INITIAL DEVELOPMENT AND VALIDATION OF THE TEACHER EMPATHY SCALE: TES

by

BOBETTE BOUTON

(Under the Direction of Cory Buxton)

ABSTRACT

The purpose of this study was to develop and validate an instrument to measure empathy specifically in educators focusing on cognitive, affective, behavioral, innate, and learned constructs. The Teacher Empathy Scale (TES) is a 21 item self-report scale designed to assess empathy in secondary school teachers who teach in grades 6-12. Due to little empirical study of the socio-emotional trait of empathy within the field of education creation of this scale could facilitate the development of programs and courses that emphasize empathy training for pre-service teachers, aid in teacher recruitment, and help teachers gain insight into their own empathic tendencies within the classroom. A five phase validation structure was used beginning with initial scale design, novice review, and expert review to create a 48 item TES; followed by a convenient sample of 261 teachers who completed a working version of the newly developed instrument to assist in the establishment of content validity and 8 teachers to help with initial estimates of instrument reliability. Data was analyzed using a quantitative design focusing on descriptive statistics, internal reliability using the coefficient alpha, and confirmatory factor analysis (CFA) to analyze the overall hypothesized model structure. Initial findings were encouraging and support further validation of the TES.

INDEX WORDS: Empathy, Young Adolescent Development, Cognitive, Affective, Behavioral, Innate, Learned, Scale Development, CFA

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CHAPTER 1

INTRODUCTION

In 2005 there were approximately 364,000 new teachers hired in the United States and according to National Center for Education Statistics the 2017 projection for new teachers is 464,000 in both public and private schools (National Center for Education Statistics). These numbers contribute to the projected 4.2 million teachers who will be teaching students in 2017 (National Center for Education Statistics). These teachers demographically are 90% white females who grew up lower middle or middle class in rural or suburban homes (Chou, 2007; Gomez, 1994; Hodgkinson, 2002; Marbley et al, 2007) and who are primarily mono-lingual (Gomez, 1994). These same teachers will however be teaching a growing number of racially, ethnically, culturally, and linguistically diverse students. Currently students from a racially diverse background make up approximately 45% of our school population in the United States and projections indicate that students of color will grow to 50% by 2022 (U.S. Census Bureau, 2012). With these mismatched percentages universities that prepare teachers must continually look at ways to help teachers not only understand diversity, but become better prepared to teach the students in their classrooms who may not look like they do or who do not come from similar backgrounds.

According to Nieto (2006), "There is growing research…that good teachers make the single greatest difference in promoting or deterring student achievement" (p. 461). If this is the case then it is necessary for teachers to do everything possible to reach each student in their care. However, Chou (2007) found that

> (1)Fewer than 15% of teacher education students would like to teach in urban schools; (2) Pre-service teachers want to teach students like themselves in communities that are familiar to them; (3) Preservice [sic] teachers are neither well prepared nor well-disposed to teach

> ethnic and language minority students; (4) Preservice [sic] teachers have very little knowledge about different cultural groups in the United States and often have negative attitudes about cultural groups other than their own (p. 146).

These attitudes and beliefs include pre-service teachers' views about sexual orientation, religion, and socioeconomic status in addition to race, cultural, ethnic, and linguistic differences (Gomez, 1994). With these findings comes the dilemma pressing teacher educators in universities. First, how to help students understand that the likelihood that they will be teaching students unlike themselves in one way or another, and second, helping students be able to become better teachers for each of their students who will enter their classroom in the future. Neito (2006) believes that it is necessary for pre-service students to not only learn about the students that they will teach but to also come to respect the families and communities in which their children live. So as universities continue to prepare our future teachers they are looking at a variety of techniques to help better prepare pre-service teachers for diverse classrooms.

Preparing pre-service teachers for the classroom is not an easy task. Universities have to ensure that they teach lesson plan design, classroom management techniques, specific content instruction, state standards, and student engagement. But oftentimes student engagement and motivation take a back seat to the more rigorous academic issues. However, "literature indicates that an ethos of caring deeply and empathically about children and their welfare has been identified as being at the heart of purposeful teaching, vital to personal happiness and daily attitude renewal, and essential to inspiring children to care about their own learning" (Boyer, 2010). With this in mind and with the knowledge that "affective techniques create a favorable psychological climate for learning" (Schunk, 2008) a more direct focus on empathy in the classroom would seem to be an important aspect of pre-service teacher educators. In the case of middle school education in particular, what is known about the changes that adolescents experience during the middle school years concerning rapid physical, hormonal, and emotional changes is a key component in developing a sense of

empathy in our future teachers (Lerner & Galambos, 1998). For if new teachers do not understand the significance of what is going on in the mental, physical, and emotional development of their students then there is little to no hope for an empathetic stance in the classroom.

The word empathy is used in common conversation today, but prior to the late 1950s it was seldom used at all (Freedberg, 2007). Its evolution can be traced back to the Greek word empatheia, translated as "to suffer with" (Cunningham, 2009, p. 681), but it wasn't until 1957 when Carl Rogers, a noted psychologist, highlighted the word for the therapeutic community and gave us one of the many definitions we so commonly use today. Rogers' definition of empathy was "to perceive the internal frame of reference of another with accuracy, and with the emotional components and meanings which pertain thereto, as if one were the other person, but without ever losing the 'as if' condition" (Hackney, 1978, p. 36). Truax and Carkhuff (1965), other early researchers of empathy, adapted the definition slightly to "the skill with which the therapist is able to know and communicate the client's inner being" (p. 5). Truax and Carkhuff changed the definition from Roger's more cognitively based definition to a more behavioral one and here began the search for the "true" definition of empathy. In fact, by 1968 over 21 definitions of empathy were used in just the domain of psychology, and as this discussion will show it was only the beginning (Hackney, 1978).

Although, Carl Rogers was one of the first researchers to really begin to unpack and see the need for empathy in the work of therapists; he also saw its importance in all human relationships (Furman, 2005). Empathy can also be seen in the language of philosophers and art critics and more recently in the medical and educational fields (Spiro, 1992; White, 1999). White (1999) outlined empathy and understanding of the student as one of the four "personal-social emotional feelings

that impact teaching and what is learned in the classroom" (p. 122). Because of this finding, the need to better assess empathy in the teaching field is the thought behind this current research.

Statement of Purpose

As the review of literature will show empathy is an essential characteristic for teachers to possess, therefore the purpose of this study is to develop and initially validate an empathy scale designed specifically for educators within grades 6-12. The scale could be used for various purposes including allowing teacher educators and school administrators to make better informed decisions in the applicant process both in admittance to teacher education programs and in the hiring process in general, assisting universities in preparing their pre-service teachers to the importance of empathy in the classroom, and simply to inform both pre-service and practicing teachers of their personal aptitude within the realm of empathy.

The scale considers the three primary components of empathy: cognitive, affective, and behavioral as will be further discussed in the review of the literature. In addition the scale attempts to separate the more contextual or learned experiences of empathy from the innate or personality based components of empathy. The contextual questions used as items in the scale are directly related to the field of education, primarily grades 6-12 and are used to help distinguish between cognitive, affective, and behavioral, as well as innate and learned empathy.

Rationale

It is from the review of the literature that the need for empathy in the field of education became evident and the obvious lack of attention to this social-emotional trait within the field was discovered. As discussed earlier studies show that empathy is a key component in helping to understand others. Because children are placed in the care of teachers for approximately eight hours

a day, five days a week, for nine out of the twelve months of each year, teachers are in their students' lives for a significant part of their growing up years. I believe empathy is a way for teachers to attempt to more fully understand each student that passes through her or his care. However, due to the difficulties that surround the study of empathy, which will be discussed in the following chapter, these problems must first be acknowledged and to try to begin to and extinguish as many of them as possible before any true accurate measurement can occur. Currently there is no empathy scale that is specifically intended and designed for teachers. There are general empathy scales (Lam, Kolomitro, & Alamparambil, 2011), empathy scales designed for physicians, such as the Consultation and Relational Empathy (CARE) measure (Buckman, Tulsky, & Rodin, 2011), and one designed for social workers (currently not published) (King, 2009). Based on the need for empathy scales specific to other helping professions, I believe the best place to begin with the field of education is to create a scale specifically designed for teachers.

In addition to seeing the importance of teacher empathy due to student diversity, for the purpose of this research I will more specifically focus on young adolescents. Because of this focus, a review of the literature concerning the socio-emotional development of young adolescents and its connection to the onset of puberty and empathy will also help inform my study as to the importance of empathy for middle level educators. Although the broader area of young adolescent socio-emotional development was not addressed in this discussion, empathy falls under its umbrella and will be discussed in much more detail in an additional review of that literature. Because of the changes that are occurring both physiologically and emotionally during puberty, I believe that the study of empathy is increasingly important at the young adolescent stage.

Throughout the past several years as I have delved further into the empathy literature I am continually shocked at the lack of research overall, but especially within the field of education.

Because education is considered one of the occupations in "the helping field" it is surprising that many of the other areas such as psychology, medical, and social work have made more efforts and greater strides in their research in empathy. Perhaps because it is only within the past fifty years that empathy has been studied at all helps to give reason as to this lack of research. However, despite the absence I truly believe it is necessary, and I hope that my study is only a new starting point for empathy research within the educational field.

I believe that once a scale designed for teachers has been validated and the many difficulties in measurement are addressed, experimental design can begin. Although my study will not incorporate experimental design my hope is that because of a validated scale for teachers this will enable more rigorous research once a measurement tool is available. These studies can begin to establish a more nuanced definition of empathy within education. In addition, experimental design can explore the ways empathy curriculum is designed and hopefully be able to see what works and what doesn't within teacher preparation programs; with the goal that this knowledge trickles down to the students that the educators teach each year.

Perhaps these goals are lofty and real change will not come to fruition in my lifetime. But change must begin somewhere or another fifty years will pass and the educational field will only fall farther behind in their knowledge concerning empathy in the classroom. We have much more at stake than a competition among the other helping professions as to who is able to teach empathy more effectively. We have our youth to keep in mind. Most middle level teachers see anywhere from 25-125 or more student each day and the more we ignore empathy's importance in the classroom the more students are failing to get needs met both emotionally and, in turn, academically.

I do not go into my research wearing rose-colored glasses. Quite the opposite, I have explored to the best of my abilities the difficulties with studying empathy as I will address in the

review of the literature. So with all of these difficulties in mind I move forward. Not a giant leap, but instead with a small measured step. I believe I am following the same path that other fields took. It is with the development and validation of an empathy scale designed specifically for teachers where my first step begins. The road ahead promises nothing, but hopes for a teaching force that both understands the importance of empathy in the classroom and uses it each and every day for the betterment of our youth.

CHAPTER 2

LITERATURE REVIEW

This literature review is divided into two separate sections. First, the six primary concerns that face empathy research: multiple definitions, multiple fields of study, innate vs. learned debate, multiple empathy interventions, difficulties in measuring empathy, and where empathy research fits in the education field within the broader research on meeting the needs of all leaners in the classroom. The second involves a historical and current review of the literature surrounding young adolescent development including physical and socio-emotional and how empathy can be highlighted during this time of growth. By combining these two literature reviews and making the connection between empathy and adolescent development I intend to show the importance of empathy training for pre-service teachers working with adolescents, thereby establishing both the need to measure empathy and the importance of a scale specifically designed for educators who teach young adolescents.

Concerns that Surround Empathy Research

Five significant issues repeatedly arise in the literature as researchers continue to try and understand the socio-emotional trait of empathy in a variety of fields. A sixth concern involves my attempt to situate empathy research within related lines of research that are better developed within the field of education. The first concern is the multiple definitions recorded for empathy. This was an issue addressed back in 1986 as Wispé tried to distinguish between empathy and sympathy and has continued to be a problem as Lu, Dane, and Gellman (2005) discussed in attempting to understand how to teach empathy to social work students. The second issue relates to the first

concerning the variety of occupational fields that use the term empathy for a variety of different purposes which can add to confusion in both definition and understanding empathy's purpose.

Third, the debate of empathy as an innate or inherit trait versus the idea that empathy can be developed and nurtured is a controversy that many scholars have attempted to understand; which then leads to the fourth issue concerning the variety of interventions that have been used throughout the many different fields that study empathy. By trying to understand that if, in fact, empathy can be taught, how do we go about the instruction? There are a variety of ways to view and understand empathy. The lenses most commonly used are cognitive, affective, and behavioral (Lam, Kolomitro, & Alamparambil, 2011). However, empathy can also be studied from a social skills or peer relations point of view (Baker, Parks-Savage, & Rehfuss, 2009); a moral development standpoint (Sezen-Balcikanli, 2009); a cultural diversity perspective (Lu, Dane, & Gellman, 2005); and even using a service-learning lens (Lundy, 2007). Each of these points of view can make any kind of consistent study of empathy rather complicated.

The fifth issue centers around the difficulties in measuring empathy for research purposes. These difficulties contribute to the limited empirical findings throughout all fields studying the phenomenon of empathy. Because of the limited research, I believe the study of empathy to be wide open, especially within the field of education. Because of this gap in literature, my proposed study will help to address the above issues while serving to better understand the importance of promoting empathy in the educational field.

Finally, as I have noted above, there is a lack of research in the education field that explicitly addresses the construct of empathy, but there is a large body of research on topics such as caring, culturally responsive pedagogy, instructional congruence, funds of knowledge, understanding

student world views, and linguistic identity. These topics are all related to understanding socio-emotional needs of students and how teachers can take action to better meet those needs.

Definitions of Empathy

To begin there are three central components to consider for the word empathy. The first, from a cognitive component, "refers to one's ability to take the perspective of others, and see the world through their perspective"; the second, from an affective point of view which, "involves experiencing the feelings of another person"; and the third, the behavioral component, "involves verbal and non-verbal communication to indicate an understanding of an emotional resonance with the other person" (Lam, Kolomitro & Alamparambil, 2011, p. 163). I have used these definitions and simplified these processes to cognitive: the mental process of empathy; affective: the emotional process of empathy; and behavioral: the physical process of empathy. It can be argued that all three components are necessary to truly define empathy. Because there is no definitive answer to which is the correct way to study empathy we are left to only make educated guesses based on limited studies.

Not only do the three separate parts complicate any effort to define empathy, there are also a variety of other words that many use as synonyms for empathy such as sympathy, perspective taking, and compassion. What seems to be the myriad of synonyms used for empathy can even more muddy the waters of research when attempting to teach empathy as a skill. Sympathy not only sounds similar but also is confused with the term empathy. Spiro (1992) explained the difference as,

> "Empathy is more than knowing what we see, it is the emotion generated by the image. It is difficult to distinguish empathy from sympathy: Where empathy feels 'I am you,' sympathy may well mean "I want to help you.' Sympathy involves compassion but not passion" (p. 843).

Ingram and Nakazawa (2003) sum it up even more clearly by quoting Seward; "Sympathy: 'I see you, I hear you, I feel for you.' Empathy: 'I see you, I hear you, I am with you.'" (p. 487).

Similar to sympathy is the word compassion. Merriam-Webster (2011) defines it as, "sympathetic consciousness of others' distress together with a desire to alleviate it" (retrieved online). Merriam-Webster even used the word sympathetic to help explain compassion, again showing the similarities, but when looking at this definition the differences from empathy are also obvious. Perspective-taking is another common phrase that is substituted for empathy. However, perspective taking can be used as a tool to aid empathy, but not as a synonym for it. Batson, Sager, Garst, Kang, Rubchinsky, and Dawson (1997) used perspective-taking in their research to induce empathy in their subjects. The process of physically and emotionally putting yourself in the place of another through role play or some other controlled environment can lead to a better understanding of empathy, but the two words are not necessarily interchangeable. These three synonyms are the most commonly used for empathy; however, many more exist to make defining empathy a difficult task indeed.

To complicate things further, each different field of study has its own definitions for empathy. In fact, Cunningham (2009) talked about empathy and its many definitions as being a "fuzzy concept" (p. 681) and to try to make sense of why such a word has so many definitions it begins in Germany in 1873 and the art world. As mentioned earlier, the word empathy didn't become part of our regular language in the United States until the late 1950s. But a century before, its origins came from aesthetics and "referred to the projection of one's own feelings into a work of art" (Cunningham, 2009, p. 681). Empathy was used in the art community and appeared to stop there for many years until Rogers and the psychology field began to see its usefulness in therapeutic situations. Rogers (1959) and Truax and Carkhuff's (1965) definitions began the shift to using

empathy in a therapeutic realm. More recently the social work community has taken the earlier definitions and suited it to fit their needs using the definition "to perceive accurately and sensitively the inner feelings of the client, and to communicate them in language attuned to the client's experience of the moment…" (Lu, Dane, & Gellman, 2005).

The helping professions of psychology and social work led to the helping profession of the medical field and yet, although similar, another definition of empathy emerged. From the medical perspective, "empathy has been defined as 'the act of correctly acknowledging the emotional state of another person without experiencing that state oneself'" (Romm, 2007, p. 91). Because of the physical pain, suffering, and multiple ailments that doctors and nurses see each day, the distinction in this definition emphasizes the separation between patient and self, but still focuses on correctly identifying the feelings, needs, and concerns of that patient.

And finally, the helping profession of education came into the mix of empathy research and with it came another definition. Boyer (2010) found that within the field of education "empathy is the ability to interpret signals of distress or pleasure with effortful control" (p. 313). Although this definition on the surface sounds very different from the others, the use of empathy in the classroom in the midst of 20, 30, or more students must look different than in a one-on-one therapist-client or doctor-patient relationship. Not only must a teacher be able to recognize the often not so overt signs from students in times of both "distress and pleasure," but the teacher must keep complete control over the situation in order to diminish any additional stress that could be caused from the situation(s). With this said, the aspect of *care* is more apparent in the definition of empathy in the classroom than other definitions previously given (White, 1999). Perhaps, this is why the word *care* is more commonly used and studied in education from authors such as Nel Noddings (2005) and Kirsten Olsen (2009). However, once again, care is not empathy, and the two should not be

interchanged. Even with the difficulty in defining empathy, along with the many fields of study that have embraced its importance through the years we must continue in the field of education as well if we truly are in the business of helping students succeed in the classroom.

Fields where empathy curriculum is commonly studied

As mentioned earlier, the art world was the first area to see empathy as significant. In 1873 the idea that "the viewer of a work of art, and particularly the viewer's subjective feelings, contribute to the perception of form in art" was introduced (Verducci, 2000). This subjective nature of empathy has continued to play a role in the complexity of its understanding, defining, and interpreting empathy. The artist and the art connoisseur are not alone in this; the subjective nature of empathy has also come into play in other fields as well, especially around designing curriculum and teaching.

In the psychological field, even before Carl Rogers popularized empathy in therapy, Hastorf and Fender (1951) stated, "It is obvious that the perception of persons lies at the very heart of social psychology and that an understanding of empathic ability will contribute greatly to our understanding of many problems in both social psychological and personality theory" (p. 574). The importance of empathy in this field is still echoed today with empirical research demonstrating "that empathy has been closely correlated with effective outcomes in social work practice" (Freedberg, 2007, p. 251). Constant reminders in the literature about the importance of and need for empathetic counselors, therapists, and social workers have driven continued research to understand how empathy can be taught to students training in these fields. However, no one has come upon the "magic potion" or more aptly put, "magic curriculum" that will ensure students learn how to incorporate empathy into their practice.

The medical field was the next to try and incorporate empathy training into their curriculum. Through research studies, empathy has been found to play a significant role in medical care concerning the doctor-patient relationship (Deloney & Graham, 2003). How patients are spoken to and interacted with can contribute to the healing process and the overall health of the patient. However, one issue with which the medical field has struggled is to maintain the strength of medical students' empathetic tendencies especially once students become residents and are faced with long hours, numerous patients, and enormous expectations placed on their success. Benbassat and Baurnal (2004) found that "23% of U.S. medical residents thought that they had become less humanistic during their training and that as many as 61% reported becoming more cynical" (p. 832). These startling numbers explain why the medical field has continued to make an attempt to teach empathy in both classroom settings and through role modeling in the hospital setting, but once again because of the difficult nature of teaching empathy they have struggled to know exactly the best way to go about it.

Finally, the educational field has begun to view the importance of incorporating empathy into the preparation of their future teachers. Many educational theorists in a multitude of arenas see the impact that empathy can have in the classroom. Many character and moral educators such as Thomas Lickona (1991), William Bennett (1993), Maxine Greene (1995), Nel Noddings (2005), Deborah Meier (1996), John Deigh (1995), and Martha Nussbaum (1995), to name a select few, have written on the importance of empathy in the lives of our children (Verducci, 2000). But once again, the issue of how to incorporate and successfully prepare our educators to understand and integrate empathy into the classroom is at the forefront of research and discussion.

Innate versus learned empathy

Researchers fall in one of three camps regarding the belief of how empathy is developed in self. Some believe that empathy is a trait that individuals are either born with or without. Some view empathy as a trait that can be taught and nurtured in a variety of ways, and some believe in a combination of the two; that empathy is innate, but that it can also be fostered or suppressed depending on external environments.

The first group of researchers who believe empathy is innate usually focus on the presence of empathetic traits in infants and small children (Hoffman, 1982; Rushton, 1991). When asking mothers of infants to facially express "fear, joy, or neutral emotion" the "arousal of resonant emotion" of the infants cause some researchers to believe that without any nurturing of empathy infants seem to experience a similar emotion as that of their mother (Goldman, 1993, p. 353). This idea that infants are able to sense the emotion of another and then not just mimic it back, but appear to understand the emotion of the other is reason to believe we are born with some ability to empathize with others. The studies did not go into detail about the differentiation between infants concerning if some showed more empathic tendencies than other infants. I believe a comparison study would help to more fully understand the inheritability of empathy, but the above studies at least give us some insight into the idea of innate empathy.

Other researchers have used twin studies to equate genetics with innate empathy. Matthews, Batson, Horn, and Roseman (1981) found that as much as 71% of the variance in the amount of empathy estimated was due to genetic influence in twins. These studies show empirically a link to the inheritability of empathy. They studied both twins that were raised together and apart and found similar findings, which does take out the nurture aspect of empathy and more fully helps to again show the genetic quality. As will be stated later in this discussion the lack of research of empathy

limits what can be empirically stated. However, although the number of studies is small I believe there is enough evidence to at least preliminarily conclude that a certain amount of empathy tendency is inherent.

The second camp believes that empathy can be developed and nurtured in an individual (Buckman, Tulsky, & Rodin, 2011; Hastings, Zahn-Waxler, Robinson, Usher, & Bridges, 2000; Tavakol, Dennick, & Tavakol, 2012). These empirical studies show an increase in empathy through training programs in each of the fields of study mentioned above. These studies will be discussed in more detail in the next section when discussing interventions. However, it is important to understand that empathy is not just developed through purposeful training and interventions, but also through parenting styles and environmental factors (Hastings et al., 2000). Hastings, et al. (2000) looked at the mother-child relationship and reported,

> …that mothers who are overly strict and harshly punitive, who do not tend to reason or establish reasonable and consistent rules, and who strongly show their anger or disappointment with their children, are likely to impede their children's prosocial development" in which empathy falls. (p. 543)

This finding of environmental modeling and the link to empathetic tendencies is consistent with what other researchers have found and why role modeling is often used in teaching empathy (Tavakol, Dennick, & Tovakol, 2012). The idea that not only can empathy be taught, but it can also be hindered or stifled is important to recognize in the study of empathy. Although the review of literature did not reveal any studies that focused on empathy repression other than that of the mother-child relationship; I believe it is logical to assume that empathy can be suppressed by other environments in which the child spends a considerable amount of time other than just the mother-

child relationship. I believe the teacher-child relationship should also be included, but research must be done in this area in order to empirically state.

The third camp, and the one to which I belong, suggests that empathy is partially innate but can also be further developed through both purposeful and non-purposeful instruction (Rushton, 1991; Tavakol, Dennick, & Tavakol, 2012). Due to the studies mentioned above, as well as the studies that will follow, there is both evidence to suggest that individuals are born with a certain amount of empathetic tendencies, but even these natural born tendencies can be enhanced or stunted based on parenting and other environmental factors. Unfortunately, there is no definitive answer to whether empathy is either only inherited or only nurtured. I believe that the empirical evidence that supports both is the most accurate and that empathy, as many other things in life, is not black and white, but a mixture of the two. As will be later discussed, it is this belief that spurs on my own interest in including empathy training in teacher preparation programs.

Purposes for empathy in education

Before the conversation on how to teach empathy can begin we must first discuss the purposes for teaching empathy, purposes that are almost as numerous and varied as the definitions themselves. The first and most basic is the epistemological experience (Verducci, 2000). Before any real teaching can occur, one must try to understand empathy and its importance as a concept in any field and why it must be taught. From this basic epistemological standpoint the other purposes for empathy preparation can continue.

Although many fields utilize empathy training, for the purpose of this discussion I will transition solely to the field of education to explore the purposes of empathy curriculum and instruction. Lu, Dane, and Gellman (2005) used an experiential model to demonstrate the importance of empathy in relation to cultural sensitivity and diversity issues in the school system.

The ability to put yourself *in the shoes* of another is imperative when teaching students from varied backgrounds in order to better understand each individual child and in turn be able to meet their educational needs. Teachers must understand that not all students come from a white, middle class background, and if successful teaching is to occur they must use empathy to embrace each of their students and their own ways of knowing, being, and feeling each day. This task is not easy, but the necessity of it has been expressed over and over again since the late 1950s when empathy first exploded onto the scene.

The distinctions between the three components of empathy have already been stated, but it is significant to note again that cognitive, affective and behavioral empathy all play a part in understanding empathy and how to teach it to others. As mentioned above, Piaget believed that with increased empathy came increased cognitive development (Carlozzi, Gaa, & Liberman, 1983). In addition neuroscientists have discovered a connection between empathy and the brain that also supports the more cognitive focus on empathy (Romm, 2007; Ruby & Decety, 2004). Although more studies seem to focus on the affective and behavioral components of empathy in order to be able to analyze the behaviors exhibited (Shapiro, 2002; Sutherland, 1986) it is important to recognize the importance of all three components of empathy research.

