THE RELATIONSHIP OF SELF-EFFICACY AND DABROWSKI OVEREXCITABILITIES

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CHAPTER ONE

INTRODUCTION TO THE STUDY

Deeply rooted in today's psychology are classical philosophies that view humanity in disparate ways. Two such philosophies are the Greek emphasizing the cognitive and the Judaic emphasizing the affective. American culture and, hence, American psychology heavily reflect Greek origins with emphatic concentration on the intellect and the Doctrine of Natural Law (Stagner, 1988) which states that human affairs should be governed by ethical principles that are part of the very nature of things and that can be understood by reason. Stagner (1988) in an extensive historical account of philosophies summarized the duality of early thinking. This account brings together and illuminates the thoughts of early classical philosophers such as Aristotle, Parmenides, and Thomas Aquinas. Aristotle (ca. 350 B.C.) believed that knowledge comes through the senses with a hierarchical order of motives, the nutritive, the sensitive, and the rational. The rational or the intellect has been placed on the top rung of the hierarchy of human abilities for centuries. Aristotle believed human reason had the power to reveal all significant truth concerning human nature. Parmenides (ca. 500 B.C.) also stated that thought was enduring; it was the intellect that was believed to endure. Thomas Aquinas (ca. 1250) wrote that only humans have the power of reason and can arrive at divine truths. The intellect was believed to exercise ultimate control over human activities; therefore, the intellectual function in humanity was considered to be a higher

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function than the emotional function (Stagner,1988). In addition the Greeks emphasized the general over the particular. The problems of humanity were more important than the problems of a particular individual. Essence was more important than existence; the rational was separated from man's intuition and emotions (Stagner, 1988).

The Judaic philosophy, on the other hand, postulates a soul, idealistic thought and action, and an impulse toward a higher spiritual life. The Hebrews believed in an innate knowledge of good and evil. This tradition values emotions and ethics over the intellectual and the rational. It values emphasis on the multidimensionality of man, a being composed of both intellect and emotion. The Greeks' concern was with the world, and the Hebrews' concern was with the soul (Stagner, 1988).

Because of the heavy influence of Greek thought on Western culture and ideas, reason has been pitted against emotion; dividing the manner in which modern psychology has viewed the person. In the past the cognitive or intellectual abilities have received more attention than the emotional abilities. This is also true in the case of those individuals who are considered gifted. More recently, however, there has been a shift in the philosophical outlook of our society from valuing only the intellect to valuing both the cognitive and affective. This shift is beginning to have an impact on gifted education. Included in this philosophical shift is Silverman (1993) who believes that giftedness has an emotional as well as a cognitive substructure: cognitive complexity gives rise to emotional depth. Gifted individuals not only think differently from their peers, they also feel differently (Silverman, 1993). Roeper (1983) defined the term "giftedness" as possessing a greater awareness, a greater sensitivity, and a greater ability to understand and transform perceptions

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into intellectual and emotional experiences.

The perception of how society understands the dimensions of giftedness has changed. A more holistic, organic approach to the understanding of human abilities has increasingly gained acceptance. One such approach is Dabrowski's (1964) Theory of Positive Disintegration (TPD), later the Theory of Emotional Development (TED) (Piechowski, 1991). In this theory Dabrowski states, "Personality (personality development) is the principal aim of man, the aim of his development, particularly accelerated development" (Dabrowski, 1967, p. 246).

Dabrowski Theory

In America the concept of development as an approach to the study of human behavior was relatively late (1920's) in its appearance in human psychological theory. Gesell, Piaget, and Werner were among the first to apply the knowledge of biological development to human psychological development. As these psychologists made contributions in developmental psychology, Dabrowski, influenced by Hughlings Jackson (Weckowicz, 1988) and his ideas on human biological development (ontogenesis), emphasized the significance of a psychological development that was multidimensional and multilevel. Like Jackson, Dabrowski believed the human nervous system and, therefore, the human personality is characterized by a hierarchical organization of levels. One of these levels is thought to be dominate in an individual's life functions. Before the dominance shifts to a higher level, there has to be dissolution of the functions of the lower level, and vice versa from higher to lower levels.

Weckowicz (1988) wrote in his historical background of Dabrowski's

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theory that similar views were held by French psychiatrist Pierre Janet and his student Henri Ey. Janet maintained that human "tendencies" (instincts) were organized into three different levels from low to high. At different levels these instincts would come into conflict with one another. One of these levels is actively dominant, and before the dominance shifts there has to be dissolution of the functions at the lower level. Ey (1969) has elaborated the theory of Jackson and Janet into the organo-dynamic theory of psychiatry. He states in this theory that a "dialectic" process is instrumental in evolutionary passage from the organic infrastructure to the psychic superstructure. Through the phylogenetic (based on the natural evolution of an organism) and ontogenetic development of the infrastructure, a more complex psychic superstructure is produced that dialectically interacts with and controls the former. The laws governing the organization of the superstructure are different from those of the organization of the infrastructure. The psychic superstructure evolves in the direction of enhancing its psychological features away from the purely physiological ones (Ey, 1969).

Jackson's, Janet's, and Ey's principles of stage theory hold true in some ways for Dabrowski's theory. This theory (TPD) rests on the concept that multilevel development should not be restricted to the perfection of one or some capacities and skills. It should include a transformation and refinement of all aspects of mental life, especially innate drive, emotions, intellect, volition, imagination, and moral, social, aesthetic, and religious sensitivity. This transformation enables individuals to overcome their hereditary and social determination and to progress toward a self-controlled, creative, empathetic, and authentic form of life. It takes form as an awareness and expression of one's own emotional, intellectual and volitional attitudes. Multilevel

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development is achieved through autonomous developmental transformations of one's own hierarchy of values and aims. These transformations result from the operation of such dynamisms as dissatisfaction with oneself (a valuation expressed in disapproval of some of the elements of one's own mental structure), autonomy (consciously developed independence from lower level drives), the third factor (dynamism of conscious choice), positive maladjustment (a conflict with, and a denial and rejection of those standards, patterns, and attitudes, demands, and expectations of one's environment which are incompatible with one's growing awareness of loyalty to a higher scale of values), inner psychic transformation (a dynamism which carries out the work of developmental change in the human environment), and the personality ideal (an individual standard against which one evaluates one's actual personality structure) (Dabrowski, 1964).

Dabrowski believed that this authentic form of life would include the emotional processes that are crucial in guiding and directing developmental restructuring. What evolves from this restructuring or disintegration is the structure of the personality. This structure underlies the organization of behavior; it determines the particular level of development. The multilevel and multidimensional aspects of Dabrowski's theory are delineated by a hierarchical order of values, an arrangement in ascending order. These values are described with precision, empirically developed, and objectively testable. This theory defines measurable developmental parameters separable from the processes of development. These parameters take the form of levels rather than stages. Levels are based on the structure below; they are built one upon the other. However, one level must disintegrate before the next can formulate. A level is dissolved and replaced by a higher one. This world of values is

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arranged in hierarchical levels from Level 1 to Level 5. Level 1 is characterized by dominant concern with self-protection and survival and self-serving egocentrism. Examples of Level 2 are a lack of inner direction, inner fragmentation, and submission to the values of the group. Level 3 is the beginning of the search for the sense of the ideal and moral concerns. Level 4 is characterized by self-actualization where ideals and actions agree. In this level there is a strong sense of responsibility. And, finally, in Level 5 the personality ideal is attained. Life is inspired by a powerful ideal, such as equal rights or universal peace (Piechowski, 1991). Values appear to represent different levels of emotional growth and development. Each level of values covers a distinctively different range of phenomena. Observable in all social structures are three distinct groupings that can be placed in this hierarchy of values: a) primitive and brutal elements acting toward their own advantage (Level 1) b) so called normal structure that is subordinated to the primitive ones (Level 2) and c) nervous individuals and psychoneurotic characterized by enhanced psychic excitability, mainly emotional, imaginational, and intellectual (Level 3-5).

The psychic excitabilities have been further identified by Piechowski (1975) who states that individuals evolve from the primitive levels to those levels characterized by these psychic excitabilities (observable dimensions of robust and abundant mental functioning: intellectual, imaginational, emotional, sensual and psychomotor; the overexcitabilities). Evolution is not the length of time it takes to move through these levels of emotional growth (positive disintegration), but the extent and depth of the movement itself. The Theory of Positive Disintegration and later the Theory of Emotional Development rests on a conception of an "individual evolution" rather than on ontogenesis, a

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biological development of the individual. Development is viewed as a function of the extent and depth of psychological transformations undergone by the individual (Dabrowski, 1964). These psychological transformations remake the cognitive and, especially, the emotional structure of the individual. These transformations are observable in all mental functions and increase as an individual's orientation to the world deepens and is refined. An individual's syntony or resonance with his or her surroundings results in the formation of a self-determined personality. This mental refinement is equated with emotional growth and is the first basic concept of the theory. There are two, qualitatively different phases of development: (a) The lower or heteronomous phase which is unconscious or only partly conscious and is determined by biological forces or the influences of the external environment. This phase takes place in the lower levels (levels 1 and 2). (b) The higher or autonomous phase which is self-conscious, self-controlled, and depends increasingly on deliberate and authentic acts of choice, that is, acts resulting from an increasing and refined understanding of the environment and of the self (levels 3 through 5). This phase develops, taking the place of the heteronomous phase (determined by biological forces or the influences of the external environment) in Levels 3 through 5 (Dabrowski, 1970). The second aspect is that this transformation is not harmonious, but rather a tension filled transition that is filled with inner conflict, struggle, anxiety, and even despair before the individual ascends to the peak of the "ideal personality" which is found on Level 5.

According to Dabrowski, part of this inharmonious, tension-filled transition is the conflict an individual faces as he or she becomes more and more self-directed and is transformed from a heteronomously controlled individual to an autonomously controlled one. Emotional development, that is

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the transition from less refined to more refined functions, is a result of the processes of positive disintegration. This conflict with one's self plays a decisive role in emotional growth. This "self" or "inner psychic milieu" is an individual's inner environment. The development and differentiation of this inner self are the distinctive features of development toward an inner autonomy. Once this inner autonomy is established, the "Third Factor" is now in play. This "Third Factor" (independent from heredity, the first factor, and environment, the second factor) enables an individual to assume a selective role in accepting and fostering or rejecting inclinations, interests and desires. It is a dynamism of conscious valuation and choice which has a fundamental role in the education of the self. Its presence and operation is essential in the development toward autonomy and authenticity. The third factor arises and grows as a result of both positive hereditary endowment and positive environmental influences (Dabrowski, 1967). At some point the drives of the ego in a Freudian sense are left behind for the attainment of a resonance with the world. This resonance takes the form of a deepening of the personality, the strengthening of one's value system, the creation of greater and greater challenges for oneself, and the development of broader avenues for expressing compassion. Advanced development in adulthood is the commitment to becoming a better person and helping to make this a better world (Silverman,1993). An individual must be able to focus on things other than the ego in order to be able to fully develop. If the ego is in the way, the individual will be unable to achieve syntony with the world through a deepened and refined orientation. Without this syntony an individual will remain tied to the ego unable to free him/herself for further development, limiting him/herself to solutions imposed by external controls. However, as this resonance is fine-tuned, the individual becomes more and

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more internally controlled. In Freudian terms the ego, the executive of the personality (controller and governor of the id and the superego), maintains commerce with the external world in the interest of the total personality and its far flung needs (Hall, 1954). In the interests of the total personality and as the individual ascends to higher levels, the personality ideal becomes a possibility and then a reality. As autonomous control gains ascendancy in the personality, the individual becomes a more positively disintegrated individual. As the individual becomes more positively disintegrated, he or she becomes more of a whole person: a person who is capable of emotional, intellectual, and imaginational intensity (Dabrowski, 1964). A person who has attained resonance with the self.

