the teachers in this study, the transformation of their mindset was both a change-process and change in substance. The experience was not just a journey travelled, but it was also a change in the essence of who they were, what they valued, and how they behaved. In selecting this visual representation of the transformative process, the incandescent light bulb captured those dimensions of the process in a way that is accessible to the audience’s common experiences and understanding and serves as an explanatory tool. While Figure 1 below represents the 2-D visual model of the mindset transformation process, the audience must imagine the model existing in 3-D and 4-D, taking up not only tangible space but also emanating heat and light as shown in Figure 2. Both Figures 1 and 2 are intended to provide readers with a
common context for the metaphorical representation of the Theoretical Model of Teacher Mindset Transformation outlined herein.

The process of mindset transformation began with a moment of realization, a glimpse of insight or small flicker of recognition that something was just not quite right. This moment resided in the thinking of the teacher and was represented by the initial heating of the tungsten filament inside the bulb. The contact wires brought electrical current to and from the filament. A set of supporting wires acted as a buttress to uphold and bolster the filament and contact wires. These contact wires represented the experiences of the teacher that are the conduit for the

Figure 1. An incandescent light bulb diagram (Kushwaha, 2011) used to visualize the parts of a light bulb described metaphor in the theoretical model. Permission for use and publication granted by Kushwaha in Appendix R.
current. These *experiences* included both *experiments* in the form of trying out new ideas or approaches and also moments of personal *reflection*. The *supporting wires* were the *equipping* activities, like exposure to ideas and mentoring, that teachers engage in throughout the process, which reinforced and strengthened the *experiences* and *thinking*. The *glass bulb* encased the filament, contact wires, and supporting wires to protect the filament from vaporizing as the current flowed through the wires and filament. This glass bulb represented the idea of *empowerment* in the process, a protective factor that created a delineated space within which the filament could glow without being consumed. *Empowerment*, like the *glass bulb*, owned its space. The light bulb was connected to the *current* which flowed through the whole process, representing the core category of *relationships*. The light bulb created not only a completed

*Figure 2.* An Edison incandescent light bulb aglow used as metaphor for theoretical model.

Creative Commons License CC0 downloaded from Pixabay.
circuit for the flow of current but also a radiance of substance in the form of light and heat. The light bulb was a model of both the process and substance of transformed thinking. As the current flowed, the filament heated and glowed, a teacher’s thinking had transformed, and the light bulb gave off both light and heat. In the model, this light represented the application of the changed thinking and the heat represented the extension of that thinking into other areas of the teacher’s life. While Kushwaha (2011) notes that most of the energy given off by the incandescent lightbulb is in the form of heat (90%), as humans we first notice the light. In teachers who have experienced mindset transformation, the application of the transformation in classroom practices

Figure 3. Theoretical Model of Teacher Mindset Transformation (Bethge, 2018).
is the most immediately noticed characteristic of the change. But as described below, the extension of change into other domains or aspects of the teacher’s life may in fact be the warmth felt through the over-flow from the one domain.

**Core Category**

The core category that emerged across the data sources was the concept of *relationship*. The process of mindset transformation happened within a relational space and not as an individual in isolation. As much as our culture values the rugged individual and drive for personalization in every aspect, the transformative process is steeped in the context of relationship. This should be no surprise as the profession of teaching itself is highly relational. When asked during the interviews to “describe what influenced you in becoming a teacher,” there were nine mentions of the positive impact that a teacher had on them during their K-12 years, two mentions of a positive impact that an undergraduate professor had on their lives, and one mention of the negative impact a teacher had on a participant in elementary school that then drove her to never let her students have such an experience themselves with her. Five of the participants also mentioned the influence of family members who were teachers. Relationship impacted not only why teachers entered the profession, but shaped what they believed and how they acted as a result.

**Relationships matter.** In the theoretical model created in this study, relationships were the power—the current flowing throughout the process. Relationships were integral to the process of making a change in thinking possible and helped moderate the intensity of the glow and warmth. A teacher’s mindset transformation about student intelligence happened in connection with other people. Jo summarized it best in relation to what was most instrumental in her change:
I think other people that allowed me to do the same thing. So, I think colleagues, I think administrators, I think family that allowed me to process and were good listeners and kind of reflected back what they were hearing or seeing from me to then give me the opportunity to continue to grow in my own way. I think it’s the people around us that help to facilitate that.

Relationships pushed people out of their comfort zones and created clarifying situations for those who were aware enough to catch it. Relationships shed light on beliefs and provided context within which to compare and illuminate other relationships. Across the data sources, the teacher participants shared different relational contexts that provided shaping power to the process of transformation.

**LAS pre-screening survey.** The idea of relationship was a prevalent factor identified by participants in the LAS (King, 2009) used in the pre-screening survey. In response to the contributions of change questions in the pre-screening survey, 12 participants noted that it was “a person who influenced this change”. This category of contribution to change received the highest number of responses, followed by “an experience in your own classroom or teaching” (n = 11) and “part of a professional development activity that influenced the change” (n = 9). While I looked at this data briefly prior to the initial open coding and axial coding process, I used it as a test of the model that emerged from the interview data by asking myself, “Does this ring true? Are these responses reflected in the rest of the data?” The influence of another person was the most indicated response by participants and supported the selection of *relationship* as the core category that emerged from the interview process. Responses on the LAS including experiences in the classroom or with teaching and professional development were more like components of the model rather than an overarching theme running throughout.
Metaphor activity. During the metaphor activity in which teachers each selected and described an image that most resonates with their transformation processes, two teachers initially selected the image that had multiple people climbing together because it reflected the team or group effort needed in the process. Goodall described how,

There is a team of people and that it takes like a team of people to go through this transformation and to have somebody that first like introduces this whole idea to me but then the support and the experiences of the other people around me and the other teachers that I was working with or the students that I’m working [with].

Camille picked her image “because there are more people in it so I feel like obviously more people - like it’s not just you. Like other people around you help you get to that point.” However, five teachers would have changed their picture selected to add people in order to make it more accurate to their experience for the same reason—the process happens with others. Kelvin noted that he would change his image:

Maybe there’s more people there. Sometimes teaching at first you feel like you’re so busy like you’re on your own but now I know that in front of us as well there’s a lot of people doing, they’re practicing the growth mindset in classroom and I feel like there would be more people in there.

Hannah also mentioned how she too would not have been alone in the image:

I think I might put more people on the bridge because we’re all in progress. We’re all on the journey and we’re not any of us alone in the sense that I mean for me much of the transformation has been because of other people in conversation with me and helping me to recognize just the varied experiences people have and perspectives.
Andre talked about the power of his colleagues going with him through this transformation. Andre said how he would have included other people with him in the image. Andre described: “Like I hate it when people say like I did stuff by myself, that’s bull crap. There are people with you, you know? People who would willingly go on that bridge with you.” By using images as metaphor for the transformation process, participants needed to identify not only what was there in the image that resonated with them then but also how the image would have been changed to be more accurate—what was missing or needed altering. This activity confirmed the impact and influence of other people on the transformation process and likewise supported relationship as the core category.

**Interviews.** The interview process generated the bulk of insights into the development of the core category relationships. Through the analysis process, several contextual sources for relationships were uncovered that influenced the process of transformation in teacher mindset towards students: The student relationship, peer relationship, administrative relationship, and other relationships form the contextual backdrop within which the interaction occurs. Each setting of the core category will be explored below along with how the participants were influenced by that relationship in the transformation process.

**Students.** Participant experiences with students provided the most intense number of responses throughout the interviews. The student context presented challenge and unexpected discovery opportunities. With students, teachers engaged in their main professional purpose and practiced their craft. Student relationships provided eye-opening interactions and were an integral part of the experiences of teachers in their classrooms. Naomi shared how she lived her own journey along with her students by “showing my students that you can struggle through learning hard things or painful things and that you can come out the other side of it better,
stronger.” Jo described how working with students who had significant learning disabilities or cognitive impairments impacted her beliefs when she noted, “so I think my experience in working with students completely changed my mindset of what people in general, not just my students, but what people in general can do under the right circumstances.” Goodall talked about how her own experience as a gifted student had impacted what she believed about student intelligence coming into the profession:

The student teaching experiences that I had and dealing with students that were not in gifted programs because I wasn’t exposed to a lot of that as a student. It was only certain classes that we were mainstreamed and so then actually student teaching and having to figure out ways to reach those students and work with them was a big eye opener. Because of that experience, Goodall found her passion to teach struggling students which was totally different from what she went into teaching thinking she would do. Igor also shared how working with struggling students in his first teaching job also really opened his eyes:

I would say my first job working at that psych hospital for those few years and immersing myself in students with special needs that because of the way I went to school and those students were not allowed in school or whatever happened to them that we never knew it was a very uncomfortable idea to me to work with those types of students because I had no idea what they were like or what they were capable of you know we were behind locked doors and gee-whiz and then to work with those students and see that they are no different than any other kid out there was just - that was when I realized that I’m the problem.

In a relationship with those students, Igor was able to see that his beliefs were the problem.

Felicity shared how she was able to build a level of trust because of her content area, “the fact
that I get the students for four years at a time a lot and I know that there are those ones that I can count on to try things out and go for it.” Over time Felicity was able to build trust-based relationships with her students that set a foundation to try new things or take risks in the classroom. Kelvin noted how “I view them as not my own kids but almost your own kids because you care about them, so that relationship aspect is the most important.” Relationships with students are highly impactful on the transformation process.

Camille had taught in a clinical inpatient facility and through a reflective process with her colleagues realized the power of her relationship as a model to students in her classroom. Camille shared,

How your values and your thoughts and your own perceptions and your own feelings toward something is being projected onto your students and how they are taking that on and then reflecting it back to you. So, that kind of really struck home with me because I never really thought about it like that and I know that if I’m excited about something they’ll be excited about something, but I never thought about it in the sense of like everything else you know that you teach them.

Camille’s description of her peer reflection process discussing teacher-student relational factors in the classroom demonstrates the power of relationships transcending both student and peer contexts.

**Peers.** Collaboration, observation, conversation, and mentorship between colleagues were described by participants as important relational contexts for their processes of change. Other teachers provided support and ideas, confidence to try new things, and resources to help through professional challenges. Kelvin mentioned “talking with colleagues, just phrases they use, quotes they use at first, activities to use and even now we’re talking about . . . how we can do it in our
grading policy.” Andre noted how instrumental “bouncing ideas off of other expert teachers” was to overcoming challenges he faced in the process. Energi has been teaching for almost 30 years now and the power of the relationship with her mentor and colleagues is clear when she shared how those relationships are an important part of the change process. Energi said,

> When you get to know your colleagues and you share things with your colleagues. I had the best mentor when I first started teaching 30 years ago that really helped me. People who are willing to help other people. That gives you a whole different perspective on everything.

In fact, Energi described her mentor as “just so outstanding” that she herself went on to become a mentor to other teachers. Goodall also noted how her cooperating teacher was like a mentor to her in the process and how “really trying to bounce ideas off of her as well as just understand from somebody that’s been through it before and can give that wisdom to somebody who is like just experiencing it for the first time.” The power of a peer relationship in the change process should not be underestimated.

When Felicity found out there were other teachers like her, it was a great help. Felicity recalled, “then lo and behold I found more teachers out there like me who were doing that and it’s like, oh okay and so that became a help.” Support from peers and colleagues also helped overcome difficulties in the process. Lana had two peers from her school in her master’s degree cohort and they were a support to her. Lana described, “we were in a cohort of 20 and I worked with two of them here at school so it was really easy to have the support and guidance and viewpoint of them . . . [and] having them stretch me beyond.” Several participants were part of a teacher-led growth mindset committee at their school that worked together through the process of bringing growth mindset principles to their instruction and school culture.
Administrators. Several participants described the impact of school leaders and administrators in providing space and resources for participant growth. Administrators and leaders set the agenda for what is valued as a school culture and provide cover for teachers exploring new methods or techniques. Brian shared how valuable it was for “administration pointing the direction of the new change” to help get everyone on board. Administrator support for teacher growth was an important relational context within which the transformation process occurred. Jo shared how she had this type of support as a first year teacher:

A very supportive administration that allowed me to fall forward for a lack of better terms and try new things and do things differently and really encouraged me to do things differently. So, as a first-year teacher you know it would’ve been really easy to you know model off of the teachers that were surrounding me but instead the administration was like . . . we’re looking for new ideas and so just that encouragement from administration to try new things gave me opportunities to still experience what other people were doing and gave me insight as to what might be working for them and what’s not working for them and then it allowed me to be able to experience things differently and grow in my own perspective of what teaching should look like and my own beliefs.

Administrator support in creating space and encouragement was an important trust-building aspect of relationship with teachers who were experiencing the transformation process. Naomi also talked of the strong support of an administrator in her first teaching role, giving her the freedom to learn through experimenting and trying new things. Naomi shared how her administrator shared with her his support for her to try out new things:

“You want you to try new things and if it doesn’t work out, so what? I’m not going to mark you down because the lesson didn’t work. We’re going to talk about why. What went
well, what didn’t, what could you do differently next time.” That was really freeing to me
to know it was okay to make mistakes and that I wasn’t going to be penalized for that but
rather it’s this attitude of growth.
That type of support gave Naomi the confidence to work through new things and techniques she
was using without fear of being punished if it did not work out as planned.

Felicity talked about how being proactive with her administrators helped establish that
trust relationship with her administrators. Felicity said, “I was proactive about telling my
administration . . . I’m going to try this out just so you know. . . If you hear that it’s weird or
anything like that, here’s why. . . they thought it was great.” Relationships with administration
flowed both ways in creating a context of support for teacher growth.

Others. Several participants mentioned connections and conversations with other people
who played a role in their mindset transformation. Family played an important role not only in
supporting the participant but also as a context for making comparisons and connections to the
transformation happening in the professional context. Dialogue with family members encouraged
the participant to take a risk or understand a situation in a new light. Goodall shared how she was
able to look at her family relationship and see how typical societal views of intelligence did not
play out in her family but rather how it was a model for her of how intelligence can look
different. Goodall said,

I think too like my dad doesn’t have a college degree but my mom does and so like
having the juxtaposition . . . my mom is a pharmacist and my dad has worked plenty of
just different jobs . . . and so I think that was like a big role model for me, never realizing
that that was like a role model for me in that sense, until learning about it and realizing
that two people can coexist and work together and I never viewed my dad as not a smart person growing up.

Goodall was able to connect the changes she was experiencing in her mindset back to family relationships she valued. Igor shared how his relationships with his own children influenced how he was able to connect with his students, who were institutionalized due to traumatic experiences. Igor said about how he was able to relate between the relational contexts:

I think also at that time was at that time I was raising my own children and so that certainly - watching where they were at, helping them with their homework in the grade levels that they were at in their early age and then going and working with students who were much older but their academic ability was at the same level of my children was an eye opener.

Energi shared how supportive and instrumental her family was for her in the change process. She described how she got to do all the same things that kids and parents did at her own school with her own family. For Energi, “So, I think I learned a lot by doing those things with my kids . . . that helps you overcome.” Conversation with a friend helped encourage Naomi to focus on her own progress instead of comparing herself to others.

One of my best friends said, “Comparing is despairing” that you can’t compare yourself to other people because then you’ll be in that frame of mind perhaps that, well I just don’t measure up and we do that though with students. We do it with our own children and I knew I had to stop comparing myself to others and I just had to build on my own strengths and abilities and push myself and it’s been painful; it still is.

Other people, through cross-cultural travel, shaped Hannah and how their situations influenced her own transformation. For Hannah, “it had a lot to do with conversation . . . this idea of the
value of a human being and the context of that human being.” Hannah shared that these conversations are the basis of “getting to know people where they are, understanding past experiences and how they see the world now because of them.” The importance of relationships to the transformation process were evident throughout all of the data collection and analysis. While relationships had different purposes at different aspects of the transformation journey, without the power of relationships fueling the process of mindset shift, an essential aspect of the process would have been missing and transformative change would therefore have been unlikely.

Central Question

The central question of this research study asks: How do high school teachers’ mindsets transform from fixed to growth regarding student intelligence? The theoretical model that emerged from the data answered this central question and is used to explain the process through the key themes that emerged (see above Figure 8). As previously described, the model was visualized using the metaphor of an incandescent light bulb to provide the audience with a usable picture as connection to theory. The transformative process began with a moment of realization that was further explored by the teacher through experiences including both external experiments with the ideas and internal reflections on the ideas. The teacher engaged in equipping activities that supported the teacher’s experiences with the new idea by providing a vocabulary to describe meaning and additional learning to make meaning from what the teachers were experiencing in the change process. At some point in the experiencing and equipping, the teachers emerged with a sense of empowerment and ownership over the new ideas and beliefs. This confidence helped the teacher to apply the ideas in tangible ways in classroom practice. The teacher may have even extended these new mindset beliefs more into the teacher’s world or even in different domains. Applying and extending visualized the light emanating from the mindset shift as well as the
tangible warmth that was generated as a result. Transformation created visible and felt outcomes. The core category of relationship flowed throughout the entire model and process as the underlying current. Transformation happened in relationship with others including students, peers, administrators, and other people like family.

Theoretical Model Themes

Each of the themes that comprise the theoretical model that emerged from the study is discussed below in the order in which it occurs in the process of transformed thinking. The process begins with the moment of realization that is cultivated further by the experiences of the teacher through experimenting and reflecting. Equipping activities support the process by giving new information, perspective, or vocabulary to the teacher. At some point, the teacher feels confident enough in the experiences and equipping to feel empowered to become a growth mindset teacher. This change is not just internal but finds application in the classroom and extends into other areas or domains of the teacher’s life. The core category of relationship acts as the current to power the entire process.

Moment of realization. The process of transformation began with a moment of realization in which the participant recognized that something was just not quite right or needed to be different. It was a spark of insight. For some participants, the disturbance was slight and nuanced, such as a nagging thought or awareness of unsettled feelings. Others could pinpoint a more impactful moment when the discomfort started. The sense was one of curiosity and desire to figure out more. There was a change in thinking, contextualized, that was the flicker of the deeper transformation to come.

Darren realized it right when he read Mindset (Dweck, 2006) that he became “just very curious . . . very exciting and curious. I knew right when I read that book I’m like, man this is
exactly . . . what we need at [school name] and this is what I need in my classroom too.” Lana shared how she had a moment of realization when she was a new teacher and took over for someone’s maternity leave. Lana described:

I felt oh I’m this radically new teacher who is going to change - my test scores are going to you know go through the roof and my kids are going to love this new way and for a whole year we did - I mean I was constantly doing different things and then I realized I wasn’t giving them everything they needed.

Camille realized it during a collaborative peer conversation time. She had a moment of insight:

So, that kind of really struck home with me because I never really thought about it like that and I know that if I’m excited about something they’ll be excited about something, but I never thought about it in the sense of everything else you know that you teach them. . . if you aren’t emulating, and like obviously I’m not perfect, but if you’re not emulating everything that you say to them then how can you expect them to even know how to do it because they don’t have any examples to see.

Camille was “struck,” had “never really thought about it like that”, and “never thought about it in the sense of everything else.” That understanding showed the spark of recognition that something different was starting to happen.

Goodall shared how her moment happened in a teacher education class. Goodall recalls how she,

just took to heart that [college] teacher was really passionate about this and really like just did a good job teaching us that whole understanding of intelligence and I don’t remember what assignments necessarily we did with that but like I just remember
whatever that process was that she had with teaching us about intelligence was really effective because it just blew up my mind at that point.

Maggie had pursued a different career even though she originally was interested in teaching. Maggie experienced disillusionment in that career and recalled a sense of disengagement:

I stopped reading and I love to read. So, I stopped reading. I just was watching a lot of reality TV and I felt myself feel “dumber.” I wasn’t engaged in what was going on in the world around me and I wasn’t as excited about things like I am now.

It was in that moment that Maggie realized there had to be something more and she went back to school to become a teacher. She continues, “I think that that really shifted when I went back to school and I started like talking to people again and engaging in conversations and realizing [that she could change].”

Felicity credits the birth of her first child with the moment that she realized that she had started this process of transformation: “I don’t know if I realized it till after my first child was born.” Having her own child opened Felicity up to wonder more about what her students needed from her.

Experiences. The participant began to act and think on the disequilibrium felt in that moment of realization. Brian shared that in the process, he had to “just practice, reminding myself what I could be doing better, and then trying it out.” Brian’s response reflected how experiences were both experiments in trying something out and reflections in thinking on how it worked and what could be different next time. This process of experiencing—the trying out and trying on of new ideas with thoughtful consideration—built capacity in the person going through the transformation process. Brian shared how this process took time because “you’re getting used
to shaping things . . . it would take me some time to reframe and re-shift.” During this time, teachers were able to explore, regroup, adjust, and try again. In my original notations, this process of experimenting and reflecting was the “mill,” where the process ground down and altered the substance. In the model as presented now, experience is rather the conduit for the power of transformation. In the participants, this phase of experience builds strength and persistence that will emerge in empowerment.

**Experiments.** Participants engaged in a series of external experiments to try out and explore the new idea and thinking about student intelligence. Kelvin shared that after reading *Mindset* (Dweck, 2006), he was impacted by how “just those like real-life examples kind of give you a better picture and idea of how you know this mindset can be a positive thing and then slowly trying to find ways to implement in the classroom.” Kelvin slowly worked through ways to incorporate growth mindset ideas he was learning into his classroom. Lana had a different experience trying to find balance in her approach. Lana recalled how she had to come to a blend of strategies with her students after she tried radically different techniques from the former teacher for whom she took over the class:

I realized during the transition from my first year into my second year of teaching that, okay how can I make them outline but not seem like an outline but help those kids but also how can I merge the two and that’s where it began. I think I started looking at, okay these are all the cool strategies I learned but how can I make them work and how can I merge the two drastic different changes for students.

Lana used feedback from students and parents to figure out how to best incorporate the ideas into workable strategies with her students.
Naomi shared how trying things out over a period of time with a struggling student was an important experience that helped her shape her perspective:

I also had a student a couple of years ago that struggled and at first I thought he was just kind of being rebellious but then I think I realized that he didn’t believe in himself . . . So, I built a relationship with him and we connected over our dogs and I began to kind of work with him and dialog about the material and where he might be struggling and encouraging him . . . and it was a matter of knowing . . . that there were people that believed in him and that were willing to build into him and hold him accountable too.

Naomi talked about the transformation that she saw in that student and that “everything” changed for her. Goodall shared that the biggest eye opener for her was experiencing students that were different than the type of student that she was. Goodall then described how she was “then accepting that challenge and figuring out how to connect with them and how to understand a student that things don’t come easily to them always.”

Igor described the process of experimenting with different teaching methods and techniques:

Kind of a layering of experiences and learning you know formal education with my work experiences. Applying various techniques I learn in the [university] classroom into my own classroom or at the hospital and just really observing . . . hey this is the textbook method of doing whatever it is you’re doing, in this case teaching, and when you get into your classroom you apply these skills and these techniques and voila you are teaching. But in a nontraditional setting with behaviorally and emotionally challenged students, it’s just not the way. It doesn’t work and so I had to adapt or fail.
Igor recognized the need to adapt to his context, try things out, and make adjustments. Energi also experimented with the atmosphere in her classroom and observed how it changed the way she felt about her students as a result. She focused on “keeping the atmosphere warm in class and opening yourself up to them and being kind and courteous and you know congratulating them on their small victories in class and it changed the way I felt about kids.” Energi recognized how the environment in the classroom provided her students with context but more so how it impacted her view of the students.

Jo described it as an evolution, and that the process of experimenting with things is continuous and ongoing:

I think I continued to evolve in that - I think that process is ongoing. I think it continues to be challenging, right, because what you believed yesterday isn’t what you believe today and so then it continues to challenge me of how do I make decisions . . . I think it’s been a process for me because when you start off with a belief and you start off with a practice and then that evolves over time well then everything about what you do has to also evolve and so it’s the constant questioning of why am I doing what I’m doing.

Jo’s observation about how the process shapes one’s beliefs and one’s beliefs shape one’s practice as part of the process provided the bridge to how reflection worked with experimenting in creating these refining experiences.

**Reflection.** A key part of the experiences involved internal reflection by the teacher. This internal self-reflection by participants and thinking about the impact of ideas was another way of experiencing these new ideas about mindset and student intelligence. The act of reflection helped make meaning of the experiments for the teacher and shaped how the teacher would adjust and try again. Reflection took different forms including asking questions of the self, making sense of
difficulty and failures, openness to another’s possibilities and path, and using others to illuminate
the teacher’s own thinking.

Jo talked about the process of continual questioning to make new changes from the way
that it has always been done that may not align with her new insights and values:

I mean that’s always the way we’ve done it so that’s what we do and it doesn’t
necessarily mean that it’s in line with what we believe or it’s in line with what’s best. So,
I think that that process continues for me and every decision that I’m making I’m
consistently needing to go back to why am I making this decision and is it in line with
what I believe.

Andre also used the process of self-questioning in his growth and problem solving through the
change process. Andre shared that he would ask himself, “What are other possibilities for us to
reach kids? What are other possibilities for us to be better teachers? What can we do to make this
school . . . on a higher level?” For Andre, the innovation process was connected with reflecting.

Naomi shared how reflecting on failure was an important part of her growth:

Failure is a part of the growth. It’s falling down and having to pick yourself back up and
say, okay maybe I didn’t do such a great job with that or with teaching that but what can I
learn from it. So, reflection is a big piece of that for me. It’s just continually reflecting,
being willing to move forward, and showing my students that you can struggle through
learning hard things or painful things and that you can come out the other side of it better,
stronger.

Failure, reflecting, and moving forward were strong tools to make the most of the experiences
that refined teacher beliefs.
Hannah shared how reflection and her faith informed the way she views with openness the difficult context of the experiences and struggles of others. Hannah said that “in conversation with other people recognizing their particular backgrounds and their particular struggles and yet their positions being places that God sees and them being people that God loves.” Reflecting on the value that God places on the people she encounters, Hannah is open to how everyone has their own journey to travel in the process.

Felicity talked about how she used her own child as a reflective mirror for her classroom and students that she also considers family. When Felicity came back from maternity leave:

Then that made me question well wait, what do they need right now? Kind of going back and forth comparing my own infant to the students that I taught, are they getting what they need? Are they getting what they need to go off into the world? What can I provide them right now? What can I provide my child right now? I kind of went back and forth. Reflecting on the experiences of being a mother for the first time helped Felicity to connect even more profoundly with looking and thinking about the needs of her students for growth and learning.

Equipping. These equipping activities took on the form of formal education, mentoring, and gaining new information. For some participants, this occurred during professional development situations. During the LAS (King, 2009) component of the pre-screening survey, nine participants indicated that part of a professional development activity influenced the change in their mindsets about intelligence. Participants shared different ways that they participated in equipping activities during the interviews.

Darren describes it as “just going through that process and learning more and more and more.” Energi talked about needing her tools during the metaphor activity. Darren, Maggie, and
Kelvin were influenced by reading *Mindset* (Dweck, 2006). Kelvin mentioned that “reading the book and just the examples that she provided in Carol Dweck’s book” were helpful to showing him examples of how mindset worked in the world. Kelvin continued talking about how reading research and looking for usable examples helped him to overcome difficulties he encountered in the process.

Jo described how the first year of teaching set the stage and was so influential in the direction that a teacher moves. It was an equipping activity. Jo described,

> How important that first year of teaching is and the experiences and the things that you do during that first year of teaching and I’m thinking about my own first-year teachers that I currently have right now and there’s that fine balance of giving exposure to things but not overwhelming people but once you start doing things you get into a rhythm right and then that rhythm tends to become your practice and tends to become your routine and once you’ve settled into a routine then sometimes it’s harder to try things differently or you know have new routines.

Equipping came from formal education as well. Maggie “went back to school.” Goodall shared the impact of learning different perspectives about intelligence in a university teacher’s course. Igor credits “formal education with my work experiences.”

Colleagues can provide mentorship and equipping. Camille shared how participating “constantly” in a group reflection time with her teaching peers helped her to learn new ways of looking at her teaching and students. Energi described how she asked for help: “I shared materials and lessons and activities with other teachers and then they did with me. I thanked people big time along the way that helped me a lot on the journey.” Energi’s mentor was a resource to her.
Empowered. At some point in the process, participants noticed that they gained sufficient confidence and enough experience with their changed thinking that their beliefs in their own abilities to live out the changes in thinking in their classrooms. This was a feeling of commitment to the power of the participants’ changed thoughts about student intelligence. Darren noticed it in how he no longer feared student struggle in class as a poor reflection on his teaching abilities. Darren said, “It comes back to my mindset shift of yeah, challenging our students is more important than just having them succeed at the basic level.”

Maggie realized that she had the power to make a change for herself and others: realizing like, okay I don’t have to just be locked in to this 8-5 job listening to somebody else’s words that’s guiding my entire day. I can actually go out and make a change and do something different for myself and then impact others as well.

Andre’s shift helped him to move from passive follower and doing the same thing “just because” to become an agent for change and a problem-solver. Andre noted that “just because something hasn’t been done doesn’t mean there is not a solution for it . . . I think not being so much like followers and just . . . a little bit more innovative.”

Energi recognized that she had the power to reach every student. Energi shared how her shift, Changed the way I looked at teaching . . . knowing that if you’re open and you embrace that kid as a person even if they’re struggling, even if they wear the same clothes every single day to school, and even if they you know could look like they would just like to melt into the wall like they don’t want anybody to notice them, there is a way to reach every kid and that’s what I took as my personal challenge every day . . . I wanted kids to feel that even if they didn’t feel that about themselves.
Energi was able to see past the struggles of her students to make them feel valuable and loved.