Measuring Empathy

So, once we get past the multiple definitions, fields of study, and purposes of empathy we arrive at the more formidable question…how do you measure empathy? For if the goal is teaching empathy there must be a way to measure the outcomes, correct? Herein lies another difficulty when considering empathy curriculum and preparation. Before a discussion around instruments can even occur a more thorough discussion of what aspect of empathy is to be measured must happen. The primary considerations in addition to the three components mentioned above are internal vs.

external processes and expressions of empathy and indirect vs. direct teaching methods of empathy. Cunningham (2009) noted, "Empathy is notoriously difficult to evaluate because it happens within the minds of students…" (p. 694). Because of this internalizing of empathy, most studies use self-reporting scales or questionnaires. In fact, 22 out of the 29 studies reviewed by Lam, Kolomitro, and Alamparambil (2011) used some scale measurement while the other seven studies used observation or written response. By using a scale format, the researchers try to get an external measurement from an internal mode of thinking. Although difficult, currently, no more effective manner has been documented.

Another difficulty arises around measuring empathy due to all of the different ways and techniques used to teach empathy. For the purposes of this discussion, the techniques discussed will not be exhaustive, but instead the most common teaching techniques will be highlighted. The most discussed teaching strategy focuses on experience-based activities including discourse strategies, role-modeling, and role playing experiences. The first of these, discourse strategies, falls into the categories of external and direct from the factors above. Cunningham (2009) used multiple "strategies to foster empathy" such as:

- "Encouraging humility and respect,"
- "Explicit talk about empathy or empathy-related issues,"
- "Encouraging differentiation between past viewpoints,"
- "Encouraging link-making, use of contextual knowledge,"
- "Encouraging logical reasoning,"
- "Exploring alternative courses of action, thoughts,"
- "Exploring paradoxes,"
- "Deducing or interpreting perspectives,"

- "Cultivating sensitivity to language,"
- "Adapting questioning styles." (p. 698)

Through this explicit use of discourses, teachers were given multiple experiences to talk through empathy training and how it can be used in the classroom.

In addition to discourse strategies, role modeling was used to teach empathy in several studies. In three articles from the medical field, faculty believed that their use of modeling empathy both in the classroom and in the hospital setting was an effective means of teaching the importance of empathy to their medical students (Annerud & Burns, 2007; Shapiro, 2002; Wear & Zarconi, 2008). This form of teaching empathy gets at more of the behavioral aspects of empathy, but none the less this approach to teaching empathy has proven successful, especially in the medical field.

The third technique most commonly mentioned was the use of role playing (Reynolds, Scott, & Jessiman, 1999). The use of a more theatrical technique to teach empathy was seen to be effective both in the medical and educational fields. Deloney and Graham (2003) reflected on their drama study, "Participation in drama, as an actor or viewer, can foster empathy by putting students in touch with their feelings and can provide opportunities for students to develop higher level thinking abilities" (p. 250). This strategy is the most interactive of the three top techniques discussed. Additionally it is easily transferrable because it can be used across all fields of study and with both adults and children in multiple age groups.

Limited Research

When trying to come to a consensus on effective empathy curriculum one confronts the overwhelming lack of empirical studies over the past twenty years. The latest review of the literature published in July 2011 which asked the question, *Can empathy be taught?*, appeared to be an exhaustive

review and found only 29 usable studies (Lam, Kolomitro, & Alamparambil, 2011). In my own literature search similar results were found. In addition to the limited number, only nine of the 29 were conducted in the past ten years. Because of the lack of empirical studies attempting to determine how and if empathy can be taught, a difficult task is at hand.

Although most of the authors felt that they had enough information to reach the conclusion that yes, empathy can be taught, it was followed by a long list of caveats to consider. The problems that the latest literature review found were the lack of consistency in empathy definitions, validity and reliability issues with the scales administered, unclear and inconsistent methodologies, and a lack of ability for any generalizable means (Lam, Kolomito & Alamparambil, 2011). The irony is that the same conclusions were drawn in a 1973 small literature review (Greif & Hogan, 1973), a 1983 study (Crabb, Moracco, & Bender, 1983), and a 1999 literature review (Reynolds, Scott, & Jessiman, 1999). With the multiple definitions, fields, and interpretations of empathy, along with the difficulties in measurement, variety of teaching techniques, and limited number of empirical empathy studies, both historical and current, the field of empathy research is still wide open. So if, in fact, empathy is believed to be essential, then the research cannot stop just because a definitive answer has not been agreed upon yet. The statement Greif and Hogan made at the end of their review in 1973 appears to still be true today, "The degree to which an empathic disposition can be trained is an empirical question" (p. 284). They had hoped their measures and study could have shed light on this question, shed light maybe, answered, no. Instead, the question still needs an answer without the many caveats attached.

Situating Empathy within Education Research on Meeting the Needs of All Learners

As discussed earlier because of the variety of synonyms and definitions used in addition to or in lieu of empathy it is important to acknowledge that research has taken place in the field of

education outside of empathy but within the socio-emotional realm of meeting the needs of all learners, especially concerning students from diverse cultural and linguistic backgrounds. Because this field is broad I will only address a few research areas, with the understanding that research is being conducted, but without necessarily the specific attention to empathy. Culturally relevant pedagogy, instructional congruence, and funds of knowledge, as three of the most commonly used conceptual frameworks adopted in this research, are briefly discussed in this section in order to make the reader aware that although there is an absence of empathy research in the field of education, that other types of research with goals that are often parallel to the research on empathy are currently present and active.

Gloria Ladson-Billings introduced Culturally Relevant Pedagogy in 1995 and focused primarily on African-American students, but her ideas go far beyond this population. Ladson-Billings (1995) introduced three primary criteria of cultural-relevant pedagogy including, "an ability to develop students academically, a willingness to nurture and support cultural competence, and the development of a sociopolitical or critical consciousness" while also distinguishing between "self and other, social relations, and knowledge" (p. 483). The idea of focusing on each student as an individual with a variety of cultures and not labeling students as belonging to "a" culture based on skin color, socio-economic status, etc. is a vital point that Ladson-Billings perceived as meeting each child where they are and not making assumptions based on outward appearances. This has vast similarities to other work done within the field of empathy.

Next, Lee and Fradd (1998) began research in instructional congruence. They defined this term as "the process of mediating the nature of academic content with students' language and cultural experiences to make such content (i.e., science) accessible, meaningful, and relevant for diverse students" (Lee & Fradd, 1998, p. 12). Again, the focus is on meeting the students where they

are, not solely defined by structural features such as race, ethnicity, language, or gender, but instead keeping each individual student in mind as lesson plans are made and instruction planned. Lee and Fradd (1998) found that "when teachers and students share languages and cultures, they tend to develop a congruent way of communicating and sharing understandings" (p. 13). Lee and Fradd focus primarily on language barriers of diverse learners and how this impacts academic learning, but their ideas can also stretch beyond by giving a voice to students who might otherwise quietly sit in the back of a classroom unable to participate and go unnoticed by teachers because they are not a behavior problem. Lee and Fradd's research wanted to shed light onto this issue to make all educators aware of the importance of sharing similarities and understanding of all students and how this can positively impact learning.

A third conceptual framework that has frequently been taken up in educational research that has parallels to research in empathy is the idea of *funds of knowledge*. González, Moll, and Amanti (2005) published a book describing their own research primarily working with students of Latino and Native American decent. They defined funds of knowledge as "those historically developed and accumulated strategies (skills, abilities, ideas, and practices) or bodies of knowledge that are essential to a household's functioning and well-being" (González, Moll, & Amanti, 2005, p. 91). Because these funds of knowledge are as diverse as each individual student and the household in which they are living it is important to understand where each student is coming from and what they bring to the classroom. This idea is important for teachers in order to remember that what one culture deems as important or worthwhile is not necessarily what another culture feels is significant, including the teacher's own culture.

Although each of these researchers study a different population the similar thread that runs through each body of work is the importance of not grouping students together based solely on

their culture, but understanding that within each culture lies many other contributing factors that should be understood and considered in order to help each child succeed to the best of his or her ability. This is where I believe empathy is vital to help support these ideas. By understanding that each student is a unique individual with a rich history of experiences and beliefs and then teaching with each child in mind. This is at the heart of empathy research and where I believe we must begin to explore more thoroughly the ideas that will aid our future students in both academic and personal success.

Socio-Emotional Development of Young Adolescents

Herein begins the second portion of the literature review. Once the literature is explored concerning empathy, the next step is to begin to unpack why empathy is important specifically for teachers who teach and/or work with young adolescents. Beginning with G. Stanley Hall in the early 1900's the age and developmental period of young adolescence began to be explored and be set apart from other developmental stages of life. From Hall to current time, researchers are still trying to understand this complicated developmental period of life that changes both the physical body and the social and emotional state of being. Therefore, this review of the literature will focus primarily on young adolescence and the connections between physiological development, usually referred to as puberty, and how this physiological developmental stage influences individuals' socio-emotional development.

To begin, we must first define some key terms. Young adolescence is defined in regards to age differently by many authors. Hall (1904) defined it from ages eight to twelve; Tanner (1962), who emphasized puberty more, had a larger age differentiation of ages six to fifteen, and many other authors fall somewhere in between these ages only loosely defining adolescence as the time period between childhood and adulthood (McRae, et al., 2012; Lerner & Galambos,1998; Eccles, et al.

1993; Lexmond, 2003). So one of the dilemmas when trying to "define" young adolescence; it appears there is no clear cut definition. This is not news at all for any parent or teacher of a young adolescent, or even the adolescent themselves going through this transition period. Because of the lack of an agreed upon definition and for the sake of this literature review I will not be using an age range, but instead will use the onset of puberty to define the beginning of young adolescence and continuing on until the start of adulthood.

The onset of puberty, as defined by Tanner (1962), is the development of secondary sex characteristics. The American Heritage Dictionary (2007) defines secondary sex characteristics as, "Any of various characteristics specific to females or males but not directly concerned with reproduction." Because I believe the physical, hormonal, and emotional changes that can occur during puberty are so closely tied to and directly impact the socio-emotional development that occurs during these years this more broad definition of young adolescence serves the best purpose for this discussion. Also, because the age of completion of puberty ranges so drastically, again for the sake of this literature review, I will not place ending parameters of puberty on young adolescence but instead focus on puberty itself and its impact on socio-emotional development.

Socio-emotional development is yet another term that has a variety of definitions. Socio-emotional development is more generally defined as "emotions that require the representation of mental states" (Burnett et al., 2008). With this said, adolescence is a peak time when both social and emotional development are extremely active both due to brain maturation and hormone level changes that occur during puberty (Burnett et al., 2008; Yurgelun-Todd, 2007). Because, as recently as 2006, there was still a great deal of inconsistency in how puberty was measured (Dorn, 2006), physicians, psychologists, and other qualified professionals working with adolescences need to be able to understand this developmental stage more and see the connection to socio-emotional

development. Until then, the myths surrounding young adolescents and their "hormones" will continue to be believed and the truths harder to determine.

Because of the limited literature in young adolescent socio-emotional development it is difficult to make many conclusive arguments. Although more studies are finding some neurological connections to puberty and beginning to try and understand it a little better, there is still a great deal of mystery surrounding the puberty/ socio-emotional connection. But the reality of the impact that this development has on young adolescents is obvious to the youth themselves, as well as parents, teachers, and others who are involved in the research or the lives of this age group. Without the knowledge that more definitive data can provide, parents will continue to misunderstand their children's responses, teachers will continue to assume that their students are walking hormones who can't perform academically, and society will continue to look at this stage of development as one of "storm and stress" and treat young adolescents accordingly. This literature review, although not exhaustive, attempts to synthesize both the historical and current literature connecting puberty and socio-emotional development to help further propel the discussion around this issue. I have used the broader scope of socio-emotional development instead of focusing on empathy under this umbrella both due to the lack of empirical research but also to better capsulize the young adolescent developmental stage without the specificities of one core component of socio-emotional development. My hope is that others will continue the research of socio-emotional development of young adolescents with the anticipation of not just a better understanding for all living and working with this age group, but more importantly the emotional and academic growth that I believe can occur with this increased knowledge.

Theoretical perspectives and research questions

Throughout this literature review I will be looking through the lens of Deweyian Pragmatism (Sleeper, 1986). Through this theoretical perspective the belief is that in order to more fully understand the child is to first understand where the child is in relationship to their overall being. Academics, personality, nor any of the other single descriptions used to describe young adolescents can solely be focused on alone, but instead "an accurate conceptualization of cognitive and neurobiological changes during adolescence must treat adolescence as a transitional developmental period, rather than a single snapshot in time" (Casey, Getz, & Galvan, 2008). Dewey began writing about the needs of the individual child as early as 1897 in his education thesis, *My Pedagogic Creed*. He wrote, "I believe that this educational process has two sides one psychological and one sociological…Of these two sides, the psychological is the basis. The child's own instincts and powers furnish the material and give the starting point for all education…Without insight into the psychological structure and activities of the individual, the educative process will, therefore, be haphazard and arbitrary" (Dewey, 1897, p. 4). This whole child approach is at the very core of this literature review and the essence of why this research is important.

The questions that drove this literature review were threefold. First, *What are the historical perspectives concerning young adolescents physiological and socio-emotional development?* Using three anchors of adolescent developmental texts written in three distinct eras of United States history the first question is answered in summary form. The titles used were, G. Stanley Hall (1904) *Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, and religion*, J. M. Tanner (1962) *Growth at adolescence*, and lastly, Roberta G. Simmons and Dale A. Blyth (1987) *Moving into adolescence: The impact on pubertal change and school context*. Through these three texts the historical definitions of adolescence were defined and explored and the first question answered.

The second question rests on the first by using current literature to tease apart the facts of young adolescent development both physiological and socio-emotional, and how the two are connected. In addition to the data, the second question also focuses on finding the fiction that was originally stated in historical texts, but that now has been empirically proven false based on more up-to-date research. So the second question asks, *What is the empirical response to the historical perspective of the connection between physiological and socio-emotional development of young adolescents?* or the "facts" and "fiction" concerning young adolescent development.

The final question takes the review of the literature, and the findings collected, and asks the question, *What are the implications for future research based on the findings of young adolescent socio-emotional development?* Although the third question is not the focal point of this literature review it is extremely important to where we, as researchers in the field of young adolescents, need to be headed. The methods section below will give a more accurate portrayal of how little research is done in this area and the wide open arena for research in the field of socio-emotional development of young adolescents.

Historical perspective of young adolescent development

G. Stanley Hall (1904) was the first to begin to explore adolescent development and write about the extreme and multi-faceted growth that takes place during this stage. He described adolescence in the preface as,

> The years from about eight to twelve constitute a unique period of human life. The acute stage of teething is passing, the brain has acquired nearly its adult size and weight, health is almost at its best, activity is greater and or varied than ever before or than it ever will be again, and there is peculiar endurance, vitality, and resistance to fatigue. The child develops a life of its own outside the home circle, and its natural interests are never so independent of adult influence. Perception is very acute, and there is great immunity to exposure, danger, accident, as well as to temptation. Reason, true morality, religion, sympathy, love, and esthetic enjoyment are but very slightly developed. (Hall, 1904, p. ix)

Some of what is stated above is still believed to be true, but some of his description of adolescence has been proven now as fiction; such as "peculiar endurance…, resistance to fatigue…and great immunity to exposure, danger, accident, as well as to temptation" both facts and fiction will be addressed in later sections of this review. Hall (1904) was also the first to describe adolescence as a time of "storm and stress" due to both physiological and psychological development. He goes into great detail concerning physical growth in aspects of the body and mind remarking on the need for adolescents to have "favorable conditions in environment" in order to reach their full potential (Hall, 1904, p. 47). Hall (1904) also makes many seemly odd proclamations about adolescence including, the likelihood to develop "urinophobia" or the phobia of child's own urine (p. 116); the occurrence of finger and feet extreme movement (p. 149); "the golden period for acquiring the skill that comes by practice" (p. 171); and the decline of drawing ability (p. 184). In addition Hall (1904) gives details concerning puberty and lists ten common traits of puberty that involve both physical and socio-emotional development: (1) "inner absorption and reverie"; (2) "birthday of the imagination"; (3) dark "self-criticism and consciousness"; (4) "over assertion of individuality"; (5) increased imitation; (6) increased dramatization of multiple aspects; (7) "age of folly"; (8) "new attitude toward speech"; (9) inconsistent socialization; and (10) extreme fluctuation of action and mood (Hall, 1904, p. 311).

Hall (1904), in addition to adolescent development, devotes one chapter to the increase of crime and "immoralities" during this stage and one chapter to sexuality and adolescence. Throughout these chapters he gives words of advice and warning to both parents and teachers alike, but his focus tends to be on teachers and the educational system. He explains the importance of activity and sports (p. 231); the reduction of school work (p. 243), and the increase of sleep (p. 246). In addition, Hall (1904) also makes mention that "psychoses and neuroses abound in early adolescent years more than at any other period of life" (p. 266) and makes connections to the lack of

teaching moral development in the schools (p. 407). Throughout the entirety of his text he stays focused on adolescents and gave us the first glimpse into adolescent development which sparked others to see the importance of this stage of development.

Because Hall's text was written in the early 1900's it is important to keep in mind the spirit of the times and what was occurring both economically, educationally, and culturally. Child labor issues were beginning to become an issue which would increase the need for understanding the young adolescent time period; John Dewey was on the philosophically scene discussing the importance of "the whole child" and embracing a more progressive idea of education over the more traditional version; and culturally, advances in technology such as automobiles, airplanes, and mass production were altering how people interacted with one another. All of these changes were forcing society to consider young adolescence in a new light.

The second historical text reviewed was J. M. Tanner's (1962) *Growth at Adolescence*. Tanner almost primarily looked at physical growth and development with only a sparse discussion concerning more psychological and behavioral development. However, what Tanner (1962) did for learning about adolescence is divide up puberty into five stages of development focusing on pubic hair and breast development for girls and pubic hair and penis development for boys. This became the primary standard for physicians in helping to define puberty. Although Tanner's (1962) main focus was on actual physical development there were repeated passages dealing with early and late maturers and the impact this can have on "psychological maladjustments" (p. 29). Because Tanner began to address the vast differences that occur physically during adolescence this helped establish a clearer link between puberty and socio-emotional development especially concerning gender differences. Tanner (1962) refers to Hall's "storm and stress" phrase but uses "Sturm and Drang" but does acknowledge that "the most important task is to decide how much of adolescent behavior

is due to biological, and how much to cultural factors" (p. 217). This separation allows the "storm and stress" belief to not be taken as a hard and fast rule, but instead acknowledges the many other contributors that can occur during adolescence.

The third, and final, historical text used is from Simmons and Blyth's (1987), *Moving into Adolescence: The impact of pubertal change and school context*. In the 25 years between these books less detail is given to actual physical development and more to the transitional aspect from childhood to adolescence. Simmons and Blyth also looked more thoroughly through the lens of psychosocial development using two large scale studies that primarily focused on self-image and the gender differences. Both of the studies were quantitative in methodology and dealt with a large variety of statistics all focusing around gender roles, adolescent development, and self-image. Like Tanner (1962), Simmons and Blyth (1987) found self-image to be impacted by early or late maturation and found differing results dependent on gender. They also found age to be a key variable; self-esteem rose as the adolescent grew older (Simmons & Blyth, 1987). Through the lens of gender and self-esteem, Simmons and Blyth (1987) were looking at a myriad of variables including school and grade transition, academic achievement, school class size, family change, adolescent independence, adolescent dating, parental involvement, number of transitions, etc. Because of the sheer number of variables an adequate summary is not possible for this particular literature review; however, the importance of this text is the attempt to prove facts of adolescent development both physical and socio-emotional and dispel myths based on empirical research. This text will be used later in the discussion to both support and refute the facts and fiction of young adolescent development.

Facts concerning young adolescent development

The first and possibly most obvious connection to physiological and socio-emotional development lies in the growth of the brain at the time of adolescence. Some researchers in the past

decade have begun to look more closely through MRI and fMRI imaging of the brain at what is actually occurring at the onset of puberty and up until adulthood. Although there still isn't an abundance of studies to reference there does seem to appear some social cognition consistencies in frontal lobe and pre-frontal cortex brain activity (Blakemore, 2008; Olson, Plotzker, & Ezzyat, 2007; Yugelun-Todd, 2007). The review of the literature found thirteen out of the twenty-five studies that focused on brain development in young adolescents; ten of which focused on the frontal lobe. The frontal lobe is the region of the brain that controls behavior, emotion, perception, risk, and reward (Steinberg, 2005) which can directly impact how young adolescents interact with the environment around them. Emotional reactivity, or "the tendency to experience frequent and intense emotional arousal. Both the threshold and ease with which individuals become emotionally aroused and the intensity of emotion" (Spinrad et al., 2004), is shown to occur in the brain and can have direct impact on social behavior (Nelson et al., 2005; Casey et al., 2010). These findings have incredible promise to furthering the understanding to how brain development during the onset of puberty impacts the socio-emotional development that is also occurring at this time with the hope that a more specific focus of empathy will be possible as well.

The second connection of physical to socio-emotional development is puberty itself. As described by both Hall (1904) and Tanner (1962) puberty can be defined in both age and stage, but as mentioned before there is no set age that signals the onset of puberty. With that said, the "interpersonal, physical and hormonal changes associated with puberty may contribute to changes in the behavioural and neural correlates of social emotional processing" (Burnett, 2010, p. 682). Burnett (2010) also makes the link to brain development and the puberty stage similar to what was described above. This connection to the brain and puberty and affective development is repeated in Steinberg's (2005) study when he found "that changes in arousal and motivation brought on by pubertal maturation precede the development of regulatory competence in a manner that creates a

disjunction between the adolescent's affective experience and his or her ability to regulate arousal and motivation" (p. 69). Because puberty is not a "one size fits all" experience for young adolescents, nor does it occur all at once but instead over time; puberty should be recognized as a stage of development unique and with constantly changing variability (Blakemore et al., 2010; Dorn, 2006; Lerner & Galambos, 1998). With the connection of puberty and social processing one of the facts that was discussed in both Tanner (1962) and Simmons and Blyth (1987) is that "hormonal changes that occur during adolescence are likely to account for at least part of the risk for mood and anxiety disorders" (Paus, Keshavan, & Giedd, 2008). However, although there seems to be some accuracy in this conclusion, there is also some dispute that will be addressed later. Because of the limited research done in this area, still many more questions are left unanswered and need to be studied more closely.

A connection to physical development and socio-emotional development that Simmons and Blyth (1987) spent a great deal of time dissecting is that of gender differences. Garaigordoil (2009) also used gender differences to look at socio-emotional variables and found that girls did in fact have significantly higher scores in pro-social behavior, emotional understanding, and anxiety-shyness, and that both boys and girls had similar scores in self-concept and anti-social behaviors. These findings help support and refute some of Simmons and Blyth (1987) findings. In a later section, gender is considered when discussing other socio-emotional developmental changes. The similarities and differences in gender were considered in all three historical texts, but only mentioned in three of the more current studies reviewed. It seems surprising that such a limited number of studies included gender, especially with the prior historical emphasis. Due to the mixed results, I believe that this is an area of focus most deprived and needs to be taken into consideration much more in future research conducted in the socio-emotional development of young adolescents.

Throughout this review of literature numerous other factual changes in socio-emotional

development were recognized that are specific to young adolescents primarily at the onset of puberty. For the purpose of order they will be discussed in number of occurrences in the literature. The first, and most widely discussed, concerns the increase for risk-taking behaviors. Hall (1904), Tanner (1962), and Simmons and Blyth (1987) all discussed the increase of these impulse control behaviors in their texts giving a variety of rationales for the rise, but until the neurosciences became involved the rationales were speculation at best. Risk-taking behaviors appeared to be the most widely researched hypothesis and can be discussed both in this fact section of the discussion and will also be discussed in the fiction section later. Pfeifer et al. (2011) found "greater subcortical reactivity to affective facial displays" in young adolescents which can impact impulse control but not in all youth (p. 1034). And Casey, Getz, and Galvan (2008) found similar findings with impulsivity being "associated with immature ventral prefrontal development" (p. 72). All findings found the brain changes that occur in puberty to be in the frontal areas of the brain as previously discussed in the *brain connections* section and does have some relationship to be able to recognize and control actions. Three other studies found the risk taking behaviors in young adolescence related to peer and social influences, as well as, brain development (Steinburg, 2005; Pfeifer et al., 2009; Lerner & Galambos, 1998). According to a 1990 survey, about 50% of the "28 million youth between the ages of 10-17" engage in two or more of the following risk behaviors: "(a) drug and alcohol use and abuse; (b) unsafe sex, teenage pregnancy, and teenage parenting; (c) school underachievement, school failure, and drop out; and (d) delinquency, crime, and violence" (Lerner & Galambos, 1998). In association with this statistic, a more recent study found that "anti-social behaviors, drug use, [and] nonmarital pregnancy" occur for the first time during the adolescent time frame (Steinberg & Morris, 2001). It is important to consider risk taking and impulse behaviors and the impact this might have on socio-emotional development.

As mentioned above, peer and social influence is also a research variable and is closely tied to socio-emotional development, especially during young adolescence. The further development of the fronto-parietal network impacts self-perception processing and can influence adolescents views of how others perceive them (Pfeifer et al., 2009). In regards to looking at the whole child, Eccles et al. (1993) conducted an earlier study on stage-environment fit on young adolescents and looked at the importance of social environments on meeting psychological needs. They reported that both teacher, peer, and self all contribute to socio-emotional development in the school system and that "optimal development takes place when there is good stage-environment fit between the needs of developing individuals and the opportunities afforded by their social environments" (Eccles et al., 1993, p. 95). Although not as much is known concerning young adolescent internalizing problems versus externalizing, it is noted repeatedly that adolescents are beginning to read the cues by others in learning how to respond in more interpersonal relationships, and this regard for other's opinions can impact socio-emotional development in both positive and negative ways (Steinberg & Morris, 2001; Yurgelun-Todd, 2007; Burnett et al., 2010).

Other variables that were researched in only minimal studies, but were decided important to note because of their connection to the role of empathy, are related to reappraisal of social situations and sexuality in young adolescence. A neuroscience, fMRI study looked at young adolescents and their ability to reappraise various social situations after being prompted to do so. They found that, in fact, increased cognitive reappraisal was evident from ages 10- 22 (McRae et al., 2012). Although this study looked at young adults, as well as young adolescents, the need for reappraisal in multiple social settings is a reoccurring theme throughout young adolescent literature.

Also, at this stage in life sexuality and physical relationships with others begin to become more prominent and at the same time parent and family dynamics are changing which often leads to

more independent behaviors (Nelson et al., 2005; Steinberg, 2005). Once again through brain imaging it can be seen that "adolescence clearly represents a period of heightened emotional responsiveness to social stimuli and socially related events" (Nelson et al., 2005, p. 169) and that these changes need the new found ability for constant reappraisal of situations both innocuous and potentially threatening. Although sexuality in young adolescence was not a key word in searching the literature, it was surprising to find that only two of the studies even mentioned increased sexuality at this time. Due to the accepted findings of what the body and mind experience during the onset of puberty, the lack of focus on this aspect was just as surprising as the fore mentioned lack of a gender variable when studying socio-emotional development of young adolescents.

