

ABSTRACT

Engaging the Other: Examining How Empathy Facilitates Self-Efficacy

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Self-efficacy is the belief that one can effect change by one's actions. One way to increase self-efficacy is through "vicarious experiences," or identifying with someone who has been previously successful. This paper tests the hypothesis that empathy mediates the relationship between vicarious experiences and self-efficacy. 174 participants from MTurk were recruited to test a correlational, cross-sectional study. Results confirmed the hypothesis that the relationship between vicarious experiences and self-efficacy is mediated by empathy. Within the facets of empathy, perspective taking is a positive mediator while personal distress and fantasy are negative mediators. These results suggest that it may be possible for one's self-efficacy to increase after simply taking the perspective of the other, rather than personally identifying with someone else. This finding is particularly helpful for people vulnerable to lower levels of successful social modeling. Further research should explore the extent to which perspective-taking can foster self-efficacy within specific contexts.

Keywords: self-efficacy, vicarious experiences, dispositional empathy

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ENGAGING THE OTHER: EXAMINING HOW EMPATHY
FACILITATES SELF-EFFICACY

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DEDICATION

To all those in Zambia who raised me and formed me. You are why I believe that a life lived with empathy is transformative.

CHAPTER ONE

Introduction

Thinkers' fascination with self-efficacy spans the centuries (Maddux, 2001). Philosophers James, Locke, Spinoza, Ryle and Hume variously called it "the will" and "volition." Self-efficacy intersects the philosophical issues of intentionality, causality, and broader illustrations of human agency. It is of particular interest to social scientists, as it has the ability to form the axiomatic assumptions of one's behavior (Gecas, 1989). First introduced by behavioral psychologist Bandura in 1977, self-efficacy is becoming one of the most researched concepts in the field of positive psychology (Snyder, Lopez, & Pedrotti, 2010). The renewed interest in the phenomenon of the self attributes to recent attention of self-efficacy in social psychology. Researchers' fascination with self-efficacy extends across time and many fields of thought.

Self-efficacy, as it is understood today, takes up a more specific space in the broad field of human agency. It is the belief that one can affect change by one's actions (Bandura, 1997). Self-efficacy refers to people's beliefs in their own causal agency, competence, and effectiveness (Gecas, 1989). The purpose of this study is to investigate the role of dispositional empathy in self-efficacy. I begin by conducting a literature review on the sources of self-efficacy. Then, I will examine how self-efficacy differs depending on the context and population demographic. This will be followed by an examination of how different populations are vulnerable to low self-efficacy. Finally, I will explore past research on how self-efficacy has been successfully fostered in different

contexts. From this perspective, I propose that dispositional empathy may be a mediator between vicarious experiences and self-efficacy.

Where Does Self-Efficacy Come From

Self-efficacy belongs to the broader context of social cognitive theory (Bandura, 2012). Therefore, to best comprehend self-efficacy, one must first understand social cognitive theory. This theory is based on the premise that individuals are their own agents. The agentic perspective recognizes people as capable of exerting influence over experiences by their own actions. Social cognitive theory is embedded in triadic codetermination, where human functioning is identified as the interaction between three determinants: personal, behavioral, and environmental. Self-efficacy is theorized to exist predominantly in the personal dimension of this model. Within this understanding, people are seen as having a significant role in shaping their own decisions and lives. In short, people are agentic in nature

Social cognitive theory exists at the intersection of two factors (Maddux, 2001). The first of these factors is the capacity for symbolic thought. Symbolic thought that is especially relevant to social cognitive theory is the understanding of causal relationships between events. This perspective holds that actions produce results. The capacity for symbolic thought develops in infancy and increases with language acquisition. As one learns to communicate, one also learns about the capacity for personal agency and self-awareness. The second factor of social cognitive theory is the responsiveness of environments. The most responsive environment is the social environment (Bandura, 1993). While responsive environments facilitate the development of social cognitive beliefs, nonresponsive environments inhibit, even impede this development. Of all the

social environments, the home has the most influence during the developmental phase of social cognition. Parents can influence the development of agency by how they respond to the infant's actions and also by encouraging their child to explore the environment. The interaction of symbolic thought and responsiveness of environments can either facilitate or hinder a sense of agency, which directly influences an individual's self-efficacy.

The development of self-efficacy, like that of agency, begins in infancy. The infant learns about agency through the interaction between environment and action; namely, how the environment responds to action (Gecas, 1989). At first, infants are exposed to almost exclusive dependence on external causation. However, the infant eventually develops a sense of self as a causal agent through exploring the world. Parents have great influence, as the most important environment for developing self-efficacy is the family context. Parents can maximize self-efficacy development through responsiveness, support and encouragement, use of inductive control, and high achievement demands. Children may also exhibit increased self-efficacy by modeling efficacious parents. While self-efficacy begins in the early stages of development, it continues to mature across the lifespan (Schunk & Meece, 2006).

In his original theory on self-efficacy, Bandura (1993) identified four major processes that contribute to its development and functioning. These processes are (1) mastery experiences, (2) social modeling, (3) social persuasion, and (4) affective states. Mastery experience is considered the most influential source of self-efficacy (Bandura, 2008; Gecas, 1989;). Previous success in an activity builds a robust efficacy. While perceptions of success strengthen self-efficacy, perceptions of failure diminish self-

efficacy, especially in early stages of efficacy development. For this reason, resiliency is necessary in order to manage failure in a way that it is informative rather than destructive.

Bandura's second process is social modeling, or vicarious experiences, and identifies how individuals observe the behavior of others and the consequences of those behaviors. For vicarious experiences, it is important for the observer to consider the other to be similar to oneself. Observers' beliefs in their own abilities will increase after seeing people similar to themselves succeed. Social modeling can take place on perceptions of other people as well as ideas, lifestyles, and belief systems that are transmitted socially (Bandura, 2008).

The third factor of self-efficacy is social persuasion, also known as verbal persuasion. Individuals are influenced by what others say about what they can or cannot do. The potency of this persuasion is influenced by the influence of the trustworthiness and expertise of the source. This factor is less influential than mastery experiences and social modeling (Bandura, 2008).

The final factor said to increase self-efficacy is affective states, or physiological and emotional states. Awareness of unpleasant or uncomfortable physiological arousal is likely to decrease feelings of competence. Positive moods enhance feelings of efficacy while negative moods diminish it. Feelings of efficacy can increase by building physical strength and stamina, reducing anxiety and depression, and changing misinterpretations of affective states perceived to be negative (Bandura, 2008).

Since Bandura first introduced self-efficacy, a fifth factor has been identified: imaginal experiences (Snyder et al., 2010). Imaginal experiences, or imagining oneself behaving effectively in a hypothetical situation is said to increase self-efficacy. Imaginal

experiences also include imaging others' behaviors. This factor is less influential than actual experiences. Examining the sources of self-efficacy provide greater insight into how self-efficacy can affect various factors of life.

Though they share many qualities, the concept of self-efficacy is different from the concept of hope. Snyder, one of the leading researchers on hope, emphasizes two cognitions important to the development of hope (Snyder et al., 2010). The first is pathways thinking, which is a perception of the ability to find routes to achieve desired goals. The second is agency thinking, which is the ability and motivation to use those routes. Hope is similar to self-efficacy in that both deal with achieving positive outcomes in the future. Similarly, hope and self-efficacy both place value on individual agency. As such, hope and self-efficacy are likely to have similar correlates with other variables and the direction of those correlations. One important distinction, however, is that self-efficacy relies on self-agency, whereas hope does not. While the individuals with hope and self-efficacy can both be optimistic about the future, the one with self-efficacy values individual agency in achieving that optimistic future. This distinction, though subtle, is important to note. Having both hope and self-efficacy implies that the individual has a sense of agency in achieving the positive outcome in the future. Having hope without self-efficacy indicates that one is positive about future outcomes, but believes it will come from a different source other than oneself.

It is also important to note that self-efficacy is a predominantly Western theory of positive outcomes. Across cultures, there are different ways to positive outcomes. The West places more value on hope as a means to having a more positive life (Snyder et al., 2010). This leads to agentic, goal-focused thinking, which self-efficacy naturally follows.