Jo realized that she had to find balance in her power to effect change in others:

There’s that fine balance of giving exposure to things but not overwhelming people but once you start doing things you get into a rhythm right and then that rhythm tends to become your practice and tends to become your routine and once you’ve settled into a routine then sometimes it’s harder to try things differently or you know have new routines.

For Jo, she recognizes how important starting others off in the right direction was, but too much at first can be overwhelming. The empowerment she exhibited was to find the right balance of exposure and ideas so that others can experience a successful growth process themselves.

Naomi shared how her faith gave her confidence that she was headed in the right direction:

I also think that my faith played into that a lot too because I felt like, well God you’ve wired me for something. You’ve given me this love for science, for the human body and how it works and how the cell works so my prayer was that I could just understand it at a deeper level and understand it in a way that I could communicate that to students that it would make sense to them. So, then I had to figure out how, okay if I’m grasping these difficult concepts then how am I going to convey that to kids.

Hannah shared how even in struggle, her faith has given her confidence to know that she and her husband were on the right track professionally and in the right place doing what they were called to do with their lives.

**Application.** During this phase, participants were making intentional choices about instruction and purpose in the classroom based off of their growth mindset towards student
intelligence. Darren noted that he initially fatigued his students and peers by talking about growth mindset so much when he first was learning and experimenting with it, but now Darren believes that “we want to model it and live it out rather than just talk about it.” Brian said that part of the change process is “seeing how I teach and really trying to see where they’re at and give feedback appropriately.” Application represented a new focus and purpose in the classroom and for learning.

**Relationally focused.** Teachers described a change in the quantity and quality of relationships with students. Even in interview questions about their current teaching styles, participants shared the prioritization of relationship building. Maggie said, “I think that I’m definitely a relationship builder so with the students I think that the best way.” Energi describes her teaching style as “I’m firm but I’m warm. So, I really like kids and I want them to know that I’m there for them but I have high expectations for them.” Darren described his style as “trying to create a culture where students feel comfortable and where they can open up and grow and develop as students and as individuals.” In addition to the data and descriptions around relationships with students forming the core category, relationship, described earlier in this chapter, participants also shared specifically how they became relationally focused in their teaching.

Kelvin shared how his transformation has changed not only how he sees his students but who he sees in his classroom:

I think I’ve opened my eyes to more students you know I’ve given more students more opportunities and benefit of the doubt where in the past it was, that’s an excuse –I don’t know what to do to help you. Now I’m really flexible on helping all students . . . now it’s I’m going to give you the opportunity if you take it, that’s great, let’s run with it, I’m here
to help... I’m here to help not just make sure they get A’s and B’s and I think the whole mindset of being there for students as well as you know they’re not stuck in this one path, they can change. We just need to work together. I know I can’t just do it all myself. They can’t do it all by themselves, be there together.

Brian also shared how his mindset transformation has influenced who he sees and how he sees the students in his classroom:

It’s helped me to reach more students because - not that I ever tried to just teach one subset of students - but when I have a growth mindset, it’s just more second nature to reach out to every student and to focus on all of them and then not be frustrated with students that are at a lower level at that time, but instead see where they’re at and then not be surprised and say how can you take one more step and really try to just push different places, different things.

Mindset transformation has substantial outcomes on a teacher’s views of students in the classroom. Teachers reported being more open to more of their students.

Igor talked about how he changed from the rigidity of his military background, recognizing that what he needed may not be what every other student needs:

I’m a little more sensitive now than I was in the beginning... I needed the structure of the military... but that’s not necessarily what everyone else needs, so understanding that and then applying that was very important.”

Goodall recalled,

I like to think that it makes me a more relatable teacher and a more approachable teacher. I think that if I thought that those students that weren’t intelligent in my old mindset of
intelligence I’d be afraid that I would’ve just like shut them out and kind of been like well you’re just never going to learn kind of thing.

This relational focus is not just becoming an approachable teacher or friendly face in the classroom. This change alters the quality and purpose of the relationship. Darren described how this was true in his own experience:

I think it’s affected every part of my teaching. It’s made me . . . develop better relationships with students . . . I have the ability to inspire them and to help them grow in the future too and they will leave nice notes and say hey, teaching about mindset has made a huge difference in my life. Thank you so much for exposing me to it and stuff like that is just really cool you know. So, it’s not like as a teacher they might like me because I’m friendly or whatever. But now, they respect me for helping them make a big influence in their lives and that’s been a big difference.

The relationship became a vehicle of influence with the student and drove a teacher’s purpose.

**Teaching strategies.** Teachers described a change and intentionality of using teaching strategies to promote learning, success, and growth. In describing their teaching styles at the beginning of the interview, six participants specifically characterized their current style as utilizing multiple modalities with a goal to help more kids learn more often. This theme of *application*, which emerged in the theoretical model, represented how participants were trying different things and incorporating more ways to help students learn and be successful. Teachers were giving more options to students in their classrooms.

Participants shared specific examples of how they engaged different and more purposeful teaching strategies to help students be more successful learners as a result of their mindset transformation about student intelligence. Kelvin shared that,
The kid who really struggled probably would’ve failed the class if I had taught it the old way but now with the opportunity to do certain things or to give them different opportunities where it maybe fits them as a student that they’re successful, had a positive attitude, would participate in class like it changes not just their grade but the way they interact with you and other students.

Brian shared how he uses differentiation in his classroom to reach more students. For Brian, “It’s had a profound impact on the types of feedback I give and on my groupings for activities.” Brian gives feedback differently now: “I used to say more things that were generic like, good job, excellent work, and I’ve really shifted away from that. . . [now I] focus more on effort in the process and less on the end result.”

Naomi commented that she used more risk-taking and modeling of trying new things with her students. Naomi commented that she was more willing to take risks with the kids and even prefacing it by saying, “This might work, it might not but if it doesn’t we’ll just figure out together why it didn’t work and we’re to learn from it and I want to learn and I’m hoping you guys do too.” Hannah talked about her transformation, saying,

I think it helps me to be more open. I try to as much as I can incorporate lots of different students and talking to them individually before class and after class but then also open in the ways that I teach . . . there’s just a lot of different avenues of arriving at the material and so it’s messy and I think that part of that process is being open and being willing and being recognizing.

For Goodall, it changed not only her focus on connecting with students but also,

It’s made me think about how am I going to make lessons that are more like multiple ways of presenting the same idea. Not everybody is going to get that first way that you
say something or you do something. I’m trying to figure out ways that are different and
different learners can relate to.

Mindset transformation had tangible outcomes in the classroom, as teachers changed the way
they interacted with students and the types of teaching strategies they employed to meet the
learning needs of more students more often.

**Learning expectations.** The teachers also described how their expectations in class for
students were strengthened. This learning expectations code for the *application* theme
represented what one thought was possible for students, belief in student ability to achieve and
do more, and belief that students were capable of growing as learners. Darren described this
change in his own expectations:

> Now I challenge students a lot more. Like we give harder articles. We give more in-depth
> projects. We try to get a higher level of thinking, critical thinking, and sometimes they
> struggle and I just realize like it’s okay for them to struggle in class. Whereas before as a
> younger teacher I was like, oh my gosh if they struggle in class that means I’m not a good
teacher. You know, if I have someone coming in they’re going to think oh my gosh
> what’s going on here? Now it’s like those struggles are good because it’s challenging
> them and making them improve as a student.

Jo said about her teaching now that “it’s revolutionarily different.” Jo describes how “before I
had a fixed outcome on what I would expect from my students and now while we set learning
targets the target is far more open and we’re constantly looking at what does that next step look
like.” Jo remarked how she does not cap their outcomes anymore and that she is constantly
looking with her students to discern the next step.
Maggie shared how her transformation is changing the culture of learning expectations in her school building:

I think it really helps at this school because I think so often some of my students get locked into this mindset like, oh I’m from [school name] this is all you know I’m not going to - you know maybe I’ll graduate. I don’t want to go to school. I won’t go to college or I’ll go to you know they kind of limit themselves and so I think when I have these one-on-one stories with students where I say you know this is what people told me my whole life too and it’s also what I kind of told myself up until a certain point. I think it kind of changes their perspective on things and you know the belief in themselves.

Brian also spoke about ways in which he saw his learning expectations for students change:

I’ve come to realize partially from my own experience as a learner that if you work hard you can get better . . . I really try hard not to place limits on students and my comments I give on papers reflect that . . . every student I think is capable of growth.”

Brian looked for ways to foster growth in his students, seeing where they are at, and then pushing them forwards. Brian also tried to “encourage them all in their own ways.”

Igor noted that “I see every day as an opportunity for those students to learn and grow really.” Lana shared how it made her more humble as a teacher. Lana said “I continue to learn and continue to grow. I know that I won’t ever stop learning. I won’t ever stop trying to do better for my students and I never stop expecting the best that they can give either.” Felicity noted that her expectations of her students and their talents focuses on serving and sharing their gifts with others. Felicity said, “if you have a talent and you have a gift you share it with others. You do not keep it to yourself. You go out there and you share it with the world.” Felicity said it was
hard at first but now it was an expectation and her students do not question having to perform in the community.

**Reflective practice.** In addition to the reflective practices occurring during the *experience* phase, participants also described specifically how they became more reflective practitioners in their teaching and classrooms because of their mindset transformations. Reflective practice as a code of *application* looked at internal self-reflection and thinking about the impact of ideas, the meaning of ideas for their practices as teachers, and thinking about how to improve. Teachers remarked how they grew in empathy, humility, and listening.

Goodall recalled how, for herself as a student, “most things came easily so really honing in on when I had struggles and . . . how did I get help to get through it and trying to figure out what would be appropriate for students that struggle.” Goodall used reflective practices and self-awareness to identify strategies that would be helpful to her own students when they struggled. This also helped Goodall grow her empathy for learners who were different from her own background. Energi recognizes how this shift has increased her patience with students and her own self-awareness. Energi said, “I think I’m more patient and I think when I’m not patient I’m hard on myself about it and I always apologize.” Andre noted, “It has me more critical of myself and humbled me as well. I think a light-bulb comes on a lot more now that I am less of a fixed-minded educator.” Jo talked about how,

I do a lot more listening and seeking to understand why someone believes something differently or what led them to feel or believe what they do and then I try to expose that person or I try to give them opportunities to see things differently and so I think in the past I would approach that head on and it was almost more confrontational and I realized that as soon as you have - if you approach it that way people are not open to learning and
then people just become much more defensive versus seeking to understand why they believe what they do and what has led them to believe that and then giving them experience to see it differently or to have their own opportunity to learn it in a new way. Felicity mentioned that “I really had to ask myself rather than get defensive like you know if I sensed there is that why out there rather than like because I said so. You know that’s not going to work so well.” Felicity said that when she senses her students pushing back, it is usually because she has not filled them in on why something matters. Felicity described how she thinks about her students as people in that moment and uses these types of moments as teaching moments because “I don’t expect them to read my mind. I think it’s important. They don’t know why it’s important. It’s my job to teach them that.” Without checking in with herself at a moment of resistance or difficulty, Felicity would have missed opportunities for her students to learn.

**Extension.** Changes in mindset around professional contexts transferred into other areas of the teacher participants’ lives, including family and personal relationships. There was a crossover between domains or extension into a broader reach. The idea of growth mindset was not limited to the teachers’ own practices or classrooms. Not all teacher participants shared experiences that were coded with this category of the process; however, there were several clear examples shared during the interview process, and that justified including them in the model as a different level from the immediate application in the classroom practice of the participant.

Goodall started seeing people in other areas of her life differently, including her neighbor. Goodall said that her mindset shift helped her to view others differently:

[This mindset] clued me into that like, wow like he’s really intelligent. He doesn’t have a college degree but that doesn’t define what your intelligence is . . . because I had so many people in my life that weren’t necessarily deemed intelligent and I felt like I could lift
them up and be like, but you are and this is why, and I’m learning this in school and this is the real thing and so it was exciting for me.

Kelvin wondered, “how we can do it in our grading policy?” Darren saw mindset transformation as impacting everything in the school:

So, I talked about it way too much but I was just really excited because I knew that this is something that – the thing with this mindset is that it impacts everything you do in the whole school, it’s not just one thing. It can impact every single initiative, every single goal you have which I think is so powerful.

Hannah said it changed how she viewed her family relationships and the ways they had categorized themselves as smart or not smart because of their test scores or performance. Hannah shared how, in talking with her brother and sister, and “really watching them too in playing out their lives that change really became apparent in those conversations where my brother would open up.” This shift changed the quality of deeply meaningful relationships. Jo mentioned how she used this process of helping others to have their own experiences to start their own journeys.

Jo described that it was about

Giving them experience to see it differently or to have their own opportunity to learn it in a new way which is a really challenging thing to do especially with people that have had similar experiences in a certain way for a long time but I thankfully have seen and currently having the opportunity to see people start to shift in their own mindset and start to have new experiences that have been awakening for lack of better terms for them.

Participants were using their mindset transformation to re-connect or understand existing relationships in a different light outside of teaching. Teachers were starting to spill-over mindset
understandings outside of the context of their own situation as a classroom teacher with their students.

Extension of mindset transformation into other areas was not a quality or theme that every participant expressed. But as indicated below in Table 2, an *Enumeration of Codes Themes in Process of Mindset Change*, at least four teachers expressed the theme of Extension into other areas. Hannah described it in a more spiritual light:

It’s a statement of kind of the brokenness of our world in a lot of ways and God desires that . . . He desires to make all things right and I believe he will. Philippians 1 talks about he is going to carry everything into completion the day of Christ Jesus and I think that extends to even the brokenness of you know of our own finite minds.

Transformation in thinking was an ongoing process that has significant reach into the immediate context of a teacher’s practice within the classroom, a teacher’s larger school culture, relationships and experiences outside of the professional context, and even for some, a spiritual component.
Table 2

Enumeration of Codes Themes in Process of Mindset Change Question

<table>
<thead>
<tr>
<th>Moment of Realization</th>
<th>Experiencing</th>
<th>Reflecting</th>
<th>Equipping</th>
<th>Empowered</th>
<th>Application</th>
<th>Extension</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>thinking differently</td>
<td>Exploring</td>
<td>reflecting</td>
<td>gained new information to consider</td>
<td>had a purpose and mission pushed myself</td>
<td>belief produces practice</td>
<td>finding more applications personal life</td>
<td>building relationships with others in process collaborative effort</td>
</tr>
<tr>
<td>started viewing students differently</td>
<td>tried something out</td>
<td>adjusting based on feedback</td>
<td>formal education or training</td>
<td>went back to school</td>
<td>faith and spiritual practice</td>
<td>whole school culture</td>
<td>dialogue with others through process</td>
</tr>
<tr>
<td>felt the disengagement</td>
<td>connect to real life examples</td>
<td>ongoing and evolving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parenthood</td>
<td>constant aligning of belief and action experience with student instrumental failure is part of it</td>
<td>blending and layering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROCESS OF MINDSET CHANGE</th>
<th>EXPLICIT COUNT</th>
<th>CHILD SUM COUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>21</td>
</tr>
</tbody>
</table>

Note. Explicit Count represents number of participants reporting theme. Child Sum Count represents sum of individual codes applied within those themes and gives a picture of weight or salience of the theme.
Unexpected Themes or Codes

There were no themes that emerged unexpectedly, as I tried to stay as open as possible during the entire analysis process to letting the data speak into the model. However, there were two unexpected commonalities with participants that are tangential to the study but worth noting for future consideration. Additionally, teacher definitions around the idea of intelligence present in a similar manner to the ongoing conflict within academic research described in Chapter One.

Career changers and special education backgrounds. Teachers who shared coming to teaching as a second-career, or a career changer, was interesting and curious. I wondered what the impact of that experience or situation could be on the transformation process because these teachers had already undergone significant change in terms of their career identities. Literature in that shift of identity in making a career change was discussed in Chapter Two. Were these teachers primed for transformation because of their shift in career? The second curiosity was the number of teachers with special education backgrounds, even if not currently in a special education role. This exposure to students who struggle to learn was impactful on the process of mindset shift of participants. This exposure, by virtue of having a special education background, could account for the number of such teachers, but it was still a commonality that I had not anticipated in the design of the study.

Intelligence. Defining intelligence was a conflicting and difficult experience for participants. I specifically asked this question of the participants because the literature on defining intelligence was also widely varied. Hannah described the question as “loaded.” Some shared how society typically defines it as IQ or a test score but they see it more broadly. Most teachers shared that it was multifaceted and broader in scope than the traditional IQ definition, to include EQ and social awareness. Several teachers specifically referenced Howard Gardner and
Multiple Intelligences Theory. Half the participants commented that intelligence changed in some way over time as well. This divergence in views on the meaning of intelligence prompted me to think about how socially constructed this concept was for practitioners who had to wrestle with it in the field and classroom. If researchers and academics struggle to define the concept coherently, how did that impact the daily practice of trying to grow this nebulous concept in students and teachers?

**LAS Instrument (King, 2009)**

This section focuses on specific analysis of the LAS Instrument (King, 2009) used in the pre-screening survey. Information from this instrument has been referenced in support and justification of the theoretical model and themes described in this chapter. However, this section will focus specifically on the qualitative analysis of the LAS (King, 2009) instrument as used because of the modifications permitted for use in this study by King and the later discussion of this study’s significance to the field of Transformative Learning Theory. An aggregate count of responses to the individual 13 sub-questions on the LAS Change Aspects item is represented in Figure 4. Of interest, as it relates to mindset change, was how no participant responded affirmatively to sub-question d. This means that as participants questioned their beliefs, they did not maintain and agree with their original beliefs about intelligence. Responses to this sub-question in the affirmative would have been reason to exclude a participant from the study as it would have reflected no change or shift in belief. This was another check on the study to make sure to the greatest extent possible that the participants were truly teachers who had experienced a mindset transformation regarding the meaning of student intelligence. The 13-item change aspects question on the LAS pre-screening survey in this study is correlated to Mezirow’s (1991) original 10 stages of transformation (King, 2009). The LAS item correlation is presented in
Table 3 as follows, with the letter referring to the sub-question on the LAS Change Aspects item. Aggregate counts of the participant responses are included in the third column for ease of reference. Finally, an overlay of the theoretical model as emerged from the Process of Mindset Shift question in the interview presents aggregate counts across the 14 participants by theme laid out against the components of Mezirow’s (1991) stages as discussed in the Chapter Five Implications section.

Figure 4. Aggregate counts of participant responses to LAS (King, 2009) Change Aspects.
Table 3

*Correlation of LAS Change Aspects Responses with Mezirow Stages and Theoretical Model*

<table>
<thead>
<tr>
<th>Mezirow (1991) Stage</th>
<th>Sub-question on LAS Change Aspects (King, 2009, p 15)</th>
<th>Participant Responses Aggregate Count</th>
<th>Theoretical Model Aggregate Count</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1</strong> a disorienting dilemma</td>
<td>a &amp; b</td>
<td>15</td>
<td>6 Moment</td>
</tr>
<tr>
<td><strong>Stage 2</strong> Self-examination with feelings of guilt or shame</td>
<td>c &amp; d</td>
<td>6</td>
<td>8 Reflecting</td>
</tr>
<tr>
<td><strong>Stage 3</strong> A critical assessment of epistemic, sociocultural, or psychic assumptions</td>
<td>g</td>
<td>6</td>
<td>8 Relationship</td>
</tr>
<tr>
<td><strong>Stage 4</strong> Recognition that one’s discontent and the process of transformation are shared and that others have negotiated a similar change</td>
<td>e</td>
<td>3</td>
<td>(unrealized?/undercurrent)</td>
</tr>
<tr>
<td><strong>Stage 5</strong> Exploration of options for new roles, relationships, and actions</td>
<td>f</td>
<td>6</td>
<td>12 Experimenting</td>
</tr>
<tr>
<td><strong>Stage 6</strong> Planning a course of action</td>
<td>i</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Stage 7</strong> Acquisition of knowledge and skills for implementing one’s plan</td>
<td>j</td>
<td>5</td>
<td>7 Equipping</td>
</tr>
<tr>
<td><strong>Stage 8</strong> Provisional trying of new roles</td>
<td>h</td>
<td>7</td>
<td>w/above-Experimenting</td>
</tr>
<tr>
<td><strong>Stage 9</strong> Building of competence and self-confidence in new roles and relationships</td>
<td>k</td>
<td>6</td>
<td>6 Empowered</td>
</tr>
<tr>
<td><strong>Stage 10</strong> A reintegration into one’s life on the basis of conditions dictated by one’s new perspective</td>
<td>l</td>
<td>8</td>
<td>13 Application and Extension</td>
</tr>
</tbody>
</table>

One participant indicated that he or she did not identify with any of these statements about change aspects. However, this participant did identify five contributors of change that
influenced his or her change in another question on the LAS and gave narrative description of that change throughout the other qualitative items on the LAS and throughout the interview process and activities.

Table 3 supports the strong presence of some experience that caused the teacher to question his or her beliefs about intelligence, which was also discovered in the process of creating the theoretical model. Table 4 is a disaggregated view of the data by participant (A-N) which provides a different look at the aspects of change experienced by each person from the LAS. Table 4 was used to support and check the data that emerged, describing the model as well as the research question. Ten participants identified an experience initiating their process as indicated by selecting sub-question a and/or b. Another interesting observation is that teachers reported extensive narrative evidence of the impact of the mindset transformation on their teaching practices, captured in the theoretical model as *application*, and the responses reflecting Mezirow’s Stage 10 were the second highest overall count in the correlation table (Table 3), adding additional support for the model and analysis of the data consistently across sources.
Table 4

LAS Change Aspects-Responses by Participant

<table>
<thead>
<tr>
<th>LAS Change Aspects by Participant</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I had an experience that caused me to question the way I normally act.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I had an experience that caused me to question my ideas about what it means to be intelligent or my expectations of what intelligence looks like.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. As I questioned my ideas, I realized I no longer agreed with my previous beliefs or expectations about intelligence.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Or instead, as I questioned my ideas, I realized I still agreed with my beliefs or expectations about intelligence.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. I realized that other people also questioned their beliefs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. I thought about acting in a different way from my usual beliefs and expectations.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. I felt uncomfortable with traditional beliefs and social expectations about what it means to be intelligent.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. I tried out new conceptions of intelligence so that I would become more comfortable or confident in them.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. I tried to figure out a way to adopt these new ways of acting regarding conceptions of intelligence.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. I gathered the information I needed to adopt these new ways of acting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. I began to think about the reactions and feedback from my new behavior.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. I took action and adopted these new ways of acting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. I do not identify with any of these statements above.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>3</td>
<td>9</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>1</td>
<td>4</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Of interest in the results of the correlation presented in Table 3 was the fact that the aggregate response to Stage 4, the sharing of the process with others, was the lowest count because the idea of relationships ended up being the core category that was evident throughout the entire study. This seemed contradictory on its face. The implications of this are discussed in Chapter Five in more detail as it relates to the results of the study. An observation about this could be explained in that the nature of the prompt on the LAS, “I realized that other people also questioned their beliefs,” in this case may not be capturing the same meaning when Mezirow’s Stage 4 category phrase in part states that the “process of transformation [is] shared.” Mezirow’s categorical description includes a fuller conceptualization of sharing a process where the LAS may be more narrowly interpreted by asking about an awareness of other people also questioning...
their beliefs. Relationship may be so inherent in the process that the participants did not openly acknowledge its extensive impact on their transformations. In the future, it may be interesting to use the LAS instrument after the interviews and activities because the participant’s mind will be more primed to be thinking about identification of these aspects of the change process. Additionally, it may have been helpful in this study to use it as a pre and post instrument to see how the study itself may have been impacted by and influenced the reflection and recollection of the transformation experiences of the participants.

Participants also identified contributors to change on the LAS, with five predetermined categories based on the LAS and an option for open response. Only one participant provided an open response, which indicated that the mindset book by Dweck (2006) was a contributor. The data are presented in disaggregated form by participant in Figure 5. These responses were used to corroborate and support the development of the theoretical model and the themes that arose in response to the research questions from the interviews and activities. Of the 14 participants, 11 teachers indicated that an experience in their own classroom or with teaching was a contributor of change. Of interest as well was the common recognition of a person \( (n = 7) \) or significant change in life \( (n = 12) \) that influenced the change.
Supporting Question 1 (SQ1)

The first supporting question asks: How do high school teachers experience the process of mindset transformation? Data analysis from the Metaphor Activity as well as the specific interview questions regarding challenges and overcoming challenges provided insight into SQ1. This question was interpreted to not overlap with the CQ theoretical model or the factors referenced in SQ2 below, but rather looked to the qualities of the process. Teachers described an

*Figure 5. Contributors of Change (LAS, King, 2009) by Participant*
ongoing process or journey that was challenging at times for some but also had significant positives and opportunity. The journey was experienced in community.

**Ongoing process.** During the Metaphor Activity, seven participants shared how the transformation process was an ongoing journey, using descriptions such as a “progression,” “steps along the way,” “the journey is important,” “a journey,” “still growing,” “more climbing to do,” “continuous thing,” and “always progress to be made.” Igor made the observation about the image with the air balloons that,

They start off on the ground all deflated and then they fill up but they’re still stuck on the ground for a long, long time until the air gets heated enough to lift them up and then once they’re airborne then you start to see the horizons that are available and you can go anywhere.

While his observations supported the positive outlook aspect with open horizons, there was an element of the ongoing process in the waiting and launching. Igor’s insights brought to light the fact that the pace of the journey may not be steady and metered. Naomi describes it as non-linear in her response to the interview question asking, “How would you characterize the process of change?” Naomi shared how there is a,

**Transitional period and that can be good and bad and it’s usually made up of good and bad, very technical terms, portions and it ebbs and flows and I think if you’re on a chart you know if you’re on a graph you start at one place, you end usually hopefully higher than that place at the end of the graph but it’s not a straight line in between.**

Brian also noted a transitional time for his shift since “it takes some getting used to” but that as he became accustomed to reframing things that it becomes “easier” and more “second nature” now.
Challenging. Participants described how the process was challenging and difficult at times. During the Metaphor Activity, several teachers connected their responses to aspects of the process that were challenging. Naomi shared that the climb was uphill and that she “struggled.” Maggie talked about a fear that needs to be overcome. Other teachers shared about the uncertainty, walking into the unknown, or not knowing exactly how it was going to turn out. When asked “How would you characterize the process of change?” nine teachers touched on challenging parts of the process. Two interview questions focused in on the difficulties encountered and how the teacher overcame those difficulties, with analysis shared below.

Difficulties encountered. Some of the most significant challenges revolved around dealing with negativity and keeping others on board. Other people resisted or derailed the process with negative attitudes or unwillingness to buy in. Sometimes the difficulty was in the challenge of working with different perspectives and seeking to find common understanding in a process. The process took time, and so significant effort was expended into making a shift when it was easier to maintain the status quo. Some teachers shared how their personal struggles in situations and how outside forces beyond their own control impacted the process or created roadblocks. Naomi shared about how student teaching as an older pre-service teacher was terrifying at times. Maggie shared how she listened to other people’s opinions and quit pursuing her dream for a time. Lana said that she felt “inept” at times. Igor shared how repeated deployments during a military interrupted his progress. Some difficulties were more challenging than others. In each case, teachers overcame their feelings and situations to press forward.

Overcoming difficulties. The difficulties and challenges provided opportunities for the teachers to overcome. Teachers described utilizing two different strategies: (a) strategies with themselves and (b) strategies with others.
Strategies with self. Teachers first utilized strategies with themselves to overcome the difficulties. This included reflecting more, self-reminding or self-talk, and cultivating self-awareness to feelings in the moment, and being intentional. Naomi used self-reminding of her past progress to help her keep going. Naomi said, “but if I remind myself that, okay these are things that I’ve done and that I didn’t really believe that I could do them. I can do this.” Felicity shared that when she faced obstacles, “I really had to ask myself rather than get defensive.” Reflection over the root of the issue helped Felicity to develop a plan to deal with it. Hannah used prayer as a way to focus her thoughts and mind into what mattered. Another strategy with self was outlook and looking for the subtle changes of growth in your students. Igor shared that “the more you do it, the more capable you are of noticing the subtle ones because there is a lot of subtle change in people.” Kelvin also mentioned practicing and getting comfortable with his new strategies giving him confidence. In the midst of difficulties, teachers used coping strategies with themselves to keep moving forward.

Strategies with others. Teachers also used strategies with others to move forward. Several teachers talked about the power of opening up and being vulnerable with others. Energi asked others for help when she needed it. Teachers shared how they sought support from mentors, fellow colleagues, and expert teachers. They shared materials and ideas. Goodall and Brian both mentioned specifically how they would bounce ideas off of a trusted fellow teacher. Hannah recognized the power of humility and acknowledged with her students when her actions set up a stressful exchange. Felicity also commented on how she made sure that she opened up and shared the necessary information with students in the process of trying new things. Felicity commented that when she felt the push-back, she utilized “patience and reminding myself that these are people. They deserve the information. I’m the one that came up with this idea. I don’t
expect them to read my mind.” Jo had learned that she could not push people or confront them directly because it just created more resistance and resentment. Instead, Jo focused on “seeking to understand why they believe what they do and what has led them to believe that and then giving them experience to see it differently or to have their own opportunity to learn it in a new way.” Jo found this to be much more effective with those around her.

**Positive outlook.** Participants surprisingly took a more positive view of the images in the Metaphor Activity and were able to describe the possibilities and positive outcomes of the mindset transformation. Kelvin said he “knew it was a positive change” so he would have changed the destination in the image to be more open and not so dark—like a beach. Jo focused on the “really clear and bright” sky in the hot air balloon image because it reflected her outlook having a much brighter future for her students and herself. Igor also picked the hot air balloons and noted how in them you could “see the horizons that are available.” Felicity noted the mountain top climber as “overlooking the idea of possibility and potential.” Darren also selected the mountain top climber and described how “he’s looking and he’s getting to see the beautiful landscape there... The future can be bright. There’s so much hope. There’s so much possibility.” The transformation process opened horizons and represented hope for a brighter and clearer future.