Emotional Development of the Gifted

Dabrowski's theory elucidates the development of the gifted. Historically, the emotional, intellectual, and imaginational intensity that is so often identified with giftedness has not fared well. Prentky (1989) illuminates society's inability to understand these intensities. He states that historically this inability has caused much speculation and many approaches to the understanding of the nature of giftedness. One such approach has been to use giftedness as a synonym for genius; and the conception of genius has often had a certain amount of negativity attached to it. Many connections between genius and psychosis have been found in the literature for at least 2,300 years. One of the earliest references dates back to Aristotle's *Problemata* (ca. 360 B.C.) and states that those who have become eminent in philosophy, politics, poetry, and the arts have all had tendencies toward melancholia. There is an often noted

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association between "enthousiasmos" or enthusiasm or mania and demonic possession or melancholia. The same distinction fourteen centuries later, during the Renaissance, was the term "genio" used to describe melancholia and the term "pazzia" used to describe madness. This type of madness attributed the characteristics of eccentricity, sensitivity, moodiness, and solitariness to being a genius (Becker, 1978). Some 2,100 years after Aristotle, the prevalent conception of genius was that it was allied with degeneracy. This was first put forth by Benedict Augustin Morel (ca. 1850) who argued that degeneracy is a state of biological inferiority and it is inherited. Genius is evolved from the same maladaptive gene pool as the lowest elements of society, the criminals and lunatics. Babcock (1895) enumerated the dire consequences of being born with degenerate genes. First and most prominent in the order of frequency is an early death. Second, an individual may swell the criminal ranks. Third, he may become mentally deranged and ultimately find his way into a hospital for the insane. Fourth, and at least frequently, he startles the world by an invention or discovery in science or by an original composition of great merit in art, music or literature. He is then styled a genius.

Another who supported the idea of degeneracy was the Italian criminologist Cesare Lombroso (1910). In 1864 he conducted the first systematic study between genius and insanity. In 1891 he published his research concluding that genius was often a degenerate psychosis of the epileptic group. Later, in 1910 he stated that any one who has had the rare fortune to live with men of genius is struck by the facility with which they misinterpret the acts of others, believe themselves persecuted, and find everywhere profound and infinite reasons for grief and melancholy. Nisbet (1912) related genius to no fewer than forty maladies from apoplexy to vanity -

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including such afflictions as gout, rheumatism, imbecility, ne'er'do wellism, opium eating, scrofula (tuberculous disorder), sexual passion, skull shape, insane temperament, and hallucinations. Tsanoff (1949) claimed that in creative activity, genius is at the limit of tension, the utmost of reach, of intensity, penetration and that it overtakes the physical and mental powers and unbalances the high-strung genius .

The antecedent definitions of giftedness are surprisingly couched in the same lexicon as Dabrowski's Theory. He gives an exegesis using words such as enthusiasm, intensity, mania, conflict, tension, anxiety, and despair which evokes the historical descriptions of melancholia, moodiness, madness, sensitivity, eccentricity and degenerative psychosis. These characteristics are found in the gifted involved in theater, arts, literature and science as well as the other more lucrative forms that genius may take common to the financial world. From Olivier, Van Gough, Faulkner, and Einstein to Rockefeller and Gates, many of these definitive personality characteristics have been present. These are the very same factors that have historically caused concern and apprehension. These are the very factors that show the disharmony of mental structures and functions that stimulate the development towards new integration, that is, emotional development. Individuals go through emotional development, some more than others, and this development is good for them. Those individuals with evidence of overexcitabilities have more capability to undergo this type of development and at earlier ages. This capacity is often viewed as asynchronous development. Asynchronous development is defined by the Columbus Group (1991) as:

> Giftedness is asynchronous development in which advanced cognitive abilities and heightened intensity combine to create inner experiences and awareness that are

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> qualitatively different from the norm. This asynchrony increases with higher intellectual capacity. The uniqueness of the gifted renders them particularly vulnerable and requires modifications in parenting, teaching,and counseling in order for them to develop optimally (p. 1).

These qualitatively different inner experiences of the Columbus Group definition have much in common with Dabrowski's (1964) definition of development: an inharmonious, tension filled transition that is filled with inner conflict, struggle, anxiety, and even despair before the individual ascends to the peak of the his/her "ideal personality."

Development in its first, more primitive stage, is determined by and subordinated to biological forces and influences of the social environment. A theoretical comprehension and elaboration of this stage in purely descriptive terms might be basically possible. However, as soon as the third factor (the capacity to foster or reject inclinations and desires) emerges, as the processes of inner psychic transformation gain in intensity, as soon as the dynamisms of autonomy and authentism start operating, the situation essentially changes, and a new quality arises. Things cease to remain under exclusive control of biological and social determinants. Self-conscious, autonomous choice between alternatives becomes real. From this point on further development is no longer an outcome of the play of factors heteronomous to the individual. The individual has to take development in his own hands; further growth, its direction and progress, ceases to be simply a result of forces beyond an individual's control. From now on the individual has to choose and determine what is to be (Kawczak, 1970). How these processes operate depends critically on the level of developmental organization, and the level of developmental organization depends on autonomous, deliberate, and authentic acts of choice

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as an individual's direction becomes more and more intrinsic (Dabrowski, 1970). Progression to this more evolved psychic structure is painful and arduous, making it the exception rather than the rule. Dabrowski's theory is particularly applicable to the gifted because it describes extraordinary development in exceptional individuals. This theory is one way of explaining the emotional sensitivity, empathy, intensity, moral concerns, and the inability to fit often faced by the gifted (Miller & Silverman, 1987).

Implications for Education of Gifted Students

The consequences of Dabrowski's approach for philosophic, creative, and gifted educational models are numerous. The implications for both the identification and the development of talent are profound. The importance of internal conflict as an indication of higher level development is rarely understood (Miller & Silverman, 1987). Too often, guidance of gifted youth is geared toward adjustment not development. The setting of realistic standards and the avoidance of conflict are often considered more important than higher level development of the personality.

Rice (1970) wrote that all too often the academic or mentally gifted student is measured and classified with no provisions made for development. To think of giftedness as only those unique attributes possessed by an individual is an incomplete concept. Not only these unique attributes (heredity), but the interactive sociocultural and economic conditions that have much to do with the emergence of talent must be taken into account.

Motivation, one of these unique attributes possessed by an individual, is also an incomplete concept unless perceived as a developmental aspect that

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must be taken into account with interactive sociocultural and economic conditions. Much like the overexcitabilities, motivation should be considered when examining the gifted individual. Intrinsic motivation and an important variable of intrinsic motivation, self-efficacy, also play an important role in the development of the gifted youth.

History of Motivation Theory

Before the zenith of behavioralism, motivation referred to goals, desires, or ideas that moved people to act in in certain predictable directions. It was assumed that motivation was largely under the control of a person's will, which itself was relatively free to determine its own direction. Individuals were free to determine their own fate and direction in life (Csikszentmihalyi & Nakamura, 1989). Motivation and volition have been described in a variety of ways. They all involve a search for the reasons for actions, individual differences, activation, control, and persistence of goal-oriented behavior (Heckhausen, 1991). Heckhausen (1991) states that what Hermann Ebbinghaus (ca. 1900) supposedly wrote about psychology, namely that it has a long past but a short history, applies equally to the study of motivation. As psychology became more and more scientific (experimental), many motivational issues emerged. Definitions, labels, and perspectives changed. The labels in the early 1900s were "motives" and "reasons." This nomenclature governed the choice between alternate behavioral options or the emergence of a decision to do or not to do something (Heckhausen, 1991). Volition became the force that insured that a formed intention would be followed by the pursuit of a goal. "Will" was seen as the guardian of moral norms with a duty to overcome "baser"

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tendencies such as instinct, drives, and basic needs (Heckhausen, 1991).

By the 1940s and 1950s, a conceptual change had taken place. The dichotomy between morally good and reasonable and the impassioned and the impetuous was gone but "will" had lost its place as a scientific concept. New concepts and terminology emerged. "Drive" and "need" no longer just applied to the animal kingdom; they now encompassed the higher human kingdom as well (Heckhausen, 1991). Many motivational issues were raised that went far beyond the traditional action and performance issues. Motivation was now seen as being able to explain in part such processes as thinking, perceiving, and imaging. These issues brought about a gradual development of a separate psychology: the psychology of motivation.

The psychology of motivation included its own concepts, methods, and theories. One of these theories of motivation is the theory of self-efficacy (Bandura, 1977). Self-efficacy is a part of the framework for eliciting motivational cognitions and particular cognitive operations. In this theory the concept of self-efficacy serves as consciously conceived reasons for behavior. These cognitive efforts and cognitive operations refer to the internal mental dialogue of the learner (Ames & Ames, 1989). Self-efficacy is a positive internal mental dialogue about an individual's capability to organize and implement actions necessary to attain designated levels of performance. Motivational goals, specifically, the intrinsic motivational variable, self-efficacy, provide the mechanism for filtering perceptions and other cognitive processes (Ames & Ames, 1989).

The idea that self-efficacy could enhance an individual's emotional development provides intrigue. This idea leads to a speculation of how such motivational characteristics fit into Dabrowski's theory. Since overexcitabilities

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are an indication of upper level development and hence giftedness, the relationship between motivational characteristics and overexcitability should be investigated. It is not known if gifted middle school students with high levels of overexcitabilities also have high levels of self-efficacy, a variable of intrinsic motivation. Furthermore, difference between gender and among age groups on high and low self-efficacy and overexcitability is not clear. Differences in self-efficacy across the overexcitabilities would help determine a potentially useful relationship. This study will shed some illumination on these concerns.

Statement of the Problem

Much has been written on the expanding view of giftedness (Gardner, 1983; Renzulli, 1977; Sternberg, 1995; Tannenbaum, 1991) and the stage has been set for the understanding and acceptance of Dabrowski's Theory in relation to the concept of giftedness (Gallagher, 1986, Piechowski & Colangelo, 1984; Schiever, 1985; Silverman & Ellsworth, 1980). Many studies have illuminated the age-old controversy on inherited characteristics (Maslow, 1971; Rogers, 1961; Silverman, 1983) as opposed to those that are in influenced by the socioenvironmental aspect of an individual's situation (Amabile, 1983). Further research has investigated intrinsic motivation and its variables (Adelman & Taylor, 1990; Bandura, 1977; Csikszentmihalyi & Nakamura, 1989; Deci & Ryan, 1985; Schunk, 1989). However, rarely are the intrinsic processes and attributes of the gifted completely understood. High levels of sensitivity (the overexcitabilities) and strong inner conflict are frequently misunderstood and ignored as indicators of the potential for emotional development, excellence, and giftedness. There is an indicated

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relationship between giftedness and certain levels of overexcitabilities (Gallagher, 1986; Piechowski & Colangelo, 1984; Silverman & Ellsworth, 1980). However, there is a lack of information on the relationship of intrinsic motivation and self-efficacy to the overexcitabilities and, therefore, to the overall concept of emotional development and giftedness. The purpose of this study is to examine the relationship of each of the overexcitabilities to one aspect of motivational cognition, self-efficacy. The research questions in this research study are 1). What is the relationship between self-efficacy to each of the overexcitabilities (intellectual, imaginational, emotional, sensual, and psychomotor)? 2). What are the effects of gender and grade on each of the overexcitabilities (intellectual, imaginational, emotional, sensual, and psychomotor) and self-efficacy? 3). What differences, if any, are there in self-efficacy across the overexcitabilities?

Significance of the Study

As so many theorists have pointed out, the concept of giftedness has broadened into a multifaceted construct involving more than just intelligence. It seems that emotional sensitivity may work hand in hand with superior intellectual ability (Gallagher, 1986; Silverman, 1983). Piechowski (1986) relates that giftedness is a multifaceted phenomena involving the interplay of specific talents, favorable environmental events, and unique personality characteristics. Overexcitabilities are viewed as an indication of the capacity for personality development. This study investigated a potential relationship between overexcitability and self-efficacy. It may be possible that the trait of self-efficacy could be seen as an indication of the capacity for psychic

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overexcitability. If so, one might find these two variables correlated in a population of gifted people. Dabrowski stresses the importance of emotions as motivators and the centrality of empathy and personal responsibility. Dabrowski believes it is the emotions that stimulate and drive the internalized desire for perfection in the personality ideal which begins to emerge at Level 3 (Dabrowski, 1970). The emotional overexcitability could promote self-efficacy and intrinsic motivation.