The East, however, tends to view collaboration and harmony as central to achieving happiness, decreasing the importance of individual achievement. As a result, self-efficacy is less valuable within Eastern contexts. Compared to collective efficacy Another reason the theory of self-efficacy differs across individualistic and collectivist cultures is because of different understandings of time (Fikert, Corbett, & Perkins, 2009). The Western world views time as monochronic; time is a limited and valuable resource, which can be lost or saved. For this reason, time is oriented to the future in the West. As a result, the West developed values of productivity and success, hence self-efficacy. In the East, however, time is considered polychronic, where time is considered an unlimited resource. With this understanding, time is oriented to the past. As self-efficacy primarily deals with successful future outcomes, self-efficacy is a more pertinent to the West. Taking into consideration different beliefs about the source of positive outcomes and the relationship with time, self-efficacy is a construct more relevant in the West.

Why Self-Efficacy is Important

Self-efficacy is important because it can increase wellbeing in many unique contexts. Self-efficacy is positively correlated with psychological adjustment (Maddux, 2001). Those who feel a loss of control, or low self-efficacy, commonly seek help from psychotherapists and counselors. Depressed individuals, for example, usually believe that they are incapable of behaving effectively. Furthermore, high anxiety and risk-aversion behavior are often the result of low self-efficacy beliefs for handling threatening situations. Low rates of self-efficacy are correlated with depression, avoidance, and anxiety (Snyder et al., 2010). When people lack confidence in their ability to perform effectively, they will more likely approach difficult situations apprehensively. Feelings of

control, conversely, are crucial for a sense of well-being and happiness. High self-efficacy is correlated with greater life satisfaction (Gecas, 1989). Those with higher self-efficacy are more likely to overcome psychological challenges.

There is also a direct correlation between self-efficacy and self-regulation (Maddux, 2001). Self-regulation is said to be comprised of three components: self-evaluative reactions, goals, and self-efficacy. People are more likely to overcome adverse behavioral problems when they are capable of self-initiated change. Higher self-efficacy increases one's decision-making abilities and effectiveness when solving problems. While people with low self-efficacy approach problems with a more self-diagnostic mindset, those with high self-efficacy remain task-diagnostic. Higher self-efficacy increases one's ability to overcome adverse situations and distressing emotional states.

Self-efficacy is also related to greater physical health. Health and medical care in the developed world are becoming more focused on prevention of disease and promotion of good health (Maddux, 2001). Self-efficacy research offers two explanations for why people chose to adopt healthy and unhealthy lifestyles. First, self-efficacy increases one's ability to maintain behavior necessary to good health (Gecas, 1989). These behaviors include disease detection behaviors, exercise, diet, stress management, and regulating alcohol consumption. Self-efficacy facilitates the maintenance of healthy behaviors and the avoidance of unhealthy behaviors. Additionally, self-efficacy beliefs influence physiological reactions to stress and perceived threat. A higher belief in perceived control decreases the body's susceptibility to disease and infections. This is due to the activation of catecholamines and endorphins. Those with high self-efficacy are more likely to overcome alcohol and drug abuse, have an increased tolerance for pain, and overcome

maladaptive health habits. Furthermore, they are more likely to rate their health as better, to be sick less often, to initiate preventative care, and seek early treatment. Self-efficacy has the potential to influence positive health outcomes, both psychologically and physiologically.

Higher self-efficacy is also related to greater response to psychotherapy interventions (Maddux, 2001). Successful psychotherapy indicates that interventions equip people with the skills to solve their own problems, rather than simply resolving specific problems. Success of therapeutic intervention depends largely on how individual self-efficacy for overcoming adversity. Higher self-efficacy increases one's ability to overcome eating disorders and abuse (Snyder et al., 2010). As people have a greater sense of efficacy, they are more likely to better manage their behavioral and cognitive skills.

Apart from these four major areas, self-efficacy is also shown to be effective in increasing abilities and skills in other domains. This is due to what Bandura called the situational perspective (Snyder et al., 2010). The situational perspective indicates that self-efficacy reflects specific circumstances and domains. Bandura assumes that efficacy is domain-specific and that beliefs should be measured to reflect particularized judgements. Consistent with this belief, several researchers have developed different scales to measure situational self-efficacy in different domains. Betz (2000) created the career self-efficacy scale to predict one's confidence in examining different careers. Similarly, the occupational questionnaire measures students' ability to master different vocations (Kline & Boyd, 1991). Another career self-efficacy scale includes the career counseling self-efficacy scale, which measures the degree of confidence to which career

counselors can intervene for persons facing career decision difficulties (O'Brien, Heppner, Flores, Bikos, & Heim, 1997). Other situational-specific scales include the coping self-efficacy scale (Chesney, Neilands, Chambers, Taylor, & Folkman, 2010), cultural self-efficacy scale (Briones, Tabernero, Tramontano, Caprara, & Arenas, 2009) and memory self-efficacy scale (Berry, West, & Dennehey, 1989). The range of scales indicate that self-efficacy is generalizable to most all situations where one has the ability to achieve a goal. Due to this high validity, self-efficacy is relevant to anyone who hopes to achieve a goal. Knowing the many advantages of having high self-efficacy, it is important to examine those vulnerable to low self-efficacy.

Demographics Associated with Low Self-Efficacy

Self-efficacy tends to decrease as income decreases (Whitbeck et al., 1997). Populations with a lower socioeconomic background are likely to have lower measures of self-efficacy. This is due, in part, to the social cognitive context of self-efficacy. As previously discussed, the development of social cognitive beliefs is facilitated by responsive environments. Individuals are first exposed to the cause and effect of their actions in infancy. Furthermore, the most influential social environment is the home. The interaction of these two factors make children from low-income homes, where environments may be less responsive, particularly susceptible to low self-efficacy.

Children are likely to develop lower self-efficacy when they come from families that face economic hardship (Whitbeck et al., 1997). This is due in part to a more stressful home environment. The burden of economic stress is associated with increased anger and irritability, and decreased parental warmth (Conger, Ge, Elder, Lorenz, & Simons, 2008; Elder & Caspi, 2010). Economic pressure increases parents' psychological

stress, which is related to negative developmental outcomes for children. A study by Whitbeck et al. (1997) showed that children's self-efficacy is adversely impacted by working conditions and economic stress of their fathers. From this, one can conclude that economic strain can have intergenerational effects.

Not surprisingly, the self-efficacy of parents also influences child development (Jackson, 2000). Jackson (2000) examined 188 single Black mothers living in New York City who were current or former welfare recipients. She found that lower self-efficacy explained part of the variance in parenting stress. Mothers who were more efficacious were more adaptive in parenting strategies, more active, and more vigilant. The self-efficacy of mothers was influential in determining their parenting styles.

These findings are important to measuring well-being because self-efficacy also affects people's perception of self and of poverty. Researchers Kunz and Kalil (1999) investigated whether self-efficacy measures from early in life were related to later welfare use. Their results showed that female welfare recipients had lower measures of self-efficacy before entering the welfare system compared with other women. Self-efficacy also affects how people understand the possibilities of overcoming poverty (Bradley & Cole, 2002). Bradley and Cole (2002) studied the connection between people's ideas about the causes of poverty and its solution. They found that people who make an internal attribution to the cause of poverty support individual responsibility as the solution to poverty. Likewise, individuals who make an external attribution to the cause of poverty believe that the solution of poverty should come from assistance programs. Those with a decreased sense of internal control (lower self-efficacy) are less likely to believe that they can overcome their hardships.

The relationship between low-income and low self-efficacy is significant because of how it contributes to intergenerational poverty. Bird, Higgins, and McKay (2010) examined this phenomenon by studying the different developmental factors associated with the intergenerational transmission of poverty. By using theories from the Chronic Poverty Research Centre (CPRC), they determined that the chronically poor are likely to be most affected by factors from fetal development, early childhood, and early youth. These are three stages of life where individuals are highly vulnerable to cognitive development that will influence future well-being. Self-efficacy is developed in infancy (Gecas, 1989). Low-income populations are usually more exposed to factors that will hinder early childhood development (Bird et al., 2010). Therefore, those from low-income backgrounds are likely to have inhibited self-efficacy development simply by living in a low-income home and environment. Knowing that self-efficacy is lower for certain demographics, it is important to examine the potential intervention methods to foster self-efficacy.