Fiction concerning young adolescent development

The "fiction" section of this discussion is much shorter in length than the above "fact" section. The conjecture that I make pertains to the point that most researchers seek out studies that are attempting to prove something rather than find it false. Another theory is that many of the earlier ideas surrounding the physiological and socio-emotional development of young adolescents have been debunked years ago and because I only looked at studies from the past ten years the ideas have become obsolete. I will address this issue at the end of the "fiction" section as well.

Although connections between physiological development and socio-emotional development have been empirically proven there are other studies that have found what was once deemed fact to be nothing more than fiction. In regards to gender it has been said by other researchers that boys exhibit more anti-social behavior during young adolescents than girls. Garaigordobil (2009) found no statistical evidence of this. In addition Blakemore's (2008) brain study found no empirical evidence that "reported significant behavioral development that is specific to social cognition and that cannot be explained by general improvements in attention,

concentration, memory, and so on" (p. 275). Because of the many variables that can impact adolescent development (i.e., genetic, family and peer influences, etc.) it is often difficult to pull apart one area of socialization and deem it the cause for certain behaviors (Steinberg & Morris, 2001). It is important to mention, as discussed earlier, that there was a limited number of studies found that reported out separate gender findings and much more research is needed in this area before any absolutes can be determined.

Another common area of study is hormone level changes in both boys and girls brought upon by puberty and the connection to socio-emotional development. While there is some evidence that these hormones can bring about moodiness, as mentioned in the fact section, it only accounts for a small percentage than what is popularly believed. Instead social situations have been found to be more responsible for moody behavior than actual hormone levels (Steinberg & Morris, 2001; Lerner & Galambos, 1998; Buchanan, Eccles, & Becker, 1992). Although the studies found are older, newer studies were difficult to locate. Perhaps this is due to the fore mentioned idea that once an idea has been debunked it ceases to become relevant to research studies. However, because of past research it seems appropriate to label hormone level changes and their connection to socio-emotional development as partial fiction at this time. It is important to understand that this belief is still upheld in many homes and schools and the only way to truly extinguish this idea is to continue research in this area. Until the popular belief that hormones alone are the cause of emotional upheaval during young adolescents masses of young adolescents everywhere will continue to have this negative stereotype attached to them and the real reasons for the emotional instability that sometimes occurs during this developmental stage will not be identified and addressed more satisfactorily.

As for the other areas listed in Hall's (1904) text concerning urinophobia, finger and feet movement, skill acquirement, and a decline in drawing ability, no recent research was found either confirming or denying his claims. However, from more current literature one has to wonder whether these issues of adolescent development were only coincidental in nature or perhaps had to do with other participant factors not associated with physiological occurrences at this life stage. In addition, Tanner's (1962) stages of development, although used as a standard of pubertal measurement for many years, have been found by many researchers to not be as generalizable as once thought. It must be recognized that more variation occurs in young adolescents during puberty than what Tanner summarized (Burnett et al., 2010; Blakemore, Burnett, & Dahl, 2010; Lerner & Galambos, 1998). Overall, young adolescence, both physiological and socio-emotional development, is incredibly complicated and cannot be matter-of-factly measured to generalize all males and females going through puberty. This brings us to the limitations of this literature review.

Limitations

The primary limitation of this literature review as mentioned repeatedly throughout is the lack of current empirical research in the field of socio-emotional development in young adolescents, especially as it pertains to neurological research and puberty. The current researchers who are trying to find answers to the "developmental patterns in the affective and attitudinal characteristics often associated with the adolescent period (e.g., moodiness, shifts in energy, irritability, restlessness) or linked patterns to the hormonal changes of puberty" (Buchanan, Eccles, & Becker, 1992) agree that much more work needs to be done in this field (Burnett et al., 2008; Blakemore, Burnett, & Dahl, 2010; Blakemore, 2008; Steinberg, 2005). However, other than finding a few common threads through brain imaging they all admit that the myths behind adolescent "storm and stress" behavior will continue to be accepted as fact until proven otherwise. Throughout the literature it seemed to be

surprising to researchers that more specialists have not explored this stage of development and the socio-emotional development implications.

In addition to the lack of empirical research, the studies that were available seemed to always focus on a very specific participant pool causing complications for any kind of generalizable research. The use of an all-female subject pool or wide age range complicates research in this area and should be considered more closely when preparing design studies (Burnett et al., 2008; McRae et al., 2012). The historical texts were also guilty of a non-generalizable participant sample. Hall (1904) and Tanner (1962) used an entirely white sample for their texts. In addition, although Simmons and Blyth (1987) had a large study where the sample population was generalizable for the schools studied they involved two larger cities both in the northern half of the United States (i.e., Baltimore, Maryland and Milwaukee, Wisconsin). Both of these cities are larger urban areas in the north that make it difficult to create a generalizable pool concerning students from the south or western regions in suburban or rural areas of the US. Overall, in order to achieve empirical results much more consideration must be paid to the selection of participants in future studies.

Future Direction

The reasoning behind the importance of more research in the area of socio-emotional development in young adolescents is a simple connection to make. Brooks-Gunn, Rock, and Warren (1989) simply stated several years back "The study of adolescence is important because the way young people cope with the changes occurring at this stage of life lays the groundwork for the emergence and maintenance of behaviors related to physical and mental health" (p. 51). "Adolescence is a time of substantial neurobiological and behavioral change. These changes are usually beneficially and optimize the brain for the challenges ahead, but they can also confer a

vulnerability to certain types of psychopathology" (Paus, Keshavan, & Giedd, 2008). Because of this the research in socio-emotional development has to continue on.

In addition to mental illnesses that can arise during adolescence, educational stability can also be at risk. First, because of the often times negative stigma attached to young adolescents, "teachers' grade level preferences and ideas about appropriate pedagogy, curriculum, and discipline for middle level students" can determine how students are taught without full facts available to teachers (Lexmond, 2003). Until more research is conducted the proper "stage-environment fit" will be difficult for teachers to construct in their classrooms resulting in difficult learning environments (Eccles et al., 1993). In addition to teacher-student interaction, one study found that more positive peer relationships led to less disruptiveness and safety issues in the school, as well as higher student self-esteem and lower instances of substance abuse related behaviors (Brand et al., 2008). Without the socio-emotional development knowledge of young adolescents and what can impact both positive and negative changes at this stage in life, parents, teachers, and youth are trapped in fiction and myth. Scared of what puberty holds in store and how others are going to respond to them. Without deciphering fact from fiction and dispelling the "storm and stress" notion that surrounds young adolescents, conditions remain static and our kids are stifled from possible growth that can occur during this rich and amazing stage of life.

Finally, the more intense and deliberate study of the larger area of socio-emotional development in young adolescence will optimistically shine the light on the importance of further research within the specific field of empathy. Because of the lack of empirical results in the field of empathy I was forced to broaden my scope to look at socio-emotional development as a whole. However, this expanded approach only solidified the importance of empathy research specifically focused on young adolescence.

CHAPTER 3

RESEARCH METHODS

The purpose of this study is to develop and provide initial validation for a scale designed to measure teacher empathy. The primary research question posed in this validation study is, *Using Confirmatory Factory Analysis (CFA) model does the Teacher Empathy Scale (TES) items explain the observed and unobserved variables?* During the development of the scale multiple phases took place, both independently of one another yet also building on the phase before it. The research methodology for this validity study is discussed below. The methods include the following sub-sections: scale construction, data collection, sample, and data analysis procedures. Each sub-section outlines the descriptions of its parameters and implementation.

Scale Construction

Phase 1: Preliminary Scale Design

Each scale item was written based on two considerations. First, a review of the empathy literature from all fields of study was conducted to understand the basic components of empathy. The scale was segmented using the ideas of cognitive, affective, and behavioral components of empathy and then divided again into innate and learned aspects of empathy. Secondly, other already valid and reliable socio-emotional scales were examined looking primarily at scale design and terminology in order to best relay the idea of empathy within the scale. The scale items were first

drafted in May 2011 in a scale design course at the University of Georgia. During this course the below steps were taken to create the first draft of questions for the TES.

Step 1: Conceptual topics

1. Why is empathy important for teachers? When can it be shown?
2. How does a teacher show empathy? What does it look like?
3. How can empathy be measured?

Step 2: Dimensions of each broad concept

1. Why is empathy important for teachers? When can it be shown?
    a. Classroom management/fairness
    b. Bullying issues
    c. Student home life situations
    d. Students with learning disabilities/IEP's
    e. ELL/Refugee students
    f. Parent communication
    g. Differences in learning strategies
    h. Love of subject content
    i. Physical and emotional changes that occur during young adolescent years

2. How does a teacher show empathy? What does it look like?
    a. Voice/Tone
    b. Actions
    c. Body language
    d. Expression of care
    e. Expression of concern

3. How can empathy be measured?
    a. Using teacher specific scenarios

Step 3: Questions were developed for each concept area (see Appendix A)

The items were changed repeatedly throughout the course based on instructor of record and peer feedback. The next round of major edits came in fall 2012 semester based on feedback from members of my dissertation committee during oral comprehension exams. These edits consisted mainly of sentence structure and general item design for the presented items. The third round of significant edits was also done in the fall of 2012 based on additional feedback from my dissertation committee members after the prospectus defense. This round of edits was primarily to lengthen the

scale from 36 to 72 items to ensure that additional items were available for removal after the novice and expert review and teacher data collection process with enough items to collect statistical data. Once the items were added a colleague was asked to review the items primarily for grammatical integrity and clarity purposes. After additional changes were made, the final 72 items were submitted and approved by the University of Georgia Intuitional Review Board (see Appendix C).

Phase 2: Novice Review

Once the IRB approved the research study the second phase of scale design began. The second phase began with four novice reviewers in spring 2013. These reviewers were MAT students from a Southeastern university enrolled in the secondary education (grades 6-12) program and in the final months of their student teaching experiences. They were contacted with their instructor's permission and prior to the coding process they were given the IRB approved consent form (see Appendix B). There were two white females, one African-American female, and one white male each representing at least one of the four main content areas of English/language arts, math, science, and/or social studies. The review process was conducted in a focus group setting in which each novice reviewer first individually read and coded each item on a 1-5 scale based on one of three areas (1) cognitive, affective, behavioral; (2) innate, learned; and (3) clarity and understanding (see Appendix C). During the focus group a set of predetermined interview questions were asked throughout item review and after completion of the entire scale (see Appendix D). Before scale administration the coding standards were discussed by reading each of the definitions, explaining in more detail the rationale behind each question, and providing a time for questions to ensure understanding.

During the second phase of scale construction items were segmented into six sections of six questions each. Novice reviewers read each of the six questions in the grouping and coded with no

time limit established and not stopping until everyone in the group had completed the same six scale items. Students were encouraged to ask questions aloud as they read and coded each item. At the end of each of the six subgroups the focus group was asked the following questions:

> Which question(s) did you mark very clear and why?
>
> Which question(s) did you mark as not clear as all and why?
>
> Which questions did you mark as cognitive? If not all participants are in agreement each will give the rationale for their answers.
>
> Which questions did you mark as affective? If not all participants are in agreement each will give the rationale for their answers.
>
> Which questions did you mark as behavioral? If not all participants are in agreement each will give the rationale for their answers.
>
> Which questions did you mark as innate? If not all participants are in agreement each will give the rationale for their answers.
>
> Which questions did you mark as learned? If not all participants are in agreement each will give the rationale for their answers.

The above questions were asked a total of six separate times for each subgroup of the scale. The focus group session was audio recorded and notes were taken for each question based on feedback received from the novice reviewers.

At the completion of scale administration and once all items had been coded and discussed; I asked the entire group the following questions:

1) What did you find most difficult about taking this scale?
2) What caused you surprise as you took this scale?
3) How do you think this scale could be utilized?

4) What was left out of this scale?

5) What questions do you find yourself still asking at the completion of the scale?

Based on the feedback from the focus group session I found that the primary area of concern for the novice reviewers was that they felt that several of the items dealt with more than one construct of empathy; however, after reviewing the recording and the notes it was determined to leave the coding checklist as is until after the expert coding. At that time the author would determine if any item questions should be reworded to isolate only one empathy construct. Although the novice coding was not used to delete or edit any items the focus group provided an opportunity to talk through each item individually to ensure that it was satisfactory prior to administering to the expert panel. All 72 items remained in phase 2 and phase 3 began in May 2013.

Phase 3: Expert Review

In order to establish content validity of the teacher empathy scale, experts in the field of socio-emotional development, scale design, and education, *N*=5, were given the scale and asked to code using the three components of empathy: cognitive, affective, and behavioral, as well as, innate and learned classifications. Four experts were selected, in addition to the author, to code based on a variety of individual and professional knowledge bases (2 socio-emotional university faculty members, 1 secondary education faculty member, and 1 statistical research analyst in the university setting). The goal was to determine an 80% agreement coding rate between all four experts as well as the author. In addition to coding the above five considerations, the experts were asked to critique the scale using a 5-point system of 1=not at all to 5=very much for clarity and understandability of each question. Following IRB guidelines consent forms and TES scale coding forms were emailed to each of the four reviewers and each expert reviewer returned their coded scale by July 2013 (See Appendix C & E).

After all coded scales were returned all items were entered into a database and 36 items were matched at an 80% or above agreement rate regarding cognitive, affective and behavioral components; and an additional 21 items matched at a 60% or above totaling 57 out of the 72 items matching at 60% or above. Because the components of innate and learned was not as pertinent, due to lack of support from the literature based on innate and learned, this area was not taken into account in item matching. However, it was kept in the hypothesized model for statistical exploration and will be discussed in more detail in the following chapter. The items that matched at 80% or greater broke down accordingly: cognitive = 15, affective = 8, behavioral = 13. Because an additional 21 items were matched at 60% or greater it was decided to use these items to balance out the three components more evenly and have additional items to allow more items for deletion after data collection, thus 11 additional items were taken from the 21 breaking down accordingly: cognitive = 3, affective = 4, behavioral = 4. Throughout the entire scale design process both positively and negatively items were written. For the final scale 29 items were positively stated and 19 were negatively stated in regards to empathy. The final scale consisted of 48 items selected for final distribution to the convenient sample and were entered into the REDCap (Research Electronic Data Capture) data base (Harris, et al., 2009).

In addition to the above breakdown of the TES, the scale was also considered using abbreviated item labels and whether an item fit into the general or education category (See Appendix F). There were 13 abbreviated item labels including "concern for others or students", "understanding others or students", "adapting teaching", "working with others or students", "care for others or students", "relating to others or students", "sympathy for others or students", change in personal feeling", "responding to others or students", "assisting others or students", "observing others or students", "learning from others or students", and "attentiveness to others or students" that were kept for the TES after the expert review. The label consisting of the most questions, 10

out of 48, was "understanding others or students" which was not surprising given the definition of empathy and the role of understanding others in its overall concept. The next label with eight questions was "care for others or students", again not surprising when interrupting empathy. The third label with seven questions was "adapting teaching for students." This label represented the only surprising question that was eliminated by the expert review panel. The item in the original coding was "I believe that not all students learn in the same way, and I do my best to accommodate all learning styles when lesson planning"; this item coded as cognitive by two of the reviewers and the author and behavioral by the other two reviewers. After studying this question it does appear to be in two parts, first understanding learning differences in students (cognitive) and then adapting lesson plans to meet those needs (behavioral). One of the most difficult processes of the design of the TES was attempting to separate all three constructs from one another and will continue to be a focus as the development and validation of the TES continues. The last category that consisted of several questions was the label of "assisting others or students" which had four questions in the TES. These top four labels are consistent with both the literature review findings and the three constructs of empathy (i.e., cognitive, affective, behavioral) used for this discussion. In addition, four labels each had three questions that were represented; "relating to others or students", "responding to others or students", "observing others or students", and "attentiveness to others or students." The labels of "relating and attentiveness to others or students" was the most surprising due to the lack of questions that did not represent these labels. There were originally six other items, three in each label, that were removed after the expert review. These items were reviewed and no common denominator could be found as to why they could not be coded consistently. 41 out of the 48 TES questions fit into one of these above eight labels. The remaining seven out of 48 questions that the expert review coded as consistent fit into the other five labels representing each label with only one or two questions. The only label that was surprising due to the lack of representation was "concern

for others or students"; because the idea of concern for others seems to help define empathy so well the lack of questions in this category needs to cause pause for reflection and possible consideration in question addition as the TES continues in the validation process.

Data Collection

Phase 4: Convenient Sample

This phase of the study used a systematic convenient sample. The sample consisted of 6th-12th grade teachers from the state of Georgia within a 100 mile radius of the University of Georgia. School districts were selected from all three classifications of urban/city, suburban, and rural totally six school districts. The National Center for Education on Statistics (NCES) defines city as "a territory inside an urbanized area and inside a principal city"; suburban as "a territory outside a principal city and inside an urbanized area"; and rural as "census-defined rural territory that is outside an urbanized area or urban cluster" (National Center for Education Statistics). The school districts were located via internet search and randomly selected solely by classification. Combined within each of the six school districts in the state of Georgia 37 middle schools, and 24 high schools were selected and every teacher with a public email in those schools was contacted and emailed the introductory letter (Appendix G) and the Teacher Empathy Scale (TES) (Appendix H). The Teacher Empathy Scale or TES was issued to participants via email through REDCap and the introductory letter informed each teacher of the voluntary nature of the study. In the introductory letter confidentiality was explained both referring to the scale itself and also the demographic information requested. The target sample was N=200 teachers. 4,157 total emails with empathy scales attached were sent on September 3, 2013 with 125 completed responses returned. A second email with the attached scale was resent approximately one week later to the remaining 4,032 teachers and 132 responses were returned. Because the target sample was achieved after the second round of emails a

third round was not sent. The total sample of returned responses was 261 completed which yielded just under a 6% return rate.

Phase 4: Convenient Sample Data Collection

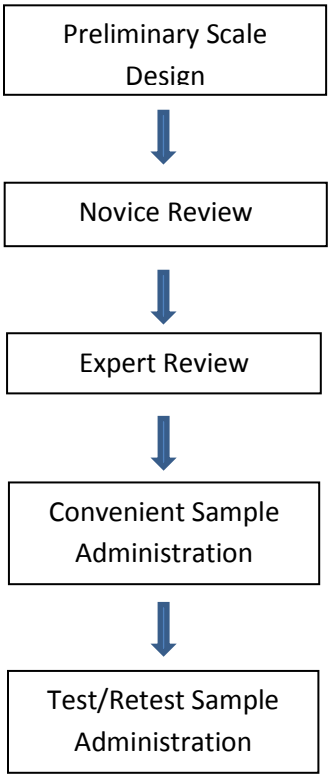
The demographic information requested prior to taking the scale consisted of age, gender, ethnicity, type of school district (i.e., city, suburban, or rural), grade and subject taught, and number of years teaching in the classroom. Additional demographic information was collected at the conclusion of the scale that consisted of childhood socio-economic status, parental highest educational level, childhood racial/ethnic surrounding, number of siblings in the home as a child, childhood geographic location, religious background, history of being bullied, history of learning disabilities, and history of life-threatening illness.

The TES contained 48 items divided between cognitive, affective, and behavioral and between innate or learned characteristics components of empathy. Participants were asked to rate each item using a Likert-like scale. The response format for the scale is: 1=Not at all like me to 5=Very much like me.

Phase 5: Test/Retest Data Collection

In addition to the selected teachers from across the state of Georgia, a group of teachers from both Georgia and Tennessee middle and high schools, *N*=8 were used to check for reliability issues with a test/retest format. Approximately one month after the initial TES was administered the same 8 participants took the TES a second time. Because of the nature of the scale and because no intervention to either improve or lessen empathy in the classroom was implemented the score for each test was expected to remain unchanged. These 8 participants' identities were known to the researcher, but names are not included in the final results section of this dissertation.

Flow chart of study data collection



Data Analysis Procedure

The data were received and analyzed using the R Development Core Team (2010). Descriptive statistics for the demographic data were analyzed primarily to ensure that a diverse group of participants were represented, including teachers from varying genders, ages, years of experience, types of school districts, and subject content. In addition to descriptive statistics, the internal reliability of the TES was computed and assessed using the coefficient alpha (α). Confirmatory factor analysis (CFA) was used to analyze the overall model structure that has interrelated constructs of cognitive, affective, behavioral and innate and learned.

Reliability Analysis Procedure

The statistical analysis began with reliability item to item correlations looking for the alpha (α) coefficient of .9 or higher. Before entering the raw data all variables were recoded into the same

direction. Once this recoding had occurred, using R, descriptive statistics of item, scale, and inter-item correlations were analyzed and this allowed the ability to report α as well as corrected item total correlations for each individual item.

Factor Analysis Procedure

Confirmatory factor analysis (CFA) was used to analysis the hypothesized model. However, a CFA does not necessarily confirm a model as correct, but simply demonstrates that the data fits with a tested model (Klem, 2000). Model fit was evaluated using a combination of test statistics (model chi-square) and approximate fit indices (Hu & Bentler, 1999; Kline, 2005).

CHAPTER 4

RESULTS AND DISCUSSION

Introduction

To begin a discussion on scale measurement it is first wise to understand the essential characteristics of measurement itself, especially as it pertains to scale development. Crocker and Algina (1986) defined instrument or test as "a standard procedure for obtaining a sample of behavior from a specified domain" (p. 4). With this in mind, two parts are key in this definition. First, the word "sample" needs to be recognized, that no matter how many participants are administered this measurement or how strenuously the statistical analysis is conducted, the results are still taken only from sample statistics instead of populations parameters. It is assumed that the sample used for this study is an accurate representation of the overall population, but in no way can this be guaranteed. The second, "specified domain", is also important because, not only is a scale incredibly specific to the trait being measured, but it is specific to the authors selection. By accepting this definition that Crocker and Algina (1996) give, we can more carefully think about scale development.

Prior to Crocker and Algina (1986) others weighed in on defining measurement as well. Weitzenhoffer (1951) defined measurement as "an operation performed on the physical world by an observer" (p. 387). As a researcher it is vital to understand that, in fact we are only observers and that because of the difficult nature regarding scale development it is often problematic to get a completely accurate account of someone taking a scale, no matter how many efforts are made to address concerns. Another way to consider measurement is by using Stevens (1946) definition as

"the assignment of numerals to objects or events according to rules" (p. 677). Stevens' definition reminds us that not only are rules implied in scale development, but they are the rules established by the developer and not necessarily by the subject taking the measurement. These factors must be kept in mind throughout the entire process of scale development in order to not only develop the most complete product, but also to remember not to place total confidence in the end creation. Crocker and Algina (1986) attempt to caution researchers by listing five problems or limitations that are common to all psychological assessments; they go into much more detail than is necessary for this discussion, but it is important to at least keep in mind the limitations they listed.

> No single approach to the measurement of any construct is universally accepted.
> Psychological measurements are usually based on limited samples of behavior.
> The measurement obtained is always subject to error.
> The lack of well-defined units on the measurement scales poses still another problem.
> Psychological constructs cannot be defined only in terms of operational definitions but must also have demonstrated relationships to other constructs or observable phenomena (p. 6).

In addition to the limitations above, the purposes for creating a scale are numerous depending on what is to be measured, who is creating the scale, and the research or purpose that is intended after the scale is developed. The process only becomes more complex when what is to be measured is an intangible trait or characteristic such as an emotion or in the case of this study, empathy. So before someone can begin scale development many things must be taken into consideration and all possible concerns addressed and proper precautions taken. Once the scale is developed and data collection has occurred additional issues arise and the stringency with which the task was begun must not let up. Issues of validity and reliability should always be in the forefront of the minds of those creating the scale. Therefore, this chapter details the results found when looking at the validity and reliability of the Teacher Empathy Scale: TES.

Phases 1-3

The initial three phases of this study: (1) preliminary scale design, (2) novice review, and (3) expert review are described in the previous chapter and no additional statistical data was collected in addition to what has already been discussed; therefore no further information is needed in this chapter other than to remind the reader that phases 1-3 directly impacted the final scale items selected for phases 4 and 5 of this study.

Phase 4

Demographic Data

The demographic variables in the TES were asked in two segments. The first was prior to the TES scale items and consisted of age, race/ethnicity, gender, type of school district, grade taught, subject taught, and years taught in classroom. All information was assumed current at the time of scale completion and due to the nature of changes that can occur to teachers' schedules no further assumptions can be made. The data was collected to ensure that the sample used was representative of the present nationwide teaching population and to ensure that a diverse population in regards to both middle and high school grade levels, subject content and years teaching in the classroom were represented. The second segment of demographic data occurred after the TES scale items and consisted of the following questions:

Which socio-economic status would you classify your upbringing as a child/adolescent?
What was the highest education level of either one or both parents?
Were the majority of the people you were surrounded by growing up of the same race/ethnicity?
How many siblings did you have living in your home growing up?
What type of geographic location did you grow up in?
How would you classify your religious background?
Have you ever been bullied?
Have you ever been diagnosed with a learning disability?
Have you ever been diagnosed with a life-threatening illness?

Participants were able to answer either "yes", "no", or "prefer not to answer" for each of the above questions. Only two items are of concern to this validation study as it pertains to sample demographics. Socio-economic status and geographic location growing up will be reported below, but no other part of this data will be discussed in the results section, but instead was collected in order for analysis at a later time.