Should a theoretical link between self-efficacy and the emotional overexcitability be established for gifted learners, there are major implications for the field of gifted education and counseling. Individual growth and development could be recognized and cultivated. Recognition of the need for self-education and self-affirmation could be nurtured and enhanced by parents, educators, and counselors. Self-efficacy in undervalued areas of psychic overexcitability could be enhanced. An individual with the potential for development could be given aid and guidance in his personal quest to reshape his psychic structures. The more the internal environment is developed, the more the individual is characterized by "psychic richness" which includes a plurality of interests and capabilities, an intense emotional life, and the ability for accelerated development (Dabrowski, 1967). If personality development is the aim of man as Dabrowski (1967) has stated, it follows that a relationship between self-efficacy and the psychic overexcitabilities could illuminate and aid in the quest of gifted students with this ability and need. The understanding, the protection, and the collaboration to enhance and extend this development could impact many gifted individuals educationally, emotionally, and vocationally.

The significance of the study is summarized by Piechowski (1986) when he asks how can the search for signs of developmental potential be

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approached? The developmental level of an individual is often overlooked when employing certain types of motivation in the classroom. Internal personality and motivational characteristics need to be considered in the development of any instructional program for any student (Switzky & Schultz, 1988). One manner the search for developmental potential can be approached is by examining the key components of overexcitability to a variable of internal motivation, self-efficacy.

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CHAPTER TWO

REVIEW OF THE LITERATURE

This review discusses the continuing movement to broaden the concept of giftedness to highlight the importance of Dabrowski's Theory. Related literature shows the context in which this theory is gaining credibility and acceptance as a viable way to address the question of the nature of giftedness. Support is offered for the concept of the overexcitabilities as defined by this theory and its relationship to giftedness. As the concept and understanding of giftedness broadens, it becomes necessary to approach identification and development of gifts and talents in a new, more multidimensional manner. Literature related to intrinsic motivation is reviewed as a context to aid in the understanding of self-efficacy and its potential relationship to the overexcitabilities.

The Continuing Movement to Broaden the Concept of Giftedness

In the current climate Tannenbaum (1991) states that it takes no more than plain common sense to realize it takes much more than extraordinary brain power for a person to become demonstrably gifted. Making the leap from promise to its fulfillment requires not only ability, but also ancillary personal attributes, along with enriching and opportunistic life experiences, all of them

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reinforcing each other in a rare and subtle combination. Tannenbaum (1991) suggests in his expanded definition of giftedness that there are some other ingredients necessary besides intelligence for the full development of potential to occur. Dabrowski (1964) also believed it takes more than just intelligence to be a gifted individual. Intelligence is only part of the necessary inherent factors that make up giftedness. The emotional and imaginational capacity of an individual play an equally important role.

In the past, however, the definition of giftedness has been a conceptually narrow one built on the foundations of the measures of intelligence. Attempts at locating gifted children solely through measures of thinking abilities have a history of unrealistic hopes and meager outcomes (Tannenbaum, 1991). Many authors have addressed the question of the nature of giftedness and talent only to discover that many factors, components, traits, facets, and potentialities are not captured by the various tests in use (Bloom, 1963; Hoyt, 1966). Critics of intelligence tests also have argued that a single metric cannot reveal much about multiple, discreet intelligences (Gardner, 1983).

Sternberg (Sternberg, 1986) believes the recent shift of emphasis from proficiency to processes of thinking promises to yield better results at identifying and nurturing talent. He maintains that there are three main aspects of giftedness: analytic, synthetic, and practical. Analytic abilities are the reasoning skills assessed by traditional tests of intelligence. Synthetic skills are those qualities labeled insightful, intuitive, creative, or abilities that allow for the capacity to uniquely deal with a situation (conceptualization and generation of new knowledge). Practical skills are those skills that allow an individual to apply analytical or synthetical skills to everyday situations. As an indication of yet a further shift, Tannenbaum (1991) argues that the sole stress cannot be on

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mental functioning while ignoring other vital facilitators in the psyche and in the environment.

Starting with the seminal work of J.P. Guilford (1967), a wide variety of theories such as Gardner's Theory of Multiple Intelligences (1983), Renzulli's Enrichment Model (1977), Calvin Taylor's Multiple Talents Model (1968), and Sternberg's Triarchic Theory (1985) also approach giftedness in a broader, more multidimensional manner. Renzulli's Enrichment Model (1977) stipulates that giftedness includes intelligence, creativity, and task persistence and Sternberg's Triarchic Model (1988) includes intelligence, cognitive style (intellectual style or mental government), and personality/ motivation (creative traits). Calvin Taylor's approaches is one of the more versatile. His theory stipulates that nearly all children, if evaluated for achievement in several different talent areas, would be gifted in some way. The Multiple Talent model arose out of Taylor's research in three main areas: primary mental ability factors, creativity, and functional thinking. In this theoretical approach to multiple talent, Taylor (1968) focused on six talents: productive thinking, academic talent, communications, forecasting, decision making, and planning. Later he added the talents of implementing, human relations, and discerning opportunities. The multiple nature of giftedness and talent, controversial when Taylor's theory was first proposed, has since been posited by other scholars (Gardner, 1983; Sternberg, 1986). Gardner (1983) cited seven different intelligences: linguistic, musical, logical-mathematical, spatial, bodily-kinesthetic, intrapersonal, and inter-personal. Gardner(1988) stated that several of these, alone and with various combinations, would probably yield a conception of giftedness, with giftedness implying outstanding achievement or ability in each or a combination of the seven intelligences.

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Despite the considerable advantages of deep explorations into how (not just how well) the gifted find and solve problems, such efforts lack a broad perspective that takes into its sweep the social as well as some other psychological dimensions of high potential. Included in this expanded view is the theory of Dabrowski (1902-1980), a Polish psychiatrist and psychologist. He formulated a theory of emotional development based on his studies of gifted and creative individuals that also provides a broad perspective and structure for the understanding of the gifted. The advantage to Dabrowski's approach is that it provides the logical basis for individual psychology, that is, for the study of structure and design of mental processes (levels of personality development) and the manner in which their elements vary across individuals (overexcitabilities), as opposed to the study of individual differences in terms of group norms and deviations from such norms (IQ). This structural approach is eminently suited for the study of the gifted individual. Everything discovered so far..... intellective factors, motivational factors, special aptitudes, Gardner's "intelligences"..... are all part of a picture which is always incomplete. This model of developmental potential fills in certain broad and important areas (Piechowski & Colangelo, 1984).

The Concept of Overexcitabilities and Their Relationship to Giftedness

One of these important areas and a key component of this theory are the overexcitabilities, which along with special talents and gifts, constitute the potential for emotional development (Dabrowski & Piechowski, 1977). Overexcitabilities have the effect of making concrete stimuli more complex,

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enhancing emotional content, and amplifying every experience. The term overexcitability comes from the Polish, and the intended meaning is of a robust surplus and abundance or a "superstimulatability." This surplus and abundance is of sensory awarenesses, sensory input and nervous tension. These heightened responses to stimuli exceed the value of an average response in intensity, frequency, or duration, hence "over" excitability (Piechowski, Silverman & Falk, 1985). Enhanced excitability allows for a broader, richer, multi-level, and multidimensional perception of reality (Dabrowski & Piechowski, 1977). This theory through the concept of the overexcitabilities provides a new approach to the perception of giftedness and a new understanding of the potential for higher development in the gifted.

Review of the literature shows that studies have been conducted that show there are three out of the five types of overexcitabilities are present in gifted individuals. The three dimensions, the imaginational overexcitability, the intellectual overexcitability and the emotional overexcitability, are those which differentiate the gifted from the average population (Piechowski & Colangelo, 1984; Silverman & Ellsworth, 1980). It is not merely a matter of being smart, learning quickly, or of being able to create ideas or objects. Rather it is a qualitative difference in perceptions, reactions, and modes of processing. The gifted are unique in ways and dimensions that have only begun to be discovered. Recognizing and measuring overexcitabilities may be one key to learning about and providing for these differences (Schiever, 1985). Perhaps as the ability to recognize and measure overexcitabilities is substantiated, practitioners can begin to foster and develop these modes of processing by the enhancement of self-efficacy.

Historically, these same characteristics identified by Dabrowski as

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overexcitabilities have been observed, studied, and noted for many years as characteristics associated with giftedness. Barron (1963), Goertzel, Goertzel, and Goertzel (1978), and Hollingworth (1942) recognized that gifted and talented people are energetic, enthusiastic, intensely absorbed in their pursuits, endowed with vivid imagination, sensuality, moral sensitivity, and emotional vulnerability. Goertzel, Goertzel, and Goertzel (1978) observed that the eminent as children and as adults "continue to react strongly to stimuli - sexual, esthetic, emotional, intellectual." William James (1902) believed that eminence is a combination of superior intellect with ardor and excitability of character. And from his study of English men of science, Galton (1874) concluded that in a man of genius, the ideas come as by inspiration; in other words, his character is enthusiastic, his mental associations are rapid, numerous and firm, his imagination is vivid, and he is driven rather than drives himself.

Dabrowski formulated his theory of emotional development to describe these characteristics and unique developmental patterns he saw in society's most talented members. He observed that gifted children exhibit stronger responses to stimuli in five domains - emotional (intensity of feeling, capacity for emotional depth, sensitivity, empathy, anxiety, self-criticism), intellectual (curiosity, concentration, theoretical thinking, introspection, extensive reading, capacity for sustained intellectual effort, love of learning, problem solving, and moral concern), imaginational (unusual visualization abilities, vivid visual recall, inventiveness, love of poetry and drama, active fantasy life), sensual (heightened experience of the senses, aesthetic appreciation, a desire for physical admiration, sensualism, sexuality), and psychomotor (surplus of energy) (Silverman,1993). He hypothesized that these high-powered response patterns were innate, and that high intensity, frequency and duration of these

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elements indicated greater developmental potential than the norm (Dabrowski, 1977). This theory of human development states that the overt characteristics of intelligence, sensitivity, and creative ability may be the indicators of a deeper structural organization. Dabrowski's Theory of Positive Disintegration (TPD) developed in 1964 and later called the Theory of Emotional Development (TED) establishes five areas of human development (emotional, intellectual, imaginational, sensual, and psychomotor) which, in various combinations, could be representative of an innate potential for a higher level of development. Not all overexcitabilities are apparent to the same degree in one person, and it is the degree of intensity of the different overexcitabilities which could be used as an indicator of giftedness (Gallagher, 1986). Clearly that awareness of the overexcitabilities is important to understanding of the heightened intellectual curiosity, sensitivity, imagination, sensuality, and energy possessed by gifted and creative children and adults (Miller & Silverman, 1987). Analysis showed that intellectual talent tends to be associated with high scores on three dimensions (intellectual, imaginational, and emotional), while artistic talent tends to be associated with high scores on all five dimensions (especially strong on imaginational and emotional). It is through the overexcitabilities that the individual's motivation, attitudes, and orientation towards others are noticeably altered (Piechowski, 1975). The overexcitabilities work in combination with the environment and the individual's drive to excel to form what is recognized as a gifted person (Gallagher, 1986).