Fostering Self-Efficacy

Several experiments have been conducted that have successfully increased self-efficacy in a given population. Medrano, Flores-Kanter, Moretti, and Pereno (2016) examined the effects of positive and negative emotional states on academic self-efficacy. An experimental design was conducted to induce either positive or negative emotions to participants through the combined exhibition of music and a movie. After exposure to a positive or negative emotional state, participants filled out several academic self-efficacy scales. Their results indicated that self-efficacy could be increased through the induction

of positive emotions. This aligns with Bandura's (1993) recognition of affective states as a contributing factor to self-efficacy.

Studies have also been conducted to manipulate self-efficacy (Tzur, Ganzach, & Pazy, 2016). One study manipulated self-efficacy in order to examine the effects of reward as a moderator. Tzur et al. (2016) created a high self-efficacy group by allowing half of the participants to attain a success in a computerized Mastermind task in the first half of eight trials. The low self-efficacy group was created through the boomerang effect (Vancouver, Thompson, Tischner, Casey, & Putka, 2002) With this effect, participants are exposed to failure, rather than success, during the first half of the eight trials. This manipulation also aligns with Bandura's original model of the sources of self-efficacy. Past achievement, or mastery experiences, is theorized to increase levels of self-efficacy. Both of these studies indicate that different methods can be employed to increase self-efficacy.

Empathy

One relationship that has not been studied directly is the relationship between empathy and self-efficacy. In his discussion of self-efficacy, Bandura noted that many advantageous developmental trajectories have a prosocial foundation (Bandura, 2008). Prosocial behavior, Bandura wrote, promotes relationships between individuals that are favorable to developmental outcomes. He recognized that prosocial behavior has a strong impact on positive peer relationships and achievement. One of the emotions that Bandura listed as leading to prosocial behavior is empathy.

Empathy is the ability to identify with the feelings and emotions of another person (Clark, 2016). Adler, one of the main psychologists attributed to studying empathy, wrote

that “empathy occurs in the moment one human being speaks with another. It is impossible to understand another individual if it is impossible at the same time to identify oneself with him” (Adler, 1927, p. 118). As empathy increases, so does an individual’s ability to identify with another person, which increases the effect of social modeling (Clark, 2016).

Social modeling is related to vicarious experiences, which is the second facet Bandura identified as a source of self-efficacy (Bandura, 1997). Self-efficacy increases as people are exposed to successful role models with whom they identify and the same is true of the opposite. Lower levels of empathy result in decreased social modeling (Clark, 2016). For example, one person may not be able to easily identify with people who do not share certain characteristics. This could lead to decreased levels of self-efficacy, as one may not have successful role models to look up to in various contexts.

Underrepresentation in various contexts leads to people having a limited number of role models they most naturally identify with. One reason that women are hypothesized to be underrepresented in the science, technology, engineering, and math (STEM) workforce is the lack of female role models in the field (Beede et al., 2011). This effect is likely compounded for women who cannot easily identify, or empathize, with men. On the other hand, women with higher levels of empathy may be able to more easily identify with men and so be more likely to pursue STEM fields regardless of the gender ratio. To use another example, attrition rates of first-generation college students are projected to be higher due to students’ lack of role models for successfully navigating college (Moschetti & Hudley, 2015). Likewise, this decreased self-efficacy is likely to have an even greater effect for students who cannot identify with students who are like

them. However, people may be able to learn to identify with a more diverse set of people by increasing levels of empathy.

Empathy requires the ability to identify with another person (Snyder & Lopez, 2001). The process of identification entails traversing the distance between the self and the other. One is more likely to bridge this gap between the self and another person when the two share explicit similarities. It is often more challenging, however, to engage in the act of identification when there is not a clear connection with the other. One way to cultivate empathy is to develop the affective Theory of Mind (ToM), or the ability to perceive and understand the emotions of others (Shamay-Tsoory & Aharon-Peretz, 2007). Developing ToM may equip people to have more opportunities to cross the bridge between the self and the other.

Existing theory supports a relationship between self-efficacy and empathy (Bandura, 2008). Vicarious experiences is one of the original four major processes that contribute to the development of self-efficacy. One gap in the literature is the relationship between vicarious experiences and empathy. It would seem highly possible that vicarious experiences and empathy are positively related, as being able to identify with more distinct groups of people will likely be able to lead to more numerous occasions for vicarious experiences. It is possible that empathy positively moderates the relationship between vicarious experiences and self-efficacy, meaning that the relationship between vicarious-experiences and self-efficacy increases as one is more empathetic. With higher levels of empathy, one would likely identify more with role models, hence increasing levels of self-efficacy. Another possibility is that the relationship between vicarious experiences and self-efficacy is mediated by empathy. Empathy as a mediating third-

variable would mean that empathy explains, in part, the relationship between vicarious experiences and self-efficacy. This would mean that the process of identifying with others is actually the action of empathizing with them, or relating to their feelings and emotions. There is yet to be a study to test the moderation and mediation properties of empathy, though it seems to be consistent with theory. This study addresses the relationship between low-incomes, empathy, and self-efficacy through the use of psychometric scales, bivariate correlation, regression, and third-variable analysis.

Hypotheses

In this study, we tested three hypotheses:

H1: There is a positive correlation between income measurements and self-efficacy.

H2: Facets of dispositional empathy are positively correlated with self-efficacy, vicarious experiences, and hope.

H3: Dispositional empathy positively moderates and/or mediates the relationship between vicarious experiences and self-efficacy.

CHAPTER TWO

Methods

Participants and Procedures

We report how we determined our sample size, all data exclusions, all manipulations, and all measures in the study. Participants were recruited from the users on Amazon's Mechanical Turk (MTurk) program. This online system allows researchers to collect a community sample of participants around the world. MTurk respondents represent a wider range of racial and economic diversity compared to participants recruited from traditional methods and other Internet survey sites (Casler, Bickel, & Hackett, 2013). Compared to most American college samples, MTurk participants are significantly more demographically diverse (Buhrmester, Kwang, & Gosling, 2011). This form of recruitment was chosen over recruiting undergraduate students to participate with online research in order to accommodate the study's focus on low-income populations. It is important to note that personality studies on MTurk reveal that its users, relative to college-student samples, are less extroverted, more socially anxious, and less emotionally stable (Paolacci & Chandler, 2014).

Two hundred and fourteen participants completed the online survey. We determined the sample size in advance using power analysis with an error probability of .05 and .80 power. Based on self-efficacy research by Tzur et al. (2016), we predicted a medium effect size and the results indicated that we needed 178 participants. We did not drop any variables or conditions. Forty respondents were excluded from analysis because

they did not reach the end of the online survey or answered at least one attention-check question incorrectly. Subsequently, 174 participants (117 women, 57 men, $M_{age} = 38.02$, age range: 19-72 years) were included in the final data analysis. Participants self-identified as White (77.6%), Asian (6.9%), Black/African American (6.9%), Hispanic/Latino (2.9%), American Indian/Alaska Native (0.6%), Native Hawaiian/Pacific Islander (0.6%) and other ethnicities (2.9%). Each participant received a payment of \$1 from MTurk for completing the survey. This is slightly higher than rates reported in other research utilizing this population (Bohannon, 2011; Buhrmester, Kwang, & Gosling, 2011; Paolacci & Chandler, 2014). Recruitment from MTurk allowed access to a population that has more variation in socio-economic status, age, and ethnicity than is available through undergraduate subject pools.