Females comprised of 70.3% of the sample, males represented 28.6%, and 1.2% of the sample preferred not to answer. Respondents were 82.2% Caucasian/White, followed by 6.9% African-American, 3.5% Hispanic, 2.7% Biracial, 0.4% Asian, and 4.2% preferred not to answer. Participants ranged in age from 21-over 60 with the largest age span of 41-50 at 28.1%, followed by, 31-40, 26.9%; 51-60, 24.6%; 26-30, 10.4%; over 60, 6.2%; 21-25; 3.1%; and 0.8% preferred not to answer. Study participants then reported the total number of years taught in the classroom. This data was also organized into ranges with the highest percentage of 6-10 years of teaching experience at 24.8%, followed by 11-15 years, 24%, 21-25 years, 15.1%, 16-20 years, 9.3%, 0-3 years, 8.5%, 26-30 years, 7%, over 30 years, 6.2%, and 4-5 years, 5%. Participants also listed the type of school district by which they are employed. 71.7% of the respondents teach in a suburban school district, followed by 17.4% in a city or urban setting, and 10.9% teach in a rural school district. The year ranges for age and years of experience are not of equal size, so the mean and standard deviation are not able to be calculated. In the final two questions participants were able to select multiple grades and subjects due to teachers teaching at multiple grade levels and subject content. Because of this the following two items do not mathematically sum to 100%. 47.9% of teacher in this sample teach 11th grade, 46.3% teach 12th grade, 41.6% teach 10th grade, 39.3% teach 9th grade, 22.2% teach 6th grade, 20.6% teach 7th grade, 19.1% teach 8th grade, and 0.4% teach 5th grade. Data concerning subject content is English/Language Arts, 25.3%, Science 21%, Math, 19.8%, Social Studies, 18.3%, Special Education, 14%, Technology/Career, 6.2%, some other subject, 5.4%, Foreign Language, 5.1%,

Music, 4.7%, Physical Education, 2.3%, and Art, 1.9%. In addition, to the above demographics socio-economic status and geographic location growing up were also recorded. Participants reported 42.7% grew up in a middle class setting, followed by 28.6%, middle-upper, 21.2%, lower-middle, 5.9%, lower, 1.2%, upper, and 0.4% preferred not to answer. As for geographic location, 56.7% reported growing up in a suburban location, 28.6%, rural, 14.3%, city/urban. (See Table 1 for all data reported here.)

The demographic data collected for the purpose of a representative sample of public school teachers is consistent based on the literature already discussed. Previously stated, "teachers demographically are 90% white females who grew up lower middle or middle class in rural or suburban homes" (Chou, 2007; Gomez, 1994; Hodgkinson, 2002; Marbley et al., 2007). This study's sample closely mimics these same numbers with the majority of participants as white, females from middle class, suburban upbringing. Therefore the sample used for this study is satisfactory for the continued validation of the TES.

Table 1

Study Participant Demographics

Sex (*N*=259)	***n***	**%**
Female	182	70.3%
Male	74	28.6%
Prefer not to answer	3	1.2%
Race/Ethnicity (*N*=259)		
African-American	18	6.9%
Asian	1	0.4%
Bi-Racial	7	2.7%
Caucasian/White	213	82.2%
Hispanic	9	3.5%
Prefer not to answer	11	4.2%

Table 1

continued

Age in years (*N*=260)		
21-25	8	3.1%
26-30	27	10.4%
31-40	70	26.9%
41-50	73	28.1%
51-60	64	24.6%
>60	16	6.2%
Prefer not to answer	2	0.8%
Years taught in classroom (*N*=258)		
	n	**%**
0-3	22	8.5%
4-5	13	5%
6-10	64	24.8%
11-15	62	24%
16-20	24	9.3%
21-25	39	15.1%
26-30	18	7%
>30	16	6.2%
Type of school district currently teaching (*N*=258)		
City/Urban	45	17.4%
Suburban	185	71.7%
Rural	28	10.9%
Grade(s) currently teaching (*N*=257)		
5th	1	0.4%
6th	56	22.2%
7th	53	20.6%
8th	48	19.1%
9th	97	39.3%
10th	105	41.6%
11th	118	47.9%
12th	116	46.3%

Table 1

continued

Subject(s) taught (*N*=257)		
Art	5	1.9%
English/Language Arts	63	25.3%
Foreign Language	13	5.1%
Math	49	19.8%
Music	12	4.7%
Physical Education	6	2.3%
Science	53	21%
Social Studies	46	18.3%
Special Education	35	14%
Technology/Career	16	6.2%
Some other subject	13	5.4%
Socio-economic status of childhood (*N*=255)		
Lower	15	5.9%
Lower-middle	54	21.2%
Middle	109	42.7%
Middle-upper	73	28.6%
Upper	3	1.2%
Prefer not to answer	1	0.4%
Geographic location of childhood (*N*=252)		
City/Urban	36	14.3%
Suburban	143	56.7%
Rural	72	28.6%
Prefer not to answer	1	0%

Psychometric Properties

The psychometric properties of the TES are presented here. The components of the TES were examined in two parts: First, the data quality, internal consistency and correlations between items and domains. Second, the five-domain structure using confirmatory factor analysis (CFA) was used. All analyses were performed using the R statistical package. Data quality was assessed by mean of item answers and percentage of missing data. Internal consistency was assessed using coefficient α

and average inter-item correlation. I defined α=.70 as the lowest acceptable value, but α=.90 was the target (McDowell, 2006). The factorial structure was evaluated by the sem package in R (Fox, Kramer, & Friendly, 2010). Chi-squared goodness-of-fit statistic assesses the discrepancy between the sample and fitted covariance matrix, with the null hypothesis being that the model fits the data. An insignificant test indicates good fit (p>.01) (Maindal, Sokolsowski, & Vedsted, 2010). These data addresses the reliability and validity of the instrument. Because the chi-squared statistic is extremely sensitive to sample size used comparative fit index (CFI) was also used to assess fit relative to a null model and ranges from 0 to 1 with values of .90-.95 indicating acceptable and over .95 good fit (Maindal, Sokolsowski, & Vedsted, 2010). In addition, root mean square error of approximation (RMSEA) was used to express the lack of fit per degree of freedom of the model. Values are interpreted as follows: ≤.05 indicates very good, >.05-.08 good and ≥.10 poor fit (Maindal, Sokolsowski, & Vedsted, 2010). Standardized root mean square residual (SRMR) is the average of the differences between the observed and predicted correlations and has a range from 0 to 1. Values of <0.08 indicates good fit (Maindal, Sokolsowski, & Vedsted, 2010). The information obtained in this initial stage of the TES development will be used as a guide in the further refinement of the scale both in terms of item number, clarity, and overall structure of the instrument.

The TES evaluated for this study is a 48-item scale which used a 5-point Likert-like response format (see Appendix H). The response format is: 1= not at all like me, 2, 3, 4, 5=very much like me. Participants answered based on this range with no real guidance for a response of a 2, 3, or 4 answer. Items were worded both positively and negatively, 29 and 19 respectively.

Descriptive Data Item Analysis Findings

Initial descriptive analyses were conducted on all 48 scale items. The results showed that all items had a maximum score of 5, but two items only had a minimum score of 3. Item 24, "I try to

let my students know I'm concerned for their personal and academic welfare" and item 40, "I am generally a kind person" were both eliminated from the scale due to lower variability. 11 additional items had a minimum score of 2, but were kept in for further analysis. In addition it was discovered every item was missing at least one response, but no item was missing more than 10 responses. Because the only interest is in item analysis at this time this is not a concern and no item was eliminated due to missing data. However, this issue will be explored further in Chapter 5 when considering the next stage of validation for the TES. The reader will note that each item reported will have slightly different sample sizes because of the missing data. Missing data were handled via pairwise deletion. See Table 2 below for all item means and standard deviations.

Next, inspection of the individual item distributions did not show any irregularities in the data. The distribution shapes were all variations on skew or normal. After initial analysis it was found that 7 items had a mean of less than 2 and 20 items had a mean of greater than 4. It was also determined that the overall distribution of items had a negative skew, indicating that teachers were more likely to respond with "like me" than "not like me." This finding did not impact any decisions based on item elimination, but may influence items kept based on positively or negatively worded item means in the future.

The reliability of the TES was evaluated using the calculation of alpha resulting in α=.85. Further analysis found that alpha could be increased to α=.88 by removing items 17 and 23. The original goal was α=.9, but since acceptable alpha can be as low at α=.7 it was determined that this was an adequate alpha. With a coefficient alpha statistic of α=.88, support for the internal consistency of the TES can be assumed. Due to the large size of a 48 item correlation matrix, Tables 3, 4, and 5 will report only the items kept after the final CFA and by latent construct.

Table 2

Item sample size, mean, and standard deviation

Item number	*n*	*M*	*SD*
1	257	4.070	0.762
2	258	4.205	0.804
3*	257	1.626	0.848
4*	257	2.712	1.095
5	253	3.893	1.016
6*	254	1.961	0.985
7	255	3.600	1.018
8	256	4.078	0.938
9*	254	1.748	0.884
10*	256	1.762	0.882
11	254	4.020	1.069
12	254	3.791	0.911
13	251	4.315	0.710
14*	252	2.036	0.929
15	255	4.471	0.669
16	254	4.433	0.761
17	254	2.016	0.994
18*	254	4.264	0.784
19	252	3.925	1.074
20	252	3.988	0.849
21*	254	2.157	1.001
22	253	3.806	1.038
23*	251	3.825	1.047
24	252	4.694	0.556
25	254	4.520	0.704
26	254	4.594	0.692
27	252	4.778	0.487
28	253	3.960	0.950
29	253	4.478	0.705
30	252	3.829	1.009
31*	253	1.510	0.928
32*	252	3.508	1.127
33	254	4.118	0.786
34*	252	2.151	1.161
35*	254	2.957	0.999
36*	254	1.705	0.845
37	254	4.579	0.616
38	251	4.135	0.808
39*	253	1.893	0.882
40	253	4.664	0.513

*items negatively worded in TES and *M* and *SD* prior to reverse coding

Table 2

continued

Item number	*n*	*M*	*SD*
41*	251	2.375	0.948
42	253	4.237	0.739
43*	252	2.171	1.089
44	252	4.409	0.775
45	254	3.193	1.032
46*	254	2.173	1.041
47*	254	2.138	0.998
48	254	4.303	0.710

*items negatively worded in TES and *M* and *SD* prior to reverse coding

Table 3

Correlation matrix of selected cognitive items

	7	**19**	**26**	**28**	**30**	**38**
7	1.00	.14	.12	.24	.24	.31
19	.14	1.00	.07	.18	.22	.16
26	.12	.07	1.00	.34	.42	.27
28	.24	.18	.34	1.00	.33	.27
30	.24	.22	.42	.33	1.00	.22
38	.31	.16	.27	.27	.22	1.00

Table 4

Correlation matrix of selected affective items

	6	**8**	**9**	**10**	**21**	**22**	**35**	**44**	**46**
6	1.00	-.06	.18	.46	.28	.00	.23	-.83	.15
8	-.06	1.00	-.04	-.025	.10	.23	-.14	.31	-.11
9	.18	-.04	1.00	.22	.23	-.10	.16	-.02	.16
10	.46	-.03	.22	1.00	.29	.00	.14	-.05	.19
21	.28	.10	.23	.29	1.00	.08	.33	-.09	.16
22	.00	.23	-.10	.00	.08	1.00	-.08	.34	.02
35	.23	-.14	.16	.14	.33	-.08	1.00	-.14	.05
44	-.08	.31	-.02	-.05	-.09	.34	-.14	1.00	.10
46	-.36	.11	-.15	-.30	-.07	.12	-.19	.10	1.00

Table 5

Correlation matrix of selected behavioral items

	20	**25**	**29**	**31**	**37**	**47**
20	1.00	.22	.25	-.15	.34	-.17
25	.22	1.00	.31	-.12	.18	-.0
29	.25	.31	1.00	-.23	.34	-.18
31	-.15	-.19	-.23	1.00	-.14	.03
37	.34	.18	.34	-.14	1.00	
47	-.17	-.07	-.18	.03	-.06	1.00

Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is used for this validation study to reduce the number of observed variables (i.e. TES scale items, *N*=48) into a smaller number of unobserved or latent variables (i.e. cognitive, affective, behavioral, innate, and learned) by examining the covariation among the observed variables (see Appendix K for hypothesized model construct). Schriber, et al. (2006) specified several key components that readers should look for in a CFA study. These guidelines were used to help ensure all components were included in this study in order to help readers understand my methodology and also for the sake of statistical replication.

> We identify six nontechnical issues in evaluating a CFA or SEM article. They include (a) Research questions dictate the use of CFA or SEM; (b) a brief explanation or rationale for CFA or SEM is introduced in the method section; (c) sufficient information is provided on the measurement model's conceptual framework, structural framework, or both (i.e., the model is theoretically grounded); (d) tables and figures or text are appropriate and sufficient (i.e. descriptive statistics, such as correlation and mean tables); (e) a graphic display of the hypothesized or final models, or both, is provided; and (f) implications follow from the findings (Schriber, et al. 2006, p. 326).

In addition to the nontechnical evaluative issues, Schriber et al., (2006) also outlined technical pre- and post-analysis issues. The pre-analysis issues reported are sample size, missing data, and software program, and the post-analysis data is "the examination of the coefficients of hypothesized relationships and whether the model is a good fit to the observed data" and "the reliability of the observed variables in relationship to the latent constructs" (Schriber et al., 2006, p. 327). Using these guidelines the following is a discussion about the quantitative methodology used and the results from the CFA statistical analysis.

Using Schriber, et al., (2006) as the guide, the steps for this study will be addressed in the remainder of this chapter. The research question posed for this study was previously stated as, "Using CFA does the Teacher Empathy Scale (TES) items explain the observed and unobserved variables?" The second issue to address concerns the rationale for using CFA for this study.

Factor analysis, is a "mathematical procedure for analyzing the relationships among a set of items …to determine which factors or constructs account for the relationships" (Aiken, 1997, p. 164). The result of a factor analysis is a set of loadings or correlations of the variables "on each of the factors extracted by the procedure" (Aiken, 1997, p. 164) (Jones, 2009). To be more precise, confirmatory factor analysis (CFA) was used to confirm the theoretically-grounded structure rather than doing an exploratory analysis. Therefore, the goal was to determine which items loaded onto each of these factors. Each construct is supported theoretically through the literature review of the socio-emotional traits of empathy; therefore, meeting the requirement of the third nontechnical evaluative issue listed by Schriber et al.. (2006). The final three issues of tables, figures and graphic representation are addressed throughout this chapter and the implications of the findings are reported in the final chapter.

The next portion of technical issues are regarding pre-analysis. First, when conducting factor analysis sample size is important because "it relates to the stability of the parameter estimates" (Schrieber et al., 2006, p. 326). However, there is no general agreement on the ideal sample size concerning CFA (MacCallum, Widaman, Zhang, & Hong, 1999). According to Schrieber et al., (2006), "For a one sample analysis, there is no exact rule for the number of participants needed, but 10 per estimated parameter appears to be a general consensus" (p. 326). For this model structure there are three primary paths or parameters; (1) a regression or the observed variable on the latent construct, (2) a covariance or the latent construct with latent construct, and (3) a variance or observed variable on observed variable. Even in the most reduced model the ratio is 3.6. With a sample size of 261 and the model hypothesized I would only be able to have a total of 7 items, which is unacceptable, or have a much larger sample size and keep the same number of items which due to the constraints of a financially unsupported dissertation is also not possible. Therefore, the sample size was determined based on Comrey and Lee's (1992) rough rating scale of: 100 = poor,

200 = fair, 300 = good, 500 = very good, 1,000 or more = excellent. My final sample size was 261, which falls between fair and good on Comrey and Lee's scale. This is an acceptable initial sample size for this study, and the goal for future studies is to increase the sample to over 500.

Second, as already discussed and detailed in Table 1, each participant was missing at least one item, but no participant was missing more than 10 items. Again, because of the nature of this study the results were analyzed by item and not by participant so any missing data, although not ideal, is not detrimental to this study. In addition, upon examining the missing data across cases and items, the data were assumed to be missing at random (MAR). This issue will be discussed further in the final chapter and steps will be taken to try and avoid missing data as validation continues on the TES. The final pre-analysis issue is concerning the software program used. For this study R statistical package was used and all code is included in Appendix I for the sake of reproducibility.

Once all pre-analysis issues were addressed, using the 46 of the original 48 items the initial CFA was conducted. The hypothesized model consisted of all five constructs of empathy, but in two parts. The first three, cognitive, affective, and behavioral, were each attached to one item in the TES. The two constructs of innate and learned were separately also attached to one of the TES items as well. For example each item was defined by cognitive, affective, or behavioral and innate and learned. Because of this more complex model there were six item variations that could occur: cognitive/innate, cognitive/learned, affective/innate, affective/learned, behavioral/innate, or behavioral/learned. As mentioned in the previous chapter the expert coding did not use the constructs of innate and learned to select items to keep in the TES for the convenient sample due to lack of supporting evidence within the literature review. However, the research must begin somewhere so it was decided to use this study to explore through CFA if, in fact, any statistical data could be collected. Most of the model fit indices showed sub-optimal model fit which indicated that

the specified model did not fit the data as well as desired (see Table 7). During test construction it was assumed that the model fit would need additional scale items eliminated to improve model fit therefore this result was not surprising. In order to improve model fit items were removed that showed a non-significant loading. A loading is the degree of association between two observed variables, between an observed variable and a latent construct, or between two latent constructs as it pertains to the TES. The only exception to this process was item 25, this item was not significant; however, for a reason unknown to this author the model would not converge without it. With the elimination of any non-significant loading (with exception of item 25) the reduced model has 21 items. At this point, the fit indices were much closer to the accepted numbers for a well-fitting model, although some were still short of the criteria. Although this approach might not be the "best" one because the model refinement is based strictly on statistics, I make the assumption that the sample is a good representation of the teacher population from the viewpoint of the literature review. It is understood that there is always the possibility that the sample is biased. However, because this is initial validation I would like to include as many items as possible for my next step in the validation process of the TES therefore, instead of basing the item elimination solely on theory a statistical elimination was used making sure that the significant variables kept had a satisfactory balance concerning construct and positive vs. negative worded questions. All 21 items kept met the above standards. Table 6 provides the items after the reduced model CFA was performed.

In order to more successfully defend the use of statistical item elimination two additional CFAs were run to assure that this was the best model fit. The first model included all scale items (minus items 24 and 40 due to lack of variability as already discussed) with only the three latent constructs of cognitive, affective, and behavioral. This analysis would not converge. In other words, the model was not able to identify a single solution or set of parameter estimates to this specified model. The second model attempted used a theory based approach and selected the 33 items from

the original 48 that had a .80 expert review agreement rate (see Table 7 for results). This CFA did not improve the overall fit; therefore the original reduced fit model using statistical significance to help select items is the best fit and is the one that will be used to further this study.

Table 6

Results of CFA

Standardized factor loadings and *p* value

Item number	factor	Standardized factor loadings	*p* value
7	cognitive	-.286	.004
19	cognitive	-.230	.008
26	cognitive	-.187	.015
28	cognitive	-.661	.000
30	cognitive	-.231	.002
38	cognitive	-.188	.022
6	affective	.433	.000
8	affective	-.301	.000
9	affective	.182	.019
10	affective	.443	.000
21	affective	.423	.000
22	affective	-.354	.000
35	affective	.157	.050
44	affective	-.316	.000
46	affective	.193	.014
20	behavioral	.143	.029
25	behavioral	.100	.158
29	behavioral	.249	.000
31	behavioral	.153	.038
37	behavioral	.713	.000
47	behavioral	-.163	.019
6	innate	.428	.000
8	innate	.332	.000
9	innate	.307	.000
21	innate	.332	.000
22	innate	.302	.000
31	innate	.205	.002
7	learned	.304	.000
10	learned	.434	.000
19	learned	.173	.008
20	learned	.511	.000
25	learned	.421	.000
26	learned	.600	.000

Table 6

continued

Standardized factor loadings and *p* value			
Item number	**factor**	**Standardized factor loadings**	***p* value**
28	learned	.274	.000
29	learned	.477	.000
30	learned	.561	.000
37	learned	.424	.000
38	learned	.525	.000
44	learned	.463	.000
46	learned	.186	.004
47	learned	.376	.000

To begin the discussion on model fit of the TES it is important to first define the term, "fit refers to the ability of a model to reproduce the data" (Kenny, 2013). With that said, using all items the overall CFA model fit was poor fit (see Table 7). However, by selecting the above items in Table 6 only and rerunning the CFA the model fit was marginal to very good (see Table 7). The CFI was a marginal fit in the reduced model at CFI=.87317 but is still not low enough to reject the model. Additionally, the CFI statistic can falsely punish complex models of more than three factors. Because the "CFI compares the fit of a target model to the fit of an independent model--a model in which the variables are assumed to be uncorrelated…and represents the discrepancy of this target model to the discrepancy of the independence model" the more complex the model the more difficult to fit (Psychlopedica, 2009) . Because the TES is a more complex model, I believe that even a marginal CFI at this time is defendable to continue with validation of this scale. Using additional fit indices to help support my model the RMSEA=.05149 is a marginal fit, but very close to good and the SRMR=.054148 was a very good fit (see Table 7). The Root Mean Square Error of Approximation (RMSEA) was calculated instead of the RMSE because a sample size just over 200 was used and "represents the square root of the average or mean of the covariance residuals--the differences between corresponding elements of the observed and predicted covariance matrix"

(Moss, 2009). The Standardized Root Mean Square Residual (SRMR) tends to be biased with smaller sample sizes, but is a popular absolute fit test and the reduced model does fit within the SRMR parameters (Kenny, 2013).

Using the reduced model fit analysis and the items selected for the continuation of the validation of the TES, the labels used in the expert review process were also considered. The remaining 21 items broke down into the following: cognitive = 6 items, affective = 9 items, and behavioral = 6 items, which is an even distribution within these three constructs of empathy. Concerning the earlier labels used, 10 of the original 13 were represented in the reduced model. Once again "understanding others and students" and "care for others and students" was the most highly represented, four and six, respectively. The other labels were "adapting teaching for students" and "relating to others and students" which consisted of two items each, and the remaining labels of "concern for others or students", "working with others or students", "sympathy for others or students", "change in personal feelings", "responding to others or students", and "assisting others or students" represented one item each. The three labels not represented in the reduced model are "observing others or students", "learning from others or students", and "attentiveness to others or students." The labels represented after the reduced model were varied and acceptable for the continuation. Additionally 11 items were general based scenario items and 10 were education based scenario items, again equally representing the item categories. Overall, the breakdown of the reduced model items is an even distribution of each of the categories and is representative of the qualities that encompass empathy for this study (see Appendix J).

Table 7

CFA Model fit statistics of the TES

Full model						
Statistics	χ^2	df	CFI	TLI	RMSEA	SRMR
Full model fit with five dimensions	1633.6	939	.721	.692	.053	.062

Reduced model using statistical elimination						
Statistics	χ^2	df	CFI	TLI	RMSEA	SRMR
Full model fit with five dimensions	342.93	253	.873	.841	.051	.054

Reduced model using theory-based elimination						
Statistics	χ^2	df	CFI	TLI	RMSEA	SRMR
Full model fit with five dimensions	957.1	492	.709	.687	.06	.067

Chi-squared = Chi-squared goodness-of-fit with df = degrees of freedom. CFI (reference: .85-.89 = marginal, .90-.95=acceptable, >.95=good). TLI (reference: .90-.95=acceptable, >.95=good). RMSEA (reference: ≤.05=good, ≥.10=poor fit). SRMR=Standardized root mean square residual (reference: <.08=good fit).

Phase 5: Test/Retest Reliability

The final phase of this study is to test for reliability using a test/retest structure. In order to ensure that the scale itself is a reliable self-assessment measure it is important to determine statistically that answers given on the measure do not vary in a short duration of time; therefore concluding that the socio-emotional trait being assessed is as accurate as possible by each individual. Traits such as empathy, without any intervention specifically designed to either increase or lessen the trait should not alter within the course of a brief period of time. Therefore, the data collected during this final phase of the study assessed the consistency of the TES across the time of approximately one month, thus being able to empirically state that there was little to no change in how each of the 8 individuals assessed answered each of the 48 items on the TES. A satisfactory to good reliability rate is .7-.8.

The participants' demographic data collected used the same questions as the convenient sample participants and are reported here. Females comprised of 75% of the sample, males represented 25%. Respondents were 93.3% Caucasian/White and 6.7% preferred not to answer. Participants ranged in age from 21-over 50 with the largest age span of 21-25 at 50%, followed by, 31-40, 25%; and 12.5% for both age ranges of 26-30 and 41-50. Study participants then reported the total number of years taught in the classroom. This data was also organized into ranges with 0-3 years of teaching experience at the highest percentage, 62.5%, followed by 6-10 years, 18.8%, 21-25 years, 12.5%, and 11-15 years, 6.3%. Participants also listed the type of school district by which they are employed. 81.3% of the respondents teach in a city/urban school district, followed by 18.8% in a suburban setting, with 0% participants teaching in a rural school district. In the final two questions participants were able to select multiple grades and subjects due to teachers teaching at multiple grade levels and subject content. Because of this the following two items do not mathematically sum to 100%. 8th, 10th, 11th, and 12th grades each reported 37.5% of teachers teaching in this sample and 25% teach in the 7^{th} and 9^{th} grades. Data concerning subject content is English/Language Arts, 37.5%, Math, 37.5%, and Social Studies, 25%. These were the only three subjects taught by this sample. In addition, to the above demographics socio-economic status and geographic location growing up were also recorded. Participants reported 56.3% grew up in a middle-upper class setting, followed by 31.3%, middle class, and 12.5% upper with the other socio-economic statuses not represented. As for geographic location, 68.8% reported growing up in a suburban location, 25% in a city/urban demographic and 6.3% in a rural setting (see Table 8).

Table 8

Test/Retest Participant Demographics (*N*=8)

Sex	***n***	**%**
Female	6	75%
Male	2	25%
Race/Ethnicity		
Caucasian/White	7	93.3%
Prefer not to answer	1	6.7%
Age in years		
21-25	4	50%
26-30	1	12.5%
31-40	2	25%
41-50	1	12.5%
Years taught in classroom		
0-3	5	62.5%
6-10	1	12.5%
11-15	1	12.5%
21-25	1	12.5%
Grade(s) currently teaching		
7th	2	25%
8th	3	37.5%
9th	2	25%
10th	3	37.5%
11th	3	37.5%
12th	3	37.5%
Type of school district currently teaching		
City/Urban	6	81.3%
Suburban	2	18.8%
Rural	0	0%
Subject(s) taught		
English/Language Arts	3	37.5%
Math	3	37.5%
Social Studies	2	25%

Table 8

Test/Retest Participant Demographics (*N*=8)

Socio-economic status of childhood		
Middle	3	37.5%
Middle-upper	4	50%
Upper	1	12.5%
Geographic location of childhood (*N*=252)		
City/Urban	2	25%
Suburban	5	68.3%
Rural	1	6.3%

All eight participants completed all 48 items with no missing data. Reliability was assessed using the entire sample as well as by individual and by item. Overall reliability for all items and sample was .85 obtaining a very good reliability rating. Table 9 below reports the reliability scores by subject; all participants scored above .8 also assuming a very good reliability rating.