According to the theory of emotional development (TPD), the strength, richness, and depth of talent are a function of the strength of these five dimensions or overexcitabilities. These dimensions constitute a model of developmental potential representing the person's level of energy, sensual

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aliveness, pursuit of knowledge and truth, imagination, and the life of feeling. Without some degree of intensity in these five areas in the individual, talent is mere technical facility, a computational machinery without conception and heart (Piechowski, Silverman & Falk, 1985). These five dimensions may be thought of as channels of information flow and as modes of experiencing. They can be wide open, narrow, or barely present (Piechowski, 1986). Overexcitabilities contribute to the individual's psychological development, and so their strength is taken as a measure of developmental potential (Piechowski, 1986). Significant correlations exist among intellectual, imaginational, and emotional overexcitabilities. The result is that when one of these variables is included as a predictor, the contribution of the others is diminished (Piechowski, Silverman & Falk, 1985). These heightened sensitivities to various types of stimuli create psychic tension. Psychic tension is a developmental necessity, the main source of the motivation to grow and change (Dabrowski, 1964). Analysis reveals that the combination of high degrees of emotional and intellectual overexcitability accounts for approximately forty-eight percent of the variance in developmental level (Lysy & Piechowski, 1983). Intellectual giftedness is often manifested in avidity for learning, curiosity, inquisitiveness, problem solving and the like. Because these characteristics partly overlap with expression of intellectual overexcitability, it was expected to find a dominant peak in this dimension. Surprisingly, however, emotional, imaginational, and intellectual scores are more or less equal (Piechowski, Silverman & Falk, 1985). Intellectual overexcitabilities occupies a special position. On the one hand, it is related to intellective capabilities; on the other, as intellectual fervor and a drive to pursue existential and moral questions, it goes beyond the purely intellective. In individuals, the three variables (intellectual, imaginational, and emotional) are

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not consistently linked. There is no consistent pattern. A gifted individual may be high or low on any of the three overexcitabilities but will not be low on all of them at once and is very likely to have elevated scores on any two (Piechowski, Silverman & Falk, 1985). The inconsistent pattern allows for a great deal of individual variation (Piechowski, Silverman & Falk, 1985). Overexcitabilities represent the kind of endowment that feeds, nourishes, enriches, empowers, and amplifies talent. Although the level of each overexcitability varies considerably across gifted individuals, the overexcitabilities are consistently and reliably present in a gifted group of any age (Piechowski & Colangelo, 1984). This constancy supports the idea of developmental potential as original equipment (Piechowski, 1975). Although overexcitabilities as original equipment is supported by the literature, there are other factors that make up the total concept of personality. Personality is the dynamic interaction between hereditary, environmental factors, and the autonomous factor. Heredity determines the developmental potential of the individual. The actualization of that potential is dependent upon environmental support and activation of the autonomous factor, the consciously developed independence from lower level drives (Silverman, 1983). Rogers (1963) postulated there is emotional development and personal growth toward a fully functioning personality: a "goal-directed attempt" of the organism that is accompanied by emotions in order to meet its needs. The primary tendency of the organism is to maintain, actualize, and enhance itself. This actualizing tendency follows lines laid down by genetics. Maslow (1970) contends there is an inborn drive toward self-actualization; human beings are interested in growing. Metamotivation refers to growth tendencies which arise out of the organism's drive to fulfill its inherent potential. Pressey (1955) and Feldman (1982) also acknowledge the

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importance of innate predispositions and abilities. Feldman (1982) proposes that the attainment of excellence is the result of the convergence of numerous hereditary, developmental, and environmental forces. Other indications that the overexcitabilities are inherent characteristics have been found by Briskin (1973) and Piechowski (1978). They have found high degrees of emotional sensitivity and compassion in children as young as four years of age. Silverman (1983) has also found strong indications of compassion, sensitivity, and intellectual overexcitability in very young gifted children.

Dabrowski believed that the stronger the developmental potential, the less significant is the influence of environment. However, if the developmental potential is weak, or indistinct, if it does not propel development in a given direction, environmental influences may prove decisive (Kawczak, 1970). The factors considered essential for development can be grouped into three categories: (a) those related to heredity, described as innate constitutional characteristics and potentialities; (Piechowski, 1975); (b) those related to the social environment; and (c) those related to autonomous processes which include self-awareness, self-control, and the self-determining of one's values (Miller & Silverman, 1987). Dabrowski posited the view that individuals are endowed with different emotional capacities just as they are with different intellectual abilities and that "the emotional sphere at every level of development is the decisive factor that determines and controls human activity" (Dabrowski, 1970, p. 112). The heightened emotional response that Dabrowski believes to be the decisive factor in the personality development of an individual may be directed into one or more of the excitabilities (Miller & Silverman, 1987). The number and intensity of the overexcitabilities, special talents and abilities, and intelligence are the determiners for the potential for

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multilevel development (Miller, Silverman & Falk, 1994). They are the building blocks of the levels. The greater their number and intensity, the greater the developmental potential (Nelson, 1989) and the higher the evolution of the personality with a few individuals reaching "the personality ideal" at Level 5. As Dabrowski described it, the evolution of a personality is an autonomous intrapersonal process of sensing and then reaching for and becoming something (someone) larger and truer.

Definition of Intrinsic Motivation

In the evolution to become someone larger and truer, many non-intellective personality traits or attributes must be present in the developmental process. Motivation is among the most important. Motivational constructs based on drives, operant learning, and even optimal arousal assume that the organism is a system that automatically adjusts and responds to mechanical forces impinging on it. But such models of behavior do not account for one obvious feature of human experience.....namely, that people are aware of their own actions. The self is a system with its own energy, its own structure, and its own capacity to initiate and direct action (Csikszentmihalyi & Massimini, 1985). This ability to initiate and direct one's action is probably what characterizes Piechowski's (1991) concept of overexcitability.

Much human behavior is directed and sustained overlong periods, even though the external inducements for it may be few and far between. Under conditions in which external imperatives are minimal and discontinuous, people must serve as agents of their own motivation and action. The intrinsic motivational bases for most intentional behavior can be viewed as stemming

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from a desire to feel self-determining, competent, and related to others (Adelman & Taylor, 1990; Deci & Chandler, 1986; Deci & Ryan, 1985). Individuals who seek to be self-determining and competent (self-efficacious) characteristically seek their principal satisfactions by concentrating on intrinsic factors such as responsibility, challenge, creativity, opportunities to learn, and task achievement.

Intrinsic motivation functions as a scheme or script that includes not only affective elements but cognitive elements as well (Brophy, 1987). The motivation is intrinsic when a person does something because he or she gets a reward directly from doing the activity itself rather than because of a reward that comes after. The reward of intrinsic motivation is not a tangible object; neither is it an abstract, symbolic reward like money or status. Instead, intrinsic rewards consist of a direct experience, a state of consciousness that is so enjoyable as to be autotelic (having its goal within itself). The most synergistic use of human potential is when psychic energy gets invested in activities that are simultaneously autotelic and productive (Csikszentmihalyi and Nakamura, 1989).

Self-Efficacy

An important, cognitively based source of self-motivation relies on the intervening processes of goal setting and self-evaluative reactions to one's own behavior i. e. self-efficacy (Bandura & Schunk, 1981). This form of self-motivation, which operates largely through internal comparison processes, requires personal standards against which to evaluate ongoing performance. By making self-satisfaction conditional on a certain level of performance,

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individuals create self-inducements to persist in their efforts until their performances match internal standards. Both the anticipated satisfaction for matching attainments and the dissatisfactions with insufficient ones provide incentives for self-directed actions (Bandura & Schunk, 1981). Schunk (1981) believes there is growing evidence that personal expectations influence achievement behaviors. Although research has been conducted within various theoretical traditions, it is united in its emphasis on self-efficacy i.e. individuals' beliefs concerning their capabilities to exercise control over important aspects of their lives (Bandura, 1986; Brophy, 1983; Dweck, 1986; McCombs, l984; Schunk, 1984). Self-efficacy is the perceived or personal beliefs about one's capabilities to organize and implement actions necessary to attain designated levels of performance and it can have diverse effects on behavior (Bandura, 1977, 1982). Self-efficacy can affect choice of activities. People who hold a low sense of efficacy for accomplishing a task may avoid it, whereas those who believe they are more capable should participate more eagerly. Self-efficacy is also believed to affect effort expenditure and persistence. Individuals acquire information about their self-efficacy from performance accomplishments, vicarious experiences, reflections on behavior of others, forms of persuasion, and physiological indexes (Schunk, 1989). Information acquired from these sources does not automatically influence self-efficacy; rather, it is cognitively appraised (Bandura, 1977, 1982). Efficacy appraisal is an inferential process in which persons weigh and combine the contributions of such personal and situational factors as their perceived ability, the difficulty of the task, amount of effort expended, amount of external assistance received, task outcomes, patterns of successes and failures, perceived similarity to modes, and persuader credibility (Schunk, 1989). Perceived self-efficacy predicts degree of

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change in diverse types of social behavior (Kazdin, 1978). Efficacy appraisal typically does not occur for habitual routines or for tasks requiring skills that are well established (Bandura, 1982).

Self-efficacy is definitely not the only influence on behavior. High self-efficacy will not produce competent performances when requisite skills are lacking. Outcome expectations, or one's beliefs concerning the outcomes of one's actions, also are important. Individuals are not motivated to behave in ways that they believe will result in negative outcomes. Another influence on behavior is the relative value people place on perceived outcomes, or how much they desire those outcomes relative to those of other behaviors. Assuming that people possess adequate skills, believe that positive outcomes will result, and value those outcomes, self-efficacy is believed to influence the choice and direction of much of human activity (Schunk, 1989).

Other Variables of Intrinsic Motivation
A Context for Self-Efficacy

The idea that personal expectations can influence behavior is not new. Tolman (1959), viewed learning as the forming of expectancies that certain behaviors will produce given outcomes. Rotter's (1966) locus of control emphasizes perceived control over outcomes. In this conception, people differ in whether they believe that outcomes occur independently of how one behaves (external control) or outcomes are highly contingent on one's behavior (internal control). Also relevant to the present formulation (Schunk, 1981) are expectancy-value theories, which stress the idea that motivation is a joint function of one's beliefs concerning outcomes of one's actions and the value one places on those outcomes (Atkinson, 1964; Vroom, 1964). The Expectancy X Value theory

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(Feather, 1982) posits that the effort an individual will expend on a task is a product of: (1) the degree to which the individual expects to be able to perform the task successfully if he applies himself; and (2) the degree to which the individual values participation in the task itself or the benefits or rewards that successful task completion will bring to him. This theory assumes that no effort will be invested in a task if either factor is missing entirely, no matter how much of the other factor may be present. Individuals do not invest effort on tasks that do not lead to valued outcomes even if they know they can perform the tasks successfully, and they do not invest effort on even highly valued tasks if they are convinced that they cannot succeed no matter how hard they try.

Attribution theories are also relevant (Schunk, 1981). The basic assumption is that people seek to explain the causes of events in their lives (Heider, 1958; Kelley and Michela, 1980; Weiner, 1985). Research shows that students often attribute their successes and failures to such factors as ability, effort, task difficulty, and luck. In turn, attributions influence expectancies of future successes. Self-efficacy theory postulates that self-efficacy influences choice of activities, persistence, effort expenditure, and task accomplishments (Bandura, 1982). Individuals who feel more efficacious about effectively managing situations are apt to choose to engage in the activities more often, persist in the face of difficulties, expend greater effort to attain their goals, and attain a higher level of performance for valued outcomes (Schunk, 1981). Attributional feedback on individual's achievement behaviors depends on such factors as the sequence of feedback, the type of student, and the difficulty of the task. Goal properties exert important effects on an individual's achievement behaviors. Individuals enter tasks with varying levels of self-efficacy that are a function of aptitudes and prior experiences. As an individual engages in

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learning activities, cues emanating from task engagement variables signal how well learning is taking place. This information affects beliefs about capabilities for further skill improvement. In turn, self-efficacy bears a positive relationship to motivation and learning. Developmental factors should influence the cues that individuals derive from task engagement variables. Short term and specific goals should be maximally motivating and provide clear information to those less developed. With development, individuals will become able to represent long-term objectives in thought, break such objectives into a series of subgoals, and self-regulate their performances over time (Schunk, 1981).

Relationship of Self-Efficacy to the Overexcitabilities

Self-efficacy is a principal component of self-regulation. As self-regulation develops, the perception of high self-efficacy is expanded and increased. The higher the perception of the capability to exercise control over the important aspects of one's life and to organize and implement actions necessary to attain designated levels of performance, the greater the propensity toward social activism (Forward & Williams, 1970; Marsh, 1977; Muller, 1972, 1979). The studies of social and political activism indicate that detrimental conditions prompt forceful action in more able members of society (Bandura, 1973). Among members of dissident groups, those who protest social inequities, compared to non-participants, are generally better educated, have greater self-pride, and have a stronger belief in their ability to influence events in their lives (Caplan, 1970; Crawford & Naditch, 1970). In many nations university students are the spearhead of political activism (Lipset, 1966). Also consistent with the findings of these studies, is the concept of emotional

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development, fueled by the overexcitabilities, as the focus on the self gives way to a more universal focus allowing for higher levels of universal social attainment.