Measures

Participants were asked to complete an online survey generated through the survey software tool Qualtrics. The primary components of this study were an income perception measure and four self-report questionnaires measuring vicarious experiences, self-efficacy, empathy, and hope. In addition to these measures, participants were asked demographic questions, which asked them to list their gender, age, racial/ethnic group and religious affiliation. Three attention-check questions were included throughout the questionnaires in order to identify inappropriate data. One of the attention-check questions used was: “When confronted with something new, please mark 2 for this item.” Data from respondents who answered at least one of these questions incorrectly were eliminated from the set. The end of the survey included free-response text boxes asking participants about their thoughts on the survey.

Income Perception

Income perception was measured using an adjusted MacArthur Scale of Subjective Social Status (Giatti, Camelo, Rodrigues, & Barreto, 2012). This scale presents a picture of a 10-rung ladder with ‘A’ at the top of the ladder and ‘J’ at the bottom. Participants are told that the ladder represents how American society is set up. Description includes ‘At the top of the ladder are the people who are best off – they have the most money, the highest amount of schooling, and the jobs that bring the most respect’ and ‘At the bottom are people who are the worst off – they have the least money, little or no education, no job or jobs that no one wants or respects.’ Participants were asked to indicate where their childhood families would have been on the ladder. This scale measures subjective aspects of social position. Participants were also asked to indicate their current household incomes, childhood household incomes, current household incomes relative to childhood income, and current household incomes compared to the majority of their family and friends.

Vicarious Experience

Vicarious experience was measured using the Vicarious Experience and Social Persuasion Scale (Neff, Niessen, Sonnentag, & Unger, 2013), adapted to measure vicarious experiences toward family and friends rather than from one’s partner. This scale consisted of eight statements regarding the efficacy of participants’ family and friends. Participants were asked to answer the questions with respect to the people they interact with/identify with the most. This scale used a 5-point Likert scale (1 = ‘totally disagree’; 5 = ‘totally agree’). This scale was adjusted from one’s partner to one’s family

friends and friends. Statements included: “Most of my friends & family are able to achieve the majority of the goals that they set for themselves” and “Even when things in life are tough, most of my friends & family can perform quite well.” This scale was measured such that higher scores indicate higher levels of vicarious experience and lower scores indicate lower levels of vicarious experience. Participants were also asked to enter the number of friends/family they were thinking of when answering the survey items. Cronbach’s alpha was .91 for this modified version of the scale.

Self-Efficacy

Participants completed the General Self-Efficacy Scale (GSE-6; Romppel et al., 2013). The GSE-6 contained ten items asking participants to report how true the statement is for them. This scale uses a 4-point Likert scale (1 = ‘not at all true’; 4 = ‘exactly true’). Sample items on the GSE-6 included: “When I am confronted with a problem, I can usually find several solutions” and “I can usually handle whatever comes my way.” Cronbach’s alpha was .88 for the GSE-6.

Dispositional Empathy

Dispositional empathy was studied using the Interpersonal Reactivity Test (IRI; Davis & Oathout, 1992). The IRI has four facets: Fantasy, Perspective Taking (PT), Empathic Concern (EC), and Personal Distress (PD), containing nine items, nine items, 14 items, and 13 items, respectively. Collectively, the IRI consists of 40 items measuring different subscales of dispositional empathy. The IRI uses a 5-point Likert scale (1 = ‘does not describe me well’; 5 = ‘describes me very well’).

Sample items on the Fantasy subscale included “After seeing a play or movie, I have felt as though I were one of the characters” and “I daydream and fantasize, with some regularity, about things that might happen to me.” Cronbach’s alpha for the Fantasy subscale was .78 for males and .79 for females. Sample items on the PT subscale included “I believe that there are two sides to every question and try to look at them both” and “Before criticizing somebody, I try to imagine how I would feel if I were in their place.” Cronbach’s alpha for the PT subscale was .71 for males and .75 for females. Sample items on the EC subscale included: “I am often quite touched by things that I see happen” and “I often have tender, concerned feelings for people less fortunate than me.” Cronbach’s alpha for the EC subscale was .68 for males and .73 for females. Sample items on the PD subscale included: “It bothers me to see poor people on the street” and “Being in a tense emotional situation scares me.” Cronbach’s alpha for the PD subscale was .77 for males and .75 for females.

Hope

Hope was examined using the Adult Hope Scale (AHS; Rand, 2009). The AHS consisted of 12 items measuring participants’ hope for the future. Participants were asked to report how true or false the statement is for them. The scale uses an 8-point Likert scale (1 = ‘definitely false’; 8 = ‘definitely true’). Sample items on the AHS included: “I meet the goals that I set for myself” and “I energetically pursue my goals.” Cronbach’s alpha was .78 for the AHS.

CHAPTER THREE

Results

Descriptives

Table 1 depicts an overview of item characteristics for dispositional empathy, self-efficacy, vicarious experiences, hope. On average, the participants showed the highest score for dispositional empathy for the facet of empathic concern, followed by perspective taking, fantasy, and personal distress. Both fantasy and personal distress were below the aggregate empathy score.

Bivariate Correlations

Pearson product-moment correlation coefficients were computed to assess the relationship between empathy, self-efficacy, vicarious experiences, income measurements, empathy, and hope. Table 2 displays the correlations between the study scales.

Self-Efficacy, Empathy, and Income

We examined the hypothesis that there would be a direct relationship between income and self-efficacy. There were no significant relationships between any of the income measures and self-efficacy. Although not an aspect of the hypothesis, one significant relationship emerged between income measures and empathy. There was a negative correlation between comparison income and empathic concern

($r = -.29, p < .01$), indicating that as people made more money relative to the majority of their family and friends, empathic concern tended to decrease.

Empathy, Self-Efficacy, Vicarious Experiences, and Hope

We looked at the hypothesis that the facets of empathy would be positively correlated with self-efficacy, vicarious experiences, and hope.

There were positive correlations between self-efficacy and perspective taking ($r = .45, p < .01$) and empathic concern ($r = .28, p < .01$). There was a negative correlation between self-efficacy and personal distress ($r = -.59, p < .01$). There was no significant relationship between self-efficacy and fantasy. Pearson's r value was squared to find the coefficient of determination. This indicated that 20.25% of the variance in self-efficacy was due to perspective taking, 7.84% of the variance in self-efficacy was due to empathic concern, and 34.81% of the variance in self-efficacy was due to personal distress.

Three significant relationships emerged between empathy and vicarious experiences. There was a positive correlation between vicarious experiences and perspective taking ($r = .22, p < .01$) and empathic concern ($r = .28, p < .01$). There was a negative correlation between vicarious experiences and personal distress ($r = -.16, p < .01$). There was no significant relationship between vicarious experiences and fantasy.

Two significant relationships emerged between empathy and hope. There was a positive correlation between hope and perspective taking ($r = .36, p < .01$) and a negative correlation between hope and personal distress ($r = -.61, p < .01$). There were no significant relationships between hope and fantasy or empathic concern.

Regression Analysis

Regression analyses were conducted as a preliminary analysis for the third hypothesis that dispositional empathy positively moderates and/or mediates the relationship between vicarious experiences and self-efficacy. Measures of dispositional empathy, self-efficacy, and hope were standardized into z-scores. Self-efficacy was regressed on the four facets of dispositional empathy using multivariate regression analysis.

The R^2 value for the model with the four predictors ($R^2 = .42$, $F(4,169) = 31.83$, $p < .01$) did not equal the sum of the squared zero-order correlation coefficients of the predictor with the outcome, taking into account hope and vicarious experiences ($R^2 = .61$, $F(6,167) = 45.86$, $p < .01$). An ANOVA test was conducted to see if the differences between these values were significant. The ANOVA test showed a significant difference between the F-values $F(2,167) = 42.59$, $p < .01$. This indicates that the empathy facets are correlated with hope and vicarious experiences.