Table 9

Test/Retest participant reliability scores

Participant number	Reliability Score
1	.82
2	.87
3	.99
4	.84
5	.86
6	.91
7	.83
8	.85

On assessing reliability by item, only two items scored below .7, items 14, "If I saw a known school bully being teased at the bus stop, I would assume that the student brought it on him/herself and ignore the situation." And item 36, "I find it difficult to view things from other's points of view." Neither of these items was included in the items at final selection after the reduced model fit

CFA; therefore this result has no bearing on item elimination. Seven additional items scored below .8, however, all scored above .7 still within satisfactory range. Out of these seven items five are included in the final selected items to move forward in TES validation, Table 10 lists each of the reliability scores for the seven items under .8, but since all were satisfactory these items will not be eliminated from the final TES. Overall, the test/retest reliability was very good and no item elimination was necessary concerning the reliability scores.

Conclusion

Figures 1-12 in Appendix K represent graphically the original CFA model and the reduced model used for continued validity of the TES. Because of the satisfactory descriptive statistics, internal consistency, model fit, and test/retest reliability statistics it is appropriate to move forward with validation of this scale without further statistical analysis. The final chapter of this study discusses the limitations at each phase of validation of the TES, along with the conclusions and implications for the field of education that this scale may provide.

CHAPTER 5

SUMMARY

The motivation behind the development of the TES is theory driven and twofold. First, the review of the literature is most clear about the importance of teacher empathy in the school classroom. I do not believe that there is only one way to prepare pre-service teachers for the diversity in today's public schools; however, empathy training is a much ignored but much needed component to teacher education programs across all universities. Empathy training, in a formal sense, has limited research because of the difficulty due to multiple definitions of empathy, multiple fields of study that use empathy for a variety of purposes, and multiple ways to both teach and measure empathy as discussed in this literature review. Because of the difficulties it appears that few researchers have taken on the task to show the importance of not just teaching empathy, but helping to more fully understand this socio-emotional trait. This first idea of understanding more fully the importance of empathy in the classroom is what began this study.

The second force that propelled this study dealt with one of the above difficulties concerning the lack of a consistent empathy instrument that was able to measure empathy effectively and thoroughly, using the components of empathy: cognitive, affective, behavioral, innate, and learned specifically designed for the educational field. All other helping professions have a similar scale and see the need for this specialized instrument, therefore the field of education should be no different. The necessity for such a tool in order to continue empathy research in education is the reason this research is significant. The lack of empathy research, accurate measurement, and a focus within the field of education is a void that must be filled for the sake of our educational system, and even more importantly the students that walk into our schools each day hoping for care,

compassion, and growth. With the above two forces in play, the Teacher Empathy Scale (TES) was reated and in order to continue to move forward the scale must be empirically proven to be both reliable and valid before any further empathy research can proceed using the TES.

This chapter will explore the limitations, conclusions, and implications in the field of education for all five phases of this research study. Each phase, although separate, built on the previous one and therefore although limitations, conclusion, and implication will be discussed independently it is important to note that because of the link between phases that the ideas discussed also build on one another as well.

Limitations

Phase 1: Preliminary Scale Design

Phase 1 began with the preliminary design of the TES. The first limitation of Phase 1 is with the concept of empathy itself. This limitation has been comprehensively examined in the literature review chapter of this dissertation; however, I believe it is important to briefly revisit this idea in the final chapter. The multi-dimensional way in which empathy can be defined regarding cognitive, affective, behavioral, innate, and learned aspects of empathy make it difficult to specifically define. Because of these five constructs one single definition of empathy is impossible; therefore, in studying empathy this limitation needs to always be in the forefront of researchers' minds. Although there is no definitive approach to address this limitation, by defining empathy as clearly as possible for myself, the novice, and the expert reviewers in this study helped was control for it to the best of this author's ability. The participants who completed the TES were not given the definitions that was used by the novice and expert reviewer; however, I am considering including the empathy definition of "The ability to understand the perspective, experience, and both verbally and nonverbally communicate the feelings of another person or student" as I continue validation for this study.

The second limitation of Phase 1 is the self-assessment nature of a scale. This limitation is not unique to the TES, but is a limitation in all self-assessment scales. Because it is impossible to detect either intentional or unintentional deception in a self-assessment scale, the only safe-guard I found was to include similar questions in the scale to be able to track responses. However, this is an extremely weak solution to this problem. If participants answer each individual question with honesty to the best of their knowledge then the answers they are giving is what they believe to be true and the inclusion of similar questions will not elevate this issue. In the original design of this study it was proposed that the test/retest teacher sample would be evaluated by one teaching peer and one administrator at each participant's school to see if what each participant answered was comparable to two other individuals that they worked with. However, this portion of the study had to be eliminated due to IRB concern. As the validation of this scale moves forward I would like to explore further a better methodology to obtain the same information without the distress to any participants.

Phase 2: Novice Review

The primary limitation for Phase 2 concerns the similar population of the novice reviewers. All of the novice reviewers were from the same cohort of pre-service teachers at the same university in the Southeastern portion of the United States. This could mean that because of similar teacher training and course work, similar ideas were present during the focus group. However, because the students did have varying answers throughout the duration of the focus group I do not believe that this limitation impacted the data collection with any significance. If a novice review is used again in the future a variety of reviewers that have no previous knowledge of one another or similar educational backgrounds will be used to avoid this limitation.

Phase 3: Expert Review

Similar to the novice review, the limitation that may have been an issue in Phase 3 was that all four of the expert reviewers were from the same Southeastern university. Because the four reviewers came from three different departments within the university I do not believe that this was a significant limitation to the study. However, if an expert review panel is used again in the future a more diverse population will be used. In addition, and of much more consequence, an additional limitation was discovered after all data was analyzed. During the expert review the author's coding of the original 72 items was considered with the same weight as the other reviewers and because of this 15 items were deemed "matched at 60% or above and kept for the TES that went to the convenient sample. However, if the author's coding was removed the questions kept for the TES changed. Two items matched below 50% and did not agree with the author's coding. These two items were not part of the reduced model, therefore there is no large consequence to the statistical analysis; however, 13 additional items were found to only match at 50% agreement when the author's coding was removed and out of these 13, five items were kept for the reduced model. Because of this it will be important to rerun the CFA with only the 33 items that were coded with 75% or greater agreement after removing the author from the expert review coding process. This will be done prior to continuing on with the validation process and adaptations will be made accordingly prior to moving forward.

Phase 4: Convenient Sample Data Collection

There were two primary limitations to Phase 4. The first, and more unique to this study, is the convenient sample used. This limitation has two primary issues (1) the voluntary nature of the teachers completing the scale, and (2) the use of teachers that may have a connection in some way to the university where the study was conducted. Due to the fact that the scale is measuring empathy and 261 teachers out of 4,157 voluntarily participated it could be assumed that only the most

empathic teachers were the ones completing the scale. Because this study was not actually measuring the empathy of the participants but was only validating the items and the scale itself, this limitation is not a large concern. However, moving forward this limitation could potential play a larger role in accurate validity. This will be explored more fully prior to the continuation of the validation of the TES with the hope of finding a solution that both meet the needs of the researcher and the integrity of the research.

The second issue regarding sample is the use of teachers that could potentially have a direct or indirect relationship with the university in association with the research. The sample was specifically targeted in order to get the largest number of participants possible. Although the sample size and diverse demographic population was successfully achieved, the connection to the institution has the potential to alter the statistics. This limitation was considered prior to data collection and it was determined that the positives outweighed any negatives. Nevertheless, moving forward the sample will be nationwide with no obvious links to either institution or researcher.

The second limitation to Phase 4 is concerning the factor analysis and how items were selected or eliminated. This issue was addressed in the previous chapter, but more detail will be discussed here. When the initial CFA was conducted using all 48 items the model fit was sub-optimal; therefore, items had to be eliminated to try and achieve a better model fit. To begin, the original CFA results were expected and this is why more items than required were sent to participants. The knowledge that items would be removed was of no surprise; however, the decision of items to be removed was made after the initial CFA. Because the fit was poor, it was determined that basing the decision first solely by statistics and "capitalizing on chance" was the first step to take in lieu of basing the decision on theory only. Because this decision produced an acceptable model fit, and because with the statistically non-significant items removed still produced a variable balance between all five constructs I believe the decision to be sound. Also, to remove items on

theory alone would also be problematic due to the fact that no question was deemed "better" or "worse" using the novice and expert review included in the final TES sent to participants. Because as the validation of this scale moves forward the statistical analysis will vary depending on the stage of validation; this issue only plays a role in future research as it pertains to the initial item acceptance and elimination, but once this decision has been reached the research only moves forward with the selected items.

The final limitation for this phase of the study involved the software used for the CFA. The sem package in R (Fox, Kramer, & Friendly, 2010) was used; however there are other software programs available that might render slightly different results. R is a fairly flexible software program and other statistical software options such as, M-plus, LISREL, AMOS, and EQS could enhance the structure of the analysis. With this said, as long as the same assumptions/parameters and estimators are used similar results should occur, but rerunning the data in other statistical software programs can help to confirm results and in turn strengthen the study. As the validation of the TES continues other software will be used to support all analysis.

Phase 5: Test/Retest Data Collection

Two limitations of the test/retest data collection phase were found in this study. The first is the limited number of participants. The original target was N=10 with a final sample of N=8. However, five of the eight participants were first year teachers completing their MAT. Because this sample had the potential to have the most change in their empathy scores due to the newness of teaching experiences, as well as completing education courses at the time, the fact that all reliability scores were very good supplies a reasonable assumption that this limitation is not a concern. If this sample was able to score at such a high level, it can be assumed that more veteran teachers completing this scale would score at or above the reported results.

The second limitation in Phase 5 is the general demographic data of the participants. Because of the smaller sample size, in three of the demographic data categories some data points were not represented. No participant taught in a rural school district, only three course subjects were represented (English/language arts, math, and social studies), and no participant reported growing up in a lower or lower-middle class socio-economic environment. Although this is a limitation, because a test/retest sample is typically much smaller this limitation is always present, and as long as the sample is not overwhelming skewed to one overall demographic I do not believe that this is a significant limitation to the study. However, in the next phase of validation a second test/retest reliability measure will occur and precautions will be taken to collect a more demographically balanced sample.

Conclusions

The primary purpose for this study was to initially validate the TES by eliminating items that do not statistically fit into the scale using descriptive statistics, internal reliability, CFA, and test/retest reliability. It was determined that 21 items out of 48 met statistical guidelines and will be used in the next phase of validation of the TES. The psychometric properties of the TES lend empirical support to the study's theoretical claim that empathy consists of the constructs of cognitive, affective, behavioral, innate, and learned traits. These findings allow the research to move forward using the above limitations of the current study to help develop the continued validation of the TES.

Implications for Research

Implications for Research on Empathy

As noted in Chapter 2 there are five primary concerns that surround empathy research: (1) multiple definitions; (2) multiple fields of study; (3) debate between innate and learned empathy; (4) purposes for empathy within the field of education; and (5) empathy measurement. In addition,

within the field of education the study of empathy is extremely limited; perhaps because of the five concerns listed above or perhaps because the field of education currently doesn't see any immediate significance of empathy research. Whatever the reason for the disconnect between education and empathy research, the other helping professions of psychology, social work, and the medical field see the importance and have made the case time and again. So my belief is that it is time for higher education to begin the same pursuit.

This study has addressed the primary concerns of empathy research in order to learn from past researchers so as not to make the same errors. This study created a working definition of empathy within the educational field that is clear and specific to educators. Empathy is defined as "The ability to understand the perspective, experience, and both verbally and nonverbally communicate the feelings of another person or student." This study used the multiple academic fields and the findings to select the aspects of empathy that are beneficial to both educators and students alike. The idea of a relational connection was a common theme throughout all areas of study and this idea was used to help create a self-assessment scale that looks at the connection between teacher and student in order to provide a safe, caring, and academically nurturing space for all involved. With this said, because of the nature of empathy in combination with the self-assessment of the TES it is necessary to consider the idea of how educators answer the questions and is there a "right" or "wrong" answer that educators feel they need to give in order to be "good" teachers. Or is it enough that the TES is anonymous and the assumption made that teachers are answering accurately as possible. Although this was discussed as a limitation in scale design and self-assessment in general it is a difficult measurement tool, but looking more closing at the TES specifically and the targeted audience are teachers programed to answer with the morally right answer. As the process of validation continues for the TES, I believe this must always be a consideration as questions are written and/or edited. I do not believe that the current questions in

the TES are a flawless representation in measuring empathy, but instead a thoughtful first attempt. After getting the results back that the participants were more likely to answer "very much like me" as opposed to "not at all like me" causes pause for consideration. As mentioned earlier this could be the result of only the most empathic individuals completing the scale or it could be a flaw in the question design. Either way, this idea of self-assessment of empathy must be taken into consideration and corrected for when possible.

The third area of concern deals with how empathy is achieved and whether it is something that a person is born with or must learn. Because the CFA specifically used these two constructs in addition to cognitive, affective, and behavioral, to help define the model fit the study can continue. However, because there is little to no literature support for this concept of any one item can be classified as innate or learned this study begins to quantitatively explore this idea. The experts could not come to a complete agreement and I do not know without a doubt if it is possible. However, what the CFA results show is that items can be grouped in innate and learned constructs and helps provide a starting place to find similarities in these items. The goal of the constructs of innate and learned is to eventually know what ideas may be taught to pre-service teachers and what ideas are more difficult to teach. With the knowledge of certain ideas or concepts being able to be taught more readily than others this can help teacher educators better prepare pre-service teachers in the courses that they teach by adapting their curriculum to surround these common themes.

The fourth concern is the purposes for teaching empathy and is the impetus of this study. I believe the literature review is clear that the need for understanding all students aid in not only their academic learning, but also in meeting other emotional needs of safety and care in the classroom. In addition, with the diverse demographics of the public school classroom juxtaposed against the more dissimilar teacher demographic, students need to know that their teachers understand them as individuals even though they might not look like they do or come from the same background. With

the creation of the TES teachers will be able to see where they fall on an empathy scale and alter their interactions in the classroom if needed. This, for some, will be a difficult realization that perhaps they don't exhibit characteristics of care, concern, and/or adapting their teaching in addition to any or all of the other major ideas in the TES, but the self-realization that the TES can provide to pre-service or practicing teachers, if used, can benefit each of the students that the teachers come in contact in the future. With the understanding of where they score on a empathy scale, this can provide insight into helping to change behaviors and in turn thoughts about why students respond the way that they do in and out of class and what a teacher can do to provide the socio-emotional care for their students. This knowledge is not just to provide comfort in class, but to also promote learning once a feeling of overall safety is present. Using the abbreviated labels from the reduced model, a trend in the statistical results was noticed "care for others or students" and "understanding others or student" were two labels in 11 out of the 21 items from the reduced model. There were a total of 10 labels that all of the items could be grouped in based on the question it was addressing and 6 of the labels consisted of only one item each and two labels consisted of two items each. The vast majority of items could be grouped in the above two labels. In addition, the first label of "care for others or students" was evenly divided between affective and behavioral and innate and learned in six items that addressed care. The second label of "understanding others or students" had less variability with four of the five items representing cognitive and one behavioral, and each item was coded as learned only.

The fifth concern helps to address the issues of the fourth concern. Although there are other empathy scales there is not one specifically designed for teachers. Education is the only helping profession that does not have their own unique empathy scale; therefore, in order to begin any empirical research a scale must be validated before any experimental design studies can be created. This study developed the first known empathy scale for teachers and began the initial validation of

that scale. Because a CFA model fit was found using the constructs of cognitive, affective, behavioral, innate, and learned, and 21 balanced items were selected for continuation of validation. The TES is able to continue on to the next phase of validation.

Continuing to address the fifth concern of measurement, the next step in validating the TES is an additional CFA analysis. This will be conducted comprised of the 21 selected items from the TES and additional validated empathy scales from other fields of study focusing on the constructs of cognitive, affective, behavioral, innate, and learned components of empathy. This stage will look similar to the current study, but instead of looking at items within the TES and how they load onto the constructs; it will compare items from the TES along with other items from validated empathy scales that load onto the same construct. By comparing the items from the TES to other already validated items it can be determined if additional items need to be eliminated from the scale. For this next phase an expert panel will be used again to code all items in all scales and a nationwide sample of $N>500$ will be used to attempt to get a more diverse participant population.

Once the next phase of validation occurs and the TES is deemed valid, the final phase will involve the researcher looking at individual item answers in order to acquire an overall empathy score. This phase will require going out to a variety of diverse schools throughout the nation and have at least 90% of each school's teaching population to take the finalized TES to be able to eliminate the bias of more empathic teachers only reporting the results. Once these two final phases are complete the TES can begin to inform experimental design techniques of teaching empathy.

Finally, the TES has addressed the issue of limited research in empathy as a whole and specifically within the field of education by placing empathy research at the forefront of this study. Although the study was centered on creating an empathy scale for teachers, the research and discussion that led up to the scale's creation opened up dialogue about the socio-emotional trait of empathy and how it impacts teachers and students. It has shed light on the limited research and

connected other areas within education such as culturally relevant pedagogy, instructional congruence, and funds of knowledge are potential partners as research continues. Overall, this study has addressed all of the principal concerns specified in the literature review and has provided a jumping off point to continue further research in empathy.

Implications for Research on Socio-Emotional Development of Young Adolescents

The primary implication from this study responding to research on the socio-emotional development of young adolescents is the grade specific design of the TES. The items in the scale emphasis the unique issues that arise in middle and high school. Grades K-5 were specifically ignored to focus on secondary school grades only. Often times in education all grade levels are combined, but due to the difference in socio-emotional needs of young adolescents a specialized scale is required. The literature review described young adolescent socio-emotional development from a historical perspective and helped to provide insight into both fact and fiction concerning this time period. The TES was created keeping the needs of young adolescents in mind and specifically drawing on situational instances that often times occur during this time period of development. Once again there is limited empirical research on young adolescent development and so by creating a scale and recognizing this developmental period the hope is that more educational researchers will begin to acknowledge the changes that are occurring during young adolescence and begin to design studies that aid in the advancement of socio-emotional development of young adolescents.

Implications for Practice in Middle Grades Teacher Education

Implications for Practice in Teaching about Empathy in Teacher Education

I believe the first place to begin empathy education is within the pre-service classroom at the university level. An additional review of the literature will be necessary once final validation of the

TES has occurred, but it is this author's viewpoint that a more indirect teaching style of empathy is the best approach. Although this discussion is a much larger one than is not appropriate for this study, it is this foundation of teaching empathy to pre-service teachers by which the study was birthed. Therefore, it is with this idea that creates the implications for teaching empathy in teacher education. More empathic teachers has the potential for better educated and more content and confident students and is what propels this study. Although much more work is required to get to the place to test out this theory, the initial validation of the TES is the first place to begin and with the statistical results achieved in this study the next steps can start with a focus on empathy in the classroom just a little closer to reality in teacher training. The reduced model found that 15 of the 21 selected items loaded onto the construct of learned. This is encouraging for future research because if, in fact, the traits of empathy that these items represent can be learned then the hope is that this can be a trained skill for both pre-service and practicing teachers.

As mentioned earlier this focus on the use of the TES in teacher training requires not only experimental design, but once empirical evidence can be collected and reported, the training literature must be written, adapted, and circulated to not just teacher educators in the pre-service sector, but also to school administrators in order to provide in-service training to existing teachers. The trainings must walk a fine line between concise, cost effective, and easily administered. Without meeting all of these objects the materials will never be distributed to a wide audience and therefore the benefits of more empathic teachers to their students will not occur.

Using the definition created for this study, as well as, the research from other fields, the concept of teaching empathy in teacher education is formed. Because of this study there is now initial validation of the TES and with continued data collection and analysis the scale will soon be validated and experimental design can begin. The TES is only the first step. In order to see if there are ways to teach empathy to teachers experimental design studies must be created, but because up

to this point there hasn't be a specialized tool for pre- and post-measurement it has been difficult to create these studies. Once the TES has been validated more vigorous steps can be taken to assure that the idea of teaching empathy to pre-service and practicing teachers can advance.

Implications for Practice in Teaching about Socio-Emotional Development of Young Adolescents

Similar to the implications for research on socio-emotional development of young adolescents, this study provides the start of a conversation about the importance and highlights the unique needs of this developmental period within young adolescence. Once again, the primary way that this study has emphasized this is through the focus of 6th-12th grade teachers. By combining the trait of empathy with the distinctive developmental traits of young adolescence the TES is able to show the importance of both concepts and the connection that occurs between them.
Often times the physiological aspects of adolescence becomes the primary focus and the socio-emotional development is overshadowed by the physical changes that are occurring at this time. However, as the literature review shows physiological and socio-emotional development overlap in many areas and one cannot be selected as more important than the other. Yet often times because the physical changes occurring are more obvious this is what is focused on in higher education. With the creation of the TES socio-emotional development is highlighted, not deemed more importance, but instead connected to physiological development. This emphasis throughout this study is not accidental and it is the hope of this author that not only will empathy began to be considered as a teaching point in pre-service teaching courses, but that the socio-emotional development and growth of young adolescents will also be added to course work throughout colleges of education.

The implications for the field of education concerning this study not only begin a conversation about the importance of empathy and socio-emotional development in the classroom,

but spotlight young adolescence and the unique qualities that define this time period. I believe that this study has started the dialogue and with continued attention aimed at the classroom we can make the school day a more productive, academically relevant and nurturing than ever before.

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APPENDICES

Appendix A

Initial Scale Questions

Step 3: Possible questions for each concept area

Concepts	***Questions***
Why is empathy important for teachers? When can it be shown?	(Participate will answer yes or no to each question.)
Classroom management/fairness	If something seems unfair to a student actively listen to the student's frustrations and see the situation from their point of view before making a final decision.
Bullying	When you see a known school bully getting teased at the bus stop you figure the student has it coming.
Student home life situations	When you find out about a severe poverty issue at home with one of your students you decide to not to investigate further because you do not want to interfere.
Students with learning disabilities/IEP's	When a student with ADHD and an IEP transfers into your class you not only follow the IEP but also attempt to find out any additional coping skills that might assist that student.
ELL/Refugee students	Normally when non-English speaking students are placed in your classroom you get frustrated because you will have to adapt your current curriculum.
Parent communication	If during a parent/teacher conference a parent became extremely upset with you and stormed out of the classroom you would alert your principal and would then hope the parent doesn't attempt to make contact again.
Differences in learning strategies	When several students from the art magnet school in your district are assigned to your classroom and ask if they could do an alternative assignment that focuses more on their gifts you figure out a way to make it fair to all students and change your assessment.
Love of subject content	When a student complains that he/she does not like your subject matter, you explain to the student that the information will be very helpful to them in the future and tell them that you hope they learn to love it the way you do.

Physical and emotion changes that occur in M.S.	If one of your students came to you and confided in you that they were embarrassed because of their pimples, you would set up an appointment with the nurse to see if there was a way that the three of you could work to find a solution.
How does/can a teacher show empathy? What does it look like?	
Voice/Tone	If a student began yelling at you in front of the whole class the best way to handle the situation is to loudly ask the student to leave your classroom and not return until they could show more respect.
Physical Actions	Normally if your students are struggling with a large assignment you might notice the struggle but feel that the struggle is good for them and allow them to continue even if it means they might not succeed.
Body Language	You make a point to smile at each of your students despite how you are feeling that day.
Expression of Care/Concern	Normally as your students come to class each day you notice by their body language or facial features if they are having a good day or not and make a point to address each one.
How can empathy be measured?	(See scenarios above)

Appendix B

Development of a Teacher Empathy Scale (TES)

Novice Consent Form

Dear Student,

You are being invited to participate in a research study titled "Development and Validation of Teacher Empathy Scale: TES" conducted by Bobette Bouton from the Department of Education at the University of Georgia (706- 542-6446) under the direction of Dr. Cory Buxton, Department of Middle School Education, University of Georgia (706-542-3951). Your participation is voluntary. You can refuse to participate or stop taking part at anytime without giving any reason, and without penalty or loss of benefits to which you would otherwise be entitled. If you decide to withdraw from the study, the information that can be identified as yours will be kept as part of the study and may continue to be analyzed. Your decision whether or not to participate in the research will not affect your grades or class standing.

The purpose of this study is to develop a scale evaluating empathy in teachers. If you volunteer to take part in this study, you may be asked to:

> code the existing 72-item empathy scale using cognitive, affective, behavioral, innate, learned and clarity of each scale item during a 3 hour audio-recorded focus group where answers to these coded items will be clarified.

You will receive a $5.00 gift card to Starbucks for your participation in the focus group.

There are no foreseeable risks or discomforts associated with this research. You will be able to skip any questions you do not want to answer.

There are no direct benefits to participants in this study.

Even though the investigator will emphasize to all participants that comments made during the focus group session should be kept confidential, it is possible that participants may repeat comments outside of the group which the researchers have no control of.

No individually-identifiable information about you, or provided by you during the research, will be shared with others by the researchers without your written permission, unless required by law. All individually-identifiable information will be destroyed one year after data collection and all audio-recordings will be destroyed immediately following transcription. If the researchers use any direct quotes from your focus group in any professional presentations or publications, the researchers will alter or delete any information that could identify the quotation as yours or be affiliated with your university.

The investigator will answer any further questions about the research, now or during the course of the project.

By your signature below, you are indicating that you understand the above described study, have had all of your questions answered to your satisfaction, and agree to participate in this research project. You will receive a signed copy of this consent for your records.

Bobette Bouton	_____	_____
Name of Researcher	Signature	Date

Telephone: 615-294-8712

Email: bdbouton@uga.edu

_____	_____	_____
Name of Participant	Signature	Date

Please sign both copies, keep one and return one to the researcher

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu.

Appendix C

Development and Validation of Teacher Empathy Scale: TES

Expert/Novice Scale Coding Checklist

Please read each statement carefully and code each item on the below specifications by circling the appropriate word or number.

1) Identify the type of empathy involved in each statement. (Note that some statements may be non-examples of a specific type of empathy) – Cognitive, Affective, Behavioral (See table below)
2) Identify the source of empathy in each statement as either Innate or Learned (See table below)
3) Identify your perception of the level of clarity for each statement as understood by a grades 6-12 teacher. (Clarity/Understandability – 1 (not at all clear or understandably) – 5 (very much clear and understandable)

Types of Empathy

Cognitive	Affective	Behavioral
Empathy as a MENTAL process	Empathy as a EMOTIONAL process	Empathy as a PHYSICAL process
The ability to understand the perspective of another person.	The ability to experience the feelings of another person.	The ability to both verbally, nonverbally, and physically communicate empathy to another person.

Sources of Empathy

Innate	Learned
Empathy as an inherited by birth trait.	Empathy as acquired by outside influence trait.