**Communally.** The process of transformation was experienced in relationship with others. The concept of relationship has been previously explored in depth as the core category and then in relationship to the theme of *application* as teachers become more relationally focused in their classrooms. In response to the interview question about characterizing the change process, teachers shared how the process involved others. Naomi gave examples of the positive impact of her cooperating teacher who was “so patient and he would like draw things out and explain it” to
help her through student teaching. Maggie said it is the “relationship thing.” Darren points out that sometimes others are not supportive, and you still have to figure out how to keep moving forward. In response to the Metaphor Activity, Goodall noted on the boat image that “it’s not going to be easy but if you all work together you can eventually sail the boat.” Goodall noted that the team of people on the boat being were like the people in her life who helped to guide her along this shift in her mindset about intelligence. Kelvin also identified how there are more people with you in the process:

Sometimes teaching at first you feel like you’re so busy like you’re on your own but now
I know that in front of us as well there’s a lot of people doing, they’re practicing the growth mindset in classroom and I feel like there would be more people in there.

A summary visualization of SQ1 is listed as a figure below. Transformation is an ongoing, challenging, and communally experienced process. But transformed teachers are hopeful that the future is brighter and more positive than where they came from before their process. These teachers would support the idea that as a profession, educators are better together.
Supporting Question 2 (SQ2)

The second supporting question asks: What factors influence the process of mindset transformation in high school teachers? Data analysis included responses to the interview question that asked, “What do you think was most instrumental?” along with responses to the pre-screening survey LAS (King, 2009) Contributors of Change question. The data were compared against process categorized responses to the interview question “How did your mindset change?” This analysis process supported the identification of three major themes: (a) experiences with students, (b) relational factors, and (c) self-factors.

Experiences with students. Participants identified experiences with their students as an influential factor in their processes of mindset transformation. This theme found resonance within the theoretical model articulated and visualized in both the initial moment of recognition
as the mill of experiences that act as a refining and defining process of this transformation. Teachers describe how these experiences with students were influential in changing their mindsets. The impact of experiences with students on the change process is noted in the LAS (King, 2009) pre-screening survey Contributors of Change question, as 11 teachers indicated influence from an experience in their own classrooms or teaching.

**Students surprising me.** Jo shared how her experiences with students who had disabilities impacted her change process. Jo described how,

I worked at the time with students that had low IQ that had significant learning disabilities or significant cognitive impairments and the things that they were able to do that other people thought they might not be able to do was like revolutionary. It was like you know the student has a cognitive disability, they have Down Syndrome, they have whatever the case may be and they were able to do things or they were able to learn things that other people didn’t think they could ever learn. So, it was like why do we place so much weight on what we think we know about someone’s intelligence or what we think we know about their performance.

Naomi also shared the impact of seeing students overcome who were not “expected to grow” by others. Naomi described how “then that began to change my mindset as I saw kids who maybe struggled, actually overcome some of those roadblocks.”

**Students different from me.** Lana described how she began seeing students who did not learn the same way that she enjoyed learning. Lana realized that not all of her students liked to do hands-on all the time and some enjoyed reading material more. “So, I really had to adjust my mindset and my teaching to hit all learners where in my mind I thought I was hitting all learners.” Lana described a process of having to try out new things with students and critically
assessing how that process was going for her students and learning. Goodall described how she had to figure out during student teaching how to help students who were not like her. Goodall said the influential factor for her was “just the student teaching experiences that I had and dealing with students that were not in gifted programs because I wasn’t exposed to a lot of that as a student.” This drove Goodall to figure out how other types of learners best learn. Igor shared how it was the experiences with students who were very different from him in a psychiatric facility that opened his eyes. Igor shared,

I got my first teaching gig at a psych hospital, it was all I could get. I had no experience with that and I feared it terribly because I had never dealt with anyone with a psychosis or any kind of a disability of any sort so this was a real eye-opening experience for me to go in there and work with people behind locked doors . . . Working with those students. Igor shared how this experience drove him to seek further understanding and training on the impact of emotion and trauma on student learning.

**Relational factors.** Teachers described how aspects of their relationships with colleagues and family influenced the process of mindset transformation. The impact of relationships was confirmed by the LAS (King, 2009) Contributors of Change question in which 12 participants indicated that there was a person who influenced this change. Jo said that “I think it’s the people around us that help to facilitate that [change].” These relationships provided support through dialogue with the participants.

**Support.** Teachers described the aid and emotional support provided by colleagues and family members in the process of transformation. Naomi shared how her husband and kids were instrumental. She said, “I really had a very good supportive network there and I knew they
believed in me and so that helped me.” Energi mentioned the supportive environment created by colleagues but also mentioned specifically the role of dialogue in that relationship.

Dialogue. Dialogue specifically looked at the supporting effect of a conversational exchange of ideas. These people acted as sounding boards. Jo described the impact of her family in this role: “I think family that allowed me to process and were good listeners and kind of reflected back what they were hearing or seeing from me,” gave her the opportunity, through this dialogue, to grow in her own way. Hannah described meaningful conversations with her brother as highly impactful. Goodall shared how dialogue with her parents was an extension of her experiences in school. Goodall described “[coming] home from school and being able to talk to them and being able to continue that.” Family was an important sounding board for Energi as well but she also described the role of colleagues in this dialogue. Energi said that this dialogue was impactful,

Because we would talk to each other about what worked or what didn’t work in a class and we would laugh about things, so we would kind of let that be a release and I could always count on my colleagues to listen. I think also they knew that I would listen to them.

Camille shared how a regular structured dialogue time with her colleagues about their classrooms was an influential factor. Camille said, “we’re constantly reflecting on like our part in the situation and our part in their education and how their actions are related with how we are in the classroom.”

In many ways, dialogue was a supportive activity that could be subsumed by support above, but there is a difference between general comforting support and dialogue as a specific form of support in that it also has generative power in revealing new meaning and understanding.
Support was provided as a factor, mainly in the form of dialogue, which contributed significantly to a general emotional feeling of being supported.

**Self-factors.** Participants identified self-factors as influences on the process of mindset transformation. Self-factors inhabited more of the space within the individual’s thought-life as opposed to the other two influencing factors shared below. These self-factors represented both a learning mind orientation and hope. The learning mind constituted a majority of the theme within self-factors but hope about the future was definitely a solid component within the thought-life of the teachers that influenced their transformation.

**Learning mind.** The learning mind described an orientation towards curiosity and learning within the participant. In response to the process factors identified in “how” their mindsets changed, participants described how they are constantly learning. Several also mentioned a focus on learning the research and science behind growth while others shared the impact of formal education and training. Lana described how she keeps learning new things to reach more students:

I’ve been teaching nine years and even now I think I still am not reaching all kids and I went to a seminar the other day and took back some incredible stuff and I’m thinking wow and I tried it out yesterday and I feel like I reached two kids that maybe like I challenged them, their thinking and they surprised me with their responses.

This learning mind orientation was also supported by the responses to the LAS (King, 2009) Contributions of Change pre-screening survey data, where nine participants identified impact from part of professional development activity.

The learning mind also included internal self-reflective processes engaged in to make meaning or understanding of circumstances. These self-reflective episodes created new meaning
and insights into situations that operated as motivators to change. Igor recalled thinking reflectively about the academic similarities between his own young children and his high school students who had been traumatized as a child when he had a moment of insight: “so that epiphany I guess was when I realized that intelligence is not set.” Camille remarked how “if you’re constantly reflecting on how you can change things then it’s a little deeper than just going into the classroom, teaching a lesson, and walking out.”

**Hope.** Hope was operationally defined to reflect the teachers’ beliefs in the possibility of more for their lives and their capability to achieve it. Maggie realized the possibility of more when she reflected on a quote about the difference between having to go to work and getting to. For Maggie, “It’s [the] opportunity aspect of it and I think that kind of helped shift my mindset.” Andre talked about wanting to be more influential during his entire career—to always be contributing to the profession. Andre said that “understanding if I don't keep up with change in our education then I am going to be passed by and my influence may not be so worthy anymore.” Lana used a negative experience during childhood as positive motivation in her thought-life about the future: “hoping that no child ever felt that . . . they weren’t good enough and that no one cared enough about them to get to understand what made them tick.” Lana hoped to inspire her students and make them feel valuable.

A summary of SQ2 is visualized in Figure 7 below. Experiences with students, relational factors, and self-factors influence the process of transformation. The ignition of the spark may reside in the experiences with students who surprised the teacher by performing above the teacher’s pre-set expectations as well as the challenge to understand students who learn differently from the teacher.
Supporting Question 3 (SQ3)

The third supporting question asks: How do high school teachers describe the outcomes of the mindset transformation process for their practice, especially as it relates to the role of professional development? During the interviews with participants, I specifically asked the question “How has this change affected your teaching?” The outcomes of transformation are reflected in the theme of *application* that is part of the theoretical model. Transformation changed the behaviors and attitudes of teachers in substantial ways in the classroom and their professional practices. Four codes emerged around the application of their transformation and were detailed above with rich descriptions from participants. These four aspects of *application*, or the outcomes of the mindset transformation process are summarized below. The role of professional development is addressed in detail separately below. Responses from the interviews
around the following questions also provided insight into SQ3 and supported the code categories because they solicited responses into current post-transformative beliefs and behaviors: (a) How would you describe your teaching style? and (b) How do you view your purpose as a teacher?

Finally, the teacher artifact activity responses informed the outcomes of mindset transformation.

**Relationally focused.** Teachers described a shift in focus towards connection and building relationships with more students in their classroom. Relationship building is reported as an important or even top priority. Teachers reported that they actually saw more students and were accessible to more students. Recognizing the individuality of each student, their unique situations, and how student experiences impact learning, the teachers reported that they saw their students as human beings and were more cognizant of the power of knowing their students to the learning process. The teachers reported how the classroom was a place where the work of learning was done together. Kelvin used the phrase “be there together” to describe the bonds created in the learning process. One teacher used student work as the artifact during the activity. He noted that this work was not from his top performers but was solid work from students who normally do not receive the recognition. Prior to his mindset shift, he would not have displayed it or given them that recognition. Maggie shared a word wall created by her students where each contributed one word they were going to be motivated towards this school year. This wall incorporated the voice and presence of every student in her classes and she would not have done something like that if she had not experienced this shift in mindset. Maggie shared how this word wall prompted “great conversations with the students about how this one word has impacted them not only at school like through their learning” but also in other areas of their lives. Some of the participants characterized their relationships with students as a family. They saw themselves as walking through hardship and difficulty alongside their students and wanted to be an
inspiration and trusted adult in their students’ lives. Relationships emerged throughout the entire study, forming the core category, but also informing the outcomes of transformation.

**Teaching strategies.** Teachers described changes to the strategies and methods they used in class with their students as an outcome of their mindset shift. Teachers described how the shift increased their differentiation within their classroom. Feedback became more specific and process or effort oriented. Teachers opened up to incorporating more ways of learning material and content with students, giving students more options in how they show their learning, and giving more students more learning opportunities. Several teachers used student-created artifacts displayed in their classroom as an example of how their mindsets had shifted towards their students’ intelligence, remarking on the creativity and ownership that students had in that process. These teachers described how they would have either not attempted the activity that led to the artifacts or would have had rigid requirements that would not have permitted student expression and ownership. Teachers shared how they were more willing to take risks and try new things because they saw the process and challenge as a learning opportunity to grow with their students. Teachers also shared how before, if a student struggled or did not get the material, they were less patient and more likely to shut them down and just move on. They described how they now looked for more ways to reach that student, incorporating more real-world examples into their lessons, and making learning into an ongoing process rather than an event.

**Learning expectations.** Teachers described how their expectations for students in class were strengthened. The teachers shared how their thinking around what was possible for students, their beliefs about student ability, and a commitment to student growth changed. Teachers described how they incorporated more challenge and rigor into their classrooms to facilitate learning and problem-solving. Teachers said how they viewed challenges as part of the
learning and growth process. Teachers shifted from focusing on grade letters towards learning and stretching students. A connected expectation also focused on helping the student to move towards career or education aspirations or to help students set higher expectations for their future selves. Teachers used artifacts in their rooms to inspire students to reach beyond what students currently thought was possible. Many teachers posted a meaningful quote that emphasized student choice in the process of learning and overcoming hard things. Naomi shared a plaque that said “Be Smart,” which she keeps on her desk facing students. Naomi talked about how it means that “you have a choice to be smart . . . well you can be smart, anybody can be.” Student achievement was described as not capped and not predetermined. When describing her current view of students, Maggie said,

I think that everybody has the opportunity to excel and grow and I don’t like to limit people and so I kind of view them as limitless . . . [like] the bottomless fries at Red Robin that you can just keep filling up.

Teachers recognized that even if a student had not achieved something in the past, that past event was not a cap on the student’s future ability to achieve. Teachers appreciated that sometimes students learn and arrive at different times.

**Reflective practice.** Participants described specifically how they became more reflective practitioners in their teaching and classrooms because of their mindset transformations. Teachers recognized how they were more engaged in thinking about their teaching and desiring to learn themselves. Participants expressed how this mindset change had generated an attitude of humility in that they realized as they learned more that there was still more to learn. Teachers shared how they also modeled the reflective process with their students. Camille noted that,
if I’m not modeling that behavior for them, if I’m not showing them I’m overcoming things and I’m doing things and I’m holding myself to the same standard then how are they going to think that they should be doing that too?

Teachers described how they listened more, were more patient, and more self-aware when they themselves fell short. Teachers were able to recognize when they were slipping back into a fixed mindset or operating with a fixed mindset about something and take corrective actions.

**Professional development’s role.** The role of professional development in the outcome of the transformation process was ascertained in the interview question: “What do you think has shaped your views of teaching and your role?” Participants provided answers in two categories: relationships and learning experiences. With specific attention to the types of learning experiences, four participants specifically mentioned ongoing professional development. Maggie, a newer teacher, mentioned her clinical experiences, and two others mentioned their formal teacher education classes having a significant impact. Professional development described in response to this interview question was characterized as being meaningful to the participant and transferrable to the classroom. For newer teachers like Maggie, their teacher preparation programs with clinical experiences and observations of other teachers provided the meaningful and transferrable qualities that other teachers with more experience cited for the professional development. These qualities of meaningful and transferrable professional development and learning are also noted characteristics of adult learners.

The professional development recommendation collected from each participant focused their responses to descriptions of what types of activities were or would have been helpful to them during their transformation journeys. This focused approach satisfies both observations from the prior question above about what has shaped their views of teaching and their roles as
teachers regarding the meaningfulness and practical transferability of the professional
development. While the initial open coding focused heavily on in vivo codes, during the axial
coding, the relationship between the diverse recommendations fell within three categories based
on how the ideas related to each other and the other themes that emerged in the model. In order
of intensity of response occurrence, teachers wanted to be equipped, supported, and inspired by
their professional development efforts.

Equipped. Equipping included practical exercises and activities for the classroom along
with research, formal learning, and practitioner experiences. Practical exercises mentioned
included simulations of feedback and teacher use of labeling as well as examples of how teachers
were using growth mindset activities in the classroom. Lana mentioned how helpful it would
have been to go and see it in action in another teacher’s classroom. Andre also mentioned how an
activity to help get parents involved with their student’s intelligence would have been helpful.
Participants suggested including research-based information on different theories, a professional
to discuss how the brain works and how people think, and the data on feedback. Teachers also
described how their formal learning experiences in grad school or in specific courses at a
university setting were impactful. One teacher also suggested a centralized collection of seminars
for training in this area that were available to teachers. Teachers saw these tools as ways to open
up to new ideas, gain insight into the science behind ideas, and obtain practical experience trying
out the techniques with peers.

Supported. The second code related to professional development is the idea of being
supported—both by colleagues and also administration. Whether it was collaborative
conversations or purposeful observations, teachers recognized the need for support from their
peers in the process. This also reflected the core category of relationship that ran through the
transformation process. The professional development recommendations recognized the importance of the community in the learning process. Another interesting observation in the supported category was the desire for available mentorship support, whether it was found in a wider social media community or in an on-demand digital platform. This provided a “just in time” resource and support to teachers trying to implement new ideas.

Administration support and encouragement was specifically mentioned by Jo and Maggie in this exercise, but Brian mentions the influence of administrative support early in the main interview and Hannah alluded to it as well as an important part of setting the focus for initiatives. In other areas of the interview, Darren and Andre mentioned the influence of administrative support introducing Carol Dweck’s work to them, and Kelvin mentioned the power of administrative buy-in to the research basis of Mindset (Dweck, 2006) to supporting teacher efforts in the building. Half of the participants mentioned the impact in some way of administrator support as important and valuable.

*Inspired.* The final characteristic of the professional development activities recommended by teachers was the desire to be inspired. Teachers wanted activities and experiences during professional development that sparked curiosity and a moment of sudden insight or discovery. Teachers described wanting to experience activities during professional development that modeled and promoted growth and let them explore the sudden discoveries that happen during meaningful simulations. Teachers desired to see others being successful and hearing real life connections to living out growth mindsets in other areas. Both Goodall and Camille mentioned that seeing success is believing. Darren, Kelvin, and Lana also mentioned the power of seeing examples from real teachers who implemented growth mindset strategies. Figure 8 below visualizes the outcomes of the process as well as the role of professional development.
Summary

The purpose of this systematic grounded theory study was to explain the process that teachers experienced in the transformation of their mindsets from fixed towards growth regarding student intelligence, including effective transformation approaches and obstacles. The theoretical model that emerged from the data, represented using an incandescent light bulb metaphor, revealed key themes of the process including: (a) moment of realization to spark the change process, (b) experiences of (b₁) experimenting with the new ideas and (b₂) reflecting on them that strengthened the teachers belief in those ideas, (c) equipping activities that support and provide tools to use in that process, which lead to a feeling of being (d) empowered or having confidence on the teacher’s part to (e) apply or make intentional choices within their practice, and can (f) extend into other areas or domains of the teacher’s life. A core category of
relationships acted as a current running throughout the key themes of the model. The context of these relationships occurred with students, peers, administrators, and others—typically family. This theoretical model answered the central question of the study: How do high school teachers’ mindsets transform from fixed to growth regarding student intelligence?

The supporting questions of the study looked at descriptions of mediums, influences, and outcomes of transformation that emerged from the data, which acted as effective approaches to transformation as well as obstacles in the process. Each supporting question is summarized below.

SQ1 focused on the mediums of how transformation happened for the teachers. The teachers described how transformation was an ongoing process or journey that was challenging at times. The difficulties encountered varied but many involved negativity or resistance from others. The time and effort involved in changing the status quo or even the impact of outside intervening influences beyond the teachers’ control required perseverance and determination. Teachers shared strategies to overcome the difficulties that included many self-strategies to muster the internal courage and fortitude to press onward. Teachers also shared techniques they used with others to help deal with negativity and resistance. Instead of becoming paralyzed by the obstacles, teachers took action to move forward and sought support from another person. The teachers also shared a common belief that even with challenges, they held positive outlooks for the future that this journey was taking them to a brighter and clearer place ahead. The teachers also described how this process was not travelled alone but communally with others.

SQ2 focused on the factors that influenced the process. Teachers identified three main factors that were the most influential to their change: (a) experiences with students, (b) relational factors, and (c) self-factors. Teachers described how their experiences with students surprising
them and overcoming limits to their learning and growth that were imposed by the mantras of others really opened their eyes to changing their beliefs about intelligence. Teachers also shared how experiences with students who were different from their own selves as learners created a need to figure out how other people learn. Teachers also shared relational factors with colleagues and family who provided support, specifically through the power of dialogue. Finally, teachers articulated self-factors that were instrumental in the transformation process, including a learning-oriented mind and a hope for a better future.

SQ3 focused on the outcomes of the transformation process in the participants’ professional practices and the role of professional development in those outcomes. Teachers described four main outcomes of their mindset transformation on their teaching: (a) relationally focused, (b) teaching strategies, (c) learning expectations, and (d) reflective practices. Teachers specifically described how this shift opened their eyes to see more of their students. They prioritized and valued the development of relationships with their students as part of their professional practices. Teachers also shared both generally in terms of differentiation and specifically with the teaching strategies they were utilizing to reach more of their students and increase learning in their classrooms. The level of expectation for students also raised as teachers embraced challenge and struggle as a sign that students were growing, learning, and becoming problem solvers. Teachers shared how they now took off imposed caps or predetermined outcomes and gave more emphasis to helping students unlock their perceived limitations. Finally, teachers shared that they engaged in more reflective practices, which encouraged their risk-taking and trying of new things.

The role of professional development in the outcomes was analyzed separately using the Professional Development Recommendation Activity, but it was also noted as a contributor to
the *equipping* theme in the theoretical model. Teachers shared that professional development had to make them feel (a) equipped, (b) supported, and (c) inspired. As it related to feeling equipped, teachers noted that they wanted practical exercises that were experiential, from real teachers, and usable for their classrooms. They also mentioned research-based development to expose them to new or different ideas that were credible and grounded in data. Finally, teachers valued the formal education opportunities like university courses or degree programs as equipping to their development.

Teachers described support coming from both their colleagues and administrators. While teachers spoke more frequently about the value of peer collaboration, mentoring, and purposeful observation in the professional development recommendations, looking over all of the data sources showed that teachers valued the encouragement, support, and direction provided by administration in professional development. The idea of just-in-time support using online formats was also described. Finally, teachers described how they wanted to be inspired by their professional development. They wanted to participate in activities during professional development that gave them “a-ha moments” of insight and discovery. Teachers also described how “seeing is believing” and that success inspires others.

This chapter focused on presenting an analysis of the multiple data sources into a coherent theoretical model to explain the process of mindset transformation in high school teachers from fixed towards growth. As Tavory and Timmermans (2014) note, “data analysis is not separate from theorizing” (p. 64). The theoretical model of mindset transformation in high school teachers presented in this chapter represents the analysis of the lived experiences of these 14 participants, taking into account the variation and consequence of the process as a shaping force on the development of the theory of transformation.
CHAPTER FIVE: CONCLUSIONS

Overview

The purpose of this systematic grounded theory study was to explain the process that teachers experienced in the transformation of their mindsets from fixed towards growth regarding student intelligence, including effective transformation approaches and obstacles. This chapter presents a concise summary of the findings that leads into a discussion of how the study findings interact within the conceptual framework presented in Chapter Two.


Summary of Findings

A theoretical model emerged from the data that answered the central research question of the study: How do high school teachers’ mindsets transform from fixed to growth regarding student intelligence? The model was visualized using metaphor as an incandescent light bulb to provide the audience with a usable picture as connection to theory. The transformative process began with a moment of realization that was further explored by the teacher through experiences, including both external experiments with the ideas and internal reflections on the ideas. The teachers engaged in equipping activities that supported their experiences with the new idea by providing a vocabulary to describe meaning and additionally learning to make meaning from
what the teachers were experiencing in the change process. At some point in the experiencing and equipping, the teachers emerged with a sense of empowerment and ownership over the new ideas and beliefs. This confidence helped teachers to apply the ideas in tangible ways in classroom practice. The teachers may have even extended these new mindset beliefs more into their world or even in different domains. The core category of relationship flowed throughout the entire model and process as the underlying current. Transformation happened in relationship with others, including students, peers, administrators, and other people like family.

The first supporting question (SQ1) asked: How do high school teachers experience the process of mindset transformation? Teachers shared qualities of the experience in how mindset transformation was an ongoing process or journey that was challenging at times, but they knew would end with something positive. Teachers described difficulties they experienced during their journeys, especially from negative people or the expenditures of effort and time involved in making change, but that they utilized strategies and took action to overcome or move through the challenges. Teachers described how the process was experienced in community with others and not alone.

The second supporting question (SQ2) asked: What factors influence the process of mindset transformation in high school teachers? Teachers identified how experiences with students, relational factors, and self-factors impacted the transformation process. Teachers described how their experiences with surprises in student learning and with students who learned differently from themselves opened their eyes. Teachers also shared how colleague and family support, specifically through the power of dialogue, provided a relational factor instrumental to change. Finally, teachers described how their learning-oriented mind and hope were self-factors that were influential in the transformation process.
The third supporting question (SQ3) asked: How do high school teachers describe the outcomes of the mindset transformation process for their practices, especially as it relates to the role of professional development? Teachers described how their mindset transformations about student intelligence made substantial differences in their classroom practices. Teachers became more relationally focused and actually saw more of their students, both in sheer number but also the value of their students. Teachers also described how they changed their teaching strategies to increase differentiation of classroom material but also how strategies like feedback or grouping experienced substantial change in the quality and character of the strategy.

Learning expectations rose as well as the intentional use of challenge and problem solving as teachers said they removed caps to student learning and opened up previous pre-determined outcomes in favor of more creative and varied expressions of learning. Teachers also explained how they became more reflective practitioners in their classrooms, as the transformation process had made them more self-aware and empathic towards their students. Teachers described how they listened more, were more patient, and could more readily identify when they were slipping back into fixed mindset modes. The role of professional development in the outcome of transformation was also analyzed and showed how teachers valued professional development that made them feel equipped, supported, and inspired. These values focused on teachers’ experiences with the practical but research-grounded application of growth mindset in their classrooms, knowing that their peers and administrators supported them in the process as both a resource and encouragement, fueled by opportunities to be inspired by new learning and success stories.
Discussion

This section discusses the study findings in relationship to the conceptual framework presented in Chapter Two. Four theoretical presentations informed different aspects of the conceptual framework proffered around the process of mindset transformation—the changing of deeply held beliefs concerning intelligence. The study findings are discussed in relation to how they inform and reflect the following theories: (a) Bandura’s (1986) Social Cognitive Theory; (b) Dweck’s (1986, 1995, 2006) implicit theories of intelligence, (c) Wenger’s (1998) communities of practice and identity formation, and (d) Mezirow’s (1991, 2000, 2003) Transformative Learning Theory.

**Bandura’s Social Cognitive Theory**

Bandura’s (1986) Social Cognitive Theory focuses on understanding the motivations and behaviors of people. Bandura’s theory is represented by a triadic self-reciprocating process between a person’s environment (including social context), cognitive and other personal factors, and behaviors. This study aligned with Bandura’s general model of why people act the way that they do. Teachers described how changes in their thinking and beliefs about student intelligence were transformed through a process that included experiences within their environment that changed their behaviors, which informed their thinking. Bandura focuses on how the interactions between the individual domains exert bi-directional pressure.

Teachers described how behaviors of experimenting in their classroom environments influenced their thinking about the new ideas and beliefs. In response to feedback acquired during the experiment, teachers made adjustments to their behaviors and tried them out again within the environment of the classroom. Reflecting on the behaviors or social responses in the environment influenced subsequent experiments. At some point, the teachers experienced a
feeling of empowerment, which influenced their behaviors in the classroom as more purposeful and aligned with their growth mindset beliefs. Bandura includes selective attention choices in the domain of behaviors. Teachers in this study shared how changes in their beliefs changed where they put their attention in the classroom when they shared that they started seeing more of their students. Bandura also includes modeling as a way of learning by observation. This reflected the interaction between environment and behavior as a teacher observed another teacher within a social context and then sought to emulate his or her behaviors. In describing contributions to change, teachers described the importance of observing other teachers as a model of successful use growth mindset techniques in the classroom with students. While Bandura’s theory may offer a generalized or generic explanation for what disturbance in the environment or behavior domain sparks the initiating thought of transformation, Bandura’s theory does not offer a compelling insight into specifically how or why the moment of realization strikes the participant as an initiation into the transformation process.

**Dweck’s Implicit Theories of Intelligence**

Growth and fixed mindset are the names given to the two diverging viewpoints about the changeability of intelligence (Dweck et al., 1995; Dweck, 2006; Yeager & Dweck, 2012). These beliefs are deeply held and operate under the surface of the everyday experience. Someone who holds a growth mindset believes that intelligence is not a fixed quality but is something that can be changed and improved through experience and feedback. Challenge and struggle are seen as opportunities to learn and improve. People who operate with more of a growth mindset are also more likely to persevere through struggle and engage in behaviors that are adaptive for learning. Feedback is received as a tool for improvement. People who hold fixed mindsets see intelligence as a fixed or unchangeable quality that is inherited and stable. There is little substantial change
that a person can make to increase it. Challenge and struggle are signs that the person is nearing their limit of ability and further effort to improve will be fruitless—so why even try? People who operate with more of a fixed mindset are more likely to give up in the face of challenge, focus their attention on easier tasks to ensure their success, and significantly overestimate their actual performance. Feedback is interpreted as a judgment on performance.

Teachers in this study articulated a clear shift from a fixed mindset about student intelligence towards a growth mindset. Teachers described how they previously believed that intelligence was capped or limited. Some talked about how they previously saw their students as either having it or not and they categorized students by their grades, recalling “this is my A student, B student, C, etc.” Some teachers even shared how they had written off or did not have expectations for some of their students based upon their fixed perception of intelligence. Despite the teacher’s efforts, this student was not capable of learning or growing in substantial ways.

Teachers described their beliefs about student intelligence now as open and that growth is possible. Teachers saw student potential as unlimited and took off caps to achievement that they had previous imposed. Teachers shared how they now believed that a student’s intelligence was much more expansive of a concept than just an IQ test or test scores in class. Students could use effort and hard work to make substantial improvements in school. Even students who performed at high levels could also benefit from feedback to increase their learning. Teachers described how they used more rigor with their students because they now believed that student learning happens doing challenging things and that students were able to rise to the challenge. The goal was growth, not perfection. Teachers were able to see more clearly the smaller and more nuanced indicators of growth and progress within their students on the path to mastery.
Teachers also described how they were more self-aware and able to identify that they were a mixture of both fixed and growth beliefs. This awareness made them cognizant of when they were operating from fixed perspectives, and they took steps to shift their perspectives. This fit with Dweck’s (Gross-Loh, 2016) observations about how people are a mixture of both, that domain and context may influence if someone operated more from one perspective or another, and how people with growth mindsets were more accurate in their self-assessments of performance. Self-awareness was essential in utilizing feedback and reflection to improve future performance or alter behaviors to be more adaptive for continued progress.