Table 3 shows the results of the regression analysis. Two facets of dispositional empathy (perspective taking and personal distress) were significantly related to self-efficacy, $F(4,169) = 31.83$, $p < .01$. The adjusted R^2 value was .42, indicating that approximately 42% of the variance in self-efficacy in the sample was accounted for by dispositional empathy. Furthermore, perspective taking explained unique variance in self-efficacy after controlling for the effects of hope and vicarious experiences. Similarly, personal distress explained unique variance in self-efficacy after controlling for the effects of hope vicarious experiences. Fantasy and empathic concern were not significantly related to self-efficacy

Moderation Analysis

The third hypothesis was that empathy would positively moderate the relationship between vicarious experiences and self-efficacy. As levels of dispositional empathy increase, the relationship between vicarious experiences and self-efficacy would also increase. Due to the significant relationships between empathy, self-efficacy, and vicarious experiences, a regression was run on the interaction between vicarious experiences and the facets of empathy to test if empathy moderated the relationship between vicarious experiences and self-efficacy. The regression included self-efficacy as the criterion variable and vicarious experiences, a facet of empathy, and the interaction between vicarious experiences and the facet of empathy as the predictor variables. However, there were no significant relationships between any of the four facets of empathy as a moderator.

Mediation Analysis

The second part of the third hypothesis is that empathy would mediate the relationship between vicarious experiences and self-efficacy. This is to indicate if empathy accounts for how or why vicarious experiences relates to self-efficacy, which helps to further understand how empathy is related to self-efficacy. Structural equation modeling was used to test the mediation effects of empathy.

The relationship between vicarious experiences and self-efficacy was mediated by empathy. Figure 1 shows the results of the first mediation analysis. This shows that the standardized regression coefficient between vicarious experiences and empathy was statistically significant, as was the standardized regression coefficient between empathy and self-efficacy. As indicated by Table 5, the standardized indirect effect was (.31)(.49)

= .15. Standardized indirect effects were computed for each of the bootstrapped samples, and the 95% confidence interval was also computed. Table 6 shows that the bootstrapped standardized indirect effect was .46 and the 95% confidence interval ranged from 0.12, 0.18. Thus, the indirect effect was statistically significant. Due to this significant result, further tests were conducted to examine each of the facets of empathy as mediators for the relationship between vicarious experiences and self-efficacy.

The relationship between vicarious experiences and self-efficacy was mediated by perspective-taking. Figure 2 shows the results of the first mediation analysis. This shows that the standardized regression coefficient between vicarious experiences and perspective-taking was statistically significant, as was the standardized regression coefficient between perspective taking and self-efficacy. As indicated by Table 5, the standardized indirect effect was $(.65)(.28) = .25$. Standardized indirect effects were computed for each of the bootstrapped samples, and the 95% confidence interval was also computed. Table 6 shows that the bootstrapped standardized indirect effect of empathic concern was .29 and the 95% confidence interval ranged from 0.20, 0.39. Thus, the indirect effect of empathic concern was statistically significant.

The relationship between vicarious experiences and self-efficacy was not mediated by empathic concern. Figure 2 shows the results of the first mediation analysis. This shows that the standardized regression coefficient between vicarious experiences and empathic concern was statistically significant, but the standardized regression coefficient between empathic-concern and self-efficacy was not. Table 6 shows that the bootstrapped standardized indirect effect of empathic concern was .02 and the 95%

confidence interval ranged from -0.09, 0.06. Thus, the indirect effect of empathic concern was not statistically significant.

The relationship between vicarious experiences and self-efficacy was mediated by fantasy. Figure 2 shows the results of the first mediation analysis. This shows that the standardized regression coefficient between vicarious experiences and fantasy was statistically significant, as was the standardized regression coefficient between fantasy and self-efficacy. As indicated by Table 5, the standardized indirect effect was $(.33)(-.20) = -.06$. Standardized indirect effects were computed for each of the bootstrapped samples, and the 95% confidence interval was also computed. Table 6 shows that the bootstrapped standardized indirect effect of fantasy was -.08 and the 95% confidence interval ranged from -0.12, -0.07. Thus, the indirect effect of fantasy was statistically significant.

Finally, the relationship between vicarious experiences and self-efficacy was mediated by personal distress. Figure 2 shows the results of the first mediation analysis. This shows that the standardized regression coefficient between vicarious experiences and personal distress was statistically significant, as was the standardized regression coefficient between personal distress and self-efficacy. As indicated by Table 5, the standardized indirect effect was $(-.33)(-.14) = -.20$. Standardized indirect effects were computed for each of the bootstrapped samples, and the 95% confidence interval was also computed. Table 6 shows that the bootstrapped standardized indirect effect of personal distress was -.23 and the 95% confidence interval ranged from 0.18, 0.29. Thus, the indirect effect of personal distress was statistically significant.

The bootstrapped mediation analysis for the facets of empathy reveals that the aggregation of these four mediating facets affects levels of self-efficacy. As illustrated by

Table 6, the bootstrapped standardized indirect effect of all four facets of empathy was .44 and the 95% confidence interval ranged from 0.28, 0.60. Thus, the indirect effect of all four facets was statistically significant.

Table 1

Item Characteristics of Dispositional Empathy, Self-Efficacy, Vicarious Experiences, and Hope

Scale	<i>M</i>	<i>Mdn</i>	<i>SD</i>	α
Dispositional Empathy	2.40	3.39	0.46	.83
Fantasy	3.39	3.43	0.84	.82
Perspective Taking	3.69	3.71	0.65	.78
Empathic Concern	3.88	4.00	0.77	.85
Personal Distress	2.66	2.64	0.76	.80
Self-Efficacy	3.13	3.10	0.53	.91
Vicarious Experiences	3.83	4.00	0.65	.93
Hope	5.37	5.42	1.13	.88

Note. The dispositional empathy items were based on a 5-Point Likert scale where “1” indicated does not describe me well and “5” indicated describes me very well. Self-efficacy items were based on a 4-Point Likert scale where “1” indicated not at all true and “4” indicated exactly true. Vicarious experiences items were based on a 5-Point Likert scale where “1” indicated totally disagree and “4” indicated totally agree. Hope items were based on a 8-Point Likert scale where “1” indicated definitely false and “8” indicated definitely true.

Table 2

Correlations Between Empathy Facets, Self-Efficacy, Vicarious Experiences, Hope, and Income Measurements

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Fantasy	-												
2 Perspective Taking	.27*	-											
3 Empathic Concern	.41**	.56**	-										
4 Personal Distress	.19	.30**	-.17	-									
5 Self-Efficacy	-.02	.45**	.28*	-.59**	-								
6 Vicarious Experiences	.09	.22	.28*	-.16	.34**	-							
7 Role Models	.10	.14	.20	-.13	.10	-.01	-						
8 Hope	-.09	.36**	.10	-.61**	.71**	.18	.10	-					
9 Current Income	.05	-.10	-.14	.06	-.01	.05	.07	.10	-				
10. Comparison Income	-.10	-.19	-.29**	.08	-.05	-.22	.03	.11	.52**	-			
11 Relative Income	.13	.10	-.02	.06	-.20	.05	-.02	-.13	-.40**	-.43**	-		
12 Childhood Income	.22	-.14	-.05	.08	-.13	.14	.07	-.04	.39**	.12	.44	-	
13 Ladder Number	-.18	.07	.06	-.01	.00	-.20	-.12	-.10	-.34**	-.21	-.16	-.66**	-

Note. ** $p < .01$ * $p < .05$

Table 3

Standardized Regression Coefficients for Self-Efficacy

	β	<i>SE</i>	<i>t</i>
Fantasy	-.01	.05	-0.28
Perspective Taking	.36**	.06	3.82
Empathic Concern	.05	.07	0.63
Personal Distress	-.46**	.06	-7.75
<i>Adjusted R²</i>		.42	
<i>F</i>		31.83**	

Note. ** $p < .01$, * $p < .05$

Figure 1

Empathy as a Mediator for Vicarious Experiences and Self-Efficacy

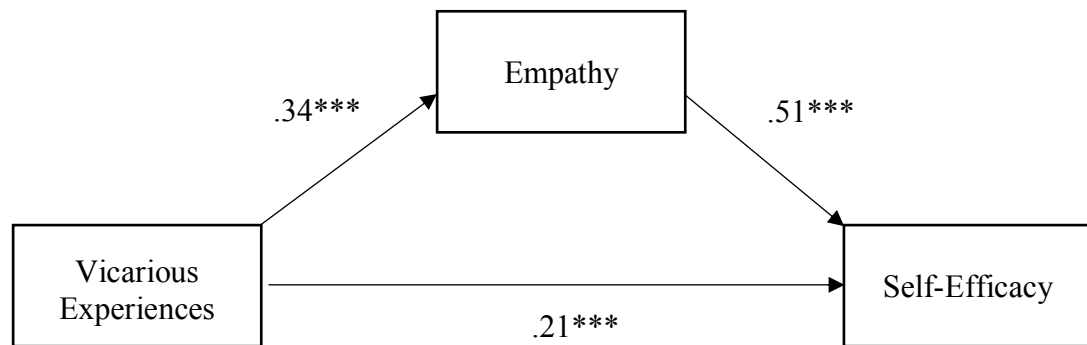


Figure 1. Standardized regression coefficients for empathy as a mediator for the relationship between vicarious experiences and self-efficacy.