Summary

In summary, the operational definition of giftedness continues to evolve as the understanding of human development continues to broaden. Dabrowski's theory is based on his belief that the capacity for psychological and emotional development comes through the enhanced reactivity in areas of functioning called overexcitabilities: the stronger the overexcitability, the stronger the potential for development. It is the emotional overexcitability, and through this channel the emotional life, that empowers and guides an individual toward a higher level (Lysy & Piechowski, 1983). Schunk also postulates that developmental factors will influence the cues that individuals derive from task engagement and with development will become able to self-regulate performance over time. Self-efficacy and self-regulation go hand in hand. As self-regulation becomes internalized, emotional development is increased, and the individual becomes more and more empathic with their world. A universal syntony becomes the focus.....the self takes a back seat to the concerns and needs of others. The individual attains a more global focus, an eye turned outward instead of inward. The problems of man become paramount instead of those of the individual. The individual strives for excellence of self by serving others.

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CHAPTER THREE

METHODOLOGY

Various studies have been conducted investigating internal motivation using self-efficacy as a variable (Bandura, 1986; Bandura & Schunk, 1981; Brophy, 1983; Dweck, 1986; McCombs, 1984; Schunk, 1984; Weiner, 1985). Others have explored the concept of emotional development and the variables of the overexcitabilities as put forth by Dabrowski's Theory (Dabrowski & Piechowski, 1977). Further research is needed to explore the relationship between self-efficacy, a variable of intrinsic motivation, and the overexcitably variables that are an innate factors of emotional development. The purpose of this study is to investigate the relationship between the overexcitability variables and self-efficacy in gifted students.

This chapter describes the research method employed to conduct this study. After a description of the participating subjects, there follows an analysis of the instruments used, procedures followed, and design utilized.

Subjects

The subjects were a group of sixth through eight grade gifted students. Seventy-three students were invited to participate in the study. Two cases chose not to participate. Two more cases failed to complete one of the instruments (OEQ) leaving 69 fully participating students (N=69). The participants are in the gifted program of a large suburban, public middle school

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(850 students) in Oklahoma. The students were selected for the district's gifted program based on identification through multiple criteria. The criteria for selection were high ratings in any or several of the following areas: achievement scores, IQ scores, grades, nomination by peers, parents, teachers, and self, and various behavior checklists. Students are socioeconomically lower to middle class. The majority of the students in the gifted program are white with about 7% black, 10% Native American, 2% Hispanic, and 2% Asian.

These students were invited to participate in the investigation with parental permission (Appendix A) after proposal approval had been obtained from the Oklahoma State University Institutional Review Board (Appendix B) and Tulsa Independent Public School District (Appendix C) .

Instruments

For the purpose of this study the Overexcitability Questionnaire developed by Michael Piechowski (Lysy & Piechowski, 1983) was used. It was developed to assess the levels of the five modes of "superstimulatability" or the overexcitabilities. This instrument contains twenty-one open-ended questions that indicate the levels of the intensities of the overexcitabilities: intellectual, imaginational, emotional, sensual, and psychomotor. Twenty of these items were used in this study because one item was determined to be inappropriate for this age group and normative data would not be used. A potential weakness of the instrument for middle school level subjects is its dependency on reading and writing abilities. Scores for the Overexcitability Questionnaire (OEQ) are reported in terms of the total sum of each of the five overexcitabilities. Each overexcitability is scored on a range from 0 (no evidence) to 3 (high intensity).

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The maximum score obtainable is 60. Trained raters reported an interrater reliability of .8 to .9. The two raters scoring the instrument for this study were not formally trained on this instrument, but were experienced at rating other similar types of instruments. The scoring of the individual responses was performed after the raters had practiced scoring the instrument following the coding guidelines used by trained raters. Recommended scoring procedures were followed to obtain interrater reliability and the required consensus score. This procedure began with discussion and then practice of the methods used by trained raters. The student responses were scored separately by each of the raters. Comparisons of scores were made. If any differences were found in the scoring, the raters came to a consensus on the score. Overexcitability variables are assumed to be innate tendencies representing exceptional responsiveness to the external world and the internal world of the individual (Falk, Piechowski & Lind, 1984); they are above and beyond what is considered to be normal responses.

TABLE 1

INTERRATER RELIABILITY ON THE OVEREXCITABILITY QUESTIONNAIRE

	Consensus
Intellectual	.84
Imaginational	.78
Emotional	.83
Psychomotor	.90
Sensual	.73

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The interrater reliability on all areas combined was r= .82. Table I demonstrates the range of interrater reliability on all five scales as .73 to .90. The interrater reliability of the trained raters has been reported to be between .8 and .9 (Falk, Piechowski & Lind, 1984). These raters have been trained by Dr. Frank Falk at the University of Akron to a skill level where the interrater reliability reaches above .9. At present there have not been many studies done using the Overexcitability Questionnaire. This instrument is one of two available for a quantitative study of Dabrowski's TED. This instrument was chosen over the six item simplified version to increase validity. The OEQ items require written response to questions that ask about situations potentially intense for the respondent: for example "What are your special daydreams and fantasies?" This question could potentially be answered with a response that indicated an intense, easily stimulated sensitivity in any of the psychic overexcitabilities such as the imaginational, emotional, sensual, etc.

For the purpose of this study, a measure of self-efficacy, the Self-Efficacy Scale (SES), was developed by Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, and Rogers (1982). Sample items demonstrate the way students perceive their belief in their own confidence such as "When I make plans, I am certain I can make them work" and "If I can't do a job the first time, I keep trying until I can." This instrument measures general levels of belief in one's competence. The Self-Efficacy Scale is a thirty item instrument that measures general expectations of self-efficacy that are not tied to specific situations or behavior. The assumptions underlying this instrument are that personal expectations of mastery are a major determinant of behavioral change, and that individual differences in past experiences and attributions of success lead to different levels of generalized self-efficacy expectations. The Self-Efficacy

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Scale consists of two subscales, general self-efficacy items (2, 3, 4, 7, 8, 11, 12, 15, 16, 20, 22, 23, 26, 27, 29, 30) and social self-efficacy items (6, 10, 14, 19, 24, 28). Seven items are filler and are not scored. Some items are presented in a negative fashion and are reverse-scored. The scores for all items are summed. The higher the score, the higher the self-efficacy expectations. The Self-Efficacy Scale has a fairly good internal consistency (.86 for the general subscale and .71 for the social). The Self-Efficacy Scale was shown to have good criterion-related validity by accurately predicting that people with higher self-efficacy would have greater success than those who score low in self-efficacy in past vocational, educational, and monetary goals. The Self-Efficacy Scale also demonstrated construct validity by correlating significantly in predicted directions with a number of other measures such as the Ego Strength Scale, the Interpersonal Competency Scale, and the Rosenberg Self-Esteem Scale (Fischer & Corcoran, 1994). The Self-Efficacy Scale is an instrument that has been used to assess adult levels of self-efficacy. There is no data available using this instrument for adolescents. However, the questions are straightforward, utilizing an easy to read and to understand format.

Procedures

To assure the protection of human subjects, the Oklahoma State University Institutional Review Board (IRB) (Appendix B) and the local school district reviewed and approved the proposal (Appendix C). A permission slip was sent to parents/guardians of students. All parents/guardians consented to the inclusion of their children in the study (Appendix A). Students were given a verbal explanation of the research study and then extended a verbal and written

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invitation to participate. Students were then administered the Overexcitability Questionnaire and the Self-Efficacy Scale over a two day period.

All instruments were administered by the researcher to assure standardization. Students were given the same instructions, assurances and time allotment. Students were instructed to choose the answer that was the most descriptive of them on the SES. They were instructed to respond freely and honestly on the OEQ. They were repeatedly assured that there were no wrong answers. They received assurances that no one but the researchers would read their answers. Subjects were told that they would receive an identification number to assure anonymity of all responses.

Design

The design of this study is a ex post facto descriptive study to determine the relationship between self-efficacy and each of the five overexcitabilities in a middle school gifted population. The relationship of gender and grade to these variables was also investigated.

Hypotheses

Question 1: What is the relationship between self-efficacy and each of the overexcitability variables?

Hypotheses:

There is a relationship between self-efficacy and

intellectual overexcitability

imaginational overexcitability

emotional overexcitability

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sensual overexcitability

psychomotor excitability.

Null: There is no relationship between self-efficacy and the overexcitability variables.

Question 2: What are the effects of gender and grade on self-efficacy and the overexcitability variables?

Hypotheses:

There is a difference between gender and grade on

intellectual overexcitability

imaginational overexcitability

emotional overexcitability

sensual overexcitability

psychomotor overexcitability

Self-Efficacy.

Null: There is no difference between gender and grade on the self-efficacy and the overexcitability variables

Question 3: What differences, if any, are there in self-efficacy across the overexcitability variables?

Hypotheses:

There is a difference in self-efficacy across

intellectual overexcitability

imaginational overexcitability

emotional overexcitability

sensual overexcitability

psychomotor excitability.

Null: There is no difference in self-efficacy across the overexcitability variables.

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Analysis of Data Procedures

Question 1 was analyzed using a Pearson product moment correlation coefficient to determine whether or not a relationship exists between self-efficacy and the overexcitability variables.

Question 2 was analyzed using a two-way ANOVA or a multiple classification of analysis. Self-efficacy and the overexcitabilities were used as dependent variables and two levels of gender and three levels of grade served as independent variables.

Question 3 was analyzed using one way analysis of variance (ANOVA) procedures to determine whether or not differences occur between high and low self-efficacy (split by median) and each of the overexcitability variables.

Statistical computations were carried out using the Statistical Package for the Social Sciences (Windows 3.1 version).

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CHAPTER FOUR

RESULTS

The purpose of this study was to determine if there was a relationship between self-efficacy and the overexcitability variables of emotional, sensual, intellectual, imaginational, and psychomotor. The relationship of gender and grade level to self-efficacy and the overexcitability variables was analyzed. In addition, the differences in self-efficacy across the overexcitability variables were investigated. Seventy-one students from an urban middle school gifted program were given the Self-Efficacy Scale and the Overexcitability Questionnaire to help clarify the following questions: What is the relationship between self-efficacy and each of the overexcitabilities (intellectual, imaginational, emotional, sensual, and psychomotor)? What are the effects of gender and grade on each of the overexcitability variables and self-efficacy? What differences, if any, are there in self-efficacy across the overexcitability variables? This chapter includes the descriptive and inferential statistical procedures and results that pertain to each of these research questions.

Descriptive Statistics

Students were given the Self-Efficacy Scale and instructed to read each of the thirty statements and decide to what extent each statement described them. They were told that there were no right or wrong answers, and that they

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would agree with some of the statements and disagree with others. The format of the Self-Efficacy Scale was a Likert-type instrument with responses of disagree strongly, disagree moderately, neither agree nor disagree, agree moderately, and agree strongly (A to E). The students were instructed to use an identification number to provide anonymity. Students were assured that individual results would be kept strictly confidential. The resulting Self-Efficacy Scale scores were totaled for each of the students that completed both instruments (N=69). There were two participants that chose not to complete the Overexcitability Questionnaire bringing the total participation from N=71 to N=69. One participant was a 6th grade female and the other was an 8th grade male. Absence from school due to illness was the cause of their failure to participate on the OEQ.

Participants were also given the Overexcitability Scale and instructed to read and respond to each of the twenty questions. Again, it was explained to the students that there were no right or wrong answers. They were encouraged to express their true feelings and ideas. They were given as much time as needed to complete the questionnaire. Each of the N=69 participants received five scores (emotional, imaginational, intellectual, sensual, and psychomotor) on each question of the Overexcitability Questionnaire. Each score could range in intensity from 0 to 3. The maximum score possible for each overexcitability is 60.

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Table 2 shows the frequency distributions by grade and gender of the study's participants (N=71). The groups were already in existence and not considered to be random. There were twenty-five in the sixth grade group, twenty-two in the seventh grade group, and twenty-four in the eighth grade group. When grouped by gender, there were thirty-six in the male group and thirty-five in the female group, an almost equal split. There were two invalid cases due to incomplete OEQs.