Teachers in this study also articulated how their mindset transformations impacted their behaviors as teachers. Teachers described how they actually started seeing more of their students and teaching to more of their students. Teachers utilized more differentiation to meet the needs of diverse learners in their classrooms and changed the way they gave feedback. Teachers discussed how they also held high expectations for all of their students because they believed their students were capable of reaching beyond their current levels. Teachers shared how they gave students more options in how they demonstrated their learning and were open to giving more opportunities for students to learn because sometimes things clicked for students at different times or in different ways. Teachers described how they were not threatened by attempting challenge with their students and embraced struggle alongside their students because teachers now realized that learning was a messy process and that struggle was where the growth and learning happen.

This study did cause me to pause about the continued ability to effectively use Dweck’s (2000) Mindset Instrument as a way to measure teacher mindset beliefs about intelligence within teacher populations who have familiarity with the concept. With the widespread popularity of her
work, many more teachers are aware of the concepts and theory. Dweck has raised the alarm about the emergence of a *false growth mindset* (Dweck, 2015b, 2016; Varlas, 2016).

Anecdotally, a researcher may be hard-pressed to have teachers freely admit that they do not believe that their students can improve their intelligences. Social pressure to conform and the desire to be socially acceptable may exert influence on a teacher’s self-identified claims or beliefs that may not necessarily align with behaviors.

Part of my own concern and rationale for this study was a firm belief that true transformation of belief necessitated an observable change in behaviors, attitudes, and actions. During the coding process, there were several comments made that reflected more of a fixed mindset approach. I flagged these moments in order to dig deeper to see if the participant had just misspoken or inarticulately shared his or her view. I used other parts of their interviews and data collection to shed better light. Although I could not compare observed teacher behaviors before their mindset shifts, I was able to use not only teacher descriptions of the outcomes of their mindset transformation, but compare it with the artifact activity and making general observations in their classrooms to corroborate teachers’ self-descriptions of their mindsets. I also recognized that there is no perfection in living out a growth mindset with students. The teachers in this study described how in many ways they were still in the process of growing and learning themselves. With the popularity of growth mindset in education, future use of the instrument in teacher populations should probably include other checks to validate the teacher’s mindset beliefs. For populations that have not yet been exposed or saturated with growth mindset concepts, the instrument will continue to likely be very informative in research.
Wenger’s Communities of Practice and Identity Formation

Wenger’s (1998) communities of practice and identity formation provide a rich social theory for understanding the learning of adults in professional environments. Communities of practice are the contexts within which professionals develop, negotiate, and share their ways of understanding. Three characteristics of a community of practice identified by Wenger (1998) include (a) mutual engagement, (b) a joint enterprise, and (c) a shared repertoire. This study supported Wenger’s theory of communities of practice as the bulk of context within which the transformative process occurred for participants was in collaboration and mutual engagement with colleagues who shared their ways of understanding on the transformation journey. Relationships, especially peer and administrator, were valuable supports through the process. A current of relationship was identified as the core category running throughout the study and reflecting the importance of the community in the process of negotiating new ways of understanding student intelligence and the impact on teacher practices.

However, teachers mentioned the significant impact of relationships that were outside the profession on their understanding of meaning within the profession. Wenger’s (1998) community of practice does not adequately account for the significant influence of these personal relationships on the understandings brought into the community of practice. Also, the context of experiences and relationships with students, who are not professionals within the community and may not necessarily share the same commitment to the domain, were also as important to the transformation of teacher beliefs as the members within the community. At the same time, students were an integral part of the joint enterprise with teachers. An easy way to account for this variation is to delimit the community of practice to just the teachers who share a commitment to their mindset transformation; however, the profession of teaching is so
intertwined with the student learner that it would be disingenuous to ignore the impact of the student on the way that the teachers develop, negotiate, and share their ways of understanding.

The creation of a shared repertoire was a characteristic of the community of practice that was evidenced as well in this study. Teachers shared with and supported each other through exchanging ideas or activities, formed collaborative committees that provided resources to others, and engaged in sharing and recommending a pool of similar resources including Dweck’s (2006) mindset book. Professional development can also create a shared repertoire of resource and support for teachers. This study did not specifically look to see whether participants experienced a shared professional development experience. However, several participants mentioned the impact of the collaborative committee in one district as being a shared resource and support. This shared repertoire was an important feature for inducting new members into the professional community of practice and forming their identities as growth mindset teachers.

**Mezirow’s Transformative Learning Theory**

Mezirow’s (1991, 2000, 2003) Transformative Learning Theory is a way to understand how adults learn, especially using the power of reflective judgment to take on new perspectives. Mezirow outlined a 10-phase process of transformation that was focused more heavily in a cognitive approach. The process identified by Mezirow (1991) included:

1. A disorienting dilemma;
2. self-examination with feelings of guilt or shame;
3. a critical assessment of epistemic, sociocultural, or psychic assumptions;
4. recognition that one’s discontent and the process of transformation are shared and that others have negotiated a similar change;
5. exploration of options for new roles, relationships, and actions;
6. planning a course of action;
7. acquisition of knowledge and skills for implementing one’s plan;
8. provisional trying of new roles;
9. building of competence and self-confidence in new roles and relationships; and
10. A reintegration into one’s life on the basis of conditions dictated by one’s new perspective. (pp. 168-169)

The results of this study aligned with some of Mezirow’s 10 observed phases, but not completely or neatly. Teachers described a moment of realization that began the process of transformation similar to Mezirow’s disorienting dilemma. However, teachers did not describe or share that they had feelings of guilt or shame during the self-examination process, which was represented in Mezirow’s phase 2. Mezirow’s phases outlined in 3-8 were combined in some ways into the experiences and equipping themes in the study’s theoretical model. Participants in this study reflected on the meaning of their thinking to their practices and experimented with different techniques, approaches, and methods in their classrooms as they further explored the meaning of their changing beliefs. Teachers shared how they kept trying it out with their students and had to get comfortable with these new ideas in their teaching. Teachers engaged in equipping activities to give them new vocabulary or insights into the meaning and understanding they were experiencing with students in their teaching. These activities were continual and reinforcing to each other, much like Bandura’s self-reciprocating triad.

Mezirow’s phase 4, recognizing that the process was shared and others had changed, was not limited to a separated or delineated phase for participants. Study participants lived the process of their mindset transformations in relationship with their students, peers, administrators, and others—namely family. Mezirow did not emphasize the impact of relationships, the sharing
of transformation, and the reciprocal building into each other, in his phases. This study’s findings showed that in the context of high school teachers, the process of mindset transformation was highly connected to relationship. Also, Mezirow did not account for the impact of spiritual practice and relationship in the transformation process. Several study participants shared the impact of their religious faith and practice on their processes.

Mezirow (2003) described the nature of transformative learning as “learning that transforms problematic frames of reference . . . to make them more inclusive, discriminating, open, reflective, and emotionally able to change” (p. 58). The findings of this study supported that characterization as participants described themselves as more open, inclusive, and reflective in their classroom practices with students. Teachers also described their flexibility and openness to student learning in different ways and recognized the value of each learner in the classroom. Teacher understandings of the nature of intelligence expanded to remove caps and limits imposed on student potential. Teachers became more discriminating as well—they purposefully chose and selected activities to use with their students that would increase challenge and rigor as well as growth.

Transformative learning in Mezirow’s (2003) theory heavily depended on a process of critical reflection, which made meaning of experiences but was highly influenced by meaning perspectives that had developed over time. For teachers in this study, the influence of their prior perspectives that had developed over significant time and their own experiences in school growing up greatly influenced their original thinking about intelligence—that it was fixed and capped for students. However, those past meaning perspectives became significantly less powerful as an influence once the teachers embarked on the transformation process regarding the meaning of intelligence for their students. Mezirow’s description of the influence of prior
meaning perspectives may not capture how teachers in this study experienced the influence of their prior ideas. It seems as if Mezirow envisioned a struggle to remove old patterns of thinking as they keep exerting influence in the process of transformation. Teachers in this study seemed more focused on trying on and trying out their new thinking about intelligence rather than struggling to discard the old. The difference is subtle in the shift of emphasis, but it causes one to ponder whether transformation of beliefs is a struggle in removing the old or a frenzy of outfitting with the new.

**Implications**

This study presents theoretical, empirical, and practical implications for consideration. In contributions to the theoretical sphere, this study produced a model of mindset transformation to provide insight into the process experienced specifically by high school teachers. The findings add to the literature and conversation around Transformative Learning Theory and present the use of a unique data collection method, called the Metaphor Activity. Empirically, this study presents an example that fundamental shifts in deeply held beliefs as an adult are possible. Practically, recommendations are presented for specific groups.

**Theoretical**

This section focuses on the contributions of this study to the theory of transformation, providing a model and additional understanding to the literature surrounding transformative learning theory. An unanticipated theoretical implication emerged during the study on the use of metaphor as a data collection tool and is further explored herein.

**Model.** The theoretical model produced in this study reflects the transformation experiences of high school teachers. Mezirow’s (1991) original 10-phase model of transformative learning was created from his study of adult women returning to the university as
students. This model was created in the context of experiences for whom the model is also intended as a guide. Also, Mezirow (2003) noted that when adults critically reflect and make meaning from experiences, they are influenced greatly by meaning perspectives that they had developed over time. While that may hold true in many contexts, that past thinking and experience heavily informs understanding of present experiences, the model in this study showed the deep significance of the current experiences influencing the transformation of implicit beliefs about intelligence. The model in this study focused on the transformation of a deeply held belief, namely the meaning of intelligence, that is greatly contextualized and informed by past thinking and experience. But, in this model, it seems that while the past experiences are a reference point for thoughts about what a person used to believe, the current experiences are much more powerful in reshaping the beliefs of participants and provide a more impactful reference point for critical reflection. This model may provide an opportunity to gain insights into some of the nuances of meaning making, especially when it comes to beliefs around core identity or deeply held implicit beliefs.

**Transformative Learning Theory literature.** This study’s findings also contribute to the literature and development of Transformative Learning as a theory. In essence, the theory asks how learning can create meaningful change for adults. Taken from the title of this study, the “power of transformation” has two meanings that contribute to the ongoing development of transformative learning research. First, transformation of beliefs is powerful because it has real consequences. The power comes from the fact that the transformation creates a substantial change in the essence of meaning ascribed to things and as a substance-in-action lived out in actions and behaviors. A transformation of beliefs changes outcomes by changing beliefs—it is a recursive process. This contributes to the literature on transformative learning as a theory by
providing another context within which the transformative power of learning creates consequences that are real and felt. Secondly, the power of relationships is the driving power behind transformation. For high school teachers, their relationships with students, each other, their administrators, and even family members were the current that energized their processes. As King (2009) shared, as a researcher she has seen repeatedly that it is “critical reflection, dialogue, situated learning, and relationships that are most effective as the facilitators” (p. xxiii) of transformative learning. While these factors were present as well in this study, relationships were the driving facilitator for the transformation experienced by the teacher participants in this study. This provides insights into what factors may be more important in a given context.

**Metaphor in data collection.** The Metaphor Activity used as a data collection tool in this study proved to be an integral part of the study in obtaining deeper insights into participant experiences. I printed five nature related images as 5x7-inch photographs to show participants during the activity. Appendix I contains the collection of images used. Each image was carefully selected to capture different aspects or emotions of a process. I provided participants with the five photographs and requested that they pick the one that they most resonated with that captured their transformation process. The metaphors became descriptions of their own processes. The participants were asked to describe what about the image was alike with their experiences and what they would change to make it more accurate. This gave the participants another creative opportunity to descriptively add, change, or take something away from the image. This method of data collection provided significant insights into the participant’s experience that had not been elicited in the normal course of the semi-structured interviews. Participants talked through their decision process to select or exclude certain images and it really gave me as the researcher a different insight into their thinking. Several participants even surprised me with how they used
the image or what they saw in the image that had been different or even not intended by me as the researcher when I selected it for inclusion in the study.

**Empirical**

This section focuses on the contributions of this study to the empirical understanding of adult mindset change and the instrumentation value of the LAS (King, 2009) as modified and used in this study.

**Adult mindset change.** Changing mindset in adult populations, especially around a deeply held personal core belief about the meaning of intelligence, may seem to be a rare occurrence. In fact, I was anticipating that more teachers would have participated in the initial pre-screening survey. Of the nine high school buildings representing six districts or entities, only 19 teachers took the pre-screening survey. While there could by a myriad of reasons why it was difficult to recruit for the study, part of it may in fact be attitudes among teachers about even the possibility of transformation in teacher beliefs or recognition of the existence of that experience. Mindset beliefs are implicitly held, as discussed in Chapters One and Two, and may be operating under the surface of explicit consciousness. With busy lives and demanding classroom responsibilities, teachers may not be in a position to recognize and express a shift. Even so, this study represents the stories of 14 teachers who did experience a transformation in their mindsets and were able to articulate the experience of that process. Empirically, fundamental change in deeply held beliefs is possible as an adult.

**LAS (King, 2009).** This study also utilized a modified version of the Learning Activities Survey (King, 2009) geared by this researcher towards exploring contributions to the process in teacher populations. The LAS as modified shed important light on the transformation process and acted as an important tool to identify potential participants. Data collected from this form
were used to triangulate interview and activity responses and acted as a check on the construction of the model that emerged during the analysis. This study supports further use of the LAS (King, 2009) as a helpful and useful tool in understanding transformative learning in teacher adult populations.

**Practical**

This section focuses on the practical implications of this study, which may be of specific interest to practitioners in the field. Specific attention is paid to the nature of professional development, administrator support, teacher encouragement, and inspiration.

**Professional development.** This study has impact on the creation of professional development and teacher mentoring programs to help teachers on their journeys of mindset transformation. The goal would be to create professional development programs that help spark that moment of realization, which initiates the journey and acts as an equipping tool in the process. Participant observations about the characteristics of effective professional development being practically equipping, supportive, and inspiring should give thought to designers and developers. Teachers do not want to waste their time but value purposeful and intentional development. Using insights from this study, including the power of peer relationships, could inform the way that professional development is conceived and implemented in order to have transformative impacts.

**Administrator support for growth.** Participants shared many instances of the impact of administrator support in their transformation processes. Administrators should take to heart the significant impact they have in building and sustaining a growth-focused culture that values the trying of new things. One of the ways administrators can support teacher growth and transformation of teacher mindset is by creating and sustaining space for the process to manifest.
There is no magic wand to change people’s beliefs instantly. But by acting consistently with growth in mind, encouraging teachers to stretch and take new perspectives, providing time and opportunities for collaboration, and providing moments for spark to ignite the process along, an administrator can establish conditions conducive to transforming teacher beliefs. Finally, administrators should not underestimate the value and the power of relationships within their school organizations. One teacher shared, “I have led a Growth Mindset committee geared at changing the way we respond to students. We are the only teacher-led committee in the district and I feel very strongly about changing our school’s culture through our student mindset.” The teacher committee’s influence is trickling down into teachers in middle school and within students at both levels who are collaborating together to support this shift towards a growth culture in their schools.

**Teachers.** Teachers who are in-process and working through the transformation of their mindset beliefs can take comfort and inspiration from the success experienced so far by the participants in this study. Even when the journey seems challenging, the teachers in this study provided practical examples of overcoming and persisting through the challenges. They saw a brighter and clearer future open ahead. The implications for teachers is that change of deeply held beliefs as an adult is possible and is powerful to their professional practice. The process of transformation changed the 14 teachers who participated in this study in profound ways. For teachers who may be wondering whether they can actually change their beliefs about student intelligence, this study provides a model that can be used as a road map to highlight key features along the ride. The core category that emerged in this study, relationships, should also impact teachers and their perceptions of each other. As a profession, we are better together. Teaching is not a solo endeavor. Tap into the power of connecting and collaborating with your peers.
Light bulb moments. A final practical implication of this study is the hope that it creates opportunities for more light bulb moments. The selection of the incandescent light bulb as a metaphor for visualizing the change process became very intentional in this study as a symbol of illumination. The teachers in this study were seeing differently as a result of their transformation experiences. They turned a light on in their thinking, it drew others towards them and their ideas, and it helped them to see their students and their teaching practices with greater clarity. The process of turning on the light revealed to the teachers what they were missing before that they had not even realized. For the teachers who are struggling and discouraged, maybe feeling that their students are never going to get it, this study shows how tapping into the process of transforming your mindset about student intelligence can ignite meaningful change in your outlook and practice as a teacher. My hope is that this study will help draw others towards the glow of these 14 teachers and inspire more teachers to turn on the lights to what is possible for their students.

Delimitations and Limitations

Delimitations are purposeful research design choices that provide a boundary and specific context for a study in order to make research more manageable, focused, and productive. This study was delimited to adult teachers in grades 9-12. The reason that the study was delimited to mindset transformation in adults reflects the gap identified in the research and the differences between adult and adolescent thinking patterns. The study was delimited to teachers of secondary school grades because of the change in expectations around course rigor and academic instructional focus, which characterizes these grade levels as opposed to the elementary level. Secondary school grades were considered students in grades 9-12 for this study.
Limitations of this study included the self-identification of teachers as individuals who hold a growth mindset and have experienced a change or transformation in mindset. Self-reporting of beliefs and feelings are difficult to corroborate but hopefully through the interview process and written reflections, these self-reports were confirmed as accurate. Also, espoused beliefs of a growth mindset may not always be consistent with a teacher’s actual actions or behaviors in the classroom (Schmidt et al., 2015). The retrospective nature of memory and past recall may have also limited the findings as time and experience can alter perceptions of memories and influence the way in which the participant now recalled those experiences (Kahneman, 2011). Participation was limited to volunteers who may be more inclined to share their story and contributed a homogenizing influence on the types of narratives provided.

Another limitation of this study was reflected in the ethnic and racial homogeneity of participants, with 13 White and one White-Hispanic identifying participant. The study findings may not be transferrable to the experiences of transformation in populations of color. However, there was variation in gender, public/private setting, age, and years teaching to provide variation in perspective. Additionally, while the goal was to obtain closer to 20 participants, despite significant and repeated effort to recruit, only 14 qualified participants agreed to be interviewed. However, even with the lower number of participants than expected, I believed that I reached theoretical saturation within the 14 participants.

**Recommendations for Future Research**

In consideration of the study findings, limitations, and the delimitations placed on the study, I recommend the following directions for future research and study. These recommendations focus on expanding populations, quantitative validation of the model, and further study of metaphor activities as useful qualitative data collection methods.
Future research should expand the study populations to recruit teachers of color to share their own stories of transformation in order to see if the model holds true for the stories of transformation across diverse populations. Since the study occurred in suburban schools, future research should consider the stories of teachers within urban and rural settings as well as different parts of the country as context and communities played a role in the experiences of the participants. Another interesting direction would be to replicate the study in cross-cultural contexts to see if the model holds true in other countries for the same reasons. Context and experiences impacted the model development and expanding to include more variation in those factors would provide helpful insight into the power of the model to explain transformation across diverse teacher populations. As noted in Chapter Four, further research into the impact of being a career-changer or teaching as a second career along with special education backgrounds would be interesting aspects to further explore. It could be beneficial to aspects of teacher training, recruitment, and hiring practices of districts to look for candidates with these backgrounds. A personal interest of mine as a researcher is also the impact of religious faith and spiritual factors on the mindset transformation process. Several participants shared aspects of their religious faith impacting them in the process, and future research should explore this aspect more in-depth in how it informs the process of transformation.

Since administrators contribute significantly to the culture and direction of the school, additional qualitative and quantitative studies exploring the impact of mindsets and leadership behaviors of administrators on school culture and teacher mindset development would be insightful. Two of the participating schools/districts had growth mindset initiatives with their teachers, one more administratively driven and the other more teacher-led, but supported by administration. Conducting an in-depth case study of these types of programs and investigating
their effectiveness at transforming not only teacher beliefs specifically but creating a growth
minded learning culture would provide important insights into administrative, teacher, and
student perspectives on the power of transforming mindsets about student intelligence.

Future quantitative studies can also investigate whether specific professional
development programs or curriculum in teacher training programs that incorporates the
principles identified in this study are effective in transforming teacher mindsets about student
intelligence. Additionally, these ideas can be developed into training teachers in how to most
effectively receive and process professional development in order for it to become informing and
transformational to their professional practice.

Finally, the use of the Metaphor Activity as a data collection tool should be explored
quantitatively to determine in fact if it is a significant tool to increase descriptive data from
interview participants in qualitative studies. Anecdotally in this study, I found it to be quite
helpful and insightful into the thinking process of the participants. If a metaphor protocol can be
established and quantitatively measured for effectiveness, this tool of data collection can
meaningfully contribute to the process of gathering rich information from qualitative study
participants in future research.

**Summary**

The purpose of this systematic grounded theory study was to explain the process that
teachers experienced in the transformation of their mindset regarding student intelligence from
fixed towards growth, including effective transformation approaches and obstacles. Fourteen
high school teachers shared their stories of mindset transformation, which resulted in the creation
of a theoretical model that captured their common experiences. This model was grounded in the
data with thick, rich descriptions provided by the participants during semi-structured interviews.
Teachers participated in three activities including a teacher artifact activity, a metaphor activity, and professional development recommendation as well as providing information through a pre-screening survey. Data from all of these sources were coded and analyzed to create the theoretical model and answer the central research question as well as the three supporting questions.

This study incorporated the use of a metaphor activity as a means of data collection that was not typical in qualitative studies. The use of metaphor with participants provided insightful, descriptive, and rich material for analysis. Teachers even found the activity pleasant, interesting, and thought-provoking. This technique provided different and deeper insights into understanding the phenomena and experience than were presented by participants during the interview. The process of looking for connection and making alteration to the metaphor image was a constructing and deconstructing activity around the meaning of the transformation. I commend the incorporation of the metaphor activity as a helpful and rich data collection technique and will continue to explore its use and refinement in future research pursuits.

The power of mindset transformation to make substantial change in the professional practice and life of a teacher cannot be underestimated. The teachers in this study did not just change in terms of the techniques they used in the classroom but made substantial shifts in the meaning they ascribed to their work and the value they placed on the people with whom they engaged through work. These teachers are making long-term impacts on the lives of their students and colleagues. They connected with the power of their relationships to form, refine, and direct their beliefs and practice in the process. Relationships are an essential and necessary energy in the transformative learning process. These teachers leaned into their relationships as they transformed their mindsets from fixed towards growth.
The stories of these 14 teachers and their accounts of the mindset transformation processes they lived stand as a beacon to other teachers who are pursuing the path of growth mindset. Their stories are inspiring accounts of how turning the lights on in your teaching through mindset transformation helps you to see new horizons and create new possibilities for yourself, your colleagues, but most importantly for your students. My hope is that this study will be a spark for another teacher and that together we can be a source of illumination in the teaching profession. Because at the end of all of it, the power of transformation is that we are truly better—together.
REFERENCES


Jacobellis v. Ohio, 378 U.S. 184 (1964)


doi:10.1002/nha3.10196


Appendix A

February 24, 2017

Judith S. Bethge
213 Woodland Park Circle
Gilberts, IL 60136

To Whom It May Concern:

I grant permission to Judith S. Bethge, doctoral candidate at Liberty University, to use Theories of Intelligence Scale – Others Form for Adults assessments in her research. Judith S. Bethge has permission to administer the instruments are long as she appropriately acknowledges and cites my scholarship in her study.

Sincerely,

[Redacted]

Carol S. Dweck
Lewis and Virginia Eaton Professor

Department of Psychology | 450 Serra Mall, Jordan Hall – Building 420, Stanford, CA 94305
Appendix B

June 7, 2017

Judith Bethge

IRB Approval 2883.060717: The Power of Transformation: A Grounded Theory Study of Cultivating Teacher Growth Mindset towards Student Intelligence

Dear Judith Bethge,

We are pleased to inform you that your study has been approved by the Liberty University IRB. This approval is extended to you for one year from the date provided above with your protocol number. If data collection proceeds past one year, or if you make changes in the methodology as it pertains to human subjects, you must submit an appropriate update form to the IRB. The forms for these cases were attached to your approval email.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
The Graduate School

Liberty University | Training Champions for Christ since 1971
Appendix C

Sample Gatekeeper Letter

Judith Swanson Bethge
Doctoral Candidate
Liberty University

Dear Sir or Madam:

I appreciate your interest partnering with me for my doctoral dissertation research. After you have looked over this information and attachments, please respond back to this email confirming your school’s desire to participate in the study. If you have questions after you have reviewed the information, please do not hesitate to reach out by phone or email.

I would be happy to provide you with the longer version of my study rationale and problem, but as we discussed, I am looking to identify a specific teacher population who has experienced a change or transformation in their beliefs about student intelligence. Specifically, teachers who have transformed from a fixed mindset about intelligence towards a growth mindset. Fixed and growth mindset are the terms that Dr. Carol Dweck from Stanford uses to identify these implicit beliefs people hold about intelligence and ability—whether it is a fixed amount or can be changed and developed. I have identified a serious gap in the literature in how to cultivate a growth mindset (or transform mindset) within the adult (teacher) population. While most teachers do hold a growth mindset, there is still a significant population who do not.

Many popular practitioner journals and blogs say that teachers should develop their growth mindset—but nobody is looking at how this process actually happens.

The short questionnaire/survey to identify potential participants who have experienced a change in their beliefs about students and who currently hold a growth mindset is attached. It will be sent to you in Google Forms format with a short introduction email to forward to your teaching staff. I would then follow-up with participants who fit the study criteria and volunteer for in-person (or Skype/online) interviews to hear their stories of transformation. I selected a qualitative methodology and am using a grounded theory approach. My hope is to identify a pattern or process that is common to teachers who have experienced a mindset transformation with the hope of creating a model to help guide professional development and interventions for teachers.

I need to identify about 15-30 teachers who have experienced a transformation in their mindset about student intelligence for interviews about their experiences. In order to find these teachers, I need to screen larger numbers of teachers using the survey that will help me to identify possible participants who fit the criteria of my study. I am hoping to spread my final participants between different school settings in order to find the maximum variety in teacher backgrounds and experiences for my study.
Because I am looking for a very specific quality (transformation from fixed towards growth mindset towards students), I will need to solicit and screen from a much larger pool to get teachers with this specific criteria. The actual study would not involve the students, specific data or identifying information about individual students, or any interference with curriculum or daily instructional activities.

I am hoping that the outcome of my research will provide a model for transformation of teacher mindset that can be used to help administrators design and implement professional development opportunities around mindset for teachers with the ultimate goal of improving student learning outcomes in the classroom.

I look forward to hearing from you at your earliest convenience to determine your school’s willingness to participate in this study.

Warmly,
Judy Bethge
Appendix D

CONSENT FORM
THE POWER OF TRANSFORMATION: A GROUNDED THEORY STUDY OF CULTIVATING TEACHER GROWTH MINDSET TOWARDS STUDENT INTELLIGENCE
Judith Swanson Bethge
Liberty University
School of Education

You are invited to be in a research study regarding the process of teacher mindset transformation about student intelligence. You were selected as a possible participant based on your recent completion of an online screening survey where you indicated that you may have experienced a shift in your mindset about student intelligence during your teaching career. Please read this form and ask any questions you may have before agreeing to be in the study.

Judith Swanson Bethge, a doctoral candidate in School of Education at Liberty University, is conducting this study.

Background Information: The purpose of this study is to answer this research question: How do high school teachers’ mindsets transform from fixed to growth regarding student intelligence? The purpose of the study is to identify a model that describes how high school teachers transform their mindsets from fixed towards growth about their students’ intelligence, including effective transformation approaches and obstacles encountered, by using high school teachers’ own stories and journeys of transformation. The ideas of fixed and growth mindset come from Carol Dweck’s research from Stanford on beliefs people hold about intelligence as a static and fixed concept or something that is changeable and malleable. Gaining insight into how teachers change their thinking or perspectives may give researchers insight into how best to serve pre-service teachers in their education preparation programs and also support the mindset of practicing teachers in the classroom.

Procedures: If you agree to be in this study, I would ask you to do the following things:
1. Participate in an on-line screening survey to determine if you qualify for further participation in the study. Information provided by you on the survey may be used in the subsequent analysis of the data. (Time: approximately 5-10 minutes)
2. Participate in an online or in-person interview that will be recorded (audio and visual) and transcribed, answering questions about your perspective of yourself as a teacher, your beliefs about the concept of intelligence, and your experiences of changing or shifting your mindset. (Time: approximately 45 mins)
3. During the interview described above, I will ask you to take a photo using your phone, webcam, screenshot, or digital camera of something in your classroom environment (physical or digital space) that reflects your current mindset about student intelligence and to give a verbal reflection regarding the selected artifact. If the participant is not in the physical or digital classroom at the time of the interview, this may be sent via email after the fact in a written format. (Time: approximately 5 minutes).
4. During the interview described above, I will show you five photographs and you will select which photograph best describes your journey of transformation or shift in mindset beliefs and provide me with a verbal reflection regarding the selected image (Time: approximately 5 minutes).
5. Within a week after the interview, email to me a written recommendation of a professional development activity that you would have found helpful on your journey of mindset shift or transformation (Time: approximately 5 minutes).

6. After your interview is transcribed, you will have the opportunity to review the interview and make any suggestions for changes or clarification so that your interview transcript accurately reflects your experiences if you like (Time will vary: 15 minutes to 1 hour estimate depending on participant).

7. If needed, follow up questions for clarification or further explanation of professional development recommendation described above (Time: approximately 5 minutes).