Note. *** $p < .001$

Table 4

Standardized Regression Coefficients for Empathy as a Mediator

	β	<i>SE</i>	95% CI
VE → Empathy (a)	.34***	.03	.26, .37
Empathy → SE (b)	.51***	.02	.41, .56
a x b	.18***	.01	.12, .18
VE → SE	.21***	.07	.14, .22

Table 5. Standardized regression coefficients for empathy as a mediator for the relationship between vicarious experiences and self-efficacy. VE = vicarious experiences; SE = self-efficacy. Estimators are standardized.

Note. *** $p < .001$

Figure 2

Facets of Empathy as Mediators for Vicarious Experiences and Self-Efficacy

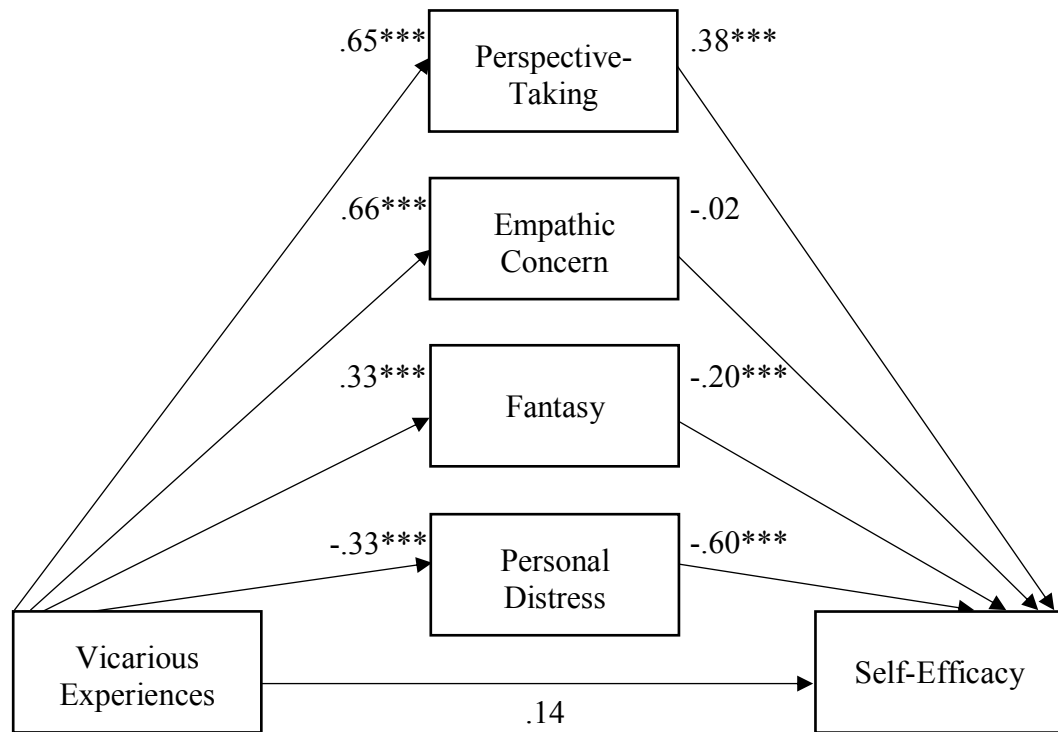


Figure 2. Standardized regression coefficients for facets of empathy as mediators for the relationship between vicarious experiences and self-efficacy.

Note. *** $p < .001$

Table 5

Standardized Regression Coefficients for Facets of Empathy as Mediators

	β	<i>SE</i>	95% CI
Perspective-taking			
VE \rightarrow PT (a)	.65***	.09	0.71, 1.05
PT \rightarrow SE (b)	.38***	.06	0.22, 0.44
a x b	.25***	.05	0.20, 0.40
Empathic concern			
VE \rightarrow EC (c)	.66***	.09	0.78, 1.13
EC \rightarrow SE (d)	-.02	.04	-0.10, 0.06
c x d	-.01	.05	-0.09, 0.06
Fantasy			
VE \rightarrow Fantasy (e)	.33***	.08	0.57, 0.89
Fantasy \rightarrow SE (f)	-.20***	.02	-0.14, -0.07
e x f	-.06***	.02	-0.11, -0.05
Personal Distress			
VE \rightarrow PD (g)	-.33***	.06	-0.62, -0.39
PD \rightarrow SE (h)	-.14***	.05	-0.56, -0.40
g x h	.20***	.03	0.19, 0.29
VE \rightarrow SE	.14	.10	-0.03, 0.36

Table 6. Standardized regression coefficients for facets of empathy as mediators for the relationship between vicarious experiences and self-efficacy. VE = vicarious experiences; SE = self-efficacy. Estimators are standardized.

Note. *** $p < .001$

Table 6

Bootstrapped Mediation Analysis for Facets of Empathy

	β	<i>SE</i>	95% CI
Perspective-taking	.29***	.05	0.20, 0.39
Empathic concern	-.02	.04	-0.09, 0.06
Fantasy	-.08***	.02	-0.12, -0.05
Personal distress	.23***	.03	0.18, 0.29
Total	.44***	.08	0.28, 0.60

Table 7. Bootstrapped mediation analysis for facets of empathy. Estimators are standardized.

Note. *** $p < .001$

CHAPTER FOUR

Discussion

This study assessed the relationship between empathy and self-efficacy. The first hypothesis tested that there is a negative correlation between income measurements and self-efficacy and a negative correlation between income measurements and dispositional empathy. Pearson product-moment correlation coefficients were computed, revealing no significant relationships between any of the income measures and self-efficacy. The results do not support the hypothesis that self-efficacy decreases with income. This finding is not consistent with the literature, which indicates a negative correlation between self-efficacy and income (Whitbeck et al., 1997). One possible explanation for this is that previous research examined how low income affects child development (Bird et al., 2010; Bird, Higgins, & McKay, 2010; Elder, 1974; Elder & Caspi, 1988; Jackson, 2000). This sample, however, represented an older population. One possibility for future research is for this study to be replicated with a younger population, namely children. This may indicate more of a relationship between income and self-efficacy. Another possible explanation is the sample population. Other research conducted on how low-income correlates to low self-efficacy used an exclusively low-income population (Whitbeck et al., 1997). For example, Jackson (2000) researched the relationship between these two variables by conducting a study with single Black mothers who were current or former welfare recipients in New York City. Similarly, Bird, Higgins, and McKay (2010)

investigated self-efficacy within an economically vulnerable population in Northern Uganda. This research for this paper, however, was conducted by recruiting participants from MTurk. While research supports that MTurk participants are more demographically diverse relative to undergraduate populations, it may have been advantageous to recruit participants from an exclusively low-income population (Buhrmester, Kwang, & Gosling, 2011).

Consistent with the second hypothesis, several correlations were found between empathy, self-efficacy, vicarious experiences, and hope. There are positive correlations between self-efficacy and perspective taking and empathic concern, while there is a negative correlation between self-efficacy and personal distress. Interestingly, the same correlations, including their directions, were found between these facets of empathy with vicarious experiences. Fantasy was not a significant correlation for self-efficacy nor vicarious experiences. This indicates that empathy may be a moderator or mediator for the relationship between vicarious experiences and self-efficacy. This hypothesis was tested and later confirmed. The same correlations, with their respective directions, emerged between empathy and hope.