TABLE 2

FREQUENCY DISTRIBUTION BY GRADE AND GENDER

OF N= 71 SUBJECTS

Grade	f	%
Sixth	25	34%
Seventh	22	30%
Eighth	24	33%
Missing cases	2	3%
Gender		
Male	36	49%
Female	35	48%
Missing cases	2	3%

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Table 3 displays by grade level the mean of all the scores, the standard deviation from the mean, the minimum score on responses given, and the maximum score on responses by grade on the Self-Efficacy Scale. Scores for the participants that did not complete both instruments were deleted.

TABLE 3

SELF-EFFICACY DESCRIPTIVE STATISTICS BY GRADE

	$\bar{x}$	S_x	Minimum Scores	Maximum Scores
Grade				
Sixth	84.80	12.98	55	107
Seventh	83.77	8.25	69	98
Eighth	87.38	8.30	74	107

The higher the score on the scale, the higher self-efficacy is perceived to be. The maximum score on this instrument was 110. This instrument was devised for adults and no adaptations were made for adolescents. Middle school students (11-14 years) are going through puberty and this may result in differences in individual scores. There is no known data from this scale for this age individual. The results of the Self-

Efficacy Scale revealed a generally high score for all grades. The median on the Self-Efficacy Scale was 85: 55-85 was considered low self-efficacy and 86-107 was considered high self-efficacy for the purposes of this study. The high seventh grade score was less than both the sixth and the eighth grade score possibly indicating a slightly lower self-efficacy during this developmental period.

Table 4 shows a bar graph of the means of each overexcitability by grade level. The psychomotor overexcitability is high for all grade levels. Overall, the means were higher for the overexcitabilities in the eighth grade level.

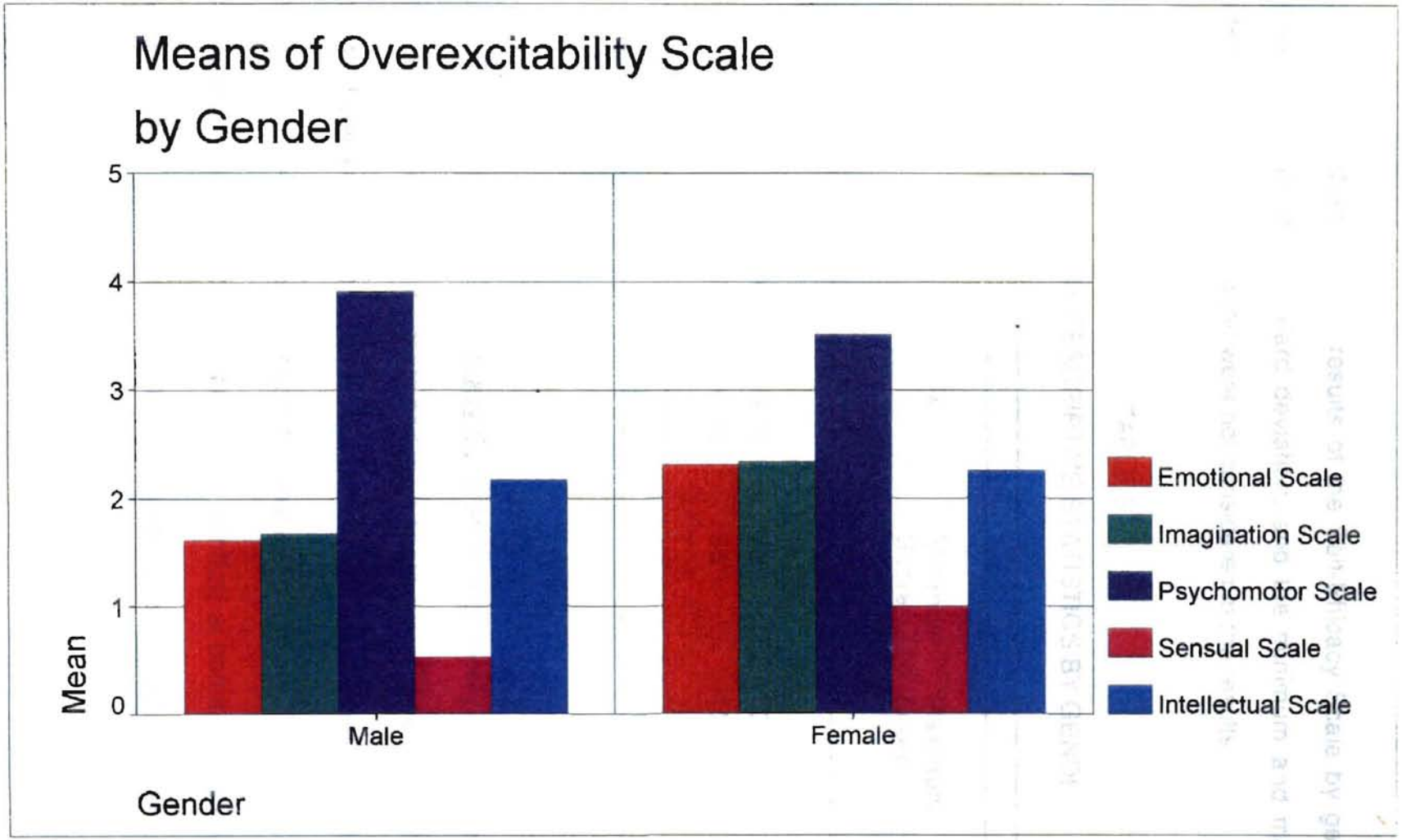
Means of Overexcitability Scale
by Gender
Mean
5
4
3
2
1
0
Male
Female
Gender
Emotional Scale
Imagination Scale
Psychomotor Scale
Sensual Scale
Intellectual Scale

Table 5 describes the results of the Self-Efficacy Scale by gender. It shows the mean, the standard deviation, and the minimum and maximum scores. The two invalid cases were not considered in the results.

TABLE 5

SELF-EFFICACY DESCRIPTIVE STATISTICS BY GENDER

	$\bar{x}$	Sx	Minimum Score	Maximum Score
Gender				
Male	83.03	16.10	72	107
Female	86.66	10.73	55	107

The results of the Self-Efficacy Scale show a generally high score for both genders. Female participants had the highest overall means with the least amount of deviation from the mean. The outlier of 55 was scored by a 6th grade female. It was 14 points below that of the next closest score. This score could indicate any number of individual problems: conflicts at home or at school, a misplacement in the program, or a temporary lack of self-efficacy due to temporary problems.

Table 6 presents a bar graph of the means of the overexcitability scale by gender. The mean of the psychomotor overexcitability is shown to be slightly higher in the male participants. However, both genders show higher psychomotor overexcitabilities than any other overexcitability. Females displayed higher means in the emotional, imaginational, and sensual overexcitabilities. The means of the intellectual overexcitability was roughly the same.

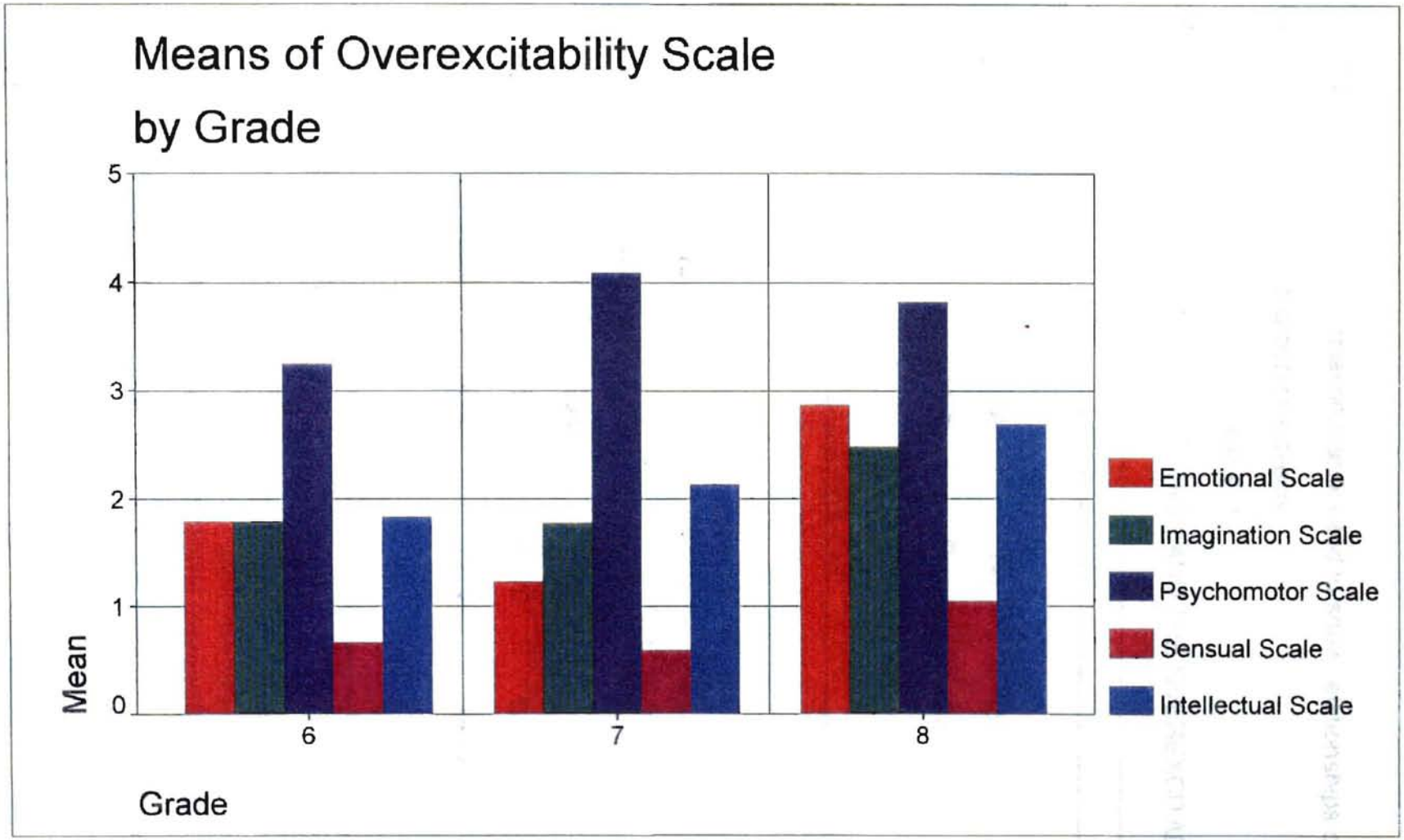
Means of Overexcitability Scale
by Grade
Mean
5
4
3
2
1
0
6
7
8
Grade
Emotional Scale
Imagination Scale
Psychomotor Scale
Sensual Scale
Intellectual Scale

Table 7 shows the correlation matrix used to show relationships of measures collected on this group of subjects.

TABLE 7

CORRELATION MATRIX OF SELF-EFFICACY AND THE OVEREXCITABILITIES

Matrix of Corr.						
	(1) Emot	(2) Imag	(3) Intel	(4) Psy	(5) Sens	(6) SES
Emot	1.000					
Imag	.4001	1.000				
Intel	.2997	.2224	1.000			
Psy	.0754	.0723	.0946	1.000		
Sen	.2108	.0199	.2530	.2020	1.000	
SES	.1207	.3488	.2180	.1918	.1415	1.000

p=.05, critical value =.2412

The significant correlations are the emotional overexcitability with the imaginational (.4001 p=.05), the intellectual with the emotional (.2997 p=.05), the intellectual with the sensual (.2530 p=.05), and self-efficacy with the imaginational overexcitability (.2593 p=.031).

Inferential Statistics

Pearson product moment correlations, a two-way analysis of variance (multiple classification of variance), and a one-way analysis of variance (ANOVA) procedures were included in the inferential tools used to test the research hypotheses.

Hypothesis:

There is a relationship between self-efficacy and

intellectual overexcitability

imaginational overexcitability

emotional overexcitability

sensual overexcitability

psychomotor overexcitability.

Null: There is no relationship between self-efficacy and the overexcitability variables.