***For each statement one of the options should be circled for A, B, and C.**

****Please feel free to write any explanations or other critiques/feedback on the form itself.**

1.)I believe that by looking at and talking to someone I get a good idea about how that individual is feeling.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

2.)People often tell me that they feel comfortable in my company.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

3.)Most of the time I don't consider how to help others feel successful because I believe it is a very personal matter.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

4.)I find myself raising my voice or speaking very strongly when I get angry or frustrated with another person.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

5.)I enjoy being around and learning from people who have different interests than me.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

6.)I often become frustrated with others who learn differently than I do.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

7.)I typically like to know why people think things are unfair.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

8.)Usually I try to listen if a student believes something to be unfair and try and see both sides of the situation even if I disagree with the student.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

9.)Often I become frustrated if I have to conduct business with someone who speaks limited English.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

10.)When I see someone who is homeless I often wonder about why they became homeless and consider their situation later in the day.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

11.)When I hear about a bullying situation in the news I immediately feel sad.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

12.)I find it difficult to relate to students going through puberty.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

13.)If during a parent/teacher conference a parent became extremely upset with me and stormed out of the classroom I would alert my principal and then hope the parent doesn't attempt to make contact again.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

14.)When a student complains that he/she does not like my subject matter, I explain that the information will be helpful in the future and that I hope they learn to love it the way I do.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

15.)If non-English speaking students are placed in my classroom I get frustrated because my current curriculum will have to be adapted.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

16.)If one of my students confided in me that they were embarrassed due to acne, I would ask the student if I could share the situation with the school nurse and with their permission I would attempt to help the student find a solution to their problem.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

17.)If a student began yelling at me in front of the whole class most likely I would handle the situation by loudly asking the student to leave the classroom and not return until they could show more respect.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

18.)While lesson planning I take each of my student's strengths into account and attempt to vary assignments to meet these needs.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

19.)Normally, if I see someone struggling with an activity, I might notice the struggle but feel that it is a learning experience for them and allow them to continue struggling.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

20.) Normally as my students come to class each day I notice by their body language and facial features if they are having a good day or not.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

21.)If I saw a known school bully being teased at the bus stop, I would assume that the student brought it on him/herself and ignore the situation.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

22.)If I were to find out about a severe poverty issue with someone I know, I would decide not to investigate further out of respect for their privacy.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

23.)I believe students have IEP's for a variety of reasons, and I must be responsive not only to meeting the requirements but also to being aware of additional support that might be needed.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

24.) I sometimes think that the bullying stories are probably blown out of proportion and not as horrible as the media makes them appear.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

25.) I believe that many of my students do not come from a home life similar to my own, and I need to try to understand each student in order to teach all of my students successfully.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

26.) When teachers talk about the difficulties of including students with disabilities into a regular education classroom, I tend to agree with them and hope I do not have to deal with the same issue in my classroom.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

27.) When I meet someone from different culture, I try to learn as much about them as possible.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

28.) I understand that many parents of my students were not successful in school, and they attach that history to their children and school personnel.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

29.)When confronting another person about a disagreement, it is important for me to look at positive aspects of the situation and relay them to the other person.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

30.) I find it difficult to relate to students that I teach who do not understand or appreciate my love of the subject content.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

31.) I believe that not all students learn in the same way and I do my best to accommodate all learning styles when lesson planning.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

32.) I do not fully understand all of the changes that occur during the young adolescent years, but I know that students will grow out of the changes so I just teach around the difficulties.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

33.) I am able to put away my own emotions or feelings when talking to another.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

34.) When I see someone in distress and I am not able to help, I am deeply troubled and revisit the situation many times after the fact.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

35.) Students from a variety backgrounds should all be treated the same way in order to be fair.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

36.) If I found out a student from another country was to be placed in my classroom, I would research that country and incorporate that student's culture into the curriculum where possible.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

37.) I try to let my students know I'm concerned for their personal and academic welfare.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

38.) I have volunteered to assist others who needed help in some way.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

39.) I believe that understanding a student's background makes me a better teacher.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

40.) I usually hold open doors for both friends and strangers.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

41.) I am not able to put aside my own feelings when teaching my students.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

42.) I am a better friend when I am able to understand the upbringing of another.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

43.) I try to give each of my students a warm greeting each day at the start of class.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

44.) I try to take students' cultural context into account as I plan lessons.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

45.) I usually do not smile at others as I pass them.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

46.) I do not take others cultural context into consideration as I interact with them.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

47.) I have little sympathy for co-workers who do not work hard.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

48.) I try to think like my students in order to teach my subject content better.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

49.) I pay attention to others' non-verbal cues.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

50.) My understanding of how others feel does not influence how I interact with them.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

51.) Students' misbehavior in class can be solved only by specific interventions; therefore, emotional ties to my students do not have a significant influence on correcting their behavior.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

52.) I have little sympathy for students who do not work hard in class.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

53.) I find it difficult to view things from others' points of view.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

54.) I try not to pay attention to others' emotions as I interact with them.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

55.) I pay attention to my students' non-verbal cues.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

56.) I am generally kind to my students.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

57.) I try to think like others in order to better understand them.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

58.) I am usually aware of those around me in need and do what I can to help.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

59.) My understanding of how my students and their families feel does not influence how I interact with them.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

60.) I find it difficult to view things from my students' points of view.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

61.) I believe that if my students know I unconditionally accept them, they will feel more comfortable in my classroom.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

62.) I believe facial expressions help me understand how others are feeling.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

63.) I am generally kind to people.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

64.) It is not important for my students to know that I care about them.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

65.) Sometimes I find myself not listening when others are talking to me.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

66.) I often disregard people who do not think or behave like I do.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

67.) I make special effort to listen attentively to students.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

68.) I often do not take my students viewpoints into consideration when dealing with misbehavior in the classroom.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

69.) It is important for people to know that I care about them.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

70.) I often do not notice voice tone in others.

a. cognitive affective behavioral

b. innate learned

c. Clarity/Understandable 1 2 3 4 5

71.) I believe that facial expressions do not help me know how my students are feeling. **a. cognitive affective behavioral** **b. innate learned** **c. Clarity/Understandable 1 2 3 4 5**
72.) I try not to pay attention to my students' emotions during class. **a. cognitive affective behavioral** **b. innate learned** **c. Clarity/Understandable 1 2 3 4 5**

Appendix D

Scale Interview Questions

Before Scale Administration

I will discuss the coding standards by reading each of the definitions and explaining in more detail the rationale behind why I am asking them to participate in this aspect of validity. Next I will ask participants for questions regarding what is expected of them. Once all questions have been answered participants will begin together.

During Scale Administration

I will segment each scale into six sections of six questions each. Students will read each of the six questions in the grouping and code with no time limit established and stopping until everyone in the group has completed the same six scale questions. Students will be encouraged to ask questions aloud as they take read and code each question. At the end of each of the six subgroups I will ask the group the following questions:

1.) Which question(s) did you mark very clear and why?
2.) Which question(s) did you mark as not clear as all and why?
3.) Which questions did you mark as cognitive? If not all participants are in agreement each will give the rationale for their answers.
4.) Which questions did you mark as affective? If not all participants are in agreement each will give the rationale for their answers.
5.) Which questions did you mark as behavioral? If not all participants are in agreement each will give the rationale for their answers.

6.) Which questions did you mark as innate? If not all participants are in agreement each will give the rationale for their answers.

7.) Which questions did you mark as learned? If not all participants are in agreement each will give the rationale for their answers.

The above questions will be asked a total of six separate times for each subgroup of the scale. I will audio record the entire session and take notes for each question.

Completion of Scale Administration

One all questions have been discussed I will ask the entire group the following questions:

6) What did you find most difficult about taking this scale?
7) What caused you surprise as you took this scale?
8) How do you think this scale could be utilized?
9) What was left out of this scale?
10) What questions do you find yourself still asking at the completion of the scale?

APPENDIX E

Development of a Teacher Empathy Scale (TES)

Expert Consent Form

Dear Faculty Member,

You are being invited to participate in a research study titled "Development and Validation of Teacher Empathy Scale: TES" conducted by Bobette Bouton from the Department of Education at the University of Georgia (706- 542-6446) under the direction of Dr. Cory Buxton, Department of Middle School Education, University of Georgia (706-542-3951). Your participation is voluntary. You can refuse to participate or stop taking part at anytime without giving any reason, and without penalty or loss of benefits to which you would otherwise be entitled. If you decide to withdraw from the study, the information that can be identified as yours will be kept as part of the study and may continue to be analyzed.

The purpose of this study is to develop a scale evaluating empathy in teachers. If you volunteer to take part in this study, you may be asked to:

> code the existing 72-item empathy scale using cognitive, affective, behavioral, innate, learned and clarity of each scale item. This should take no more than two hours.

While you will not receive any personal benefits from participating in this research project, the researcher hopes to learn more about empathy in the field of education.

There are no foreseeable risks or discomforts associated with this research. You will be able to skip any questions you do not want to answer.

No individually-identifiable information about you, or provided by you during the research, will be shared with others without your written permission, unless required by law. All individually-identifiable information will be destroyed one year after data collection. The investigator will answer any further questions about the research, now or during the course of the project.

By your signature below, you are indicating that you understand the above described study, have had all of your questions answered to your satisfaction, and agree to participate in this research project. You will receive a signed copy of this consent for your records.

Bobette Bouton	_____	_____
Name of Researcher	Signature	Date

Telephone: 615-294-8712

Email: bdbouton@uga.edu

_____	_____	_____
Name of Participant	Signature	Date

Please sign both copies, keep one and return one to the researcher

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu.

APPENDIX F

TES Item Label Table After Expert Review

TES Item #	TES Item Question	TES Abbreviated Item	Cognitive, Affective, or Behavioral	Innate or Learned
1	I believe that by looking at and talking to someone I get a good idea about how that individual is feeling.	General: observing others	Cognitive	Learned
2	I enjoy being around and learning from people who have different interests than me.	General: learning from others	Cognitive	Innate
3	Most of the time I do not consider how to help others feel successful because I believe it is a very personal matter.	General: assisting others	Cognitive	Innate
4	I find myself raising my voice or speaking very strongly when I get angry or frustrated with another person.	General: responding to others	Behavioral	Innate
5	I typically like to know why people think things are unfair.	General: understanding others	Cognitive	Learned
6	Often I become frustrated if I have to conduct business with someone who speaks limited English.	General: working with others	Affective	Innate
7	When I see someone who is homeless I often wonder about why they became homeless and consider their situation later in the day.	General: concern for others	Cognitive	Learned
8	When I hear about a bullying situation in the news I immediately feel sad.	General: care for others	Affective	Innate
9	I find it difficult to relate to students going through puberty.	Education: relating to students	Affective	Innate
10	If non-English speaking students are placed in my classroom I get frustrated because my current curriculum will have to be adapted.	Education: adapting teaching for students	Affective	Learned

11	If one of my students confided in me that they were embarrassed due to acne. I would ask the student if I could share the situation with the school nurse and with their permission I would attempt to help the student find a solution to their problem.	Education: assisting students	Behavioral	Learned
12	While lesson planning I take each of my students' strengths into account and attempt to vary assignments to meet these needs.	Education: adapting teaching for students	Cognitive	Learned
13	Normally as my students come to class each day I notice by their body language and facial features if they are having a good day or not.	Education: observing students	Cognitive	Learned
14	If I saw a known school bully being teased at the bus stop, I would assume that the student brought it on him/herself and ignore the situation.	Education: assisting students	Behavioral	Learned
15	I believe students have IEPs for a variety of reasons and I must be responsive not only to meeting the requirements but also to being aware of additional support that might be needed.	Education: adapting teaching for students	Behavioral	Learned
16	I believe that many of my students do not come from a home life similar to my own, and I need to try and understand in order to teach all of my students successfully.	Education: understanding students	Cognitive	Learned
17	When teachers talk about the difficulties of including students with disabilities into a regular education classroom, I tend to agree with them and hope I do not have to deal with the same issue in my classroom.	Education: adapting teaching for students	Affective	Learned
18	Usually I try to listen if a student believes something to be unfair, and I try to listen to both sides of the situation even if I disagree with the student.	Education: attentiveness to students	Behavioral	Learned

19	I understand that many parents of my students were not successful in school, and they attach that history to their children and school personnel.	Education: understanding students	Cognitive	Learned
20	When confronting another person about a disagreement, it is important for me to look at positive aspects of the situation and relay those aspects to the other person.	General: responding to others	Behavioral	Learned
21	I find it difficult to relate to students that I teach who do not understand or appreciate my love of the subject content.	Education: relating to students	Affective	Innate
22	When I see someone in distress and I am not able to help, I am deeply troubled and revisit the situation many times after the fact.	General: care for others	Affective	Innate
24	I try to let my students know I'm concerned for their personal and academic welfare.	Education: concern for students	Behavioral	Learned
25*	I have volunteered to assist other who needed help in some way.	General: assisting others	Behavioral	Learned
26	I believe that understanding a student's background makes me a better teacher.	Education: understanding students	Cognitive	Learned
27	I usually hold open doors for both friends and strangers.	General: care for others	Behavioral	Learned
28	I am a better friend when I am able to understand the upbringing of another.	General: understanding others	Cognitive	Learned
29	I try to give all of my students a warm greeting each day at the start of class.	Education: care for students	Behavioral	Learned
30	I try to take students' cultural context into account as I plan lessons.	Education: adapting teaching for students	Cognitive	Learned
31	I usually do not smile at others as I pass them.	General: care for others	Behavioral	Innate
32	I have little sympathy for co-workers who do not work hard.	General: sympathy for others	Affective	Innate
33	I try to think like my students in order to teach my subject content better.	Education: adapting teaching for students	Cognitive	Learned

34	My understanding of how others feel does not influence how I interact with them.	General: understanding others	Affective	Innate
35	I have little sympathy for students who do not work hard in class.	Education: sympathy for students	Affective	Learned
36	I find it difficult to view things form others' points of view.	General: understanding others	Cognitive	Innate
37	I am generally kind to my students.	Education: care for students	Behavioral	Learned
38	I try to think like others in order to better understand them.	General: understanding others	Cognitive	Learned
39	I find it difficult to view things from my students' points of view.	Education: understanding students	Cognitive	Learned
40	I am generally kind to people.	General: care for others	Behavioral	Learned
41	Sometimes I find myself not listening when others are talking to me.	General: attentiveness to others	Behavioral	Innate
42	I make special effort to listen attentively to students.	Education: attentiveness to others	Behavioral	Learned
43	If a student began yelling at me in front of the whole class most likely I would handle the situation by loudly asking the student to leave the classroom and not return until they could show more respect.	Education: responding to students	Behavioral	Learned
44	It is important for people to know that I care about them.	General: care for others	Affective	Learned
45	If I found out a student from another country was to be placed in my classroom I would research that country and incorporate that student's culture into the curriculum where possible.	Education: adapting teaching for students	Behavioral	Learned
46	I am not able to put aside my own feelings when teaching my students.	Education: change of personal feelings	Affective	Learned/Innate
47	My understanding of how my students and their families feel do not influence how I interact with them.	Education: understanding students	Behavioral	Learned
48	I believe facial expressions help me understand how others are feeling.	General: observing others	Cognitive	Learned

APPENDIX G

Scale Cover Letter

Development of a Teacher Empathy Scale (TES)

Dear Educator,

You are being invited to participate in a research study titled "Development and Validation of Teacher Empathy Scale: TES" conducted by Bobette Bouton from the Department of Education at the University of Georgia (706- 542-6446) under the direction of Dr. Cory Buxton, Department of Middle School Education, University of Georgia (706-542-3951). Your email address was obtained through your school districts public website. Your participation is voluntary. You can refuse to participate or stop taking part at anytime without giving any reason, and without penalty or loss of benefits to which you would otherwise be entitled. Once you have submitted your results at the end of the survey, the researchers will not be able to return or destroy the information provided by you.

The purpose of this study is to develop a scale evaluating empathy in teachers. It is important to understand that individual participants' answers will not be tabulated or scored. Rather, the responses you provide will be analyzed to assess the merits of the scale itself. This research theorizes that empathy consists of three specific but overlapping dimensions. They are proposed to be affective, cognitive, and behavioral in nature. In addition to these dimensions, this research divides empathy again between innate and learned empathy. The data collected from all study participants will be used to evaluate the validity of these dimensions of empathy. If you volunteer to take part in this study, you may be asked to do the following things:

1) Complete a 15-20 minute survey about your personal empathy both in and out of the classroom.
2) Complete some specific demographic questions about both you and the school district in which you teach.

Benefits are minimal and abstract, but some participants who take the empathy assessment might gain some personal insights into their beliefs about empathy that have the potential to change the ways in which they interact with certain students in their classes.

Personal reflections on empathy as you complete the scale might cause some to experience mild discomfort, but you will be able to skip any questions you do not want to answer. Also, due to potential breach in confidentiality if the scale is completed on a public work computer it is recommended that each participant complete the scale on a private/personal computer.

Internet communication are insecure and there is a limit to the confidentiality that can be guaranteed due to the technology itself. However, once the materials are received by the researcher, standard confidentiality procedures will be employed. No individually-identifiable information about you, or provided by you during the research, will be shared with others without your written permission, unless required by law. Once data collection has been completed, the researchers will strip all data files of IP addresses so that the data cannot be linked back to you.

If you have any questions contact Bobette Bouton at 615-294-8712, bdbouton@uga.edu.

By completing this survey, you are agreeing to participate in the above described research project.

Thank you for your consideration! Please print a copy of this letter for your records.

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu.

Appendix H

Teacher Empathy Scale (TES)

See below for the full pdf version

Tes Teacher Empathy Scale

Demographic Information

Please answer the below questions. If you do not feel comfortable answering a question(s) leave item blank or mark "Prefer not to answer".

1) Age (years)
- ☐ 21-25
- ☐ 26-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-60
- ☐ 60+
- ☐ Prefer not to answer

2) Race/Ethnicity
- ☐ African American/Black
- ☐ Asian
- ☐ Caucasian/White
- ☐ Hispanic
- ☐ Biracial
- ☐ Prefer not to answer

3) Gender
- ☐ Female
- ☐ Male
- ☐ Prefer not to answer

4) What type of school district do you currently teach in?
- ☐ City/Urban
- ☐ Suburban
- ☐ Rural

5) What grade do you currently teach? (check all that apply to the 2013-14 school year)
- ☐ 5th grade
- ☐ 6th grade
- ☐ 7th grade
- ☐ 8th grade
- ☐ 9th grade
- ☐ 10th grade
- ☐ 11th grade
- ☐ 12th grade

6) What subject do you teach? (check all that apply to the 2013-14 school year)
- ☐ Art
- ☐ English/Language Arts
- ☐ Foreign Language
- ☐ Math
- ☐ Music
- ☐ Physical Education
- ☐ Science
- ☐ Social Studies
- ☐ Special Education
- ☐ Technology/Career
- ☐ Some other subject

7) How many years have you taught in the classroom?
- ☐ 0-3
- ☐ 4-5
- ☐ 6-10
- ☐ 11-15
- ☐ 16-20
- ☐ 21-25
- ☐ 26-30
- ☐ 30+

TES: Teacher Empathy Scale

Please mark the number by each statement that best represents your level of agreement.

8) Item 1: I believe that by looking at and talking to someone I get a good idea about how that individual is feeling.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

9) Item 2: I enjoy being around and learning from people who have different interests than me.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

10) Item 3: Most of the time I do not consider how to help others feel successful because I believe it is a very personal matter.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

11) Item 4: I find myself raising my voice or speaking very strongly when I get angry or frustrated with another person.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

12) Item 5: I typically like to know why people think things are unfair.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

13) Item 6: Often I become frustrated if I have to conduct business with someone who speaks limited English.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

14) Item 7: When I see someone who is homeless I often wonder about why they became homeless and consider their situation later in the day.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

15) Item 8: When I hear about a bullying situation in the news I immediately feel sad.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

16) Item 9: I find it difficult to relate to students going through puberty.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

17) Item 10: If non-English speaking students are placed in my classroom I get frustrated because my current curriculum will have to be adapted.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

18) Item 11: If one of my students confided in me that they were embarrassed due to acne, I would ask the student if I could share the situation with the school nurse and with their permission I would attempt to help the student find a solution to their problem.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

19) Item 12: While lesson planning I take each of my students strengths into account and attempt to vary assignments to meet these needs.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

20) Item 13: Normally as my students come to class each day I notice by their body language and facial features if they are having a good day or not.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

21) Item 14: If I saw a known school bully being teased at the bus stop, I would assume that the student brought it on him/herself and ignore the situation.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

22) Item 15: I believe students have IEPs for a variety of reasons, and I must be responsive not only to meeting the requirements but also to being aware of additional support that might be needed.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

23) Item 16: I believe that many of my students do not come from a home life similar to my own, and I need to try to understand each student in order to teach all of my students successfully.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

24) Item 17: When teachers talk about the difficulties of including students with disabilities into a regular education classroom, I tend to agree with them and hope I do not have to deal with the same issue in my classroom.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

25) Item 18: Usually I try to listen if a student believes something to be unfair, and I try to listen to both sides of the situation even if I disagree with the student.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

26) Item 19: I understand that many parents of my students were not successful in school, and they attach that history to their children and school personnel.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

27) Item 20: When confronting another person about a disagreement, it is important for me to look at positive aspects of the situation and relay those aspects to the other person.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

28) Item 21: I find it difficult to relate to students that I teach who do not understand or appreciate my love of the subject content.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

29) Item 22: When I see someone in distress and I am not able to help, I am deeply troubled and revisit the situation many times after the fact.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

30) Item 23: When a student complains that he/she does not like my subject matter, I explain that the information will be helpful in the future and that I hope they learn to love it the way I do.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

31) Item 24: I try to let my students know Im concerned for their personal and academic welfare.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

32) Item 25: I have volunteered to assist others who needed help in some way.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

33) Item 26: I believe that understanding a students background makes me a better teacher.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

34) Item 27: I usually hold open doors for both friends and strangers.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

35) Item 28: I am a better friend when I am able to understand the upbringing of another.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

36) Item 29: I try to give all of my students a warm greeting each day at the start of class.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

37) Item 30: I try to take students cultural context into account as I plan lessons.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

38) Item 31: I usually do not smile at others as I pass them.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

39) Item 32: I have little sympathy for co-workers who do not work hard.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

40) Item 33: I try to think like my students in order to teach my subject content better.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

41) Item 34: My understanding of how others feel does not influence how I interact with them.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

42) Item 35: I have little sympathy for students who do not work hard in class.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

43) Item 36: I find it difficult to view things from others points of view.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

44) Item 37: I am generally kind to my students.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

45) Item 38: I try to think like others in order to better understand them.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

46) Item 39: I find it difficult to view things from my students points of view.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

47) Item 40: I am generally kind to people.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

48) Item 41: Sometimes I find myself not listening when others are talking to me.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

49) Item 42: I make special effort to listen attentively to students.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

50) Item 43: If a student began yelling at me in front of the whole class most likely I would handle the situation by loudly asking the student to leave the classroom and not return until they could show more respect.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

51) Item 44: It is important for people to know that I care about them.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

52) Item 45: If I found out a student from another country was to be placed in my classroom I would research that country and incorporate that student's culture into the curriculum where possible.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

53) Item 46: I am not able to put aside my own feelings when teaching my students.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

54) Item 47: My understanding of how my students and their families feel do not influence how I interact with them.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

55) Item 48: I believe facial experessions help me understand how others are feeling.
- ☐ 1 Not at all like me
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 Very much like me

56) Which socio-economic status would you classify your upbringing as a child/adolescent?
- ☐ Lower
- ☐ Lower- Middle
- ☐ Middle
- ☐ Middle-Upper
- ☐ Upper
- ☐ Prefer not to answer

57) What was the highest education level of either one or both parents?
- ☐ Did not graduate from H.S. or receive H.S. diploma equivalent
- ☐ H.S. diploma or equivalent
- ☐ Some college
- ☐ College graduate
- ☐ Graduate school
- ☐ Prefer not to answer

58) Were the majority of the people you were surrounded by growing up of the same race/ethnicity?
- ☐ Yes
- ☐ No
- ☐ Prefer not to answer

59) How many siblings did you have living in your home growing up?
- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5+
- ☐ Prefer not to answer

60) What type of geographic location did you grow up in? (If more than one location, select the one that you spent the majority of years)
- ☐ City/Urban
- ☐ Suburban
- ☐ Rural
- ☐ Prefer not to answer

61) How would you classify your religious background?
- ☐ No religious background
- ☐ Some religious background
- ☐ Active in a religious organization
- ☐ Prefer not to answer

62) Have you ever been bullied?

- ☐ Yes
- ☐ No
- ☐ Prefer not to answer

63) Have you ever been diagnosed with a learning disability?

- ☐ Yes
- ☐ No
- ☐ Prefer not to answer

64) Have you ever been diagnosed with a life-threatening illness?