The positive correlations between perspective taking and self-efficacy, vicarious experiences, and hope reveals that empathy is an advantageous trait. This is consistent with Bandura's (2008) assertion that empathy has a prosocial foundation and that it can promote beneficial developmental trajectories. Those with higher levels of empathy are likely to have higher levels of vicarious experiences, indicating that they have a social network of people they consider role models. Additionally, empathy is positively correlated with both self-efficacy and hope. Empathic people are not only likely to be

optimistic about the future, but that they have a sense of agency in the positive outcomes of their futures. This is also consistent with research on self-efficacy, which indicates that self-efficacy is positively correlated with psychological adjustment (Maddux, 2001). Those with higher levels of self-efficacy are more likely to overcome psychological challenges and report greater life satisfaction (Gecas, 1989). One explanation for this may be the connection between self-efficacy and empathy; that people are likely to be more socially connected and have greater social support.

The third hypothesis, that empathy moderates and/or mediates the relationship between vicarious experiences and self-efficacy, was first analyzed using regression analysis. Levels of perspective taking and personal distress were significant predictors of levels of self-efficacy, controlling for the effects of vicarious experiences and hope. This helps to better understand the relationship between empathy and self-efficacy. It is also interesting to note that personal distress is a negative predictor of self-efficacy, while perspective taking positively predicts measures of self-efficacy. It is possible that personal distress is negatively correlated with self-efficacy because of how it relates to vicarious experiences. In his original theory, Bandura noted that individuals' self-efficacy increases after seeing people similar to themselves succeed (2008). It makes sense, then, that the reverse of this is true. When people feel personally distressed over the plight of others, it is likely that their self-efficacy may decrease. This is also related to Bandura's fourth factor of self-efficacy: affective states. Negative moods, or awareness of unpleasant or uncomfortable physiological arousal, can decrease levels of self-efficacy. This may be another explanation for the negative relationship between personal distress

and self-efficacy. Due to the significant results in regression analysis, moderation and mediation analyses were conducted.

Further regression analysis revealed that empathy is a mediator, not a moderator, of the relationship between vicarious experiences and self-efficacy. Moderation analysis showed that empathy is not a moderator, meaning that empathy does not affect the strength of the relationship between vicarious experiences and self-efficacy. Mediation analysis revealed that empathy mediates the relationship between vicarious experiences and self-efficacy. This indicates that empathy explains part of the relationship between vicarious experiences and self-efficacy. Due to this significant relationship, each of the facets of empathy were also tested as mediators.

Three of the four facets of empathy mediate the relationship between vicarious experiences and self-efficacy. Perspective taking positively mediates the relationship, personal distress is a negative mediator, and fantasy is also a negative mediator. The bootstrapped mediation analysis revealed that of these three facets, perspective-taking has the highest mediation effect, followed by personal distress and then fantasy. Explanations for the negative mediation effect of personal distress is likely to its adverse effects on both vicarious experiences and affective states. Fantasy as a mediator is less clear, as the regressions reveal that it is positively related to vicarious experiences and negative related to self-efficacy. Perspective-taking as a mediator is particularly interesting, as it provides greater insight into how these two variables are related. Bandura noted that a key component of vicarious experiences is that the observer considers the other to be similar to oneself. This finding gives greater insight into that assumption; taking the perspective of the other facilitates social modeling. It is indeed easier to take the

perspective of someone who is more similar. However, it may be possible for one's self-efficacy to increase after simply taking the perspective of the other, rather than personally identifying with someone else.

This new understanding of vicarious experiences is important because of the many benefits of self-efficacy, including overcoming maladaptive health habits (Gecas, 1989), increased ability to overcome abuse (Snyder et al., 2010), and greater response to psychotherapy interventions (Maddux, 2001). All of these benefits of self-efficacy are more likely to occur when individuals have examples of successful role models. Taking the perspective of someone who has previously been successful at a task may help to facilitate increased self-efficacy.

Having a wider range of potential role models is particularly important to populations vulnerable to lower levels of self-efficacy. Children from families that experience economic hardship are more likely to develop lower levels of self-efficacy (Whitbeck et al., 1997). As the burden of economic stress increases, parental warmth decreases, which creates a less responsive home environment (Elder & Caspi, 1998). Children living in poverty may have few role models, providing little in the way of social modeling. Thus, their self-efficacy may stagnate at low levels, continuing the cycle of poverty. Perspective-taking as a mediator may help to address this issue; as perspective-taking increases, so does an individual's ability to identify with another person, which should increase the effect of social modeling. Further research should explore the extent to which perspective-taking can foster self-efficacy. An experiment would be helpful to infer causality between perspective-taking and self-efficacy.

Another possibility for further research is to examine the extent to which these empathy interventions can be implemented in school settings. Research reveals that self-efficacy develops in infancy and that children in poverty are more exposed to factors that hinder early childhood development (Gecas, 1989; Bird et al., 2010). For these reasons, it may be helpful to examine how self-efficacy can be fostered in a classroom setting. Researchers Chemers, Hu, and Garcia (2001) conducted a study where self-efficacy was fostered in the classroom. They examined the importance of academic self-efficacy, which is a student's belief that he or she can accomplish goals in the school setting. Self-efficacy and academic self-efficacy are shown to be related to one another (Zimmerman, Bandura, & Martinez-Pons, 1992). One way to influence students' attitudes in the classroom is through curriculum development; in particular, literary novels can be a powerful tool in curriculum (Feshbach & Feshbach 2011). Further research could explore the relationship between perspective-taking through literary novels as a means to foster self-efficacy in schools. Though the ideas of self-efficacy have existed for centuries, they can be used to address specific and current needs.

APPENDIX

APPENDIX

Personality and Attitudes Questionnaire

INFORMED CONSENT AGREEMENT

Please read this consent agreement carefully before agreeing to participate in this research.

Purpose of the research:

The purpose of this study is measure people's attitudes with respect to their personality.

About 198 participants will take part in this research study through MTurk.

Study activities:

If you choose to be in the study, you will be asked to read a scenario and fill out questionnaires. We expect that this study will take no longer than 30 minutes to complete.

Risks and Benefits: To the best of our knowledge, there are no risks to you for taking part in this study.

Questionnaires/Survey Risks: You may be uncomfortable with some of the questions and topics we will ask about. You do not have to answer any question that make you feel uncomfortable.

Psychological Testing/Sensitive Topics: This research study involves psychological testing. The questions being asked may be sensitive and personal in nature. It is possible that answering some questions may cause some stress. Participants may skip any questions that they feel uncomfortable answering, and can close the browser if they would like to withdraw from the study.

Payment: You will be paid \$.50 for 30 minutes of work.

Future Benefit: Others may benefit in the future from the information that is learned in this study.

Confidentiality: A risk of taking part in this study is possibility of a loss of confidentiality. Loss of confidentiality includes having your personal information shared with someone who is not on the study team and was not supposed to see or know about your information. The researcher plans to protect your confidentiality. Confidentiality will be maintained to the degree permitted by the technology used. Your participation in this online survey involves risks similar to a person's everyday use of the Internet, which could include illegal interception of the data by another party. If you are concerned about your data security, contact the researcher to schedule a time to complete a printed survey

with the same questions/you should not participate in this research.

We will keep the records of this study confidential encrypting all obtain data and separating subject logs from the data. We will make every effort to keep your records confidential. However, there are times when federal or state law requires the disclosure of your records.

Authorized staff of Baylor University may review the study records for purposes such as quality control or safety.

Questions or concerns about this research study

You can call us with any concerns or questions about the research. Our telephone numbers are listed below

Jessica Schurz: (254) 716-7660

Dr. Jo-Ann Tsang: (254) 710-2259

If you want to speak with someone not directly involved in this research study, you may contact the Baylor University IRB through the Office of the Vice Provost for Research at 254-710-1438.