**Risks and Benefits of Participation:** The risks involved in this study are minimal, which means they are equal to the risks you would encounter in everyday life. The only potential risk is as a result of a breach in confidentiality if the data is lost or stolen. Your participation will contribute to the field of education and provide insights into professional development for teachers. However, participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include helping to develop a model of teacher mindset transformation for future use in professional development and supporting the mindsets of teachers in both the classroom and pre-service education programs.

**Compensation:** Participants will not be compensated for participating in this study.

**Confidentiality:** The records of this study will be kept private. In any sort of report I might publish, I will not include any information that will make it possible to identify an individual subject. Research records will be stored securely, and only the researcher will have access to the records. I may share the data I collect from you for use in future research studies or with other researchers; if I share the data that I collect about you, I will remove any information that could identify you, if applicable, before I share the data.

- Pseudonyms will be used to identify participants and cooperating schools or districts in order to maintain confidentiality. However, members of cooperating schools or districts will be aware of the study due to the recruitment emails and screening survey link. Therefore, non-participants in the study may be generally aware that a study is taking place and know general details about the topic of the study.
- In order to protect the privacy of participants during the recruitment phase of the study, the screening survey recruitment email will be sent out to the staff by the school gatekeeper at each location with a link to a google forms survey. This survey is anonymous until the respondent voluntarily provides contact information indicating the desire to participate in the main part of the survey. The google forms survey does not automatically collect email addresses that could tie the respondent to the study. No administrator or school gatekeeper at the cooperating schools will be able to access or determine who responded to the survey. The contact information for potential study participants is recorded in a google sheets document that is only accessible to the researcher via password. This document is not shared with anyone else, and it is not a public document.
In order to protect the privacy of participants during the main part of the study, interviews will be conducted and arranged at a time and location of preference for the participant and where others will not easily overhear the conversation. If done virtually, I will locate myself in a room with a closed door so others on my end will not easily overhear the conversation, and I will recommend to the participant to do same. Any contact via email or telephone will be done with the same consideration for where the conversations are occurring to minimize the risk of anyone overhearing the conversation. Emails and email accounts of the researcher are password protected and contact will be made to the participant via the participant-provided contact information.

Data files including interviews, transcriptions, and coding will be stored in the researcher’s password-protected computer and not accessible to any other individuals. Backup files will be stored in Dropbox, and the individual folders of data will be password protected as well. Upon transcription of the recording into a written file, the participant name and cooperating school name will be converted into a pseudonym for the remainder of the study. The researcher will keep a password-protected file with the participant name and pseudonyms, which will remain confidential, accessible only to the researcher. The data will be analyzed using an online analysis software, which is also password protected. Any data uploaded to be analyzed will contain pseudonyms. The researcher will maintain the data for three years upon completion of the study per federal regulations. The data will be used to complete the doctoral dissertation requirements and may be used to write future journal articles, blogs or books; inform the direction or creation of future studies; inform the creation of curriculum or courses; be presented at conferences or speaking engagements; or referenced during professional development or training. Cooperating schools may also invite the researcher to give a presentation on the findings and outcomes of the study. Given the inclusion of multiple participants from multiple cooperating schools/districts, the identification of any one participant or school will not be likely at these presentations, and any references to the outcomes of the study will be made in the aggregate without reference to a particular school or participant, even by pseudonym. However, at all times, participant names will remain confidential.

Researcher notes, physical copies of the executed informed consent, and handwritten memos will be kept in a locked file box in the researcher’s office, and the researcher only will have the key.

Interview recordings will be digitally stored as data files for transcription into a written digital file. Images provided to the researcher as photographs or screenshots for the artifact activity will be maintained digitally. All digital data files will be maintained with password protection as described above. Any third-party services for transcription will be expected to execute a non-disclosure and confidentiality statement prior to performing services for the researcher and to return all original digital files or destroy any copies of same in their possession. Any academic peer review or rater test will use only data that contains pseudonyms. The researcher will maintain copies of all executed agreements regarding same. Actual recordings and participant generated images will not be shared or used in subsequent publications or presentations but may be described for the audience without reference to information that may identify the participant. These recordings and digital files will be destroyed and deleted by the researcher after three years.
• While the researcher will maintain confidentiality with all due care, the limits to confidentiality include the participant’s voluntary disclosure to third parties or discussions of the study and participation in the study with others.

Voluntary Nature of the Study: Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or the school in which you work. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

How to Withdraw from the Study: If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you, including audio/video recordings or any photographs, will be destroyed immediately and will not be included in this study.

Contacts and Questions: The researcher conducting this study is Judith Swanson Bethge. You may ask any questions you have now. If you have questions later, you are encouraged to contact her at jbethge@liberty.edu or [redacted]. You may also contact the researcher’s faculty advisor, Dr. Ellen Lowrie Black, at elblack@liberty.ed.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, you are encouraged to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 1887, Lynchburg, VA 24515 or email at irb@liberty.edu.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

☐ The researcher has my permission to audio-record/video-record me as part of my participation in this study.

***A PDF or digital copy of my signature shall have the same effect as my original signature if I return this consent to the researcher via email.

________________________________________  Date
Signature of Participant

________________________________________  Date
Signature of Investigator
To whom it may concern:

Judith Bethge has my permission to use the Learning Activities Survey (LAS) as developed by King (2009), as Ms. Bethge modified it for her study, in her dissertation research project currently titled, “The Power of Transformation: A Grounded Theory Study of Cultivating Teacher Growth Mindset Towards Student Intelligence”.


Sincerely,

Dr. Kathleen P. King  
CEO & Founder, Transformation Education LLC

Professor & Program Coordinator, Higher Education and Policy Studies  
University of Central Florida
Appendix F

Survey on Teacher Experiences of Mindset Transformation

This survey is part of my doctoral research project on teacher experiences of mindset transformation. By clicking "yes" below, you are agreeing to participate in an initial screening survey to determine if you meet the parameters of the study. A consent document outlining the procedures and risks of the study was provided as a linked Google Doc in the email you received regarding this study. Please review that document if you have not already. Your participation is totally voluntary and anonymous at this point. If you meet the parameters of the study, you will be able to provide your contact information at the end of the survey to express your interest in moving forward in the study.

Thank you for your time and consideration to participate in this doctoral research study on teacher mindset transformation. This initial survey process may take 5-10 minutes to complete depending on your level of familiarity with the Google Forms product. Please make sure to click submit at the end to ensure your response is recorded. If you do not click submit, no response will be recorded for the researcher.

If you decide to submit your contact information at the end of the survey, the researcher will follow up with you to determine if you would like to continue in the research study. By giving your name and contact information, you will no longer be anonymous, but your identity will remain confidential. If you are selected to participate in the study, you will receive another copy of informed consent document to sign and return to the researcher. Information you provide in this screening survey will be included in the data analysis phase of the study.

The survey also has three main parts: (1) demographic background (2) questions on mindset and (3) experiences around transformation.

As the researcher, I value your opinions, experiences, and insights and believe this study to be of value for supporting teachers in helping students to learn and achieve success. I want to get thoughtful input from a wide-range of professional high school educators. Please be as candid as possible in your answers. If you have any questions about my background prior to starting this survey, please contact me:

Judy Bethge  bethge@liberty.edu
Doctoral Candidate, School of Education, Liberty University

* Required

1. By clicking "yes", you are agreeing to participate in the initial screening survey to determine if you meet the parameters of the study and affirm you have reviewed the informed consent document electronically.*

   Mark only one oval.
   
   Yes
   
   No  Skip to "Thank you for your responses. Please click submit to complete the survey process. Unfortunately, you do not meet the criteria of this study. Please accept my sincerest appreciation for your time."

Demographic Questions

These questions will help me to know if I have collected insights from a wide group of people in the teaching profession.
2. How many years have you been teaching? *
   Mark only one oval.
   ☐ 1-5
   ☐ 6-10
   ☐ 10-15
   ☐ 15-20
   ☐ 21+

3. What type of school do you teach in? *
   Mark only one oval.
   ☐ Public
   ☐ Private
   ☐ Charter
   ☐ Other: ________________

4. Please identify your gender: *
   Mark only one oval.
   ☐ Male
   ☐ Female
   ☐ Prefer not to say

5. Please identify your race/ethnicity. You may select more than 1 response. *
   Check all that apply.
   ☐ American Indian or Alaska Native
   ☐ Asian
   ☐ Black or African American
   ☐ Native Hawaiian or Other Pacific Islander
   ☐ White-Not Hispanic or Latino
   ☐ White-Hispanic or Latino
   ☐ Prefer not to say
   ☐ Other: ________________
6. Please identify your age bracket: *
Mark only one oval.

- 21-24
- 25-29
- 30-39
- 40-49
- 50-59
- 60-69
- Over 70
- Prefer not to identify.

7. Do you primarily teach high school students (grades 9-12)? *
Mark only one oval.

- Yes
- No  

Skip to "Thank you for your responses. Please click submit to complete the survey process. Unfortunately, you do not meet the criteria of this study. Please accept my sincerest appreciation for your time."*

Part 1: I would like you to think about your ideas of student intelligence as you are completing this section of the questionnaire.
This questionnaire has been designed to investigate ideas about intelligence. There are no right or wrong answers. We are interested in your ideas.

Using the scale provided, please indicate the extent to which you agree or disagree with each of the following statements by clicking the number that corresponds to your opinion.

1 Strongly Agree
2 Agree
3 Mostly Agree
4 Mostly Disagree
5 Disagree
6 Strongly Disagree

8. Your students have a certain amount of intelligence, and they can’t really do much to change it. *
Mark only one oval.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

9. Your students’ intelligence is something about themselves that they can’t change very much. *
Mark only one oval.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>

https://docs.google.com/forms/d/1E1owYF-Qy5ioOHd0DIOGua0bjJmolumQ_6frKic6Xwo/edit
10. To be honest, your students can’t really change how intelligent they are. *
Mark only one oval.

1 2 3 4 5 6
Strongly Agree ☐ ☐ ☐ ☐ ☐ ☐ Strongly Disagree

11. Your students can learn new things, but they can’t really change their basic intelligence. *
Mark only one oval.

1 2 3 4 5 6
Strongly Agree ☐ ☐ ☐ ☐ ☐ ☐ Strongly Disagree

This section of the survey is about the experiences of teachers as they learn new or different concepts about student learning and intelligence.
I am looking at two aspects of this experience: first, how does the teacher’s perspective about student intelligence change, and second, what contributes to this change. Only with your help can we learn more about this.

12. Since you have been teaching, do you believe you have experienced a change in your perspective about concepts of intelligence? *
Mark only one oval.
☐ Yes
☐ No Skip to "Thank you for your responses. Please click submit to complete the survey process. Unfortunately, you do not meet the criteria of this study. Please accept my sincerest appreciation for your time."

Untitled Section

13. Briefly describe this change of perspective. *

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

https://docs.google.com/forms/d/1E1owYF-QySioOJh20dDcOGuv0bjllnQ_6PcRinc6Xwc/edit
14. Some statements that could describe aspects of this change are listed here. Thinking about your beliefs, as a professional educator, concerning your students' intelligence, check off any statements that may apply.*

Check all that apply.

☐ I had an experience that caused me to question the way I normally act.

☐ I had an experience that caused me to question my ideas about what it means to be intelligent or my expectations of what intelligence looks like.

☐ As I questioned my ideas, I realized I no longer agreed with my previous beliefs or expectations about intelligence.

☐ Or instead, as I questioned my ideas, I realized I still agreed with my beliefs or expectations about intelligence.

☐ I realized that other people also questioned their beliefs.

☐ I thought about acting in a different way from my usual beliefs and expectations.

☐ I felt uncomfortable with traditional beliefs and social expectations about what it means to be intelligent.

☐ I tried out new conceptions of intelligence so that I would become more comfortable or confident in them.

☐ I tried to figure out a way to adopt these new ways of acting regarding conceptions of intelligence.

☐ I gathered the information I needed to adopt these new ways of acting.

☐ I began to think about the reactions and feedback from my new behavior.

☐ I took action and adopted these new ways of acting.

☐ I do not identify with any of these statements above.

15. Thinking back to when you first realized that your views or perspective had changed, what did learning about mindset and concepts of intelligence have to do with it? *

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

16. Some possible contributors of such change are listed below. Please check off all those which may have played a part in this change of perspective.*

Check all that apply.

☐ a person who influenced this change

☐ part of a professional development activity that influenced the change

☐ a policy or administrative directive or initiative

☐ an experience in your own classroom or teaching

☐ a significant change in your life that influenced the change

☐ Other: ____________________________
17. Thinking back to when you first realized that your views or perspective of intelligence had changed, what did your being a professional educator or teacher in a school have to do with the experience of change? *

18. Would you characterize yourself as one who usually thinks back over previous decisions or past behavior? *
Mark only one oval.
☐ Yes
☐ No

19. Would you say that you frequently reflect upon the meaning of your professional work for yourself, personally? *
Mark only one oval.
☐ Yes
☐ No

Thank you. Your responses indicate that you may qualify for continued participation in this study. Please provide your name, best phone number, and email below and the researcher will follow up with you. Providing your name and contact information means you are no longer anonymous, but your information will be held confidentially by the researcher and you will not be identified by your real name.
Your continued participation is greatly valued and totally voluntary.

20. First and Last Name *

21. Best Telephone Number *

22. Email Address *

Stop filling out this form.

Thank you for your responses. Please click submit to complete the survey process. Unfortunately, you do not meet the criteria of this study. Please accept my sincerest appreciation for your time.
Appendix G

Interview Guide

1. Teaching:
   a. Why did you become a teacher?
   b. How would you describe your teaching style?
   c. How do you view your purpose as a teacher?
   d. Describe what influenced you in becoming a teacher?
   e. What do you think has shaped your views of teaching and your role?

2. Mindset
   a. How do you view your students?
   b. What do you believe about student potential?
   c. How do you define intelligence?
   d. How would you describe your mindset today about student intelligence?
   e. Has that always been the case? If not, when did it change?
   f. How did your mindset change?
   g. What did you believe before about student’s intelligence?
   h. How would you characterize your own mindset?

3. Transformation factors
   a. Describe the process you experienced in that change?
   b. What do you think contributed to that change?
   c. How would you characterize the process of change?
   d. When did you first realize this change had happened?
   e. Did you encounter any difficulties in the process?
   f. Describe these difficulties.
   g. How did you overcome these difficulties?
   h. What do you think was most instrumental?
   i. How has this change affected your teaching?
Appendix H

Teacher-Selected Photograph and Reflection Prompt

1. Think about something in your classroom or in your digital classroom that reflects your current mindset view towards your students’ intelligence. Please take a picture of that something with your phone or computer and share it with me.

2. Described to me why you chose this example and how it reflects your current mindset about your students’ intelligence.

3. How it would have looked different if you had not experienced a shift in your thinking about your students’ intelligence?
Appendix I

Metaphor Activity (Images purchased from Shutterstock)
Email to Gatekeepers for Initial Teacher Survey

Greetings!
Thank you for your willingness to allow me to partner with you for this dissertation study. Please send out the following email blurb to your high school teachers inviting them to voluntarily participate in this survey through the included link:

Your input is desired! As part of the requirements for a doctoral degree, a graduate student is seeking participants for a research study to better understand teacher mindsets about intelligence. The study would entail this screening survey, an interview with the researcher, and a recommendation from you for professional development. More information on the study procedures and consent and a survey to see if you fit the study is found by clicking here. If you are a high school teacher and are willing to participate, the first page of the survey link will provide more information and seek your consent to participate. Questions? Feel free to contact the researcher directly: Judy Bethge (omitted) or jbethge@liberty.edu Thank you for considering!
Appendix K

Member Checking Directions:
Thank you for participating in this research study. An important part of the study process is providing you an opportunity to review your interview transcript and provide feedback. Attached to this email is a Word Document of your interview transcription. Please know that it is totally normal to feel a little self-conscious or embarrassed as you read through your interview transcript. I have cleaned up the transcripts a bit to remove some of the natural filler words we use when speaking and some minor grammar glitches, but I recognize it is still a humbling process to read your own words. Any sections of the interview that are not central to the substance of the study will not be included in your transcription and simply be referenced in brackets. Within a week, please review your transcript, save a copy, and return the edited document back to my email: jbethge@liberty.edu

What I am NOT looking for:
- Please don’t worry about grammar or any stray filler phrases.
- Please don’t be overly critical of your responses. We can always think of things we wished we would have said slightly differently but didn’t. That is OK.
- Don’t correct spellings. Names will be changed to pseudonyms. Spelling will be cleaned up prior to finalization.

What I AM looking for:
- Please turn on track changes if you make any comments to the transcript.
- Please review the transcript to determine if it is a good representation of your thoughts and beliefs.
- You can provide any comments in the margins to clarify your answers using track changes.
Appendix L

PROCESS
Moment of realization
Spark or recognition of something off in their thinking about intelligence; Eye-opener to something different

Experimenting
Trying out ideas with students, exploring concepts in classroom, figuring out how new beliefs or ideas work

Reflecting
Internal self-reflection and thinking about impact of ideas, meaning of them for practice as teacher

Equipping
Activities and tools; classes; prof develop, formal education, books, podcasts

Empowered
Feelings, confidence and belief in ability to act with and utilize new thinking in classroom

Application
Making intentional choices about instruction and purpose in the classroom based off of teacher mindset towards student intelligence; new focus and purpose in classroom/learning

Done in Relationship with Others
Interaction with others/peers/students/admin/family part of process

CONTRIBUTIONS TO CHANGE
Development and Learning
PD, classes, learning, book, trying new things, research

Dialogue
Conversation and input from others

Event
Recollection of a specific time, occurrence, or situation that triggered process

Observing Others
Observing other teachers or people as models

Self-Reflective Processes
Engaging in self-reflection/awareness/internal thinking about ideas, beliefs, actions

Support
Receiving help, ideas, material, assistance, encouragement, support from others
MOST INSTRUMENTAL IN CHANGE
Administration
school leader or admin positive involvement

Experiences with Students

Self Factors
Beliefs, thinking, motivations of participant

Support and Relationship with Others
support and connection from peers, friends, family, prior teachers etc

CHANGE AFFECTED TEACHING
Learning Expectation
what you think is possible for students, belief in student ability to achieve and do more; students are capable of growing

Reflective Practice
internal self-reflection and thinking about impact of ideas, meaning of them for practice as teacher; thinking about how to improve

Relationships
focus on connection and building relationships with students important priority

Teaching Strategies
trying different things and more ways to help students learn and be successful; giving more options to students
Appendix M

Theoretical memos: Internal Processing Memo and In Situ Memo

Narrative Memo of my Internal Processing

To conduct the data analysis, I utilized dedoose.com, an online software for qualitative and mix-methods data analysis. After each step in the coding process, a copy of the coding project was created in Dedoose as a backup of that step in the event that I needed to return to a prior stage in the coding. I organized the transcribed interviews by question and participant. This connected each answer to the participant to permit a vertical analysis within an individual’s entire interview but also divided the responses by questions to permit a comparative horizontal analysis across participants by question. The three activities were uploaded in the same manner as well as the participant’s pre-screening data. A total of 29 excerpts for each of the participants was coded across the 14 participants for a total of 406 coded excerpts in total. During the initial open coding process, I coded by question across the 14 participants in order to be consistent in application of codes. Code libraries built over the 14 responses and were kept discrete to each question. After coding the 14th response, I want back and reviewed coding from the beginning responses to ensure completeness of coding in that question across the responses. To avoid coding fatigue affecting the application of codes by order of participant interview, I alternated coding from Andre to Naomi and then backwards from Naomi to Andre in the next question. I also chunked up the initial coding application over several days, letting the process and emerging ideas marinate over time as well as memoing my impressions of categories, connections, and relationships.

Initial open coding heavily utilized in vivo codes to capture the words and meaning of the participants as well as the situational factors presented in their responses. After the initial coding of the interviews, three activities, and qualitative pre-screening survey questions, there were over 1,800 code applications. A secondary step in the open coding process combined, renamed, and sorted similar codes within a question’s responses to make a more manageable workflow. I printed a hard copy of the codes and sub-codes for each question and tried to make sense of these initial open codes. This initial open coding process still produced an almost unwieldy amount of information. However, the connections and integration of concepts from the conceptual framework and literature review were jumping out of the data but I was trying hard to suspend judgment and stay open for surprises and insights to emerge. The idea that the transformative process was a learning process and done in relationship with other people was screaming from the data, but I felt like the term learning process was too generic and encompassing of a characterization to be of any value.

I then realized that several of the questions were more key in answering the central research question and supporting questions, but that the other questions would provide a check and support for different aspects. This helped me to focus in during the axial phase of coding to look at how the questions built the insights into the research questions. The interview protocol was divided into three main areas of questions: (1) philosophy of teaching, (2) mindset beliefs, and (3) transformation process. In the middle category of mindset beliefs, teachers responded with answers reflecting both a process of change and substance of change in response to the
question “How did your mindset change?” I utilized some of the strategies including asking questions of the questions and looking for alternative meanings. I realized that the respondents had interpreted the question with two meanings for the word “how”. Some of the responses focused on the process of how their mindset towards intelligence changed while others focused on the substance of change in their mindset. This was a way that I did not anticipate for participants to interpret the question but it provided surprising insights about the process of transformation as not just something gone through but also a substantial change.

The second key question asked participants to: “Describe the process you experienced in that change.” This question produced the largest amount of code application but also was central in the emergence of categories and factors in the process of change experienced by the teachers. Because it had so many individual codes during the open coding phase, I actually used a process of elimination to develop the secondary open coding and axial coding. The obvious concepts were first grouped and named, including reflection, done in relationship with others, and what became equipping.

A third question looked for factors that impacted the transformation. In asking “What do you think contributed to that change?”, I was able to identify a variety of influences on the process of change. But then I asked about the transformation process, “What do you think was most instrumental?”, participants were forced to narrow into the most significant contributors to the transformation process.

The last key interview question looks to explore the outcomes of the transformation and answers SQ3. In asking “How has this change affected your teaching?”, I was able to elicit some surprising responses that I was not anticipating. While SQ3 asks about the role of professional development specifically, participants answering this interview question were not primed to focus on that aspect. The aspect of professional development’s impact on the process was ascertained through other questions.

I made several preliminary lists and sketches of concepts that were emerging from the process, trying different ways to integrate them and looking at the relationships between them. Common descriptors included: spark, moment, explore, experience, empowered, adjust, try, reflect, energize, relate, community, and relationships. I included some images of my brainstorming in progress below. Nothing was resonating in how to visual the model for my audience. I experimented with abstract shapes, a bowl shaped design with relationship as the base, and a web-looking image.
Then, as I was sitting in my family room typing and working during the Christmas holiday, I looked up at these Christmas lights I had hung up thinking how much I enjoyed them and were drawn to them. I had to go out and buy a bunch of replacement bulbs because there were a lot of the bulbs that were not working. When I connected in the new bulbs, they lit up and were warm. It made me think about how experiencing a transformation is like turning on the lights. It was then that I realized that powering the lights in my study were the relationships my participants were experiencing—both professionally as teachers with other adults but also within their classroom communities with students. Everything the participants were sharing was happening with other people throughout the process. In my research study protocol, I was very impressed by the significance of the metaphor activity with participants and how using an image to describe something else gave more meaning than just asking questions. So I looked at the light bulb as a metaphor and wondered how I could use this common object to describe with more meaning and dimension the mindset transformation process. I included a picture of the inspiration bulbs below.
From there I started ordering the process and determining the relationships between concepts, thinking how the flow and circuit to create light in a bulb functions. I sketched it in my notes.

I reordered the *in vivo* and original codes to align under these categories, eventually combining exploring into experimenting which fell under experiences as I could not distinguish a difference between exploring and the experimentation. It was the experimenting and reflection that worked together in the concept of experiences—it was the doing and the thinking about doing that was the mill in which participants refined their beliefs and strengthened their understanding with action. And relationships were integral to the experiences.

I then conducted a rater test focusing on the four questions that were most connected to the central question and supporting questions of the study. Because I had so many initial *in vivo* codes, the rater used only the conceptual level codes. Those outcomes are detailed in the main body of the dissertation in Chapter 4.

After receiving confirmation that my coding application made sense to a third party and was consistent, I looked for corroboration of the process model both horizontally across participants and vertically within each participant’s whole interview. I used comparative data within a data excerpt across all 14 participants but then looked for the pattern within each person’s individual story and interview. The goal was to methodically review the fit of the model over the participants. After reviewing both the horizontal and vertical fit of the model, I sketched a final version of the model and then hired a designer to create a graphic representation of same for publication.

*In Situ Memoing*

This is a sample screenshot image of the Dedoose program for memos within the data. They are linked to specific passages or participants, but collected in one location.
### Appendix N

#### Audit Trail

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/7/17</td>
<td>IRB Approval</td>
<td>Exciting process. Being a lawyer helped make it through this process. Just had to revise 1 time.</td>
</tr>
<tr>
<td>7/4/17</td>
<td>Marc passed away.</td>
<td>My sister’s husband died suddenly of a heart attack while we were together on 4th of July vacation. Traumatic experience. My brain was not working. Other people need me. Need to put this aside.</td>
</tr>
<tr>
<td>8/4/17</td>
<td>Pilot Interviews</td>
<td>Conducted 2 pilot interviews with former colleagues. Was able to try out and confirm the flow of my interview questions and activities. Minor adjustment to clarify 2 questions.</td>
</tr>
<tr>
<td>9/7/17</td>
<td>Reminder emails to gatekeepers</td>
<td>Sent emails 1 week prior to launch to remind gatekeepers and keep study on radar.</td>
</tr>
<tr>
<td>9/12/17</td>
<td>Email gatekeepers with study recruitment link and blurb</td>
<td>Sent email with recruitment blurb and survey link. Nervous and excited.</td>
</tr>
<tr>
<td>9/26/17</td>
<td>Second email to gatekeepers to resend recruitment link and blurb</td>
<td>Resent email with recruitment blurb and survey link. Some responses started coming in. Hopefully more with second.</td>
</tr>
<tr>
<td>10/27/17</td>
<td>Individual emails to gatekeepers to resend recruitment link</td>
<td>Still need a few more participants, sent individual emails to gatekeepers to try and get the last couple of participants. Praying and anxious.</td>
</tr>
<tr>
<td>9/14/17-11/1/17</td>
<td>Received screening survey responses</td>
<td>Excited to see people wanting to participate. Nervous that there are not</td>
</tr>
</tbody>
</table>
more. Found out I need to have knee surgery—pushed it out to 11/8 so I can get interviews done. I hope.

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Task Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/29/17-11/13/17</td>
<td>Scheduled and Conducted teacher interviews &amp; activities</td>
<td>Connected via email; scheduled a date and time convenient for them; in their classrooms; I drove all over the place! After about the 5th interview, the stories started having predictable themes. Super inspiring stories and really amazing people.</td>
</tr>
<tr>
<td>10/17-11/20/17</td>
<td>Transcribed</td>
<td>Used upwork.com to hire a transcriber. Best use of my money!</td>
</tr>
<tr>
<td>10/17-11/22/17</td>
<td>Sent for member-checking</td>
<td>Reviewed and sent out transcripts to participants with directions. Rolling basis. Realized I had forgotten the last 3 interview questions on my first interviews. Followed up with participants to complete. I was nervous and didn’t flip the page.</td>
</tr>
<tr>
<td>11/20-11/22/2017</td>
<td>Review and Format interviews for upload</td>
<td>Used a template to better organize the interview data for upload. Made sure data sets across all formats were complete.</td>
</tr>
<tr>
<td>12/4/17-12/6/17</td>
<td>Uploaded to Dedoose for analysis</td>
<td>Took time to review and figure out how to get it uploaded right. Frustrating. Had my small group pray over it.</td>
</tr>
<tr>
<td>12/6/17-12/18/17</td>
<td>Completed initial coding analysis</td>
<td>This took time to go through all 14 participants across all the data sources. A lot of information—it was overwhelming.</td>
</tr>
<tr>
<td>12/18/17-12/26/17</td>
<td>Created Model</td>
<td>Several floated but didn’t materialize. After sitting with the data—it started to emerge.</td>
</tr>
<tr>
<td>Date</td>
<td>Event</td>
<td>Details</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>12/17/17</td>
<td>Started writing Chapters 4 and 5</td>
<td>Started with writing the participant backgrounds…this kept them and their stories front of my mind. I imagined each of them as I wrote.</td>
</tr>
<tr>
<td>12/28/17</td>
<td>Rater Test</td>
<td>Set up test in dedoose. Dr. Laura King, PhD was my rater. Good experience. Hard.</td>
</tr>
<tr>
<td>12/28/17</td>
<td>Refined Model and Analysis</td>
<td>Image of lightbulb as visualization of model came to me. The power of metaphor as a data collection tool could be also be helpful in explaining the process more fully.</td>
</tr>
<tr>
<td>12/26-12/31/17</td>
<td>Continued writing Chapters 4 and 5</td>
<td>I wrote 100 pages! I was locked on every day. My eyes hurt and my back hurts. But I have to get it done.</td>
</tr>
<tr>
<td>1/1/18-2/18</td>
<td>Continued refining analysis</td>
<td>Struggled with really understanding SQ2/how to put together. A break for NYE and having to explain it to someone at the party sparked an idea.</td>
</tr>
<tr>
<td>1/1/18</td>
<td>Created cross-analysis charts</td>
<td>Creating visuals to help summarize and explain data super helpful.</td>
</tr>
<tr>
<td>1/2/18</td>
<td>Final edits to Chapters 4 and 5</td>
<td>Draft of final product complete. Off to committee for review. Praise the Lord! The end is in sight!!!</td>
</tr>
</tbody>
</table>
Appendix O

Dedoose Training Center Test Data
Test: Test-Rater
Type: Code Application
Taken By: lking, On: 12/27/2017
Pooled Kappa: 0.844320377925702

Test Description: 4 questions, 6 participants

Excerpt: 1 From Media: TEACHER ID LETTER: C-Camille, Location: 14527 - 14777
  Question: MOST INSTRUMENTAL IN CHANGE; Answer: I have no idea. I am not certain exactly what this means. I guess I just practiced it and did it over and over until it wasn’t something I had to think about anymore, just something I automatically did.