- ☐ Yes
- ☐ No
- ☐ Prefer not to answer

65) Comments _____

Appendix I

R Code

```
rm(list=ls())

datafull<-read.csv("c:/Research/TES/TES data.csv", header=TRUE)

####Select the item data only
data<-subset(datafull, select=item1:item48)

####Reverse code the negatively-scored items
datarev<-data
datarev$item3<-6-datarev$item3
datarev$item4<-6-datarev$item4
datarev$item6<-6-datarev$item6
datarev$item9<-6-datarev$item9
datarev$item10<-6-datarev$item10
datarev$item14<-6-datarev$item14
datarev$item21<-6-datarev$item21
datarev$item23<-6-datarev$item23
datarev$item31<-6-datarev$item31
datarev$item32<-6-datarev$item32
datarev$item34<-6-datarev$item34
datarev$item35<-6-datarev$item35
datarev$item36<-6-datarev$item36
datarev$item39<-6-datarev$item39
datarev$item41<-6-datarev$item41
datarev$item43<-6-datarev$item43
datarev$item46<-6-datarev$item46
datarev$item47<-6-datarev$item47

####Correlation matrix using pairwise deletion
cormatrix<-round(cor(datarev, use="pairwise.complete.obs"), 3)
#write.table(cormatrix, file="c:/Research/TES/Correlation matrix with reverse
coding.csv", row.names=TRUE, col.names=TRUE, sep=",", append=FALSE)

###Descriptive statistics
require(pastecs)
descriptives<-round(t(stat.desc(datarev)), 3)
#write.table(descriptives, file="c:/Research/TES/Table of descriptives with reverse
coding.csv", row.names=TRUE, col.names=TRUE, sep=",", append=FALSE)

####Histogram of each item
require(Hmisc)
hist.data.frame(data)

####Alpha of full set of items and pre-specified subsets
alpha(datarev)
```

```
alpha1<-subset(datarev, select=-c(item25, item37, item26, item40, item24, item27))
alpha(alpha1)

alpha2<-subset(datarev, select=-c(item5, item11, item19, item22, item23, item25, item27,
item31, item32, item46))
alpha(alpha2)

alpha3<-subset(datarev, select=-c(item3, item6, item9, item10, item31, item36, item39,
item24, item25, item26, item27, item37, item40, item5, item11, item19, item22, item23,
item25, item27, item31, item32, item46))
alpha(alpha3)

alpha4<-subset(datarev, select=-c(item2, item3, item6, item15, item18, item32, item34,
item44, item45, item47, item48))
alpha(alpha4)

alpha5<-subset(datarev, select=-c(item3, item4, item6, item9, item10, item14, item21,
item23, item31, item32, item34, item35, item36, item39, item41, item43, item46, item47))
alpha(alpha5)

alpha6<-subset(datarev, select=-c(item1, item2, item3, item4, item5, item6, item7, item20,
item22, item25, item27, item28, item31, item32, item34, item36, item38, item40, item41,
item44, item48))
alpha(alpha6)

alpha7<-subset(datarev, select=-c(item3, item4, item5, item6, item9, item10, item22, item23,
item25, item27, item31, item32, item34, item36, item39, item40, item41, item44, item46,
item47, item48))
alpha(alpha7)

####Begin factor analysis

require(sem)
####Full model
datarev1<-subset(datarev, select=-c(item17, item23))
tescov1<-cov(datarev1, use="pairwise.complete.obs")
tesmodel1<-specify.model()
fc->item1, lam1, NA
fc->item2, lam2, NA
fc->item3, lam3, NA
fc->item5, lam5, NA
fc->item7, lam7, NA
fc->item12, lam12, NA
fc->item13, lam13, NA
fc->item19, lam19, NA
fc->item26, lam26, NA
fc->item28, lam28, NA
```

fc->item30, lam30, NA
fc->item33, lam33, NA
fc->item36, lam36, NA
fc->item38, lam38, NA
fc->item39, lam39, NA
fc->item48, lam48, NA
fa->item6, lam6, NA
fa->item8, lam8, NA
fa->item9, lam9, NA
fa->item10, lam10, NA
fa->item16, lam16, NA
fa->item21, lam21, NA
fa->item22, lam22, NA
fa->item32, lam32, NA
fa->item34, lam34, NA
fa->item35, lam35, NA
fa->item44, lam44, NA
fa->item46, lam46, NA
fb->item4, lam4, NA
fb->item11, lam11, NA
fb->item14, lam14, NA
fb->item15, lam15, NA
fb->item18, lam18, NA
fb->item20, lam20, NA
fb->item24, lam24, NA
fb->item25, lam25, NA
fb->item27, lam27, NA
fb->item29, lam29, NA
fb->item31, lam31, NA
fb->item37, lam37, NA
fb->item40, lam40, NA
fb->item41, lam41, NA
fb->item42, lam42, NA
fb->item43, lam43, NA
fb->item45, lam45, NA
fb->item47, lam47, NA
fi->item2, lam102, NA
fi->item3, lam103, NA
fi->item4, lam104, NA
fi->item6, lam106, NA
fi->item8, lam108, NA
fi->item9, lam109, NA
fi->item21, lam121, NA
fi->item22, lam122, NA
fi->item31, lam131, NA
fi->item32, lam132, NA
fi->item34, lam134, NA
fi->item36, lam136, NA

fi->item41, lam141, NA
fi->item48, lam148, NA
fl->item1, lam101, NA
fl->item5, lam105, NA
fl->item7, lam107, NA
fl->item10, lam110, NA
fl->item11, lam111, NA
fl->item12, lam112, NA
fl->item13, lam113, NA
fl->item14, lam114, NA
fl->item15, lam115, NA
fl->item16, lam116, NA
fl->item18, lam118, NA
fl->item19, lam119, NA
fl->item20, lam120, NA
fl->item24, lam124, NA
fl->item25, lam125, NA
fl->item26, lam126, NA
fl->item27, lam127, NA
fl->item28, lam128, NA
fl->item29, lam129, NA
fl->item30, lam130, NA
fl->item33, lam133, NA
fl->item35, lam135, NA
fl->item37, lam137, NA
fl->item38, lam138, NA
fl->item39, lam139, NA
fl->item40, lam140, NA
fl->item42, lam142, NA
fl->item43, lam143, NA
fl->item44, lam144, NA
fl->item45, lam145, NA
fl->item46, lam146, NA
fl->item47, lam147, NA
item1<->item1, e1, NA
item2<->item2, e2, NA
item3<->item3, e3, NA
item4<->item4, e4, NA
item5<->item5, e5, NA
item6<->item6, e6, NA
item7<->item7, e7, NA
item8<->item8, e8, NA
item9<->item9, e9, NA
item10<->item10, e10, NA
item11<->item11, e11, NA
item12<->item12, e12, NA
item13<->item13, e13, NA
item14<->item14, e14, NA

item15<->item15, e15, NA
item16<->item16, e16, NA
item18<->item18, e18, NA
item19<->item19, e19, NA
item20<->item20, e20, NA
item21<->item21, e21, NA
item22<->item22, e22, NA
item24<->item24, e24, NA
item25<->item25, e25, NA
item26<->item26, e26, NA
item27<->item27, e27, NA
item28<->item28, e28, NA
item29<->item29, e29, NA
item30<->item30, e30, NA
item31<->item31, e31, NA
item32<->item32, e32, NA
item33<->item33, e33, NA
item34<->item34, e34, NA
item35<->item35, e35, NA
item36<->item36, e36, NA
item37<->item37, e37, NA
item38<->item38, e38, NA
item39<->item39, e39, NA
item40<->item40, e40, NA
item41<->item41, e41, NA
item42<->item42, e42, NA
item43<->item43, e43, NA
item44<->item44, e44, NA
item45<->item45, e45, NA
item46<->item46, e46, NA
item47<->item47, e47, NA
item48<->item48, e48, NA
fa<->fa, NA, 1
fc<->fc, NA, 1
fb<->fb, NA, 1
fi<->fi, NA, 1
fl<->fl, NA, 1
fa<->fb, fafb, NA
fa<->fc, fafc, NA
fb<->fc, fbfc, NA
fi<->fl, fifl, NA

tesrun1<-sem(tesmodel1, tescov1, nrow(datarev1))
summary(tesrun1)
std.coef(tesrun1)

####Reduced model - nonsignificant paths dropped from full model

```
datarev2<-subset(datarev, select=-c(item17, item23, item1, item11, item36, item2, item18,
item39, item34, item15, item13, item16, item14, item12, item5, item45, item27, item3, item48,
        item42, item41, item43, item32, item33, item4))
tescov2<-cov(datarev2, use="pairwise.complete.obs")
tesmodel2<-specify.model()
fc->item7, lam7, NA
fc->item19, lam19, NA
fc->item26, lam26, NA
fc->item28, lam28, NA
fc->item30, lam30, NA
fc->item38, lam38, NA
fa->item6, lam6, NA
fa->item8, lam8, NA
fa->item9, lam9, NA
fa->item10, lam10, NA
fa->item21, lam21, NA
fa->item22, lam22, NA
fa->item35, lam35, NA
fa->item44, lam44, NA
fa->item46, lam46, NA
fb->item20, lam20, NA
fb->item24, lam24, NA
fb->item25, lam25, NA
fb->item29, lam29, NA
fb->item31, lam31, NA
fb->item37, lam37, NA
fb->item40, lam40, NA
fb->item47, lam47, NA
fi->item6, lam106, NA
fi->item8, lam108, NA
fi->item9, lam109, NA
fi->item21, lam121, NA
fi->item22, lam122, NA
fi->item31, lam131, NA
fl->item7, lam107, NA
fl->item10, lam110, NA
fl->item19, lam119, NA
fl->item20, lam120, NA
fl->item24, lam124, NA
fl->item25, lam125, NA
fl->item26, lam126, NA
fl->item28, lam128, NA
fl->item29, lam129, NA
fl->item30, lam130, NA
fl->item35, lam135, NA
fl->item37, lam137, NA
fl->item38, lam138, NA
fl->item40, lam140, NA
```

```
fl->item44, lam144, NA
fl->item46, lam146, NA
fl->item47, lam147, NA
item6<->item6, e6, NA
item7<->item7, e7, NA
item8<->item8, e8, NA
item9<->item9, e9, NA
item10<->item10, e10, NA
item19<->item19, e19, NA
item20<->item20, e20, NA
item21<->item21, e21, NA
item22<->item22, e22, NA
item24<->item24, e24, NA
item25<->item25, e25, NA
item26<->item26, e26, NA
item28<->item28, e28, NA
item29<->item29, e29, NA
item30<->item30, e30, NA
item31<->item31, e31, NA
item35<->item35, e35, NA
item37<->item37, e37, NA
item38<->item38, e38, NA
item40<->item40, e40, NA
item44<->item44, e44, NA
item46<->item46, e46, NA
item47<->item47, e47, NA
fa<->fa, NA, 1
fc<->fc, NA, 1
fb<->fb, NA, 1
fi<->fi, NA, 1
fl<->fl, NA, 1
fa<->fb, fafb, NA
fa<->fc, fafc, NA
fb<->fc, fbfc, NA
fi<->fl, fifl, NA

tesrun2<-sem(tesmodel2, tescov2, nrow(datarev2))
summary(tesrun2)
std.coef(tesrun2)

####Specified subset model
datarev3<-subset(datarev, select=-c(item17, item23, item24, item40))
tescov3<-cov(datarev3, use="pairwise.complete.obs")
tesmodel3<-specify.model()
fc->item1, lam1, NA
fc->item2, lam2, NA
fc->item3, lam3, NA
fc->item5, lam5, NA
```

fc->item7, lam7, NA
fc->item12, lam12, NA
fc->item13, lam13, NA
fc->item19, lam19, NA
fc->item26, lam26, NA
fc->item28, lam28, NA
fc->item30, lam30, NA
fc->item33, lam33, NA
fc->item36, lam36, NA
fc->item38, lam38, NA
fc->item39, lam39, NA
fc->item48, lam48, NA
fa->item6, lam6, NA
fa->item8, lam8, NA
fa->item9, lam9, NA
fa->item10, lam10, NA
fa->item16, lam16, NA
fa->item21, lam21, NA
fa->item22, lam22, NA
fa->item32, lam32, NA
fa->item34, lam34, NA
fa->item35, lam35, NA
fa->item44, lam44, NA
fa->item46, lam46, NA
fb->item4, lam4, NA
fb->item11, lam11, NA
fb->item14, lam14, NA
fb->item15, lam15, NA
fb->item18, lam18, NA
fb->item20, lam20, NA
fb->item25, lam25, NA
fb->item27, lam27, NA
fb->item29, lam29, NA
fb->item31, lam31, NA
fb->item37, lam37, NA
fb->item41, lam41, NA
fb->item42, lam42, NA
fb->item43, lam43, NA
fb->item45, lam45, NA
fb->item47, lam47, NA
fi->item2, lam102, NA
fi->item3, lam103, NA
fi->item4, lam104, NA
fi->item6, lam106, NA
fi->item8, lam108, NA
fi->item9, lam109, NA
fi->item21, lam121, NA
fi->item22, lam122, NA

fi->item31, lam131, NA
fi->item32, lam132, NA
fi->item34, lam134, NA
fi->item36, lam136, NA
fi->item41, lam141, NA
fi->item48, lam148, NA
fl->item1, lam101, NA
fl->item5, lam105, NA
fl->item7, lam107, NA
fl->item10, lam110, NA
fl->item11, lam111, NA
fl->item12, lam112, NA
fl->item13, lam113, NA
fl->item14, lam114, NA
fl->item15, lam115, NA
fl->item16, lam116, NA
fl->item18, lam118, NA
fl->item19, lam119, NA
fl->item20, lam120, NA
fl->item25, lam125, NA
fl->item26, lam126, NA
fl->item27, lam127, NA
fl->item28, lam128, NA
fl->item29, lam129, NA
fl->item30, lam130, NA
fl->item33, lam133, NA
fl->item35, lam135, NA
fl->item37, lam137, NA
fl->item38, lam138, NA
fl->item39, lam139, NA
fl->item42, lam142, NA
fl->item43, lam143, NA
fl->item44, lam144, NA
fl->item45, lam145, NA
fl->item46, lam146, NA
fl->item47, lam147, NA
item1<->item1, e1, NA
item2<->item2, e2, NA
item3<->item3, e3, NA
item4<->item4, e4, NA
item5<->item5, e5, NA
item6<->item6, e6, NA
item7<->item7, e7, NA
item8<->item8, e8, NA
item9<->item9, e9, NA
item10<->item10, e10, NA
item11<->item11, e11, NA
item12<->item12, e12, NA

```
item13<->item13, e13, NA
item14<->item14, e14, NA
item15<->item15, e15, NA
item16<->item16, e16, NA
item18<->item18, e18, NA
item19<->item19, e19, NA
item20<->item20, e20, NA
item21<->item21, e21, NA
item22<->item22, e22, NA
item25<->item25, e25, NA
item26<->item26, e26, NA
item27<->item27, e27, NA
item28<->item28, e28, NA
item29<->item29, e29, NA
item30<->item30, e30, NA
item31<->item31, e31, NA
item32<->item32, e32, NA
item33<->item33, e33, NA
item34<->item34, e34, NA
item35<->item35, e35, NA
item36<->item36, e36, NA
item37<->item37, e37, NA
item38<->item38, e38, NA
item39<->item39, e39, NA
item41<->item41, e41, NA
item42<->item42, e42, NA
item43<->item43, e43, NA
item44<->item44, e44, NA
item45<->item45, e45, NA
item46<->item46, e46, NA
item47<->item47, e47, NA
item48<->item48, e48, NA
fa<->fa, NA, 1
fc<->fc, NA, 1
fb<->fb, NA, 1
fi<->fi, NA, 1
fl<->fl, NA, 1
fa<->fb, fafb, NA
fa<->fc, fafc, NA
fb<->fc, fbfc, NA
fi<->fl, fifl, NA

tesrun3<-sem(tesmodel3, tescov3, nrow(datarev3))
summary(tesrun3)
std.coef(tesrun3)
```

APPENDIX J

TES Item Label Table After Reduced Model

TES Item #	TES Item Question	**TES Abbreviated Item**	**Cognitive, Affective, or Behavioral**	**Innate or Learned**
6	Often I become frustrated if I have to conduct business with someone who speaks limited English.	General: working with others	Affective	Innate
7	When I see someone who is homeless I often wonder about why they became homeless and consider their situation later in the day.	General: concern for others	Cognitive	Learned
8	When I hear about a bullying situation in the news I immediately feel sad.	General: care for others	Affective	Innate
9	I find it difficult to relate to students going through puberty.	Education: relating to students	Affective	Innate
10	If non-English speaking students are placed in my classroom I get frustrated because my current curriculum will have to be adapted.	Education: adapting teaching for students	Affective	Learned
19	I understand that many parents of my students were not successful in school, and they attach that history to their children and school personnel.	Education: understanding students	Cognitive	Learned
20	When confronting another person about a disagreement, it is important for me to look at positive aspects of the situation and relay those aspects to the other person.	General: behavior when responding to others	Behavioral	Learned
21	I find it difficult to relate to students that I teach who do not understand or appreciate my love of the subject content.	Education: relating to students	Affective	Innate
22	When I see someone in distress and I am not able to help, I am deeply troubled and revisit the situation many times after the fact.	General: care for others	Affective	Innate
25	I have volunteered to assist other who needed help in some way.	General: assisting others	Behavioral	Learned
26	I believe that understanding a student's background makes me a better teacher.	Education: understanding students	Cognitive	Learned

28	I am a better friend when I am able to understand the upbringing of another.	General: understanding others	Cognitive	Learned
29	I try to give all of my students a warm greeting each day at the start of class.	Education: care for students	Behavioral	Learned
30	I try to take students' cultural context into account as I plan lessons.	Education: adapting teaching for students	Cognitive	Learned
31	I usually do not smile at others as I pass them.	General: care for others	Behavioral	Innate
35	I have little sympathy for students who do not work hard in class.	Education: sympathy for students	Affective	Learned
37	I am generally kind to my students.	Education: care for students	Behavioral	Learned
38	I try to think like others in order to better understand them.	General: understanding others	Cognitive	Learned
44	It is important for people to know that I care about them.	General: care for others	Affective	Learned
46	I am not able to put aside my own feelings when teaching my students.	Education: change of personal feelings	Affective	Learned
47	My understanding of how my students and their families feel do not influence how I interact with them.	Education: understanding students	Behavioral	Learned