You can talk to them about:

- Your rights as a research subject
- Your concerns about the research
- A complaint about the research

Taking part in this study is your choice. You are free not to take part or to stop at any time for any reason. No matter what you decide, there will be no penalty or loss of benefit to which you are entitled. If you decide to withdraw from the study, the information that you have already provided will be kept confidential. Information already collected about you cannot be deleted.

By continuing with the research and completing the study activities, you are providing consent.

The following questions are basic demographic questions. Please answer as honestly as you can.

Sex

- ☐ Male
- ☐ Female

Education level

- ☐ 8th grade or less
- ☐ 9th to 12th grade
- ☐ No high school diploma
- ☐ High school graduate
- ☐ Some college
- ☐ Trade/technical/vocational training
- ☐ College graduate
- ☐ Postgraduate work/degree

Your current household income

- ☐ \$10,000 or less
- ☐ \$10,001 - \$20,000
- ☐ \$20,001 - \$35,000
- ☐ \$35,001 - \$50,000
- ☐ \$50,001 - \$100,000
- ☐ \$100,001 - \$150,000
- ☐ \$150,001 or more

Your current household income compared to the majority of your family & friends

- ☐ I make more than the majority of my family & friends
- ☐ I make about the same compared to the majority of my family & friends
- ☐ I make less than the majority of my family & friends
- ☐ Don't know

Your current household income relative to childhood income

- ☐ I make more than my parents' made when I was growing up
- ☐ I make about the same the same compared to my parents' when I was growing up
- ☐ I make less than my parents' made when I was growing up
- ☐ Don't know

Your childhood household income

- ☐ \$10,000 or less
- ☐ \$10,001 - \$20,000
- ☐ \$20,001 - \$35,000
- ☐ \$35,001 - \$50,000
- ☐ \$50,001 - \$100,000
- ☐ \$100,001 - \$150,000
- ☐ \$150,000 or more
- ☐ Don't know

Race

- ☐ White
- ☐ Black/African-American
- ☐ Hispanic/Latino
- ☐ Asian
- ☐ American Indian/Alaska Native
- ☐ Native Hawaiian/other Pacific Islander
- ☐ Other _____

Religious affiliation

- ☐ Protestant (enter denomination) _____
- ☐ Catholic
- ☐ Jewish
- ☐ Muslim
- ☐ Buddhist
- ☐ Hindu
- ☐ Agnostic (not sure if God exists)
- ☐ Atheist (don't believe in God)
- ☐ No religion
- ☐ Don't know
- ☐ Other _____

The following questions are about your friends & family. Please answer the questions respect to the people you interact with most/identify with most.

	1 - Totally disagree	2	3	4	5 - Totally agree
Most of my friends & family are able to achieve the majority of the goals that they set for themselves.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When facing difficult tasks, most of my friends & family are certain that they will accomplish them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of my friends & family can obtain outcomes that are important to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of my friends & family believe that they can succeed at most any endeavor to which they set their minds.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of my friends & family are able to overcome many challenges successfully.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of my friends & family are confident that they can perform effectively on many different tasks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared with other people, most of my friends & family can do most tasks very well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Even when things in life are tough, most of my friends & family can perform quite well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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About how many friends/family were you thinking of when answering the previous questions? (enter the number) _____

The following questions are about your personality. Please answer as honestly as you can.

	1 - Not at all true	2 - Hardly true	3 - Moderately true	4 - Exactly true
I can always manage to solve difficult problems if I try hard enough.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If someone opposes me, I can find the means and ways to get what I want.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy for me to stick to my aims and accomplish my goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident that I could deal efficiently with unexpected events.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thanks to my resourcefulness, I know how to handle unforeseen situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can solve most problems if I invest the necessary effort.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can remain calm when facing difficulties because I can rely on my coping abilities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am confronted with a problem, I can usually find several solutions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I am in trouble, I can usually think of a solution.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can usually handle whatever comes my way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mark 2 for this item	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following questions are about your attitudes. Please answer as honestly as you can.

	1 - Does not describe me well	2	3	4	5 - Describes me very well
I daydream and fantasize, with some regularity, about things that might happen to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often have tender, concerned feelings for people less fortunate than me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I sometimes find it difficult to see things from the "other person's" point of view.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes I don't feel very sorry for other people when they are having problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I really get involved with the feelings of the characters in a novel.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In emergency situations, I feel apprehensive and ill-at-ease.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I try to look at everybody's side of a disagreement before I make a decision.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I see someone being taken advantage of, I feel kind of protective towards them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I sometimes feel helpless when I am in the middle of a very emotional situation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I sometimes try to understand my friends better by imagining how things look from their perspective.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming extremely involved in a good book or movie is somewhat rare for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I see someone get hurt, I tend to remain calm.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other people's misfortunes do not usually disturb me a great deal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I'm sure I'm right about something, I don't waste much time listening to other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

people's arguments.					
After seeing a play or movie, I have felt as though I were one of the characters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being in a tense emotional situation scares me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I see someone being treated unfairly, I sometimes don't feel very much pity for them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am usually pretty effective in dealing with emergencies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am often quite touched by things that I see happen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I believe that there are two sides to every questions and try to look at them both.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would describe myself as a pretty soft-hearted person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I watch a good movie, I can very easily put myself in the place of a leading character.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I tend to lose control during emergencies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When I'm upset at someone, I usually try to "put myself in his shoes" for a while.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I see someone who badly needs help in an emergency, I go to pieces.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Before criticizing somebody, I try to imagine how I would feel if I were in their place.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mark 4 for this item	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following questions are about your attitudes. Please answer as honestly as you can.

	1 - Defin itely False	2	3	4	5	6	7	8 - Defin itely True
I can always think of many ways to get out of a jam.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mark answer '3'	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel tired most of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are lots of ways around my problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am easily downed in an argument.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can think of many ways to get the things in life that are important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even when others get discouraged, I know I can find a way to solve the problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My past experiences have prepared me well for my future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been pretty successful in life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I usually find myself worrying about something.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I meet the goals that I set for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry about my health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I energetically pursue my goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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The following questions will help us interpret your answers correctly. Please answer as honestly as you can.

Where are you completing this survey?

- ☐ Home
- ☐ Place of employment
- ☐ Library
- ☐ School
- ☐ Public place (ex. coffee shop, restaurant)
- ☐ Other (please specify) _____

How many other people are in the same room where you are completing this survey?

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5+

What other tasks are you doing while you complete this survey? (choose ALL that apply)

- ☐ Nothing - only completing this survey
- ☐ Watching TV
- ☐ Listening to music
- ☐ Talking with friends
- ☐ Reading something else (besides this survey)
- ☐ Eating
- ☐ Other (please specify) _____

What do you think the purpose of these questionnaires was?

What do you think these questionnaires were trying to study?

While you were completing these questionnaires, did you have any particular goal or strategy?

- ☐ Yes
- ☐ No

If you selected yes, please specify what particular goals and/or strategies you had

Thank you for completing these questionnaires! Click to the next screen for a study explanation and payment.

Thank you for your help with our study. This page provides you more information about what the study was about.

We are interested in how self-efficacy can be fostered. Self-efficacy is the belief that one is able to accomplish one's goals. Research has established that income is related to levels of self-efficacy, which could in part explain why some people often struggle in their academic endeavors. One way to increase self-efficacy is to provide people with examples of successful role models. We propose that one reason people with low-income may have lower self-efficacy is because they have less access to role models with which they can identify. In addition, we predict that empathy, or the ability to easily imagine and sympathize with what another person is thinking and feeling, increases the effect of role models of self-efficacy.

To test this, we created a study to test the relationship between socioeconomic status and self-efficacy. We predict that socio-economic status will be related to self-efficacy, and this will be due in part to a lack of role models. Furthermore, we predict that high levels of empathy will increase the importance of role models in the relationship between socioeconomic status and self-efficacy.

We appreciate the time you have taken to fill out these questionnaires. Please feel free to contact Jessica Schurz at Jessica_Scurz@Baylor.edu or Dr. Tsang at JoAnn_Tsang@Baylor.edu if you have any questions about this research.

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