Hypothesis:

There is a effect of gender and grade on

self-efficacy

intellectual overexcitability

imaginational overexcitability

emotional overexcitability

sensual overexcitability

psychomotor overexcitability

Null: There is no effect of gender and grade on the self-efficacy and the overexcitability variables.

Hypothesis:

There are differences in self-efficacy across the overexcitabilities:

intellectual overexcitability

imaginational overexcitability

emotional overexcitability

sensual overexcitability and

psychomotor excitability.

Null: There are no differences in self-efficacy across the overexcitability variables.

Table 8 reveals that there was a significant relationship between self-efficacy and the imaginational overexcitability. The correlation between the imaginational overexcitability and self-efficacy may be indicative of the ability to invent coping strategies and create spontaneous imagery as an expression of emotional tension during this developmental period. Self-efficacy may be fostered by this overexcitability.

TABLE 8

PEARSON CORRELATIONS OF SELF-EFFICACY WITH THE OVEREXCITABILITY SCALE (N=69)

Overexcitability Scale Factors	Self-Efficacy Scale r
Intellectual	.22
Imaginational	.34*
Emotional	.12
Sensual	.14
Psychomotor	.19

*Significant relationship (r=.34 p<.05) between imaginational overexcitability and self-efficacy.

TABLES 9-14
ANALYSIS OF VARIANCE RESULTS

Tables 9-14 depict the results of the multiple classification analysis of variance (ANOVA). Table 9 shows the effects of grade and gender (independent variables) on each of the overexcitabilities and self-efficacy (dependent variables). There was a significant two-way interaction effect found between grade level and gender on the intellectual scale ($F=3.910$ $p<.05$) with 8th grade females achieving a significantly higher intellectual overexcitability effect (Appendix E). Females develop more rapidly at this age than do their male counterparts. This could be an indication of a developmental process at work in the intellectual overexcitability. Table 10 shows that there were no effects found between gender and grade and the imaginational overexcitability. Table 11 shows a main effect between grade and the emotional overexcitability also indicating a possible developmental effect ($F=3.502 < p.05$). There were no effects found between gender and grade on the sensual overexcitability (Table 12). Table 13 displays a two-way interaction effect found between gender and grade and the psychomotor overexcitability ($F=4.108 < p.05$) (Appendix F). Males highest effect was in eighth grade with females having the highest effect in seventh. This might be a further indication of a developmental process that begins in females earlier than in males. There were no significant effects found between gender and grade and self-efficacy (Table 14).

There was a significant interaction effect between gender and grade and the intellectual overexcitability.

TABLE 9

ANALYSIS OF VARIANCE RESULTS OF THE EFFECTS OF GENDER AND GRADE ON THE INTELLECTUAL OVEREXCITABILITY

Source of Variation	Sum of Squares	DF	Mean Squares	F	Significance of F
Main Effects					
Gender	.487	1	.487	.172	.680
Grade	9.320	2	4.660	1.648	.201
Interaction					
Gender Grade	22.120	2	11.060	3.910	.025*
Residual	178.137	63	2.828		
Total	209.739	68	3.084		

There were no significant effects between gender and grade and the imaginational overexcitability.

TABLE 10

ANALYSIS OF VARIANCE RESULTS OF THE EFFECTS OF GENDER AND GRADE ON THE IMAGINATIONAL OVEREXCITABILITY

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects					
Gender	9.397	1	9.397	2.666	.108
Grade	9.163	2	4.582	1.300	.280
Interaction					
Gender Grade	.061	2	.031	.009	.991
Residual	222.103	63	3.525		
Total	238.986	68	3.514		

There was a significant main effect between grade and the emotional overexcitability.

TABLE 11

ANALYSIS OF VARIANCE RESULTS OF THE EFFECTS OF GENDER AND GRADE ON THE EMOTIONAL OVEREXCITABILITY

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects					
Gender	11.084	1	11.084	2.269	.137
Grade	34.226	2	17.113	3.502	.036*
Interaction					
Gender Grade	1.532	2	.766	.157	.855
Residual	307.815	63	4.886		
Total	351.942	68	5.176		

There were no significant effects between gender and grade and the sensual overexcitability.

TABLE 12

ANALYSIS OF VARIANCE RESULTS OF THE EFFECTS OF GENDER AND GRADE ON THE SENSUAL OVEREXCITABILITY

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects					
Gender	4.489	1	4.489	2.950	.091
Grade	3.351	2	1.676	1.101	.339
Interaction					
Gender Grade	7.265	2	3.633	2.387	.100
Residual	95.854	63	1.521		
Total	110.290	68	1.622		

There was a significant interaction between gender and grade and the psychomotor overexcitability.

TABLE 13

ANALYSIS OF VARIANCE RESULTS OF THE EFFECTS OF GENDER AND GRADE ON THE PSYCHOMOTOR OVEREXCITABILITY

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects					
Gender	1.954	1	1.954	.484	.489
Grade	7.810	2	3.905	.967	.386
Interaction					
Gender Grade	33.189	2	16.595	4.108	.021*
Residual	254.480	63	4.039		
Total	298.203	68	4.385		

There were no significant effects between gender and grade and self-efficacy.

TABLE 14

ANALYSIS OF VARIANCE RESULTS OF THE

EFFECTS OF GENDER AND GRADE ON SELF-EFFICACY

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Main Effects					
Gender	13.823	1	13.823	.131	.718
Grade	168.109	2	84.054	.797	.455
Interaction					
Gender Grade	184.943	2	92.471	.877	.421
Residual	6854.723	63	105.457		
Total	7214.197	68	103.060		

TABLES 15-19

ANALYSIS OF VARIANCE OF SELF-EFFICACY FOR THE OVEREXCITABILITIES

Tables 15-19 present one way analysis of variance tables examining the differences in self-efficacy (independent) across the overexcitability variables(dependent): emotional, imaginational, intellectual, sensual, and psychomotor. Self-efficacy was divided into two groups based on a median score of 85: 1 the high group (SES-L) and 2 the low group (SES-H). Students scoring 85 and below on the Self-Efficacy Scale were grouped in the SES-L group (1) and those scoring above 85 were grouped in SES-H (2). The range of scores were from 55 to 107. There were 33 students in group 1 (SES-L) and 36 students in group 2 (SES-H).

Table 15 shows that there were no significant differences found between high and low self-efficacy and the intellectual overexcitability. There was a significant difference found between SEL-H and SEL-L for the imaginational overexcitability (Table 16) ($F=6.0629$ $p<.05$). Those students with high self-efficacy also had higher imaginational overexcitability. Table 17 displays that there was not a significant difference found between the SES-H group and the SES-L for the emotional overexcitability.. There were no significant differences found in high and low self-efficacy for the sensual overexcitability (Table 18). Table 19 shows no significant difference found between levels of high self-efficacy and low self-efficacy for the psychomotor overexcitability.

Table 15 explores the intellectual overexcitability and the two levels of self-efficacy: SES-H and SES-L. There were no significant differences found between these two groups.

TABLE 15

ANALYSIS OF VARIANCE OF SELF-EFFICACY FOR THE INTELLECTUAL OVEREXCITABILITY

Source of Variation	Sum of Squares	DF	Mean Squares	F	Sig. of F
				E	
Between Gr.	3.8805	1	13.8805	1.2630	.2651
Within Gr.	205.8586	67	3.0725		
Total	209.7391	68			

Table 16 examines the imaginational overexcitability with the two levels of self-efficacy. There was a significant difference found between the group with high self-efficacy and the imaginational overexcitability and the group with low self-efficacy and the imaginational overexcitability.

TABLE 16
ANALYSIS OF VARIANCE OF SELF-EFFICACY FOR THE IMAGINATIONAL OVEREXCITABILITY

Source	Sum of Squares	DF	Mean Squares	F	Sig. of F
				E	
Between Gr.	19.8315	1	19.8315	6.0629	.0164*
Within Gr.	219.1540	67	3.2710		
Total	238.9855	68			

Table 17 explores the differences between the SES-H group and the SES-L group on high and low self-efficacy for the emotional overexcitability. There were no significant differences found.

TABLE 17
ANALYSIS OF VARIANCE OF SELF-EFFICACY FOR THE EMOTIONAL OVEREXCITABILITY

Source	Sum of Squares	DF	Mean of Squares	F	Sig. of F
				E	
Between Gr.	.0531	1	.0531	.0101	.9202
Within Gr.	351.8889	67	5.2521		
Total	351.9420	68			

Table 18 shows that there were no between group differences for the high and low groups of the self-efficacy and the sensual overexcitability.

TABLE 18

ANALYSIS OF VARIANCE OF SELF-EFFICACY

FOR THE SENSUAL OVEREXCITABILITY

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
				E	
Between Gr.	3.1358	1	3.1358	1.9607	.1660
Within Gr.	107.1540	67	1.5993		
Total	110.2899	68			

Table 19 shows there were no significant differences found between groups.

TABLE 19

ANALYSIS OF VARIANCE OF SELF-EFFICACY SCALE FOR THE PSYCHOMOTOR OVEREXCITABILITY

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
				E	
Explained	.0110	1	.0110	.0025	.9605
Residual	298.1919	67	4.4506		
Total	298.2029	68			

The correlation between self-efficacy and each of the five different modes of the overexcitabilities was varied in magnitude although not in direction. All correlations were of a positive nature indicating that significant correlations might be found in a study with a larger sample. The magnitude of the correlation coefficient indicates that there is a significant degree of association between self-efficacy and the imaginational overexcitability, however the degree of association is a moderate one. There was one significant positive correlation between the imaginational overexcitability and self-efficacy ($r=.34$ $p<.05$). This relationship could indicate an ability to invent coping strategies that increase self-efficacy. This relationship is also indicative of underlying abilities. The students perception of the capacity to cope creatively with their environment and to release tension in imaginative ways may lead to higher levels of self-efficacy. Self-efficacy requires tools of personal agency and the self-assurance to use them effectively.

An analysis of variance (ANOVA) was computed to investigate the effects of gender and grade on overexcitability and self-efficacy. This was done to examine a possibility of developmental differences and gender differences. An interaction effect was found between gender and grade on the intellectual overexcitability ($F=3.910$ $p< .05$). Eighth grade females achieved a significantly higher intellectual overexcitability effect (Appendix E). This could be an indication of more rapid development in females than males. A significant main effect was found between grade and the emotional overexcitability ($F=3.502$ $p<.05$) with grade 8 achieving a significantly higher emotional score than grade 6 or grade 7. This effect could also be indicative of a developmental process at

work. There was also an interaction effect between gender and grade on the psychomotor overexcitability ($F=4.108$ $p< .05$). Males achieved a higher effect in the eighth grade while females highest effect was in the seventh grade (Appendix F). This could prove to be a further indication of a developmental process that begins earlier in females than males. There were no significant effects between imaginational overexcitability, sensual overexcitability, self-efficacy, and grade and gender.

Next, an analysis of variance (ANOVA) was calculated to explore differences in self-efficacy across the overexcitability variables. There was one significant difference between high self-efficacy and the imaginational overexcitability ($F=6.0629$ $p <.05$). Self-efficacy was divided into two groups based on a median of 85. Group 1 or SES-L scored 85 and below and group 2 or SES-H scored above 85. Those students scoring above the median of 85 also showed evidence of a higher levels of the imaginational overexcitability. The definition for imaginational overexcitability state that gifted individuals have a higher ability to use free play of the imagination and an ability to use spontaneous imagery as an expression of emotional tension (Silverman, 1993). These students have higher levels of self-efficacy and may be better able to cope with situational factors than their less efficacious peers. Gifted adolescents have been found to be consistently higher than their average peers in the domain of imaginational overexcitability (Silverman, 1993). Identifying students with high self-efficacy in this area might prove to be a useful way of including more students with high imaginational capabilities in gifted programs.