<table>
<thead>
<tr>
<th>Code Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainer Codes</td>
</tr>
<tr>
<td>MOST INSTRUMENTAL IN CHANGE</td>
</tr>
<tr>
<td>Self Factors</td>
</tr>
</tbody>
</table>

Excerpt: 2 From Media: TEACHER ID LETTER: C-Camille, Location: 11059 - 11583
  Question: CONTRIBUTIONS TO CHANGE; Answer: I think just honestly the whole experience of where I worked before. I think working with those kids and we’re constantly reflecting on like our part in the situation and our part in their education and how their actions are related with how we are in the classroom just kind of all came together you know. Like if you’re constantly reflecting on how you can change things then. It’s a little deeper than just going into the classroom, teaching a lesson, and walking out you know.

<table>
<thead>
<tr>
<th>Code Applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainer Codes</td>
</tr>
<tr>
<td>Self-Reflective Processes</td>
</tr>
<tr>
<td>Observing Others</td>
</tr>
<tr>
<td>CONTRIBUTIONS TO CHANGE</td>
</tr>
</tbody>
</table>

Excerpt: 3 From Media: TEACHER ID LETTER: A-Andre, Location: 14081 - 14889
  Question: PROCESS OF MINDSET CHANGE; Answer: I think the process in the change of my mindset is learning the hard way. You know, like understanding that like one of my favorite things we just talked about in the Mindset Committee was like just because something hasn’t been done doesn’t mean there is not a solution for it and I think like a lot of times as a teacher, because there are so many of us, you just kind of listen and do what you have to do rather than you know like what are other possibilities for us to reach kids, what are other possibilities for us to you know be better teachers? What
can we do you know to make this school you know I guess you’d say on a higher level? So, I think not being so much like followers and just like kind of being a little bit more innovative you know.

<table>
<thead>
<tr>
<th>Code Applications</th>
<th>Trainee Codes</th>
<th>Trainer Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROCESS OF MINDSET CHANGE</td>
<td>PROCESS OF MINDSET CHANGE</td>
<td>Done in Relationship with Others</td>
</tr>
<tr>
<td>Reflecting</td>
<td>Reflecting</td>
<td>Empowered</td>
</tr>
<tr>
<td>Empowered</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Excerpt: 4 From Media: TEACHER ID LETTER: A-Andre, Location: 18146 - 18375**

*Question: MOST INSTRUMENTAL IN CHANGE; Answer: Being more open-minded to change but also understanding if I don't keep up with change in our education then I am going to be passed by and my influence may not be so worthy anymore*

<table>
<thead>
<tr>
<th>Code Applications</th>
<th>Trainee Codes</th>
<th>Trainer Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOST INSTRUMENTAL IN CHANGE</td>
<td>MOST INSTRUMENTAL IN CHANGE</td>
<td>Self Factors</td>
</tr>
</tbody>
</table>

**Excerpt: 5 From Media: TEACHER ID LETTER: C-Camille, Location: 14778 - 15078**

*Question: CHANGE AFFECTED TEACHING; Answer: I think I am a much better teacher because I am prepared for just about anything now and can handle most things pretty much on my own. I also can anticipate outcomes, needs, and things of nature, which is pretty huge. It helps a lot to be able to do that.*

<table>
<thead>
<tr>
<th>Code Applications</th>
<th>Trainee Codes</th>
<th>Trainer Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE AFFECTED TEACHING</td>
<td>CHANGE AFFECTED TEACHING</td>
<td>Teaching Strategies</td>
</tr>
</tbody>
</table>

**Excerpt: 6 From Media: TEACHER ID LETTER: B-Brian, Location: 9052 - 9402**

*Question: CONTRIBUTIONS TO CHANGE; Answer: Professional development I’ve got at ideas from our administrators, other conferences I’ve been to, the conversations I’ve had with other teachers mostly about that process, and books I’ve read or maybe podcasts I’ve heard things like this that I’ll watch and listen to.*

<table>
<thead>
<tr>
<th>Code Applications</th>
<th>Trainee Codes</th>
<th>Trainer Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Reflective Processes</td>
<td>CONTRIBUTIONS TO CHANGE</td>
<td>Support</td>
</tr>
<tr>
<td>CONTRIBUTIONS TO CHANGE</td>
<td>Development and Learning</td>
<td>Dialogue</td>
</tr>
<tr>
<td>Development and Learning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Excerpt: 7 From Media: TEACHER ID LETTER: C-Camille, Location: 9974 - 11058

**Question:** PROCESS OF MINDSET CHANGE; **Answer:** It was like a clinical setting so we were constantly doing, what do they even call them I can’t remember, oh supervisions and I think like therapists do them because it was like a clinical setting so it’s basically where you sit and talk about your part in whatever is going on in your classroom and how your like values and your thoughts and your own perceptions and your own like feelings toward something is being projected onto your students and how they are taking that on and then reflecting it back to you. So, that kind of really struck home with me because I never really thought about it like that and I know that if I’m excited about something they’ll be excited about something, but I never thought about it in the sense of like everything else you know that you teach them. Like, if you aren’t emulating, and like obviously I’m not perfect, but if you’re not emulating everything that you say to them then how can you expect them to even know how to do it because they don’t have any examples to see. Do you know what I mean?

| Code Applications |
|-------------------|------------------|
| **Trainer Codes** | **Trainee Codes** |
| Equipping         | PROCESS OF MINDSET CHANGE |
| PROCESS OF MINDSET CHANGE | Done in Relationship with Others |
| Done in Relationship with Others | Moment of Realization |
| Moment of Realization | Reflecting |
| Reflecting        | Experimenting |
| Experimenting     | Application |
| Application       | |

Excerpt: 8 From Media: TEACHER ID LETTER: A-Andre, Location: 14890 - 16184

**Question:** CONTRIBUTIONS TO CHANGE; **Answer:** I’d say just - I’ve gone to like Eduardo Briceno like I’ve gone to a couple of his things, Carol Dweck. I mean just like different - once I kind of got on Twitter and kind of just hashtag you know growth mindset works and growth mindset networks, I feel like you know kind of like yeah, I believe that, I agree with that, I like that. Well here’s a good activity. I think just the more I’ve been exposed to it the more I made that change. I think a lot of you know teachers who aren’t growth minded, they kind of just lock themselves in their room and they do it this way. I’ve done it for 25 years. I’m not going to change. Whereas, I’m kind of doing like an entire - like we’re going to this whole like almost one-to-one model next year. A lot of teachers are kicking back on that. Like me I’ve got to be growth minded and I’m going to be teaching for another 25 years. It’s kind of the way we’re going. Every kid is going to have a Chromebook in here and you know like nothing is going to be like - I’m not going to be making copies. It’s going to be turned in digitally and it’s just different. You know, like how do I respond to that? Am I in the circle or am I out? (referring to artifact on wall) You know, that’s kind of the way we got to go.

| Code Applications |
|-------------------|------------------|
| **Trainer Codes** | **Trainee Codes** |
| Self-Reflective Processes | Self-Reflective Processes |
| Observing Others | Observing Others |
| CONTRIBUTIONS TO CHANGE | CONTRIBUTIONS TO CHANGE |
| Development and Learning | Development and Learning |

Excerpt: 9 From Media: TEACHER ID LETTER: B-Brian, Location: 11449 - 11621
Question: MOST INSTRUMENTAL IN CHANGE; Answer: Administration pointing the direction of the new change they wanted to see, and then the teachers following through with it.

Code Applications

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOST INSTRUMENTAL IN CHANGE</td>
<td>MOST INSTRUMENTAL IN CHANGE</td>
</tr>
<tr>
<td>Administration</td>
<td>Administration</td>
</tr>
</tbody>
</table>

Excerpt: 10 From Media: TEACHER ID LETTER: B-Brian, Location: 11622 - 11790

Question: CHANGE AFFECTED TEACHING; Answer: It’s had a profound impact on the types of feedback I give and on my groupings for activities (to reflect differentiation).

Code Applications

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE AFFECTED TEACHING</td>
<td>CHANGE AFFECTED TEACHING</td>
</tr>
<tr>
<td>Teaching Strategies</td>
<td>Teaching Strategies</td>
</tr>
</tbody>
</table>

Excerpt: 11 From Media: TEACHER ID LETTER: B-Brian, Location: 8403 - 9051

Question: PROCESS OF MINDSET CHANGE; Answer: It’s helped me to reach more students because - not that I ever tried to just teach one subset of students - but when I have a growth mindset, it’s just more second nature to reach out to every student and to focus on all of them and then not be frustrated with students that are at a lower level at that time, but instead see where they’re at and then not be surprised and say how can you take one more step and really try to just push different places, different things. So, part of that is differentiation seeing how I teach and really trying to see where they’re at and give feedback appropriately.

Code Applications

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROCESS OF MINDSET CHANGE</td>
<td>PROCESS OF MINDSET CHANGE</td>
</tr>
<tr>
<td>Experimenting</td>
<td>Reflecting</td>
</tr>
<tr>
<td>Application</td>
<td>Empowered</td>
</tr>
</tbody>
</table>

Excerpt: 12 From Media: TEACHER ID LETTER: A-Andre, Location: 18376 - 18566

Question: CHANGE AFFECTED TEACHING; Answer: It has me more critical of myself and humbled me as well. I think a light-bulb comes on a lot more now that I am less of a fixed-minded educator.

Code Applications

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective Practice</td>
<td>Reflective Practice</td>
</tr>
<tr>
<td>CHANGE AFFECTED TEACHING</td>
<td>CHANGE AFFECTED TEACHING</td>
</tr>
</tbody>
</table>

Excerpt: 13 From Media: TEACHER ID LETTER: G-Goodall, Location: 11081 - 12609
Question: PROCESS OF MINDSET CHANGE; Answer: The process itself being in that class and that was like the moment. I mean I’m just thinking of other people in my life at that time that had that skill like our next-door neighbor. He was a custodian for a school but like he knew how to fix our organ that we had at our house. It was like just because he knows how to fix things and it clued me into that like, wow like he’s really intelligent. Like he doesn’t have a college degree but that doesn’t define what your intelligence is and so just learning - like I really just took to heart that teacher was really passionate about this and really like just did a good job teaching us that whole understanding of intelligence and I don’t remember what assignments necessarily we did with that but like I just remember whatever that process was that she had with teaching us about intelligence was really effective because it just blew up my mind at that point. I felt that that was an easy transition. It didn’t make me feel like any less intelligent because like now I do have a college degree that makes me nothing compared all these people now. Like that wasn’t like I didn’t have any self-esteem issues because of it. It was more like optimistic and encouraging because I had so many people in my life that weren’t necessarily deemed intelligent and I felt like I could like lift them up and be like, but you are like and this is why and I’m learning this in school and like this is the real thing and so it was exciting for me.

Excerpt: 14 From Media: TEACHER ID LETTER: G-Goodall, Location: 17965 - 18844

Question: CHANGE AFFECTED TEACHING; Answer: I like to think that it makes me a more relatable teacher and a more approachable teacher. I think that if I thought that those students that weren’t intelligent in my old mindset of intelligence I’d be afraid that I would’ve just like shut them out and kind of been like well you’re just never going to learn kind of thing and it’s made me think about how am I going to make lessons that are more like multiple ways of presenting the same idea I guess. Like not everybody is going to get that first way that you say something or you do something. I’m trying to figure out ways that are different and different learners can relate to. This is my fifth year of teaching so it’s like I’m not that experienced in it and so like having more real-world connections that I can make in order to make it more accessible to all those students.

Excerpt: 15 From Media: TEACHER ID LETTER: G-Goodall, Location: 12610 - 13608
Question: CONTRIBUTIONS TO CHANGE; Answer: I think too like my dad doesn’t have a college degree but my mom does and so like having the juxtaposition like my mom is a pharmacist and my dad has worked plenty of just different jobs in the time and so I think that was like a big role model for me, never realizing that was like a role model for me in that sense, until learning about it and realizing like that two people can coexist and work together and I never viewed my dad as not a smart person like growing up and so it was just like having those examples then when I would come home from school and being able to talk to them and being able to continue that. I think if I had like two parents that both went to college and had professional degrees maybe it wouldn’t have been the same situation. Maybe I would have been under that influence but because I had both aspects of that world it was like a good balance of influence on me then too to continue to encourage that thought process.

Code Applications

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing Others</td>
<td>Self-Reflective Processes</td>
</tr>
<tr>
<td>CONTRIBUTIONS TO CHANGE</td>
<td>Observing Others</td>
</tr>
<tr>
<td>Event</td>
<td>CONTRIBUTIONS TO CHANGE</td>
</tr>
</tbody>
</table>

Excerpt: 16 From Media: TEACHER ID LETTER: F-Felicity, Location: 11714 - 12728

Question: CONTRIBUTIONS TO CHANGE; Answer: Giving birth, child, postpartum depression. Also like I definitely have had world events contribute to it. After the Paris attack what was it two years ago, whenever? I was like no, this can’t happen. I’ve got to teach them about this. We are not going to blink our eyes and say oh my gosh that was horrible, let’s move on. So, we did some things and we did an entire concert to promote peace and they got involved and they wrote their own quote and they had to find their favorite quote about peace and write about. I said if someone were to quote you about peace what would you want that quote to say. Like world events definitely shape what I do and what I teach and I never have a political intent; that’s never the idea. It’s more a good intent. How can you make the world a better place? If you just play this music and don’t know anything about it and don’t share it that’s not going to make it a better place. You have to do something with it and have a purpose.

Code Applications

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing Others</td>
<td>Self-Reflective Processes</td>
</tr>
<tr>
<td>CONTRIBUTIONS TO CHANGE</td>
<td>CONTRIBUTIONS TO CHANGE</td>
</tr>
<tr>
<td>Event</td>
<td>Event</td>
</tr>
</tbody>
</table>

Excerpt: 17 From Media: TEACHER ID LETTER: G-Goodall, Location: 17353 - 17964

Question: MOST INSTRUMENTAL IN CHANGE; Answer: Experiencing students that were different than the type of student that I was. I think that was the biggest eye-opening part of it and then accepting that challenge and figuring out how to connect with them and how to understand a student that things don’t come easily to them always. I mean I had struggles too, but in general most things came easily so really honing in on when I had struggles and how did I get through it or how did I get help to get through it and trying to figure out what would be appropriate for students that struggle more often than not.

Code Applications

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observing Others</td>
<td>Self-Reflective Processes</td>
</tr>
<tr>
<td>CONTRIBUTIONS TO CHANGE</td>
<td>CONTRIBUTIONS TO CHANGE</td>
</tr>
<tr>
<td>Event</td>
<td>Event</td>
</tr>
</tbody>
</table>
Excerpt: 18 From Media: TEACHER ID LETTER: M-Maggie, Location: 6521 - 7304
Question: PROCESS OF MINDSET CHANGE; Answer: When I was working as a paralegal, I remember just not - I stopped reading and I love to read. So, I stopped reading. I just was watching a lot of reality TV and I felt myself feel like “dumber.” I wasn’t engaged in what was going on in the world around me and I wasn’t as excited about things like I am now. I think that that really shifted when I went back to school and I started like talking to people again and engaging in conversations and realizing like, okay I don’t have to just be locked in to this 8-5 job listening to somebody else’s words that’s guiding my entire day. I can actually go out and make a change and do something different for myself and then impact others as well. So, I think it was kind of that like trigger.

Code Applications
<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipping</td>
<td>Equipping</td>
</tr>
<tr>
<td>PROCESS OF MINDSET CHANGE</td>
<td>PROCESS OF MINDSET CHANGE</td>
</tr>
<tr>
<td>Done in Relationship with Others</td>
<td>Moment of Realization</td>
</tr>
<tr>
<td>Moment of Realization</td>
<td>Reflecting</td>
</tr>
<tr>
<td>Empowered</td>
<td>Empowered</td>
</tr>
</tbody>
</table>

Excerpt: 19 From Media: TEACHER ID LETTER: K-Kelvin, Location: 14314 - 15117
Question: MOST INSTRUMENTAL IN CHANGE; Answer: I think just success stories. You know even in my other class where it’s an elective where I get every type of student and those kids were buying in, all levels. It didn’t matter if the student was going to get 100% almost in my class but still like, hey when can I fix this, asking questions because they knew that it would in the long run help them out and then the kid who really struggled probably would’ve failed the class if I had taught it the old way but now with the opportunity to do certain things or to give them different opportunities where it maybe fits them as a student that they’re successful, had a positive attitude, would participate in class like it changes not just their grade but the way they interact with you and other students.

Code Applications
<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOST INSTRUMENTAL IN CHANGE</td>
<td>MOST INSTRUMENTAL IN CHANGE</td>
</tr>
<tr>
<td>Experiences with Students</td>
<td>Experiences with Students</td>
</tr>
</tbody>
</table>

Excerpt: 20 From Media: TEACHER ID LETTER: K-Kelvin, Location: 7973 - 9211
Question: PROCESS OF MINDSET CHANGE; Answer: First off reading the book and just the examples that she provided in Carol Dweck’s book. One of the ones I always go back to is the puzzle where you’re working on an easy puzzle and there’s a hard puzzle and they have like two groups of kids and the kids that are always used to succeeding just wanted the easy puzzle but the kids that have a growth mindset want to work on that hard puzzle. We’re just looking at it when we do presentations and things and I talk to my seniors about this like, do you guys did you ever not want to walk? Did you walk the first time you tried? They’re like no. Did you try again? Did you fail and fail and fail? Just those like real-life examples kind of give you a better picture and idea of how you know this mindset can be a
positive thing and then slowly trying to find ways to implement in the classroom so talking with colleagues, just phrases they use, quotes they use at first, activities to use and even now we’re talking about it like how we can do it in our grading policy so just slowly kind of getting used to it and comfortable but I never really use the phrase mindset, growth mindset or anything. I just kind of display it rather than say it.

**Code Applications**

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipping</td>
<td>Equipping</td>
</tr>
<tr>
<td>PROCESS OF MINDSET CHANGE</td>
<td>PROCESS OF MINDSET CHANGE</td>
</tr>
<tr>
<td>Done in Relationship with Others</td>
<td>Done in Relationship with Others</td>
</tr>
<tr>
<td>Experimenting</td>
<td>Moment of Realization</td>
</tr>
<tr>
<td>Application</td>
<td>Experimenting</td>
</tr>
</tbody>
</table>

**Excerpt: 21 From Media: TEACHER ID LETTER: M-Maggie, Location: 7305 - 7805**

*Question: CONTRIBUTIONS TO CHANGE; Answer:* I think it was mostly myself just feeling like every day I was waking up and I didn’t like going to work every day and I was very miserable. I know John Maxwell, no not John Maxwell, oh my gosh the other John, one of them, sorry there was like we get to instead of we have to so saying kind of that mindset like I have to go to work every day. Now it’s I get to go to work. It’s an opportunity aspect of it and I think that kind of helped shift my mindset.

**Code Applications**

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Reflective Processes</td>
<td>Self-Reflective Processes</td>
</tr>
<tr>
<td>CONTRIBUTIONS TO CHANGE</td>
<td>CONTRIBUTIONS TO CHANGE</td>
</tr>
<tr>
<td></td>
<td>Development and Learning</td>
</tr>
</tbody>
</table>

**Excerpt: 22 From Media: TEACHER ID LETTER: M-Maggie, Location: 10381 - 10712**

*Question: MOST INSTRUMENTAL IN CHANGE; Answer:* I think just a belief in myself and then you know an understanding that things don’t have to end here just because this is what you’re told your whole life, things don’t have to end here. So, there are ways to go out and like reach what you want so I think just the belief in myself.

**Code Applications**

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOST INSTRUMENTAL IN CHANGE</td>
<td>MOST INSTRUMENTAL IN CHANGE</td>
</tr>
<tr>
<td>Self Factors</td>
<td>Self Factors</td>
</tr>
</tbody>
</table>

**Excerpt: 23 From Media: TEACHER ID LETTER: L-Lana, Location: 16846 - 17117**

*Question: CHANGE AFFECTED TEACHING; Answer:* It makes me more humble and I continue to learn and continue to grow. I know that I won’t ever stop learning. I won’t ever stop trying to do better for my students and I never stop expecting the best that they can give either.

**Code Applications**
Excerpt: 24 From Media: TEACHER ID LETTER: M-Maggie, Location: 10713 - 11365

Question: CHANGE AFFECTED TEACHING; Answer: I think it really helps at this school because I think so often some of my students get locked into this mindset like, oh I’m from this is all you know I’m not going to - you know maybe I’ll graduate. I don’t want to go to school. I won’t go to college or I’ll go to you know they kind of limit themselves and so I think when I have these one-on-one stories with students where I say you know this is what people told me my whole life too and it’s also what I kind of told myself up until a certain point. I think it kind of changes their perspective on things and you know the belief in themselves.

Code Applications

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective Practice</td>
<td>Reflective Practice</td>
</tr>
<tr>
<td>CHANGE AFFECTED TEACHING</td>
<td>CHANGE AFFECTED TEACHING</td>
</tr>
<tr>
<td>Learning Expectations</td>
<td></td>
</tr>
</tbody>
</table>

Excerpt: 25 From Media: TEACHER ID LETTER: L-Lana, Location: 13319 - 14346

Question: CONTRIBUTIONS TO CHANGE; Answer: Communication. I think the relationship I built with the kids that we built together, me listening to their needs. I always encourage them come and talk to me if you’re not understanding something like I want to help you and really listening to them and taking that time made a huge difference for me because they’re so honest. I mean they’re not trying to be rude. They’re just honest. So, tests were difficult for some kids where I knew they knew the material but when it came to the test they would fail it. So, I would pull them in in a study hall or after school and I would read them the questions again and oh that’s what that question asks you know it’s more about comprehension than it was academic ability like intelligence that they didn’t know. It was more, oh well that’s not how you worded it in class. I said “Well no it’s not going to be exactly how I word it in class, right, we have to look at different ways things are said.” So, I would say that was a huge shift.

Code Applications

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE AFFECTED TEACHING</td>
<td>CHANGE AFFECTED TEACHING</td>
</tr>
<tr>
<td>Relationships</td>
<td>Teaching Strategies</td>
</tr>
<tr>
<td>Learning Expectations</td>
<td>Relationships</td>
</tr>
</tbody>
</table>

Excerpt: 26 From Media: TEACHER ID LETTER: K-Kelvin, Location: 9212 - 9988

Question: CONTRIBUTIONS TO CHANGE; Answer: One of the conferences I went to and just seeing the buy-in from - so we went to a conference it was all administrators except myself and two other teachers and the buy-in from administrators and you know what they were seeing from an administrative role and then we were discussing it and they were saying you know from a teacher perspective like all these people and the other thing we always talk about is it’s research from a doctor you know it’s not just made up. The research base sometimes people will say, “Oh, it’s all fluff” and then we go, no it’s based
on research from a lot of different people at you know Stanford University and I think that’s the biggest thing. If you look at that, you can kind of buy in much more.

**Code Applications**

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>CONTRIBUTIONS TO CHANGE</td>
</tr>
<tr>
<td>CONTRIBUTIONS TO CHANGE</td>
<td>Event</td>
</tr>
<tr>
<td>Development and Learning</td>
<td>Dialogue</td>
</tr>
<tr>
<td></td>
<td>Development and Learning</td>
</tr>
</tbody>
</table>

**Excerpt: 27 From Media: TEACHER ID LETTER: J-Jo, Location: 16395 - 16814**  
*Question: MOST INSTRUMENTAL IN CHANGE; Answer: I think other people that allowed me to do the same thing. So, I think colleagues, I think administrators, I think family that allowed me to process and were good listeners and kind of reflected back what they were hearing or seeing from me to then give me the opportunity to continue to grow in my own way. I think it’s the people around us that help to facilitate that.*

**Code Applications**

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support and Relationship with Others</td>
<td>Support and Relationship with Others</td>
</tr>
<tr>
<td>MOST INSTRUMENTAL IN CHANGE</td>
<td>MOST INSTRUMENTAL IN CHANGE</td>
</tr>
<tr>
<td>Administration</td>
<td>Administration</td>
</tr>
<tr>
<td></td>
<td>Self Factors</td>
</tr>
</tbody>
</table>

**Excerpt: 28 From Media: TEACHER ID LETTER: N-Naomi, Location: 19636 - 20550**  
*Question: MOST INSTRUMENTAL IN CHANGE; Answer: I think it’s kind of twofold. First of all, I had my husband and my kids who believed in me and they supported me. I mean I was working full time, going to grad school, and trying to you know I had three kids at home. So, I really had a very good supportive network there and I knew they believed in me and so that helped me but then just the other thing of just students I think really helped me. They challenged me. Like those really smart kids in student teaching with their questions. They challenged me to find those answers and to learn new questioning techniques to ask them questions back and so then I was like, oh that went pretty well. That was really fun and that kind of spurred me on. So, I would say my family supporting and then students you know challenging me and I don’t know if kids really realize that they can challenge a teacher in a good way.*

**Code Applications**

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support and Relationship with Others</td>
<td>Support and Relationship with Others</td>
</tr>
<tr>
<td>MOST INSTRUMENTAL IN CHANGE</td>
<td>MOST INSTRUMENTAL IN CHANGE</td>
</tr>
<tr>
<td>Experiences with Students</td>
<td>Experiences with Students</td>
</tr>
</tbody>
</table>

**Excerpt: 29 From Media: TEACHER ID LETTER: K-Kelvin, Location: 15118 - 16203**  
*Question: CHANGE AFFECTED TEACHING; Answer: You don’t think about this right on a day-to-day basis. I think I’ve opened my eyes to more students you know I’ve given more students more opportunities and benefit of the doubt where in the past it was, that’s an excuse I don’t know what to do to help you. Now I'm really flexible on helping all students. In the past it was kind of like, alright you*
want opportunity to impress me or want opportunity to fix this but now it’s I’m going to give you the opportunity if you take it, that’s great, let’s run with it, I’m here to help. So, I went more from I need my students to get good grades to I need my students to be able to learn how to you know fix problems or if they’re having you know a rough time, fix a relationship. I’m here to help not just make sure they get A’s and B’s and I think the whole mindset of being there for students as well as you know they’re not stuck in this one path, they can change. We just need to work together. I know I can’t just do it all myself. They can’t do it all by themselves, be there together.