Appendix K

CFA Model Fit Graphics

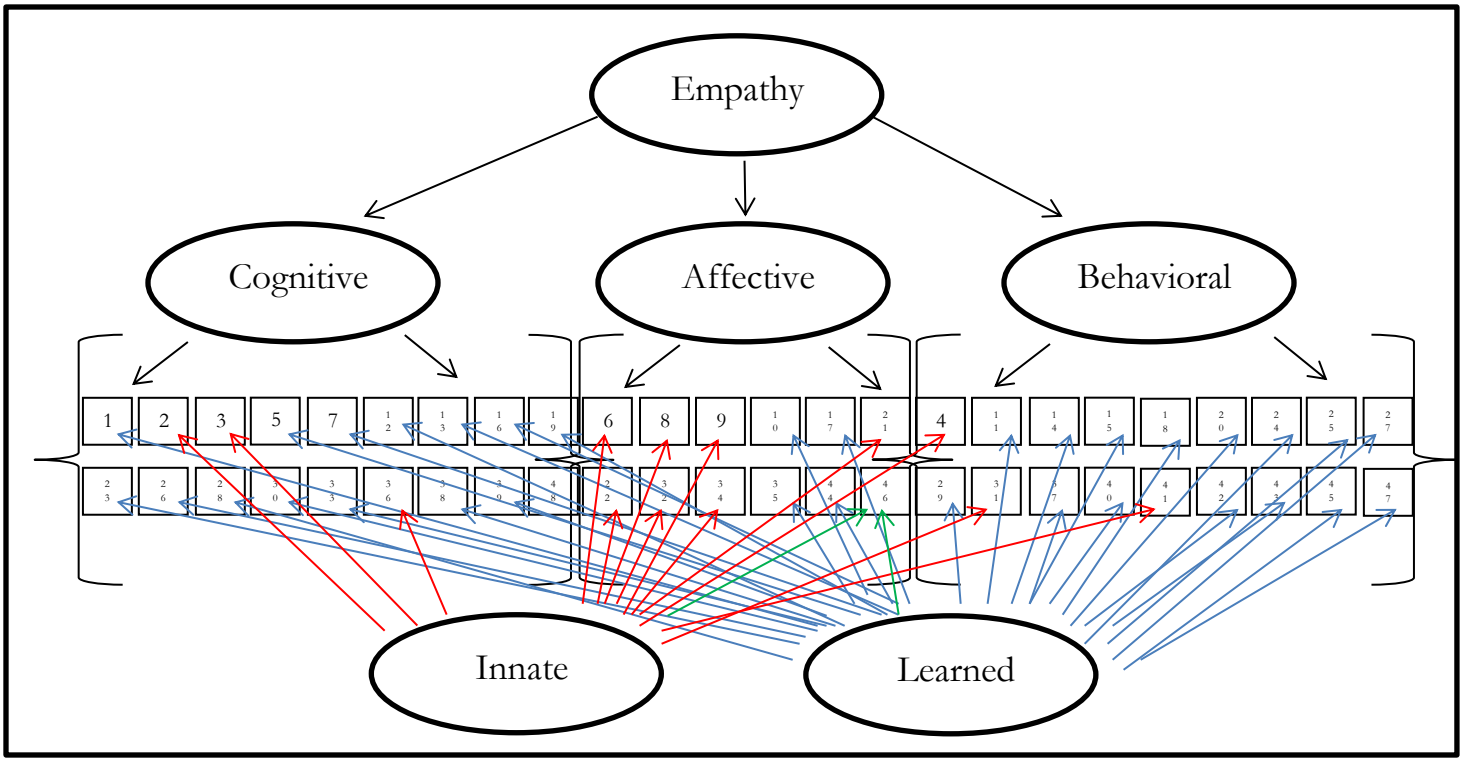

Figure 1. Hypothesized CFA Model Fit

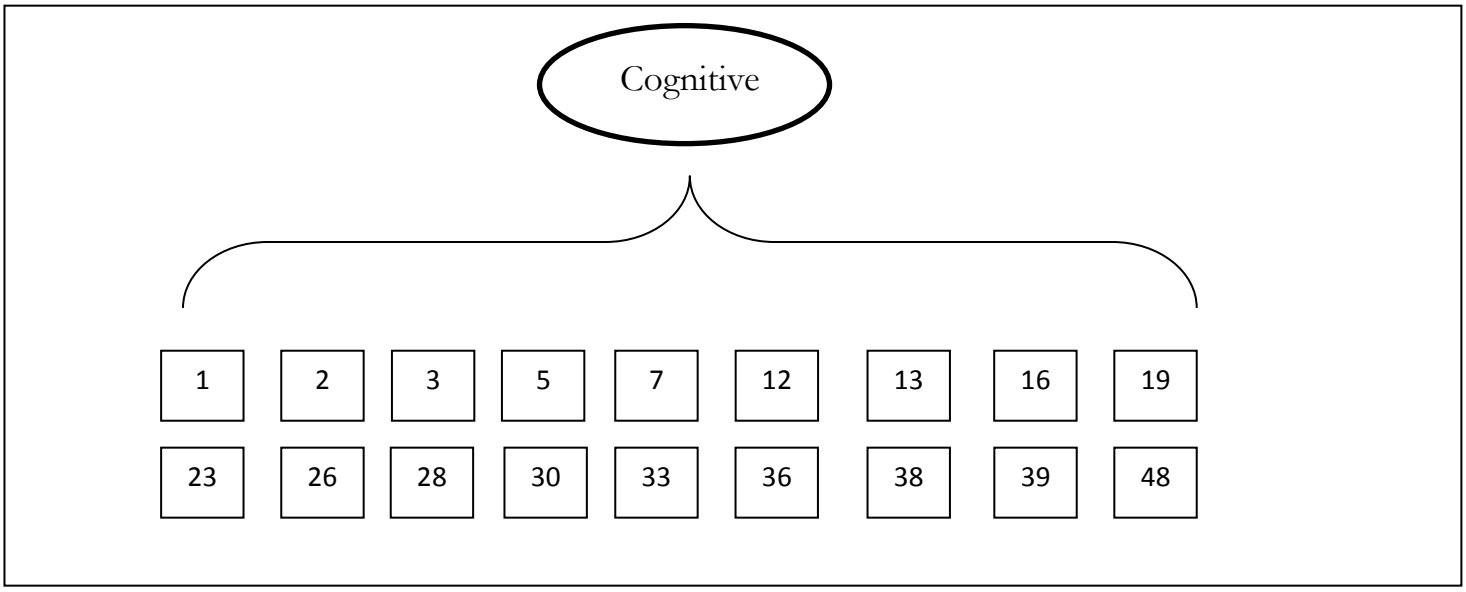

Figure 2. Hypothesized Cognitive Model Fit

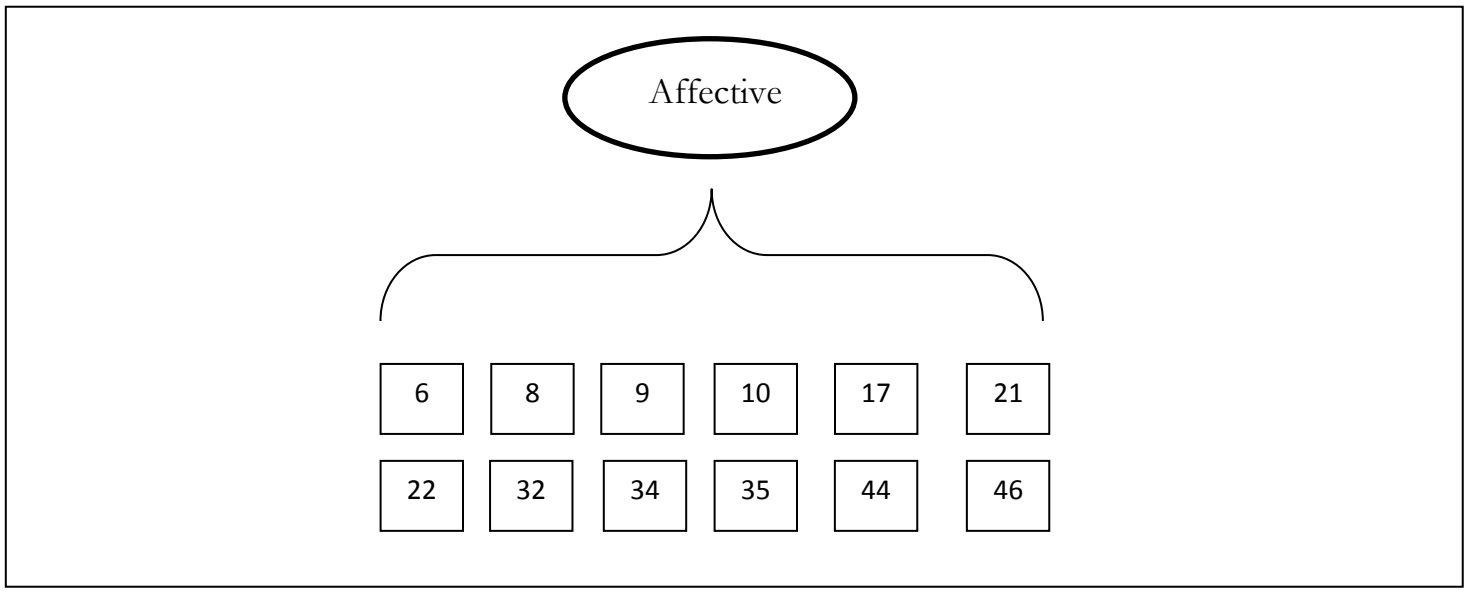

Figure 3. Hypothesized Affective Model Fit

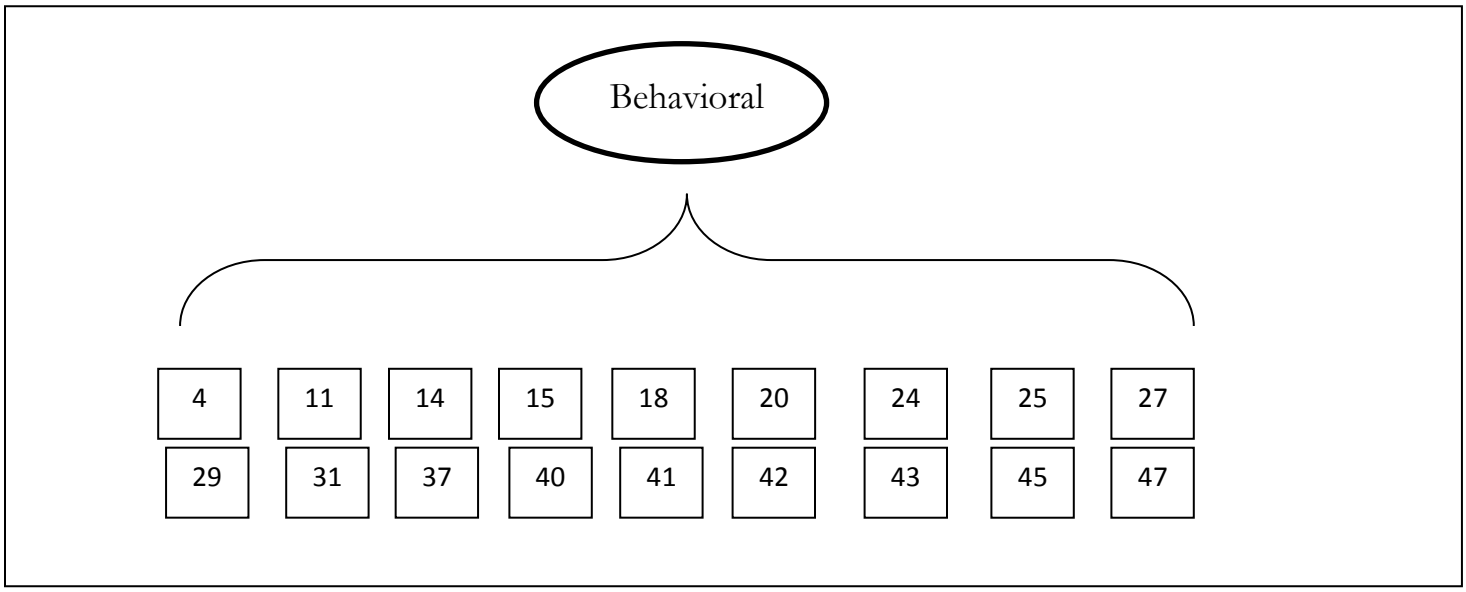

Figure 4. Hypothesized Behavioral Model Fit

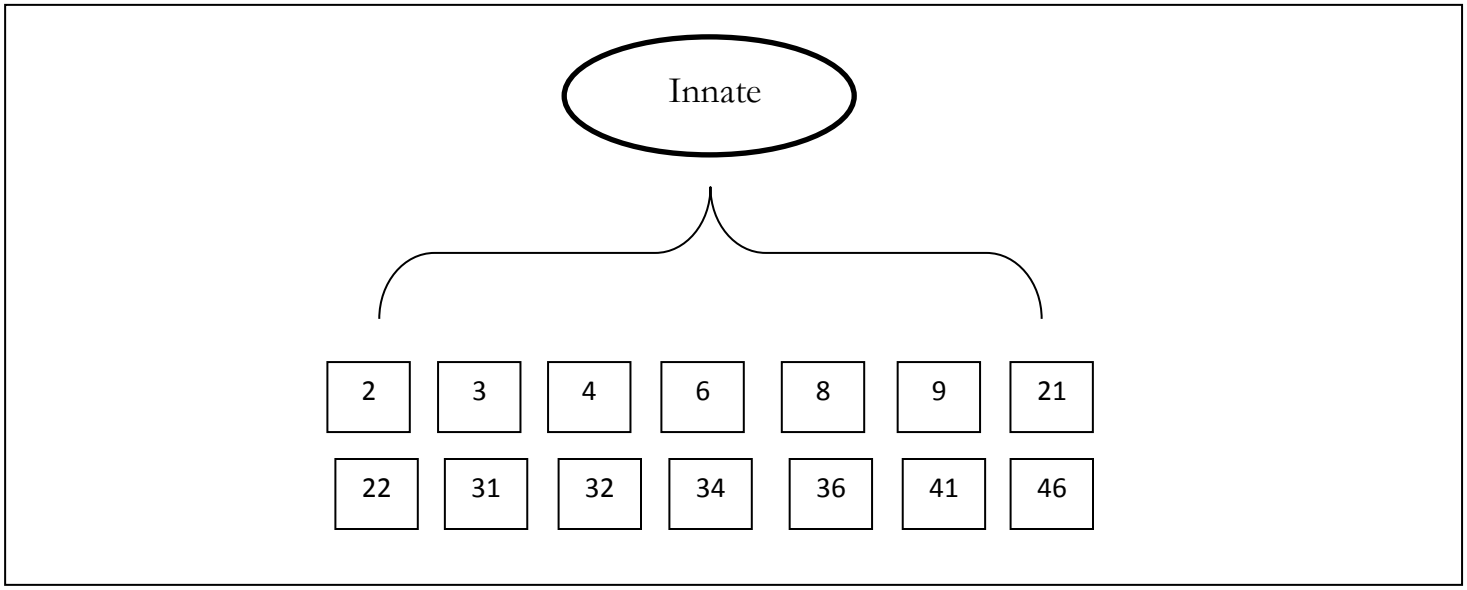

Figure 5. Hypothesized Innate Model Fit

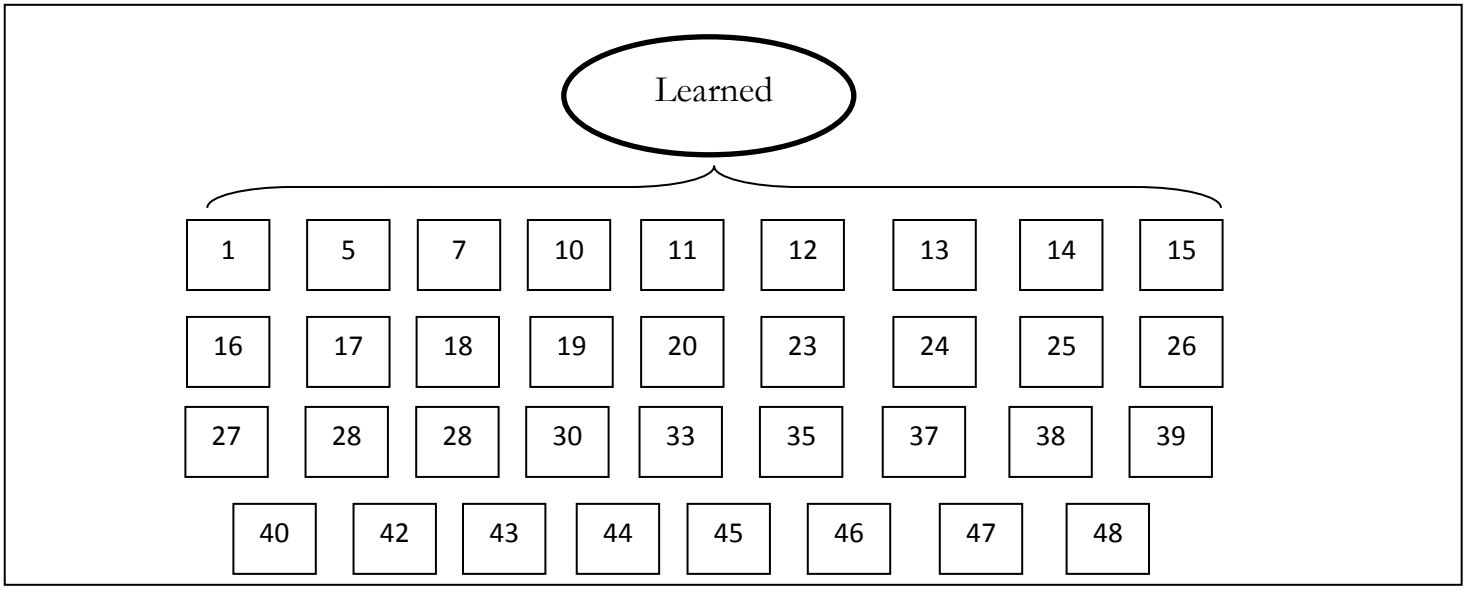

Figure 6. Hypothesized Learned Model Fit

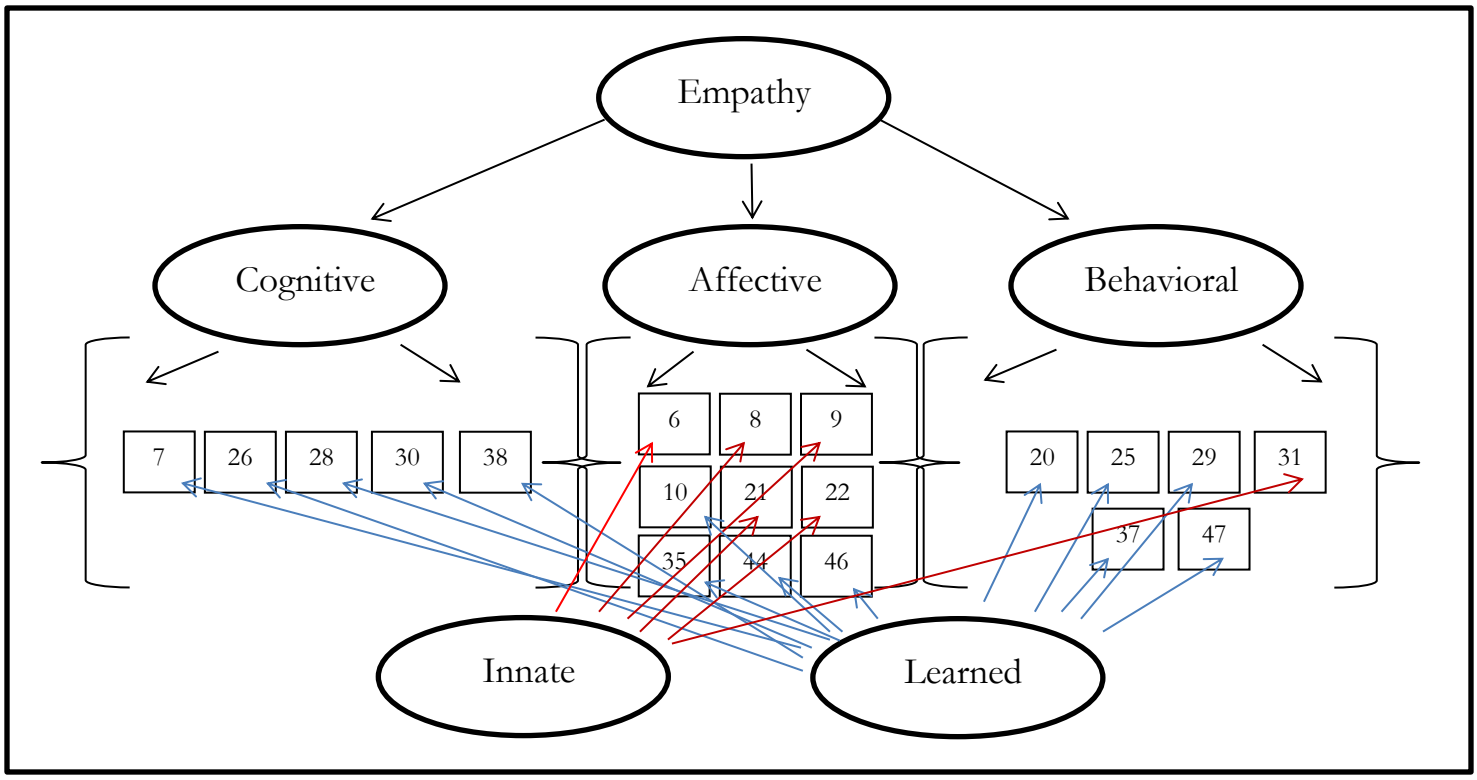

Figure 7. Reduced Model Fit CFA

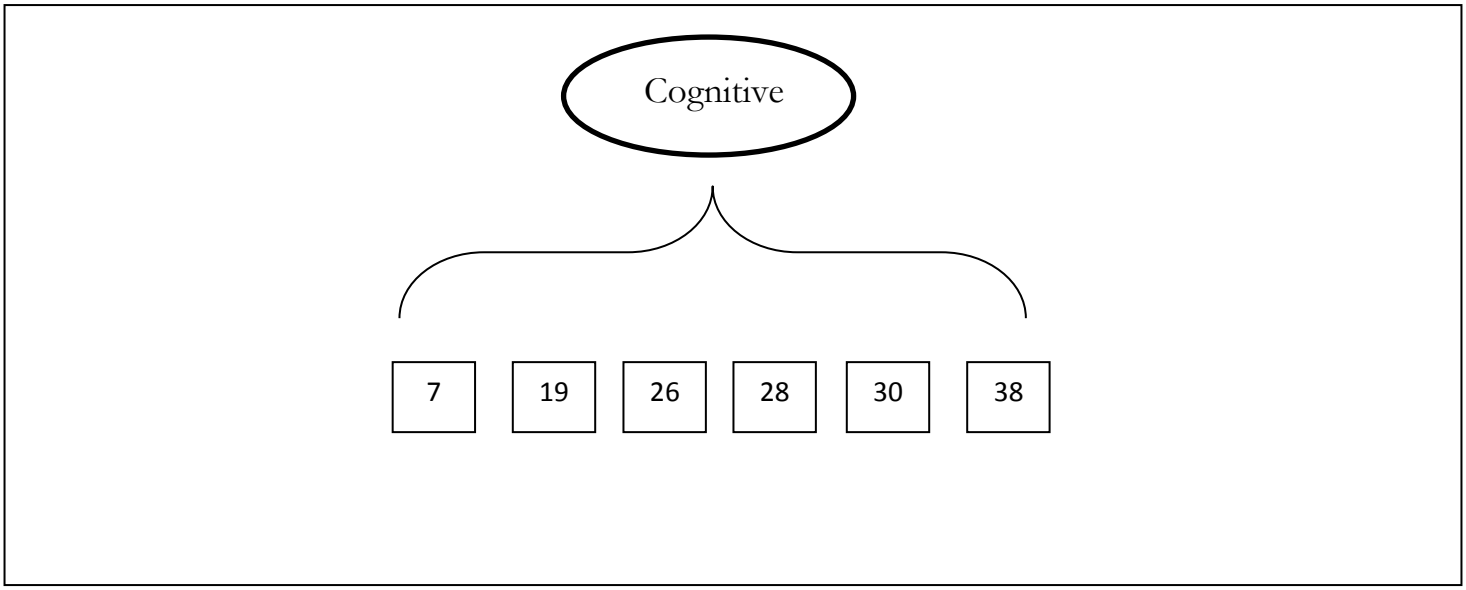

Figure 8. Final CFA Cognitive Model Fit

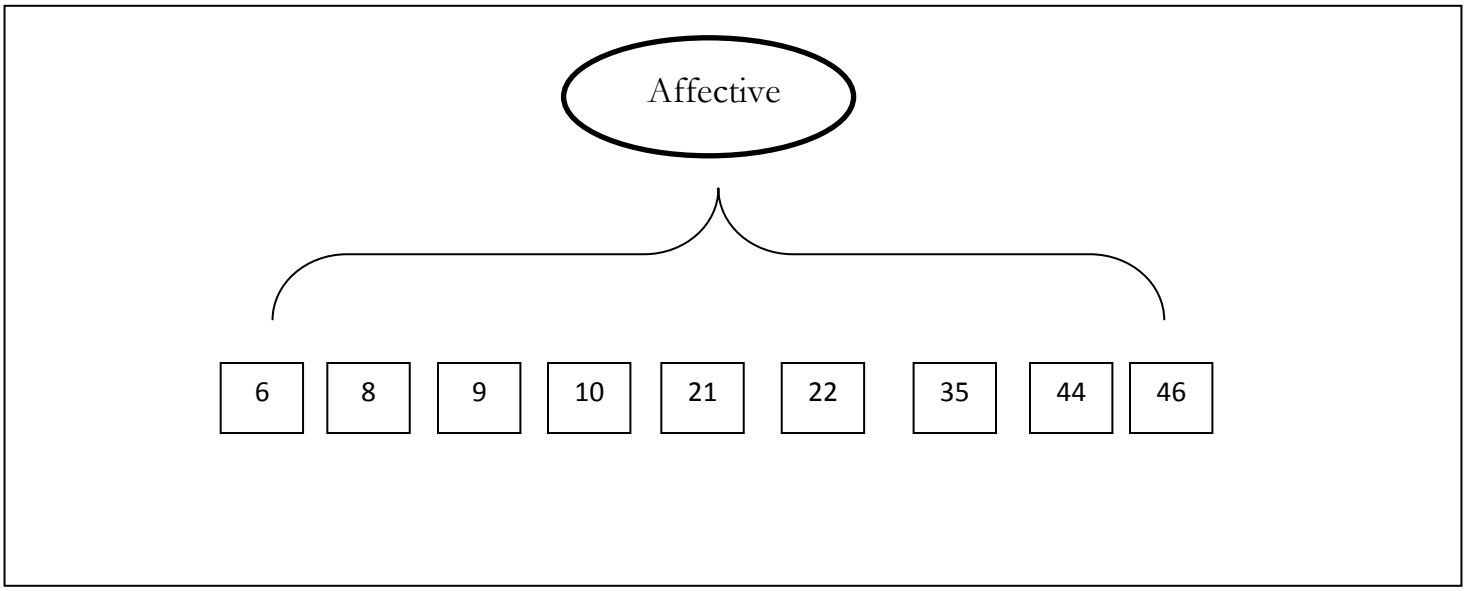

Figure 9. Final CFA Affective Model Fit

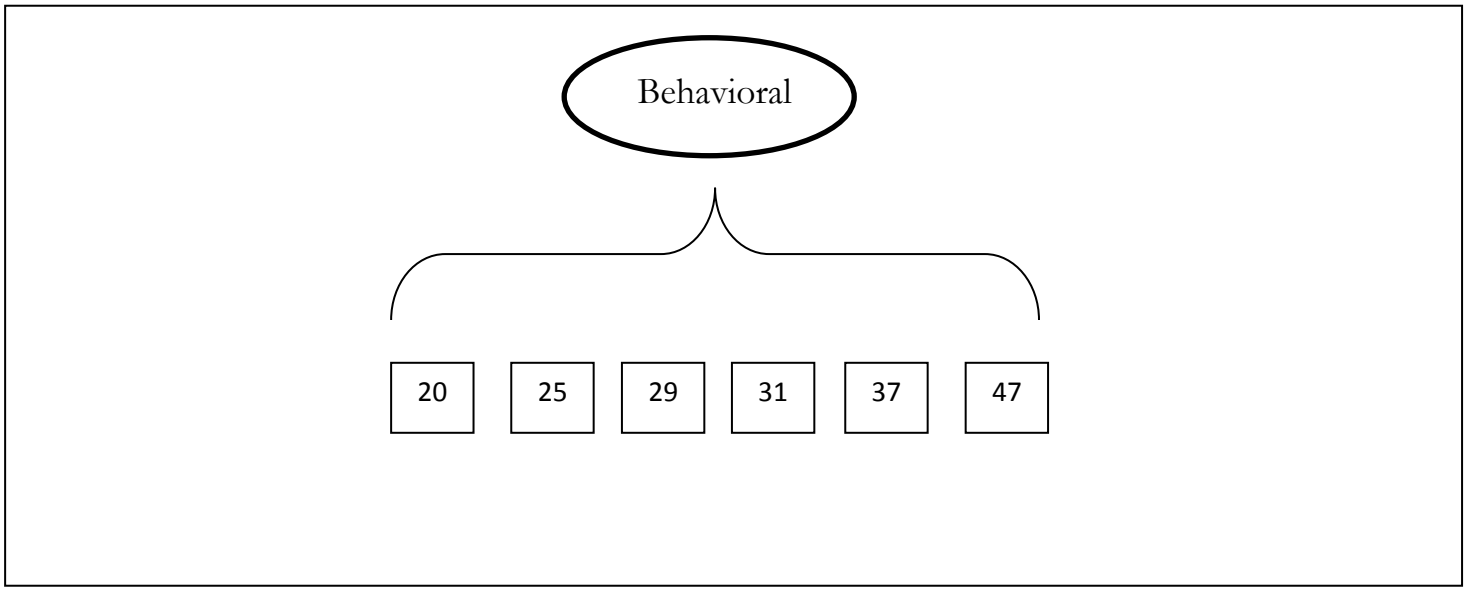

Figure 10. Final CFA Behavioral Model Fit

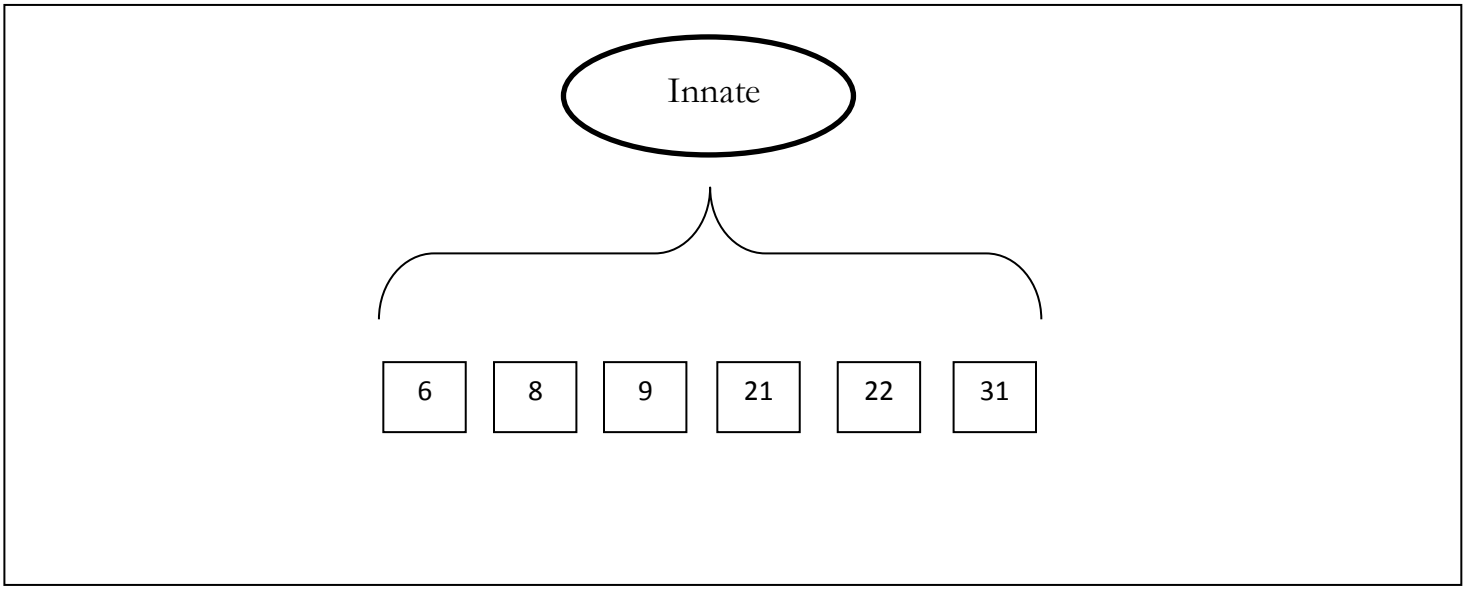

Figure 11. Final CFA Innate Model Fit

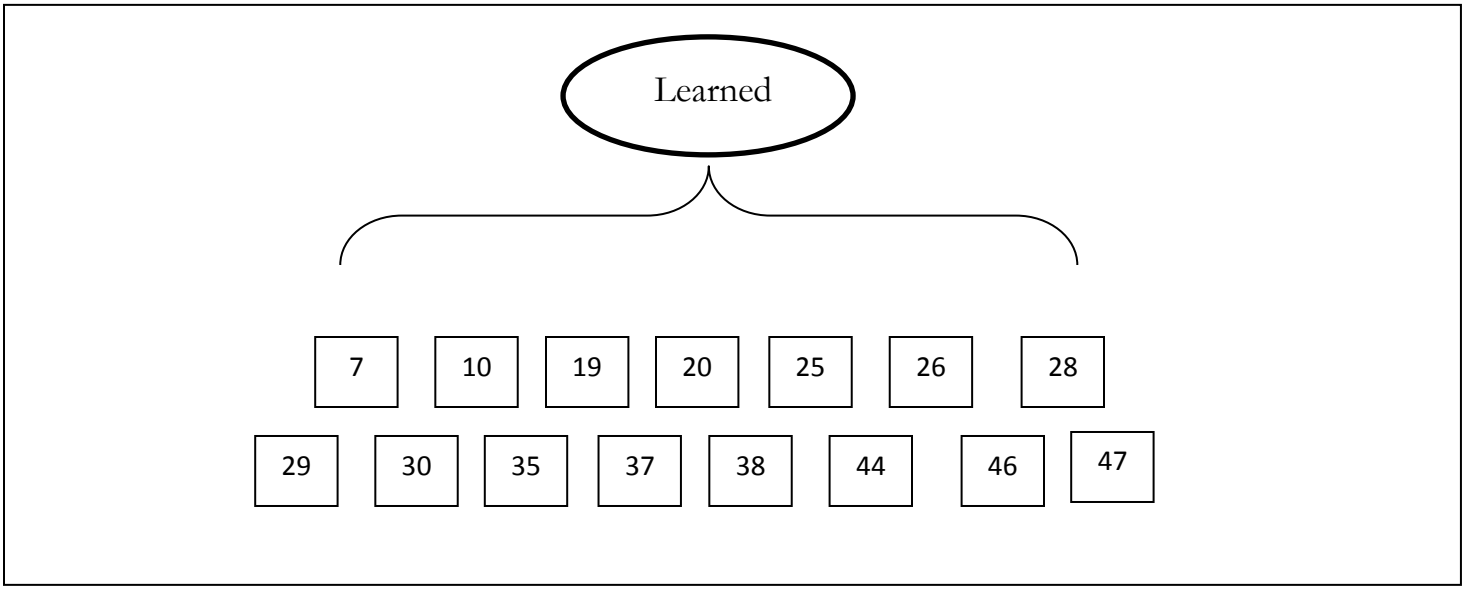

Figure 12. Final CFA Learned Model Fit