**Code Applications**

<table>
<thead>
<tr>
<th>Trainer Codes</th>
<th>Trainee Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANGE AFFECTED TEACHING</td>
<td>Reflective Practice</td>
</tr>
<tr>
<td>Teaching Strategies</td>
<td>CHANGE AFFECTED TEACHING</td>
</tr>
<tr>
<td>Relationships</td>
<td>Teaching Strategies</td>
</tr>
<tr>
<td>Learning Expectations</td>
<td>Relationships</td>
</tr>
<tr>
<td></td>
<td>Learning Expectations</td>
</tr>
</tbody>
</table>
## Appendix P

Vertical Analysis of Process by Participant Across All Data Collection

<table>
<thead>
<tr>
<th>Moment</th>
<th>Experimenting</th>
<th>Reflecting</th>
<th>Equipping</th>
<th>Empowerment</th>
<th>Application</th>
<th>Extension</th>
<th>Relationship</th>
<th>MAT/Career Change</th>
<th>Special Ed</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALWAYS CASE? WHEN CHANGED</td>
<td>STUDENT'S CASE? WHEN CHANGED how delivering and designing curriculum in classroom</td>
<td>PROCESSES OF MINDSET CHANGE what are other options? MINDSET TODAY ABOUT INTELLIGENCE have I done enough with them?</td>
<td>STUDENT POTENTIAL? Dweck research, CONTRIBUTIONS TO CHANGE twitter PD, Briceno/Dweck presentation</td>
<td>PROCESS OF MINDSET CHANGE being innovators and not followers</td>
<td>SHAPED VIEWS OF TEACHING/ROLE using yet; focused shifted from completion to mastery now</td>
<td>CONTRIBUITIONS TO CHANGE going 1-1; apply to technology; got a 25 year career ahead</td>
<td>Metaphor Activity PROCESSES OF MINDSET CHANGE</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Brian VIEW YOUR STUDENTS partially from my own experience as a learner HOW MINDSET CHANGED administrative initiative on Growth</td>
<td>PROCESSES OF MINDSET CHANGE trying to push different places and things with students</td>
<td>SHAPED VIEWS OF TEACHING/ROLE comprehensive administrator feedback; reflection</td>
<td>SHAPED VIEWS OF TEACHING/ROLE collaborator time with colleagues; working together HOW MINDSET CHANGED Dweck research/videos/training</td>
<td>CHARACTEIZE OWN MINDSET I've seen it in my own life work...it will work for my students</td>
<td>PROCESSES OF MINDSET CHANGE second nature now seeing more of my students VIEW YOUR STUDENTS changing feedback</td>
<td>SHAPED VIEWS OF TEACHING/ROLE</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Camille</td>
<td>PROC ESS OF MINDSET CHANGE</td>
<td>'supervisions' in 1st job clinical setting</td>
<td>PROCES S OF MINDSET CHANGE reflecting on our part, emulating</td>
<td>PROCESS OF MINDSET CHANGE gaining new information in clinical setting</td>
<td>PROCESS OF MINDSET CHANGE showing students a living model</td>
<td>PROCES S OF MINDSET CHANGE living it with my students every day</td>
<td>Metaphor Activity PROCES S OF MINDSET CHANGE</td>
<td>0</td>
<td>y</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------------------</td>
<td>-------------------------------------------</td>
<td>-------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td>----------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darren</td>
<td>PROC ESS OF MINDSET CHANGE</td>
<td>read Mindset</td>
<td>PROCES S OF MINDSET CHANGE gaining new information in clinical setting</td>
<td>PROCESS OF MINDSET CHANGE showing students a living model</td>
<td>PROCES S OF MINDSET CHANGE living it with my students every day</td>
<td>PROCES S OF MINDSET CHANGE for whole school</td>
<td>PROCES S OF MINDSET CHANGE</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Felicity</td>
<td>PROCESS OF MINDSET CHANGE</td>
<td>Becoming a parent</td>
<td>PROC ESS OF MINDSET CHANGE gaining new information in clinical setting</td>
<td>PROCESS OF MINDSET CHANGE showing students a living model</td>
<td>PROCES S OF MINDSET CHANGE living it with my students every day</td>
<td>PROCES S OF MINDSET CHANGE for whole school</td>
<td>PROCES S OF MINDSET CHANGE</td>
<td>y</td>
<td>y</td>
</tr>
</tbody>
</table>

**ALWAYS CASE? WHEN CHANGED**

- Special ed background, experiences with students
- PROCES S OF MINDSET CHANGE trying different approaches, diff activities
- PROCES S OF MINDSET CHANGE having new information in clinical setting
- CONTRIBUTIONS TO CHANGE* mentor?
- PROCESS OF MINDSET CHANGE I can be open and embrace students/mission
- PROCESS OF MINDSET CHANGE I create a room that embraces every student
- PROCES S OF MINDSET CHANGE sharing their gifts with the world
- MOST INSTRUMENTAL IN CHANGE

**Felicity**

- Becoming a parent
- PROCESS OF MINDSET CHANGE what do they need, are they getting it, back and forth
- Northwestern Howard Gardner MI
- SHAPED VIEWS OF TEACHING/ROLE* faith, family, friend
- BELIEFS BEFORE ABOUT STUDENT INTELLIGENCE see my students more clearly as individuals
- CONTRIBUTION S TO CHANGE sharing their gifts with the world
- MOST INSTRUMENTAL IN CHANGE

**Camille**

- PROCESS OF MINDSET CHANGE 'supervisions' in 1st job clinical setting
- PROCESS OF MINDSET CHANGE reflecting on our part, emulating
- PROCESS OF MINDSET CHANGE gaining new information in clinical setting
- PROCESS OF MINDSET CHANGE showing students a living model
- PROCESS OF MINDSET CHANGE living it with my students every day
- Metaphor Activity PROCESS OF MINDSET CHANGE

**Darren**

- PROCESS OF MINDSET CHANGE read Mindset
- PROCESS OF MINDSET CHANGE curious, said it over and over, trying out new things
- PROCESS OF MINDSET CHANGE living with my students every day
- Metaphor Activity

**Felicity**

- PROCESS OF MINDSET CHANGE what do they need, are they getting it, back and forth
- Northwestern Howard Gardner MI
- SHAPED VIEWS OF TEACHING/ROLE* faith, family, friend
- BELIEFS BEFORE ABOUT STUDENT INTELLIGENCE see my students more clearly as individuals
- CONTRIBUTION S TO CHANGE sharing their gifts with the world
- MOST INSTRUMENTAL IN CHANGE

**Camille**

- PROCESS OF MINDSET CHANGE 'supervisions' in 1st job clinical setting
- PROCESS OF MINDSET CHANGE reflecting on our part, emulating
- PROCESS OF MINDSET CHANGE gaining new information in clinical setting
- PROCESS OF MINDSET CHANGE showing students a living model
- PROCESS OF MINDSET CHANGE living it with my students every day
- Metaphor Activity PROCESS OF MINDSET CHANGE

**Darren**

- PROCESS OF MINDSET CHANGE read Mindset
- PROCESS OF MINDSET CHANGE curious, said it over and over, trying out new things
- PROCESS OF MINDSET CHANGE living with my students every day
- Metaphor Activity

**Felicity**

- PROCESS OF MINDSET CHANGE what do they need, are they getting it, back and forth
- Northwestern Howard Gardner MI
- SHAPED VIEWS OF TEACHING/ROLE* faith, family, friend
- BELIEFS BEFORE ABOUT STUDENT INTELLIGENCE see my students more clearly as individuals
- CONTRIBUTION S TO CHANGE sharing their gifts with the world
- MOST INSTRUMENTAL IN CHANGE
<p>| Goodall | PROC ESS OF MINDSET CHAN GE Teacher Ed. Class | PROCES S OF MINDSET CHANG E | PROCES S OF MINDSET CHANG E thinking about meaning of intelligent | PROCES S OF MINDSET CHANGE formal education assignments | PROCES S OF MINDSET CHANGE I know you're smart, here's why | PROCES S OF MINDSET CHANGE neighbors and family don't fit trad mold | PROCES S OF MINDSET CHANGE looking at other people with different eyes | Metaphor Activity PROCES S OF MINDSET CHANGE | y | ? |
|---|---|---|---|---|---|---|---|---|---|
| Hannah | ALWA YS CASE? WHEN CHAN GED trip to El Slavador; meeting people in context | CHARA CTERIZE E OWN MINDSET conversat ions with students in class; PROCES S OF MINDSET CHANG E conversations with brother and others | PROCES S OF MINDSET CHANG E spiritual /my why | STUDENT POTENTIA L professional dev with admin. | PROCESS OF MINDSET CHANGE confidence in God's purposes | PROCESS OF MINDSET CHANGE standing firm where planted | PROCESS OF MINDSET CHANGE all things coming to completion | PROCES S OF MINDSET CHANGE | 0 | 0 |
| Igor | HOW MINDSET CHANGED experiences with teaching in psych hospita l; diff student s | PROCES S OF MINDSET CHANG E layering techniques | PROCES S OF MINDSET CHANG E being an observer | HOW MINDSET CHANGE d learned @ impact of emotion and trauma | HOW MINDSET CHANGE d creating activities around emotion and learning for students | PROCESS OF MINDSET CHANGE at every decision now | PROCESS OF MINDSET CHANGE | y | y |
| Jo | HOW MINDSET CHANGED working with student s with disabili ties, surprising me | PROCES S OF MINDSET CHANG E ongoing process | PROCES S OF MINDSET CHANG E going back to my why | 1st year sets the stage; so important* | PROCESS OF MINDSET CHANGE practice evolves over time to routine/habit | PROCESS OF MINDSET CHANGE on every decision now | PROCESS OF MINDSET CHANGE | y | y |</p>
<table>
<thead>
<tr>
<th>Name</th>
<th>Process of Mindset Change</th>
<th>How Mindset Changed</th>
<th>How do I implement in my classroom</th>
<th>Process of Mindset Change</th>
<th>Change Affected Teaching</th>
<th>Process of Mindset Change</th>
<th>Metaphor Activity</th>
<th>Change AFFECTED Teaching</th>
<th>Change AFFECTED Teaching</th>
<th>Change AFFECTED Teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kelv</td>
<td>Trying out new things in class room, slowly</td>
<td>how do I implement in my classroom?</td>
<td>talking with colleagues &amp; sharing activities</td>
<td>doing it more and more without saying it</td>
<td>opened eyes to more students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lana</td>
<td></td>
<td>PROCESSES OF MINDSET CHANGE</td>
<td>emerging strategies</td>
<td>CLASSROOM ARTIFACT ACTIVITY</td>
<td>I define classroom as collaborative by my seating arrangement</td>
<td></td>
<td>PROCESSES OF MINDSET CHANGE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maggie</td>
<td></td>
<td>CONTRIBUTIONS TO CHANGE</td>
<td>quote got her thinking about &quot;get to&quot; not &quot;have to&quot; opportunities</td>
<td>PROCESS OF MINDSET CHANGE</td>
<td>I can actually go out and make a change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Metaphor Activity y 0
<table>
<thead>
<tr>
<th>Name</th>
<th>PROCESSES OF MINDSET CHANGE</th>
<th>Struggling Student, realized, thinking differently</th>
<th>ALWAYS CASE? WHEN CHANGED?</th>
<th>PROCESSES OF MINDSET CHANGE</th>
<th>Reflection big piece for me</th>
<th>PROCESSES OF MINDSET CHANGE</th>
<th>Grad school; Howard Gardner</th>
<th>PROCESSES OF MINDSET CHANGE</th>
<th>Living and modeling struggle</th>
<th>PROCESSES OF MINDSET CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naomi</td>
<td></td>
<td>Working with struggling student over time, student grew</td>
<td>Howard Gardner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For Naomi, the process of mindset change involved working with a struggling student over time, which led to personal challenges and accomplishments. The reflection was a big piece for her, and it was further solidified when she graduated from grad school and worked with Howard Gardner. Naomi has a spiritual change, which includes having purposes, stopping comparing herself to others, and living and modeling struggle. She takes more risks and models challenge.
## Appendix Q

### Short Codes and Full Questions

<table>
<thead>
<tr>
<th>Short Code</th>
<th>Full Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>BECOME TEACHER?</td>
<td>Why did you become a teacher?</td>
</tr>
<tr>
<td>TEACHING STYLE</td>
<td>How would you describe your teaching style?</td>
</tr>
<tr>
<td>PURPOSE AS TEACHER</td>
<td>How do you view your purpose as a teacher?</td>
</tr>
<tr>
<td>INFLUENCE IN BECOMING TEACHER</td>
<td>Describe what influenced you in becoming a teacher?</td>
</tr>
<tr>
<td>SHAPED VIEWS OF TEACHING/ROLE</td>
<td>What do you think has shaped your views of teaching and your role?</td>
</tr>
<tr>
<td>VIEW YOUR STUDENTS</td>
<td>How do you view your students?</td>
</tr>
<tr>
<td>STUDENT POTENTIAL?</td>
<td>What do you believe about student potential?</td>
</tr>
<tr>
<td>DEFINE INTELLIGENCE</td>
<td>How do you define intelligence?</td>
</tr>
<tr>
<td>MINDSET TODAY ABOUT INTELLIGENCE</td>
<td>How would you describe your mindset today about student intelligence?</td>
</tr>
<tr>
<td>ALWAYS CASE? WHEN CHANGED</td>
<td>Has that always been the case? If not, when did it change?</td>
</tr>
<tr>
<td>HOW MINDSET CHANGED</td>
<td>How did your mindset change?</td>
</tr>
<tr>
<td>BELIEFS BEFORE ABOUT STUDENT INTELLIGENCE</td>
<td>What did you believe before about student’s intelligence?</td>
</tr>
<tr>
<td>CHARACTERIZE OWN MINDSET</td>
<td>How would you characterize your own mindset?</td>
</tr>
<tr>
<td>PROCESS OF MINDSET CHANGE</td>
<td>Describe the process you experienced in that change?</td>
</tr>
<tr>
<td>CONTRIBUTIONS TO CHANGE</td>
<td>What do you think contributed to that change?</td>
</tr>
<tr>
<td>CHARACTERIZE PROCESS OF CHANGE</td>
<td>How would you characterize the process of change?</td>
</tr>
<tr>
<td>FIRST REALIZE CHANGE</td>
<td>When did you first realize this change had happened?</td>
</tr>
<tr>
<td>DIFFICULTIES ENCONCERED/DESCRIBE</td>
<td>Did you encounter any difficulties in the process? Describe these difficulties.</td>
</tr>
<tr>
<td>OVERCOME DIFFICULTIES</td>
<td>How did you overcome these difficulties?</td>
</tr>
<tr>
<td>MOST INSTRUMENTAL IN CHANGE</td>
<td>What do you think was most instrumental?</td>
</tr>
<tr>
<td>CHANGE AFFECTED TEACHING</td>
<td>How has this change affected your teaching?</td>
</tr>
<tr>
<td>Classroom Artifact Activity</td>
<td>Classroom Artifact Activity</td>
</tr>
<tr>
<td>Metaphor Picture Activity:</td>
<td>Metaphor Picture Activity:</td>
</tr>
<tr>
<td>PD Recommendation</td>
<td>PD Recommendation</td>
</tr>
<tr>
<td>Teacher Identification Letter</td>
<td>Teacher Identification Letter</td>
</tr>
<tr>
<td>Date of Interview</td>
<td>Date of Interview</td>
</tr>
<tr>
<td>Location Identification Letter</td>
<td>Location Identification Letter</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>PS YEARS TEACHING</td>
<td>PS How many years have you been teaching?</td>
</tr>
<tr>
<td>PS PRIVATE/PUBLIC</td>
<td>PS What type of school do you teach in?</td>
</tr>
<tr>
<td>PS gender</td>
<td>PS Please identify your gender:</td>
</tr>
<tr>
<td>PS race/ethnicity</td>
<td>PS Please identify your race/ethnicity. You may select more than 1 response.</td>
</tr>
<tr>
<td>PS age bracket</td>
<td>PS Please identify your age bracket:</td>
</tr>
<tr>
<td>PS DI #1</td>
<td>PS DI Your students have a certain amount of intelligence, and they can’t really do much to change it.</td>
</tr>
<tr>
<td>PS DI #2</td>
<td>PS DI Your students’ intelligence is something about themselves that they can’t change very much.</td>
</tr>
<tr>
<td>PS DI #3</td>
<td>PS DI To be honest, your students can’t really change how intelligent they are.</td>
</tr>
<tr>
<td>PS DI #4</td>
<td>PS DI Your students can learn new things, but they can’t really change their basic intelligence.</td>
</tr>
<tr>
<td>PS DI AVG Mindset</td>
<td>PS DI AVG Mindset</td>
</tr>
<tr>
<td>PS LAS Since teaching, change?</td>
<td>PS Since you have been teaching, do you believe you have experienced a change in your perspective about concepts of intelligence?</td>
</tr>
<tr>
<td>PS LAS describe Change of perspective</td>
<td>PS Briefly describe this change of perspective.</td>
</tr>
<tr>
<td>PS LAS CHANGE ASPECTS</td>
<td>PS Some statements that could describe aspects of this change are listed here. Thinking about your beliefs, as a professional educator, concerning your students’ intelligence, check off any statements that may apply:</td>
</tr>
<tr>
<td>PS LAS INFLUENCE OF learning about mindset and concepts of intelligence</td>
<td>PS Thinking back to when you first realized that your views or perspective had changed, what did learning about mindset and concepts of intelligence have to do with it?</td>
</tr>
<tr>
<td>PS LAS contributors OF Change</td>
<td>PS Some possible contributors of such change are listed below. Please check off all those which may have played a part in this change of perspective.</td>
</tr>
<tr>
<td>PS LAS professional educator AND experience of change</td>
<td>PS Thinking back to when you first realized that your views or perspective of intelligence had changed, what did your being a professional educator or teacher in a school have to do with the experience of change?</td>
</tr>
<tr>
<td>PS LAS THINK BACK TO PRIOR DECISIONS</td>
<td>PS Would you characterize yourself as one who usually thinks back over previous decisions or past behavior?</td>
</tr>
<tr>
<td>PS LAS REFLECT ON MEANING OF PROFESSIONAL WORK</td>
<td>PS Would you say that you frequently reflect upon the meaning of your professional work for yourself, personally?</td>
</tr>
</tbody>
</table>
Appendix R

Email permission from Kushwaha, S. (2011) to use and publish lightbulb figure.

From: Sumit Kushwaha  sumit.kushwaha1@gmail.com
Subject: Re: Permission to use diagram in dissertation publication
Date: January 5, 2018 at 5:36 PM
To: Bethge, Judith  bethge@liberty.edu

Ok dear,
You can use it for education purpose with proper citation and credit to me.

On 06-Jan-2018 4:33 AM, "Bethge, Judith"  <bethge@liberty.edu> wrote:
Dear Sir,

I am a doctoral candidate at Liberty University. I am writing to ask permission to include and publish your figure of the diagram of an incandescent light bulb for publication in my dissertation study with citation and credit to you. I found the image from the publication on your conference presentation in 2011. I am using it to help my audience and readers to identify the parts of an incandescent light bulb. My study is called: "THE POWER OF TRANSFORMATION: A GROUNDED THEORY STUDY OF CULTIVATING TEACHER GROWTH MINDSET TOWARDS STUDENT INTELLIGENCE," I created a model of teacher mindset transformation and am using the incandescent light bulb as a metaphor of the process. I have included the citation of where I found the figure below.

Thank you in advance.
Sincerely,

Judith Bethge

Appendix S

Code Application Raw and Sample Dedoose Screenshots of Themes

<table>
<thead>
<tr>
<th>Questions</th>
<th>Naomi</th>
<th>Maggie</th>
<th>Lana</th>
<th>Kelso</th>
<th>Jo</th>
<th>Lance</th>
<th>Hanna</th>
<th>Goodall</th>
<th>Felicity</th>
<th>Energy</th>
<th>Darren</th>
<th>Camille</th>
<th>Brian</th>
<th>Andre</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passionate about</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College Class Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family member influence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helping others learn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifestyle Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Love for Learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood Dream</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Undergraduate Center</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior Experience Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationships with kids</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>important</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second career</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher influence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>make a difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEACHING STYLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Priority</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecting with K-12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Instruction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inquiry and Discourse</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem Solving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interactive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple Modalities/Mix it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>differentiated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student-led or centered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>high expectations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>laid back</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>planner and deliberate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>student realization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PURPOSE AS TEACHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learn Content</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discipleship of students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain independence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>God’s calling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Career Ideas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learn Humility/empathy for</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Influence on</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Building</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students Do Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>appreciate education/learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>facilitator of learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>realize potential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFLUENCE IN BIG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive learning experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyed school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Event-inspired</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience-positive as adult</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>military</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family member</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Love of learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make a difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative learning experience</td>
<td>-14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calling from God</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Redeem Negativity K-12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher-negative influence in K-12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher-positive influence undergrad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

276
<table>
<thead>
<tr>
<th>Unsatisfied adult career</th>
<th>meaningful work</th>
<th>service orientation</th>
<th>working with kids</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHAPED VIEWS OF</td>
<td>Learning Experiences</td>
<td>Professional Dev</td>
<td>Intensive Summer PD</td>
</tr>
<tr>
<td>Social Media PD</td>
<td>Transferring PD</td>
<td>Meaningful PD</td>
<td>Asking Self-Reflect</td>
</tr>
<tr>
<td>Reflection end of year and goals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Experience</td>
<td>Pre-service</td>
<td>Experiences reinvent</td>
<td>Formal Education</td>
</tr>
<tr>
<td>Goal Orientation Shift</td>
<td>Incremental Changes</td>
<td>Administration Feedback</td>
<td>Personal Life Experiences</td>
</tr>
<tr>
<td>Personal School Experiences</td>
<td>Prior teaching experiences</td>
<td>Relationships</td>
<td>Building Relationships With Students</td>
</tr>
<tr>
<td>Colleagues</td>
<td>Modeling Other Teachers</td>
<td>Collaboration Time</td>
<td>Mentors</td>
</tr>
<tr>
<td>Observing other teachers</td>
<td></td>
<td></td>
<td>Observing outside my comfort area</td>
</tr>
<tr>
<td>Empathy</td>
<td>Professor Influence</td>
<td>Relationships with Family</td>
<td>Parental Involvement</td>
</tr>
<tr>
<td>Parenthood</td>
<td>Relationships with Friends</td>
<td>Students</td>
<td>Faith or Spiritual Influences</td>
</tr>
<tr>
<td>VIEW YOUR STUDENTS</td>
<td>Great potential</td>
<td>Bottomless</td>
<td>Individuals</td>
</tr>
<tr>
<td>Humans</td>
<td>Influencers</td>
<td>Next Generation</td>
<td>Valued</td>
</tr>
<tr>
<td>Loved</td>
<td>Co-worker</td>
<td>Known</td>
<td>Opportunity to Influence the World</td>
</tr>
<tr>
<td>Own Kids</td>
<td>Relationship Aspect</td>
<td>With Ability to learn</td>
<td>Connected and Information Worthful</td>
</tr>
<tr>
<td>Without pre-judging</td>
<td>STUDENT POTENTIAL</td>
<td>How Manifests</td>
<td>Grow every day/everyone</td>
</tr>
<tr>
<td>Develops at Different Times for Students</td>
<td>Do great things</td>
<td>Always there</td>
<td>Essential Quality of</td>
</tr>
<tr>
<td>Endless</td>
<td>Students don’t recognize</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

277
<table>
<thead>
<tr>
<th>Topic</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude is a factor</td>
<td>4</td>
</tr>
<tr>
<td>Effort is a factor</td>
<td>4</td>
</tr>
<tr>
<td>Others help foster</td>
<td>4</td>
</tr>
<tr>
<td>Outside or internal influence may interfere</td>
<td>2</td>
</tr>
<tr>
<td>Resistance and 2</td>
<td>1</td>
</tr>
<tr>
<td>Spiritual calling to develop and grow</td>
<td>5</td>
</tr>
<tr>
<td>Teacher helps foster</td>
<td>2</td>
</tr>
<tr>
<td><strong>DEFINE INTELLIGENCE</strong></td>
<td>5</td>
</tr>
<tr>
<td>Conflicted Views of Definition</td>
<td>3</td>
</tr>
<tr>
<td>doesn’t determine success in life</td>
<td>1</td>
</tr>
<tr>
<td>personal def different than “professional”</td>
<td>1</td>
</tr>
<tr>
<td>socially or culturally loaded word</td>
<td>1</td>
</tr>
<tr>
<td>understanding doesn’t fit usage of word</td>
<td>1</td>
</tr>
<tr>
<td>Change over Time</td>
<td>3</td>
</tr>
<tr>
<td>Passion and purpose</td>
<td>1</td>
</tr>
<tr>
<td>can increase intelligence</td>
<td>1</td>
</tr>
<tr>
<td>never fills</td>
<td>1</td>
</tr>
<tr>
<td>develops over time</td>
<td>1</td>
</tr>
<tr>
<td>hard work matters</td>
<td>1</td>
</tr>
<tr>
<td>Affected by Surroundings</td>
<td>1</td>
</tr>
<tr>
<td>- influenced by environment</td>
<td>1</td>
</tr>
<tr>
<td>not born with a certain amount</td>
<td>2</td>
</tr>
<tr>
<td>taking something away from experience</td>
<td>2</td>
</tr>
<tr>
<td>Higher Order Process</td>
<td>1</td>
</tr>
<tr>
<td>- how you bring your gifts to bear on challenges in life</td>
<td>1</td>
</tr>
<tr>
<td>- metacognitive awareness</td>
<td>1</td>
</tr>
<tr>
<td>- problem-solving</td>
<td>1</td>
</tr>
<tr>
<td>recognizing with the more you know, the less you actually know</td>
<td>1</td>
</tr>
<tr>
<td>- skill to figure out and get knowledge</td>
<td>1</td>
</tr>
<tr>
<td>Multiple Factors</td>
<td>2</td>
</tr>
<tr>
<td>Multirooted</td>
<td>2</td>
</tr>
<tr>
<td>Multiple Intelligences</td>
<td>2</td>
</tr>
<tr>
<td>- not binary topic</td>
<td>1</td>
</tr>
<tr>
<td>- includes EQ and so</td>
<td>1</td>
</tr>
<tr>
<td>- individualized</td>
<td>1</td>
</tr>
<tr>
<td>- IQ score part of it</td>
<td>1</td>
</tr>
<tr>
<td>- not just IQ</td>
<td>1</td>
</tr>
<tr>
<td>- not just knowledge acquisition</td>
<td>1</td>
</tr>
<tr>
<td>- not just test scores</td>
<td>1</td>
</tr>
<tr>
<td>- partially innate</td>
<td>1</td>
</tr>
<tr>
<td>WELL-ROUNDEDNESS</td>
<td>1</td>
</tr>
<tr>
<td>- recognizing with the more you know, the less you actually know</td>
<td>1</td>
</tr>
<tr>
<td>MINDSET TODAY A</td>
<td>1</td>
</tr>
<tr>
<td>- how I utilize it</td>
<td>1</td>
</tr>
<tr>
<td>- guides my approach to teaching students</td>
<td>1</td>
</tr>
<tr>
<td>- just in time to inform next moves</td>
<td>1</td>
</tr>
<tr>
<td>- lightbulb moments with students are rewarding</td>
<td>1</td>
</tr>
<tr>
<td>- my beliefs show up in my classroom practice</td>
<td>1</td>
</tr>
<tr>
<td>- need to reflect how I can maximize with students</td>
<td>1</td>
</tr>
<tr>
<td>Nature of Student</td>
<td>1</td>
</tr>
<tr>
<td>- not just performing on standardized tests</td>
<td>1</td>
</tr>
<tr>
<td>Not fixed</td>
<td>1</td>
</tr>
<tr>
<td>holistic</td>
<td>1</td>
</tr>
<tr>
<td>knowing facts is not necessarily intelligence</td>
<td>1</td>
</tr>
<tr>
<td>not ever a peak</td>
<td>1</td>
</tr>
<tr>
<td>I can be smart</td>
<td>1</td>
</tr>
<tr>
<td>room for growth</td>
<td>1</td>
</tr>
<tr>
<td>still under development</td>
<td>1</td>
</tr>
<tr>
<td>understanding and thinking important factors</td>
<td>1</td>
</tr>
<tr>
<td>unlimited</td>
<td>1</td>
</tr>
<tr>
<td>What informs you</td>
<td>1</td>
</tr>
<tr>
<td>- hopeful for student growth</td>
<td>1</td>
</tr>
<tr>
<td>positive mindset</td>
<td>1</td>
</tr>
<tr>
<td>research says g</td>
<td>1</td>
</tr>
</tbody>
</table>
sometimes the lack of intelligence is frustrating  1  1  1
students believe testing is intelligence  1  1  1  1  1
teacher has big impact on it  1  1  1  1  1
what you believe about you  1  1  1  1  1
labels can become self-fulfilling  1  1
socialization blocks students expression of intelligence  1  1
student prior experience impacts performance  1  1
work and diligence important parts of it  1  1
ALWAYS CASE: YES  1  1  1  1  1
Professional Relationship Experience  1  1  1  1  1
Experiences with Students  1  1  1  1  1
in prior job/position  1  1  1  1  1
mindset PD committee  1  1  1  1  1
Deliberate Learning  1  1  1  1  1
Formal Learning  1  1  1  1  1
Started Grad School  1  1  1  1
during college education courses  1  1  1  1
Going into teaching  1  1  1  1  1
In High School  1  1  1  1  1
Professional Reading/Development  1  1  1  1  1
after reading Mindset book  1  1  1  1  1
reflecting on teaching and interacting  1  1  1  1  1
After 1st year teaching  1  1  1  1  1
Relational Experience  1  1  1  1  1
A teacher was influential  1  1  1  1  1
Family member  1  1  1  1  1
having own kids  1  1  1  1  1
FIGURE OUT COINCIDING EVENT  1  1  1  1  1
HOW MINDSET CHANGED  1  1  1  1  1
Experiential  1  1  1  1  1
Process Factors  1  1  1  1  1
maintaining high expectations-students rise  1  1  1  1  1
pushed me to try new things  1  1  1  1  1
Informational  1  1  1  1  1
I’m constantly learning  1  1  1  1  1
focused on the research and science of growth  1  1  1  1  1
formal education and training impacted thinking  1  1  1  1  1
Relational  1  1  1  1  1
Someone I respect  1  1  1  1  1
Experiences with  1  1  1  1  1
Parenthood experiences shaped my views  1  1  1  1  1
Recognize the input of other’s experiences in the  1  1  1  1  1
Coaching influenced how I looked at students  1  1  1  1  1
Worked in a group to put into practice  1  1  1  1  1
college teacher  1  1  1  1  1
Substance Factors  1  1  1  1  1
Views of my students  1  1  1  1  1
I saw student struggle  1  1  1  1  1
More open to future improved performance  1  1  1  1  1
Started thinking about others  1  1  1  1  1
analyze the impact of trauma and emotion on student  1  1  1  1  1
Changed my values  1  1  1  1  1
Enhanced my views of intelligence  1  1  1  1  1
Evolve over time  1  1  1  1  1
What I prioritized changed over time  1  1  1  1  1
Changed my practices  1  1  1  1  1
changed my teaching practices  1  1  1  1  1
more intentional about student growth  1  1  1  1  1
Views of myself  1  1  1  1  1
Found my calling in helping struggling learners  1  1  1  1  1
I could go out and do anything  1  1  1  1  1
I’m more self-aware of own mindset triggers  1  1  1  1  1
change in beliefs about intelligence  1  1  1  1  1
BELIEFS BEFORE ARE  1  1  1  1  1
Fixed or Capped  1  1  1  1  1
leaps in learning not possible
limitations to things
some just won't get it
stable

Afflicted How I Taught

Limited Methods

I didn't have guidance to teach anything
so busy doing teaching—not seeing students
taught to test
teaching one-way-a-way

Limiting Students

mirrored own high school experience
comforting behavior to reduce challenge
don't give opportunity to change

lumped in group

IQ dictates success and access

one opportunity for success

prohibited access for students to different opportunities

tracking students by ability

Afflicted How I THOUGHT

binary

didn't really think about it
if not performing-then lazy or don't care
kids learned one way

self-beliefs fixed too

struggle means "not smart"

thinking was discrete and analytical

Quantified

IQ test

Quantified by test

QUOTE

CHARACTERIZE DAY

Embrace Challenge


embrace learning

persevere through

stretch profession

tackling challenges

Aware

give others space to change and grow

increased my empathy and connect

recognize the tension and struggle

self-aware of fear

Authentic and Vulnerable

OK with not knowing everything

applying it to other areas

I have to model growth mindset for...

my vulnerability empowers my students

ok to make mistakes

Open

flexible and open-minded

increased my creativity to solve problems

value the talents and skills of others

Oriented Toward

growth

I know I can improve

encouraged and grateful for improvement through effort

shapes my goal to help others realize their intelligence

PROCESS OF MIND

Moment of RealiZation

felt the disengagement

moment of realization

parenthood

started viewing students differently—more wonder

thinking differently
<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimenting</td>
<td></td>
</tr>
<tr>
<td>balance between overwhelming and giving exposure</td>
<td></td>
</tr>
<tr>
<td>connecting to real-life examples</td>
<td></td>
</tr>
<tr>
<td>curious</td>
<td></td>
</tr>
<tr>
<td>watching a struggle</td>
<td></td>
</tr>
<tr>
<td>tried something out</td>
<td></td>
</tr>
<tr>
<td>blending and finding middle ground</td>
<td></td>
</tr>
<tr>
<td>build on success</td>
<td></td>
</tr>
<tr>
<td>constant aligning of belief and action</td>
<td></td>
</tr>
<tr>
<td>drastic change was not working</td>
<td></td>
</tr>
<tr>
<td>experiences with</td>
<td></td>
</tr>
<tr>
<td>failure is part of</td>
<td></td>
</tr>
<tr>
<td>falling down and</td>
<td></td>
</tr>
<tr>
<td>frustration between what is what can be</td>
<td></td>
</tr>
<tr>
<td>incremental changes</td>
<td></td>
</tr>
<tr>
<td>layering of experiences and learning</td>
<td></td>
</tr>
<tr>
<td>prior work experiences</td>
<td></td>
</tr>
<tr>
<td>Reflecting</td>
<td></td>
</tr>
<tr>
<td>adjusting based on feedback</td>
<td></td>
</tr>
<tr>
<td>ongoing and evolving</td>
<td></td>
</tr>
<tr>
<td>reflecting</td>
<td></td>
</tr>
<tr>
<td>Equipping</td>
<td></td>
</tr>
<tr>
<td>gained new information to consider</td>
<td></td>
</tr>
<tr>
<td>formal education training</td>
<td></td>
</tr>
<tr>
<td>influence of my own teacher or professor</td>
<td></td>
</tr>
<tr>
<td>practice becomes routine or habit</td>
<td></td>
</tr>
<tr>
<td>went back to school</td>
<td></td>
</tr>
<tr>
<td>Empowered</td>
<td></td>
</tr>
<tr>
<td>I have a voice and power to</td>
<td></td>
</tr>
<tr>
<td>comparison bring</td>
<td></td>
</tr>
<tr>
<td>creating a positive environment within which to exist</td>
<td></td>
</tr>
<tr>
<td>faith and spirituality</td>
<td></td>
</tr>
<tr>
<td>had a purpose and</td>
<td></td>
</tr>
<tr>
<td>push myself</td>
<td></td>
</tr>
<tr>
<td>stop comparing me</td>
<td></td>
</tr>
<tr>
<td>stopped living someone else</td>
<td></td>
</tr>
<tr>
<td>Application</td>
<td></td>
</tr>
<tr>
<td>belief produces practice</td>
<td></td>
</tr>
<tr>
<td>communicating it</td>
<td></td>
</tr>
<tr>
<td>living and modeling it-not just talking about it</td>
<td></td>
</tr>
<tr>
<td>meeting more student needs more often</td>
<td></td>
</tr>
<tr>
<td>showing students</td>
<td></td>
</tr>
<tr>
<td>Extend</td>
<td></td>
</tr>
<tr>
<td>finding more applications</td>
<td></td>
</tr>
<tr>
<td>Done in Relationships</td>
<td></td>
</tr>
<tr>
<td>building relations</td>
<td></td>
</tr>
<tr>
<td>collaborative effort</td>
<td></td>
</tr>
<tr>
<td>dialing with other</td>
<td></td>
</tr>
<tr>
<td>CONTRIBUTIONS</td>
<td></td>
</tr>
<tr>
<td>Observing Others</td>
<td></td>
</tr>
<tr>
<td>models of juxtaposition/intelligent w/o degree</td>
<td></td>
</tr>
<tr>
<td>experiences with others</td>
<td></td>
</tr>
<tr>
<td>experiences with own children</td>
<td></td>
</tr>
<tr>
<td>experiences with students</td>
<td></td>
</tr>
<tr>
<td>making connections between professional life and other</td>
<td></td>
</tr>
<tr>
<td>seeing how past experiences impact other’s views of the work</td>
<td></td>
</tr>
<tr>
<td>seeing what works and doesn’t for other teachers</td>
<td></td>
</tr>
<tr>
<td>student teaching</td>
<td></td>
</tr>
<tr>
<td>Dialogue</td>
<td></td>
</tr>
<tr>
<td>building relationship with students</td>
<td></td>
</tr>
<tr>
<td>communication</td>
<td></td>
</tr>
<tr>
<td>conversations with colleagues</td>
<td></td>
</tr>
<tr>
<td>listening for understanding</td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td></td>
</tr>
</tbody>
</table>
282

buy in from administrators
mentor-supporitve and helpful
support from administrators
support from family
Event
1
doing good in a bad situation
epiphany moment
giving birth
Set a goal and met it
1
world terrorism attacks
Development and Learning
books and podcasts
professional development at school
professional development with researchers
research based
social media professional development
trying out new things
understanding impact of trauma on students
Self-Reflective Processes
1
embracing change
emotional feelings
1
leadership guru "get to, have to" 1
opportunity aspect
1
passion to develop students as people
recognizing value of people/spiritual view
self-reflection
space to grow into my own beliefs of teaching
CHARACTERIZE PROCESS OF1 CHANGE
1
1
Non-Linear
ebbs and flows
not a straight line
Embracing Change
easy
open to change
potential for better
Involves Others
1
1
changing along with my students
encouragement from family
1 member
influence from others
1
1
learn from experiences
Challenging Process
1
1
1
an adventure
challenging
1
determination and perserverance matter
1
hard
1
painful
seek challenges to grow 1
takes effort and energy
work hard to be succesful1
Over Time
change is not instantaneous
gradual
takes time to get used to changing
Requires Emotional Courage
1
1
1
be ok with others not being on board
believing easier than doing it
change requires grieving
discouragement from others
1
empathy for others
felt inept
1
takes courage to face faults
terrifying
1
trying to do better
1
Self-Aware
1
1
gets easier over time

1
1
1

1
1
1

1

1

1

1
1
1
1

1

1

1
1
1

1
1
1
1

1

1

1
1
1

1

1

1

1

1

1

1

1

1
1

1
1

1
1
1
1

1
1

1

1

1
1

1

1
1
1
1

1

1

1

1

1
1
1

1
1
1
1

1
1

1
1
1

1

1

1
1

1

1
1

1
1

1

1

1

1

1
1
1
1
1

1
1
1

1

1
1

1

1

1

1

1

1

1
1

1

1
1

1

1

1

1

1

1
1

1

1

1
1

1

1
1
2
1
4
1
2
1
1
1
4
1
1
1
2
1
2
1
8
1
1
1
1
1
1
3
1
14
2
1
2
3
2
2
1
5
2
1
2
2
9
1
4
1
4
1
1
1
1
3
2
1
1
10
1
1
1
1
2
1
1
1
2
11
1


<table>
<thead>
<tr>
<th>Difficulties Encountered</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Struggle</td>
<td>2</td>
</tr>
<tr>
<td>Disruptions in time and continuity</td>
<td>2</td>
</tr>
<tr>
<td>Getting financial aid</td>
<td>2</td>
</tr>
<tr>
<td>- Only owning my part in the process</td>
<td>2</td>
</tr>
<tr>
<td>Outside influences beyond my control affecting</td>
<td>2</td>
</tr>
<tr>
<td>Struggle personally</td>
<td>2</td>
</tr>
<tr>
<td>Vulnerability with others</td>
<td>2</td>
</tr>
<tr>
<td>Effort to Change</td>
<td>2</td>
</tr>
<tr>
<td>Emotions and feelings in the process</td>
<td>2</td>
</tr>
<tr>
<td>Grit needed</td>
<td>2</td>
</tr>
<tr>
<td>Need positive change</td>
<td>2</td>
</tr>
<tr>
<td>Slip into old patterns of thinking</td>
<td>2</td>
</tr>
<tr>
<td>Status quo easy</td>
<td>2</td>
</tr>
<tr>
<td>Keeping Others on Board</td>
<td>2</td>
</tr>
<tr>
<td>Concept fatigue in students</td>
<td>2</td>
</tr>
<tr>
<td>Convincing others of the 'why'</td>
<td>2</td>
</tr>
<tr>
<td>Feeling of urgency</td>
<td>2</td>
</tr>
<tr>
<td>New things not accepted by students</td>
<td>2</td>
</tr>
<tr>
<td>Dealing with Naysayers</td>
<td>2</td>
</tr>
<tr>
<td>Needing to confront misunderstanding or negativity</td>
<td>2</td>
</tr>
<tr>
<td>Discouragement</td>
<td>2</td>
</tr>
<tr>
<td>Negative home</td>
<td>2</td>
</tr>
<tr>
<td>Negative people</td>
<td>2</td>
</tr>
<tr>
<td>Negativity in context</td>
<td>2</td>
</tr>
<tr>
<td>Others saying you can't do</td>
<td>2</td>
</tr>
<tr>
<td>Resistance to new ideas</td>
<td>2</td>
</tr>
<tr>
<td>Process taking time</td>
<td>2</td>
</tr>
<tr>
<td>Impatience in process</td>
<td>2</td>
</tr>
<tr>
<td>Implementing changes takes time</td>
<td>2</td>
</tr>
<tr>
<td>Uncertainty in implementing</td>
<td>2</td>
</tr>
<tr>
<td>How to display new without saying</td>
<td>2</td>
</tr>
<tr>
<td>Needing creativity</td>
<td>2</td>
</tr>
<tr>
<td>Needing different ideas and methods</td>
<td>2</td>
</tr>
<tr>
<td>Not knowing what I'm doing</td>
<td>2</td>
</tr>
</tbody>
</table>

**Situation that required:**
- Encouraged from experience
- Remembering skills and techniques
- Self-reflection
- Want feedback to improve

**First Realize Change:**
- After starting mindset committee
- After working with
- Allowed me to see where I came from
- Changing jobs/schools
- Changing position in school
- During student teaching
- After becoming a mom for the first time
- Gave words to what I had been doing and working toward

**Influence of college education:**
- Reading mindset
- Realized prior career not fulfilling
- Observation of something that revealed it
- Started thinking about how to apply to the feedback surveys from students
- In conversation with another person
- Students started talking about it
- Type of feedback I started giving students changed

**Haven't put it together before:**
- Bits and pieces before

**Now:**
- Several years ago

**Applied Techniques used for helping students on myself:**
- Becoming self-aware
- Belief in my ability to initiate change or plan
- Encouraged from experience
- Remembering skills and techniques
- Self-reflection
- Want feedback to improve

**Situation that required:**
- Encouraged from experience
- Remembering skills and techniques
- Self-reflection
- Want feedback to improve

**First Realize Change:**
- After starting mindset committee
- After working with
- Allowed me to see where I came from
- Changing jobs/schools
- Changing position in school
- During student teaching
- After becoming a mom for the first time
- Gave words to what I had been doing and working toward

**Influence of college education:**
- Reading mindset
- Realized prior career not fulfilling
- Observation of something that revealed it
- Started thinking about how to apply to the feedback surveys from students
- In conversation with another person
- Students started talking about it
- Type of feedback I started giving students changed

**Haven't put it together before:**
- Bits and pieces before

**Now:**
- Several years ago
<p>| students who are willing to try new things | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| time to build a meaningful relationship | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| Administration | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| leadership vision from administration | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| support from administrators | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| Support and Relief | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| dialogue and relationships | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| support from colleagues | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| support from family | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| support from others | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| CHANGE AFFECTED | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| Relationships | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| connect with students | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| develop better relationships with students | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| more sensitive to students | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| opened my eyes to more students | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| taking risks with | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| transparency with | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| working together with students | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| Reflective Practice | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| felt freed and supported | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| humility | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| I’m constantly learning and growing | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| more light-bulb moments as teacher | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| more patient | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| self-assessing as a teacher | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| teachable spirit | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| Learning Expectations | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| end goal of teaching shifted | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| inspire students to reach potential | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| keeps my expectations of students | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| opportunity for students to make a difference in the world | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| outcome is not fixed | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| unlocking student created | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| Teaching Strategies | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| more flexible on helping all students | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| anticipating student needs | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| changed my feedback | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| give more students opportunities | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| how I group students | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| learning together | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| prepared to handle anything | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| CLASSROOM ARTIFACTS | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| promotes growth mindset behaviors in content area | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| Saying up in class | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| You can choose to | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| artwork on wall | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| digital classroom space | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| example of creativity and truth | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| giving praise to non-top performers | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| goal of where you want students to be | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| promoted values and culture of growth mindset in school | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| Classroom table set-up | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| promotion of collaboration | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| represents the product of hard work | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| seeing the intelligence of an unknown | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| student centered environment | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| student created display | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| student effort on display | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| student motivational word | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| your choices are wide open | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| METAPHOR ACTIVITY | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| D | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| B | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |
| C | 1 1 1 1 | 1 1 1 1 | 1 1 1 1 |</p>
<table>
<thead>
<tr>
<th>Change?</th>
<th>Team or Group Efforts</th>
<th>add personal connections</th>
<th>more people doing it with</th>
<th>Positive and Good</th>
<th>much more opportunity out there</th>
<th>show more positive outcome in future</th>
<th>Ongoing Process</th>
<th>being able to see</th>
<th>add more peaks and valleys</th>
<th>room for more growth in future</th>
<th>show more of the journey</th>
<th>need my tools with me to be prepared</th>
<th>none</th>
<th>A</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How alike</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive and Good</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>idea of possibility and potential</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>introspection on the good</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>future is positive and clear</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>knew its going to be positive change</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I'm comfortable in my career</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>once all I can do</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ongoing Process</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>not finished yet</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Looking back at experiences has sh</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>journey</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lite something else I want</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>once you reach critical mass you rise and see</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>progression</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenging and Difficult</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>challenge</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>don't always know where its going</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>not sure how it will turn out</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>process is scary or frightening</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sometimes its hard</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>take care in the process</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>uncomfortable</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>uphill climb</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team or Group Effort</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>it takes a team of people</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>working together to be successful</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD RECOMMEND</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipped</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal Learning</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master's degree program</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>centralized clearinghouse seminar</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>grad/undergrad courses with examples of overcoming adversity</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practical Exercise</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How to create an</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simulation of Labeling power</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher examples of implementation in classroom</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>activities to engage parents with student intelligence</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>simulation of feedback on student work with discussion</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>video simulation and discussion</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>warm up activities for classroom use</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How people think</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychologist profiles</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>brain research</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>data on feedback</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>intro to growth mindset presentations</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>multiple intelligences series of training</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>student-centered teaching</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study other contexts and cultures/difficulties of learning in context</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspired</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth focused activities</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeing is believing</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TED talks collection or YouTube series</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How teacher unplanned words affect student self-image</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observe other teachers doing it</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real life connections and examples of growth</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using connected theories with mindset</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supported</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support and encouragement</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colleague collaboration with specific purpose</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encapsulating mentor knowledge</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaborative conversation with admin during obs</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth mindset book groups</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observe other teachers with purpose</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-demand mentor</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Servant leadership from admin</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social media and twitter</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS Questions</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS LAS DESCRIVE E</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem solving through visualization is a high form of intelligence</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intelligence may be somewhat determined</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal motivation influences intelligence</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Making school-wide culture shift</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple definitions of intelligence</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My intelligence changed</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My perspective influenced my behavior</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My students’ interactions</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My words change perspectives</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After reading Mindset</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science says the brain can grow</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social context and home impact intelligence</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students learn in different ways</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Through my own personal experiences</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Through teaching experiences</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Views of intelligence can cause tension and anxiety in others</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work with students</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can be anything you put your mind to</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS LAS CHANGE AS</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. I had an experience</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I had an experience</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. As I questioned</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Or instead, as I questioned my ideas, I realized I still agree with my beliefs or expectations about intelligence</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. I realized that other people</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. I thought about</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. I felt uncomfortable</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. I tried out new ideas and</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. I tried to figure out</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. I gathered the ideas</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k. I began to think</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. I took action and</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. I do not identify with any of these statements above</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PS LAS INFLUENCE</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mindset could impact school culture of achievement</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I realized I could be</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All of it</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Before I learned about mindset</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changed way I engage with</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort impacts achievement</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gave me vocabulary to discuss it</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less rigid and more dynamic interpretation</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grad school</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My old ways did not fit my new thinking</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My perception impact student performance</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### CHANGE AFFECTED TEACHING

- **10 Relationships**
- **4 Reflective Practice**
- **8 Learning Expectations**
- **9 Teaching Strategies**

### MOST INSTRUMENTAL IN CHANGE

- **4 Self Factors**
- **8 Experiences with Students**
- **3 Administration**
- **5 Support and Relationship with Others**

### ALWAYS CASE? WHEN CHANGED

- **8 Professional Relationship Experience...**
  - **5 Experiences with Students**
  - **2 in prior job/position**
  - **3 mindset PD committee**
Appendix T

My Personal Narrative of Transformation

My story of mindset transformation reflects the experiences, equipping, and relationships of my own journey. As a student young student, I was always curious and imaginative. Reading voraciously and wanting to know as much as I could. I did not ever struggle in school, except with conforming my cursive penmanship and coloring to the lines. I was a shy child and anytime I had to perform in front of others I was very nervous and self-conscious. Academically, I did not struggle and excelled in both math and ELA.

I come from a family with little experience in college. My older sister was the first to formally attend and graduate from a university a decade before me. Both my parents had some experience at the college level, my mom went through an RN training program and my dad had a few courses but was in the manufacturing trade. During high school, there was always a running competition in my peer group to perform, excel academically, and take the hardest classes offered. I was labeled “smart” and “gifted”, an “honors student” and “AP student”. I was tracked with students of similar ability and was not really exposed to students who learned differently from me. Poor marks on assignments were shame inducing and my greatest “struggle” in high school was AP Calculus BC. I ended up receiving a C in that class second semester due to a failed test. My teacher projected that I would be lucky to obtain a 3 on the AP test at the end of the year. Seeing the posted grades on the pre-test in the hallway with my peers made me feel inadequate. I had worked for several hours a night, every night, to understand and learn the material all year long. I could not believe that my effort produced such a menial assessment of my potential on the final AP test. Part of me wanted to prove her assessment of me wrong, and I worked even harder. I ended up with a 4 on the AP test—to the amazement of my teacher.

This idea of striving to perform, to validate the labels that I had put on myself and had been put on me by others was exhausting. I had to be “perfect”, to be “smart”, and a “top performer”. There was a mixture of learning to satisfy my curiosity and desire to learn, but also to be considered worthy in others eyes as a valuable person. During high school and college, some of that pressure and lack of self-confidence manifested in an eating disorder—a pretty common experience of high achieving females who have to seem all together.

I attended Wheaton College, “the Harvard” of Christian education. I enjoyed the experience very much and continued to work diligently at my studies. However, on a trip to Wheaton in Europe with my Political Science Department, I received a poor mark on a paper which caused a crisis of identity. Was I just not that smart? Did I not belong here? In part that experience caused me to try and figure out how to get better, but at the same time I felt it was a judgment of who I was as a student. It made me really examine myself spiritually as a student. By the end of my undergraduate experience, I ended up deciding to go to law school after Wheaton.

I took a year off in between and ended up meeting my future husband. His story was very different from mine. He had dropped out of high school his senior year and had his GED. He had obtained an Associate’s Degree but at the age of 33 was no further along in his education. And he was a cop—not a stereotypical intellectual career choice. But he was smart and intelligent—
even though he did not have the formal educational credentials. And we fell in love. I was accepted at the University of Illinois College of Law and we dated, became engaged, married, and became pregnant while I was a few hours away at school. While formal education was not for him at that point, he fully encouraged and supported me in my schooling. My husband is a unique man, confident and sure in himself but also open and understanding.

I graduated law school and took a position as an Assistant State’s Attorney, prosecuting criminal offenders. Law training and practicing as an attorney created a very dichotomous worldview in my mind. Every case had winners and losers, good guys and bad guys, right and wrong—and in my professional position it seemed like the same criminal offenders were recirculating through the system. My job felt futile at times and I realize today that I had started dehumanizing the people coming through the system. I believed they would be back through the system and I did not believe that people could make substantial change in their lives to escape a pattern of criminal behavior. I would hold them accountable to the violation of law with certain conditions, fines, restitution, or community service. They would not do what they promised to do, I would file a petition to revoke their sentence, and then the judge would resentence them to jail. Sometimes the threat of jail looming would be enough motivation for them to finish the conditions of their original sentence. This observation makes sense to me today because only the repeat offenders would recirculate while the one and done offenders who learned their lesson and changed their behavior would never come back through the system. While there was a lot of important work keeping the community safe from people who were doing bad and dangerous things, there was a lot of petty nuisance crime that brought people into the system. I saw people as basically unable to make substantial change to themselves, their patterns of thinking that got them caught up in the criminal justice system, and their inability to conform their behavior to the requirements of law.

I eventually went into private practice working on civil litigation and family law. Much of what I saw were people at their worst moments, behaving poorly, and seeking to use the legal system and my skill as a form of emotional weaponry. Eventually, I grew disillusioned with the whole process and felt burnt out. That is when teaching found me. My sister mentioned to me at a family get together in her kitchen…”Have you ever considered teaching Judy? You’d make a great one.” To be honest, it had never crossed my mind and was the furthest thing from where I saw myself. However, over 6 months I was considering and thinking about what to do with my life. What I liked most about the practice of law was working with my juvenile and minor clients—they seemed to have time to make changes to redirect the course of their lives. What I realized though, was that the people besides parents who had the most impact in their lives were their teachers at school. If I wanted to impact and influence more kids, I would need to change careers. At that time, my sister recommended to me Christian education and the church campus had a K-12 school.

I closed down my law practice and ended up back in school working on a Masters in Teaching that also had a certification program embedded. We moved our family close to the church and Christian school and I completed my teaching certificate while volunteering at the school. My brother-in-law, Marc, was named the Executive Director of the school by the church—moving over from Children and Family ministries to bring more of a connection between the church and
school. I enjoyed both the mission of Christian School and the close-knit family feeling of the environment. Students were known and valued. There was strong camaraderie amongst the staff.

After finishing up my student teaching, I got my first teaching job at the Christian School teaching 6th grade history and English Language Arts. As much as student teaching and volunteering for the year prior could prepare me for life in my own classroom, the first year was an incredible struggle. I thought I was a great teacher, but my students were not learning the way I expected them to. The school also had two new administrators, Kent and Bob, who started their roles as principal and vice-principal at the same time I started as a new teacher. In many ways, we had started our careers together there, but in different roles. In this context, Kent became instrumental in my own journey of transformation. A man ahead of his time, Kent brought high expectations, differentiation, and a relentless pursuit of knowing Christ and your students. Bob helped me to see discipleship and discipline as two sides of the same coin—being patient to seek to understand before judgment and always seeking to model with students the heart change and repentance the Lord seeks from us in our walks. Marc, as executive director, was intense and relentless in making the school not only spiritually vibrant but also a true family with traditions and opportunities for students to grow in new ways. Marc set up a resource department to allow students who struggled in their learning the opportunity to be successful in a private Christian education environment. He did not think it was fair that some children in a family could attend and a sibling who struggled reading would not be able to be part of the school family. Marc believed that every student should be able to read God’s Word for themselves and he brought in resources specific to helping students with dyslexia learn to read as well as other supports. For students in the arts and sports, he brought quality opportunities to grow and excel at the highest levels. His vision was that the school would prepare students to be successful in whatever endeavor or passion they had at the next level of their education and life.

In this environment. I had the opportunity to grow and transform as a teacher. During that first year, I would grow frustrated with how to get students to learn. It was hard for me to understand the disinterested or disengaged learner. Through experiences with coaching from Kent, I had a moment in which I realized that I was approaching the whole teaching profession backwards. I was trying to replicate myself as a learner in my students. I needed to help my students figure out who they truly were as learners, not the labels they had come to embrace, and then help to maximize their learning opportunities. I had believed that success at my tests or other measures made you smart or not. I was not seeing my students for who they were and the unique and valuable people that God had made them to be.

Over the course of the year, I had no idea that Kent was coaching and mentoring me. He did it in such a way that it felt totally natural and just part of our daily relationship. Kent was obsessed with knowing our students and meeting them where they were at academically, spiritually, socially, and emotionally. Kent was in my classroom every day. He would drop in for a few minutes, and then leave me a note either in writing or via email with positive things he saw me doing. We would have in-person conversations to talk about what I could be doing differently. These conversations were never accusatory and Kent always used questions to help me see for myself what he was seeing that I could improve upon. Kent was supportive of me trying new things and talking through what worked and what didn’t work in a situation. He also encouraged
us to observe each other, to get ideas, and to be part of the feedback process with our peers. And he knew I liked to read, so he was always dropping helpful books by on my desk.

It was during one of those conversations that Kent helped me to realize that not all students learned like me. “They’re not you Judy.” God meets each of us where we are at and then grows us to where we need to be. I realized that I needed to see my students the way that God saw them and me. I realized that all my students could grow, but it might look different or take a different path from my own. Kent would always remind me, “All behavior is purposeful Judy—what is it that they are really telling you about themselves through it.” He helped me to see that God looks at each of us as unique individuals and while he loves us all—he loves each of us personally in the way that we need to be loved. The problem was not that my students could not learn but that I was not teaching them in the way that they needed me to be teaching them for growth. Looking back, I can see now the shift that was occurring in my mind. I was shifting to a curious outlook of who my students were and what made them tick as people. Instead of being the “teacher” expert, I felt like I was becoming the “student” to come to know them each as individuals.

During my second year of teaching is when I began to embrace new ways of doing and teaching with my students. I was experimenting and seeing what happened. It was not until I ran across an article on my Facebook feed that highlighted Carol Dweck’s work on Mindset that I finally had words and background research to give expression to what I was experiencing. Reading her work and research helped me to see and re-evaluate my teaching and my own mindset. And, it made me realize that I had viewed myself as fixed in many ways—even as a high performer. This fixed belief also made me view others around me as unable to or incapable of their own growth. Over time, Kent kept coaching us—constantly applying gentle pressure to move our minds and hearts around new ideas. As I continued my education, finishing up my Master’s and then starting my doctoral program, Kent and I would talk and share ideas. I would ask him questions and try new things in the school. I was constantly pushing for ways to improve and grow our school and our team was doing really good work. This picture above is the board from one of the first days back to school in our all team meeting--what we were going for that year with our students and each other. I’ve saved many pictures of our boards from staff meetings over the years and fondly remember all the lessons and insights. After 4 years together,
change was in the air again. Marc left as executive director to do leadership development and coaching for Christian ministry leaders and schools around the country. Kent went back to Iowa to be a high school principal there again. And I was looking for a path forward for my growth and needed to expand my experiences, but growth comes through difficulty and challenge. I had built the confidence and skill as a growth-minded teacher over those four years. I ended up working in a public school setting the following year in a dual credit program using my law degree. And then the unthinkable happened…

In 2017, as we were on our yearly family vacation in Door County over the 4th of July, Marc died suddenly from a heart attack. The outpouring of love and support from the church and school, the collective grief of families and students, was unbelievable. Over 3,500 came through the visitation line at his wake, some waiting 4-5 hours in line to pay their respects and share their stories of how Marc had impacted them individually and specifically.
The students at the school painted The Rock in his honor. No matter who they were, Marc made people at the school feel loved and part of the family. He had students take pictures of themselves over summer vacation with “We are Lions” signs wherever they were and at the beginning of the school year played a recap movie of their summers. He made students and families understand what it meant to “Be a Lion” and how we’re to love one another because this is how the world would know that we belonged to Christ. While you think that relationships make an impact in the lives of students and families, it is not until something like this happens that you realize the extent of an impact of someone’s life. His funeral service was live-streamed. And it was a testimony to the power of Christ working through Marc’s life to impact everyone around him. Over a month later, my dear sister encouraged the students to repaint over The Rock. Marc had intended The Rock to celebrate their milestones and he would have not wanted it to become a permanent memorial or shrine to himself. Marc would not have believed the outpouring of love and honor to his legacy that was demonstrated by his church and school families, friends, and colleagues. The suddenness of his passing and the depth of the loss experienced by people who loved and knew him is still reverberating through our community. People are still reflecting on their lives, their faith, their walk with the Lord, their pursuits, and their purpose in light of the faith of Marc Abbatacola in Jesus Christ.

For me personally, he took a chance on me as a new teacher and career changer. He gave me my first opportunity and trusted me in that role. He brought great people around me to mentor me and help me grow as a teacher. And in the early morning hours before he left planet Earth to meet his Savior in person, we had one last conversation about what I should be doing with my life. I was feeling lost and wondering where God was taking me on this doctoral path. Marc gave me one last word... “Judy-go be a teacher of teachers.” A few hours later, he made his way to Glory in a moment. How fleeting our time is here on earth. How we are but a vapor and mist. Marc’s life was illuminated by his relationship with Jesus Christ. The light Marc emanated was because of
the power of Christ in him, the hope of glory. The impact of his life continues in the people he
touched and changed. He lived his legacy.

As I sit here 6 months after his death, I am struck by the power of the relationships in my life,
forming and transforming me as a teacher and person. In whatever capacity God has for me, I’m
determined to teach others what has been entrusted to me through the context of relationship. We
can all grow and change…and we can give others the opportunity to do the same. Herein lies the
power of transformation—it is in knowing and being known—by God and by the people around
you. Because, we are only better…together.