CHAPTER FIVE

CONCLUSIONS

The purpose of this study was to explore the relationship between the trait of self-efficacy and the overexcitability variables: intellectual, imaginational, and emotional, sensual, and psychomotor. There was a significant relationship found between self-efficacy and the imaginational overexcitability ($r=.34$ $p<.05$). This correlation may be indicative of the ability to invent coping strategies and create spontaneous imagery as an expression and release of emotional tension during this developmental period. This could enable students to cope with situational and environmental factors in a more efficient manner than other members of their age group. Self-efficacy may be fostered by this overexcitability. Is it possible that traditional school settings have caused inhibition of the remaining overexcitabilities found so abundantly in the gifted during childhood? Does the presence of imaginational overexcitability indicate that coping strategies are often used to produce "teacher pleasers" while others with less imaginational overexcitability fail by traditional standards, and are the underachievers of our schools?

There were correlations found between imaginational overexcitability and emotional overexcitability ($r=.4001$ $p<.05$), the intellectual with the emotional ($r=.2997$ $p<.05$) and the sensual with the intellectual ($.2530$ $p<.05$). These correlations and the positive direction of self-efficacy with all the overexcitabilities leads to speculation that future studies may reveal more

correlations between self-efficacy and the remaining overexcitabilities. The correlation between the overexcitabilities and self-efficacy were varied in magnitude, however, as previously mentioned, the direction of the correlation of all five overexcitabilities with self-efficacy was positive. With larger samples these relationships may prove to be stronger than indicated by the present study. These relationships may prove to have promising implications for identification procedures for gifted programs. If a relationship between self-efficacy and the remaining overexcitabilities could be substantiated by further studies, better identification methods could be developed. Using self-efficacy and the overexcitabilities for the identification of high potential students goes beyond traditional methods that often overlook creativity and the emotions. The conception of giftedness needs to be broadened by addressing the personality correlates of high ability. Piechowski (1986) states that identification of the gifted using a broadened concept of giftedness binds the goals of gifted students' education to self-actualization and advanced moral development, and not to societal conditions of success such as high paying jobs and eminence. These findings could also prove to be beneficial in building curriculum for gifted students. Curriculum should meet the needs of every dimension of the gifted student not only the intellectual. The emotional and imaginational dimensions of gifted students should be valued and enriched as well. Gifted individuals should be aided developmentally in all areas of growth so that they may reach their full potential.

There was a significant interaction effect between intellectual overexcitability and gender and grade ($F=3.910$ $p<.05$). Eighth grade females achieved a significantly higher intellectual overexcitability effect ($F=3.502$ $p<.05$). Females develop more rapidly at this age than do their male

counterparts. This could indicate a developmental process at work in the intellectual overexcitability. It could also indicate that females are culturally safe in acknowledging their emotionally while males are encouraged by our culture to control and hide this aspect of the personality. There was a significant main effect between grade and the emotional overexcitability indicating a possible developmental effect ($F=3.502$ $p<.05$). Also, gifted adolescent may become more willing to attend to their emotional needs and less willing to compromise and conform to others expectations as they develop. There was a significant interaction between gender and grade level and the psychomotor overexcitability ($F=4.108$ $p<.05$). Males highest effect was in eighth grade with females having the highest effect in seventh. This might be a further indication of a developmental process that begins earlier in females than in males. It might also indicate that males divert the emotional aspect of the personality into the psychomotor overexcitability. Again, a larger sample could show more information about age and gender. It would be interesting to investigate these effects in students in the higher grades levels (9th-12th). This investigation might illuminate the developmental potential of the overexcitabilities and self-efficacy. If shown to be developmental in nature, identification procedures might be developed based on overexcitabilities and self-efficacy levels as well as gender and age level. More emphasis might be placed on a truly differentiated curriculum based on gender, age, levels of overexcitabilities and self-efficacy. Counseling procedures could be developed to aid in the different development patterns of males and females. A more holistic approach to the development of the gifted student could be developed to guide our schools. A safer environment that is more conducive to growth and development could evolve and provide a direction for the change our schools have so desperately

needed.

A significant difference was found between high and low self-efficacy and the imaginational overexcitability ($F=6.0629$ $p<.05$). Those with higher self-efficacy had higher levels of the imaginational overexcitability. These students may be better able to cope with situational and environmental factors than their less efficacious peers. Overexcitabilities are observable in infancy and are thought to be innate (Silverman, 1993). Are they hidden by gifted adolescents with high imaginational overexcitability to aid in academic survivability? Efficacy beliefs predict how well individuals cope with threats and fear (Bandura, 1986). If positive disintegration is looked upon as an illness in our society, do we force our gifted students to adapt these characteristics, to hide their "psychoneurotic" conflicts instead of take the societal cure? Much of the research in this area has indicated that gifted students are at heightened risk for developing social-emotional problems (Lajoie & Shore, 1981; Roedell, 1986; Merrell & Gill, 1996). Is it possible that they have learned to reconcile themselves to a concrete reality from which only some emerge to find the richness and "superstimulatability" to which they were born?

Developmental potential must be fostered and nurtured at all stages of mental and emotional growth. Environmental situations play an integral part of this development. Educational environments must take into consideration the developmental potential of each student if they are to evolve to their maximum potential. More studies should be conducted to further investigate the possibility that these overexcitabilities are consistently found in a middle school population. It would be helpful for educators to understand the developmental nature of middle school gifted students from this perspective. Although many studies show that overexcitabilities are inherent in gifted children, these studies

were done on a younger population or on an adult population. As biological development takes place, some overexcitabilities may become more pronounced for a given period of time. Further investigation between self-efficacy and the overexcitabilities should include students of all ages. It would also be interesting to examine the order, if any, in which the overexcitabilities become more or less significant. The intellectual and imaginational overexcitability might not be identified as significant in a middle school population because of developmental levels that are more attuned to social and psychomotor needs than to cognitive needs. Counseling methods might also be refined for gifted students as more information is accumulated in this area.

Limitations of the Study

As indicated there were many limitations of the study. The Overexcitability Questionnaire is a format which requires a written response. Many individuals do not enjoy writing.....with some revealing an open dislike. This could prevent some individuals from expressing their true feelings and thoughts which could alter outcomes. The development of an instrument that does not depend on written responses from middle school students might prove to be more illuminating. Also, the outcomes might have proven stronger if the students in the sample were allowed to take home the Overexcitability Questionnaire and spend as much time as needed without any form of peer pressure to finish quickly or to refrain from answering completely. It might prove helpful to allow the responses to be taped. This would allow for those students that did not want to write responses. Often this age student does not wish to be

involved in the writing process and will not answer fully in order to avoid having to do so. Adolescents may have felt inhibited by the personal nature of the questions asked on this instrument. This age student would probably feel more constrained than either younger or older students when answering questions of this nature. The scoring range on the OEQ is from 0-60. For this age group the range from 0-9 was quite narrow indicating the need for an different instrument, or the possibility that this was not a gifted population of middle school students.

Magnitude of the correlations depended on variability, and lack of variability can be accounted for by three significant factors: (I) There was a very narrow range in the scores on the Overexcitability Questionnaire. The range from 0 to 9 was quite narrow. (2) The participants involved were homogeneously grouped (all gifted middle school students). (3) There was no intervention to cause differences. Because of the low range of scores on The Overexcitability Questionnaire (0-9), a different format would be more appropriate for middle school age students.

The Self-Efficacy Scale was developed for adults and not for middle school aged students. This instrument was also a measure of general levels of self-efficacy. The items on the test measured general expectations that were not tied to specific situations or behavior. Bandura (1982, 1986) warns that self-efficacy is situation specific and should be examined from this perspective. The underlying assumptions of this instrument are that personal expectations of self-efficacy are not tied to situation specific behavior. Caution should be used in making generalizations from this data.

The sample size was small. This had an adverse affect on cell size. More research should be undertaken with a much larger sample.

Future Studies

Several studies have shown that gifted individuals are characterized by emotional, imaginational, and intellectual overexcitabilities (Piechowski, 1986). These overexcitabilities are believed to be original equipment that is affected by environmental and social factors (Piechowski,1986; Silverman, 1994). These environmental factors often make the difference between realization of personal and emotional growth or personality stagnation. Developmental potential must be nurtured and valued if it is to come to it full fruition. Further exploration and empirical investigation into the connection of self-efficacy to motivation and the growth of the overexcitabilities needs to be done. This is especially true for school age children. Schunk (1989), speaking in terms of the development of academic motivation, stated that with development students become able to represent long-term objectives in thought, break such objectives into a series of subgoals, and self-regulate performance over time. If intrinsic motivation can be increased in this area by increasing self-efficacy as Schunk (1989) believes, there is a possibility that by adding depth to motivational goals, an individual could better filter perceptions and other cognitive processes and increase personal growth in other areas.

Dabrowski's theory rests on the concept that there is a multilevel development that takes place. This development should not be restricted to the perfection of one capacity or skill. It should include a transformation and a refinement of many aspects: innate drive, emotions, intellect, volition, imagination, and moral, social, aesthetic and religious sensitivity (Dabrowski, 1964). Transformation and refinement imply growth and development. Can assistance be provided for this transformation? The need to explore the

possibility of the development of the overexcitabilities is apparent. Can they be developed by certain types of experiences or environmental conditions?. Dabrowski believed that the emotional processes are crucial in guiding and directing development. If innate motivation and the emotions can be transformed, this should enable an individual to overcome hereditary and social determination and to progress toward a more self-directed and self-controlled life. More research needs to be done on how the overexcitabilities influence self-efficacy and how self-efficacy influences the overexcitabilities.

Studies should also pursue age-related differences of the overexcitabilities. Some studies in this area have been done (Piechowski, & Colangelo, 1984), but a longitudinal study is needed for further illumination. Further studies should explore age-related differences of self-efficacy.

Finally, future studies should explore the possibility of developing a new format to measure the overexcitabilities in middle school age gifted students. The Overexcitability Questionnaire is inadequate when measuring the overexcitability levels of this age population.

Conclusions

Self-efficacy, a personal belief about one's capabilities to organize and implement actions necessary to attain designated levels of performance (Bandura, 1977) should be encouraged in other areas besides academic performance. The performance levels that are valued should include emotional, imaginational and intellectual as defined by Dabrowski as well as the purely academic. Growth in these areas should be valued and nurtured. As self-efficacy in these areas increased, further development could be enhanced.

If any area of human potential can be influenced by self-efficacy such as academic achievement, then why can't that influence be broadened to the affective and imaginative areas of human endeavor? As Dabrowski described it, the evolution of a personality is an autonomous intrapersonal process of sensing and then reaching for and becoming something larger and truer. Self-efficacy might be shown to aid in this quest.

As Silverman (1983) has stated, "Excellence may be a universal ideal, but it is a personal goal for only a few. It only remains with those who are willing to work toward its fruition." Willingness to aid in the fruition of excellence is paramount. Instruction could be offered on the understanding of intrinsic motivation and self-efficacy, so students can knowingly participate in the creation of a vision that they can embrace.....a vision that includes excellence of the self. Emotions can begin to be valued in the classroom. Perhaps internal motivation can be increased as individuals learn to pursue their "vision of themselves", learn to take personal responsibility for increasing levels of emotionality, and learn to explore and execute their personal vision of "excellence". Cannot more individuals learn to forego egocentric concerns in the service of the formation of higher level, altruistic values? The path to higher development is not an easy one. It is filled with conflict and struggle, but to pursue it is to increase the probability that society will be endowed with leaders with moral values, a superior perception of the reality of self, empathy, concern, and compassion for others (Miller & Silverman, 1987). As educators we must prepare ourselves to show the way.....to help the student incubate and give birth to a vision of personal excellence. This can only help to focus and, perhaps, solve some of the problems facing the educational system and the society of today and the future.

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APPENDIXES

APPENDIX A

LETTER OF PARENTAL CONSENT

Whitney Middle School
2177 S. 67th E. Ave.
Tulsa, Oklahoma 74129
March 15, 1996

Dear Parent/Guardian:

I will be conducting research for my master's thesis from OSU in Applied Behavioral Studies (Gifted Education) during the month of April, 1996. I hope that you will consent and encourage your child's participation in this research. The information obtained will help further the understanding of gifted education.

This research includes an investigation of the correlation of self-efficacy (confidence in learning ability) and the Dabrowskian concept of overexcitability or supersensitivity. This concept is one that allows for a broader definition and understanding of giftedness. According to the theory there are five areas where students might have intense interest: intellectual, imaginational, emotional, sensory, and psychomotor. These "overexcitabilities" have the effect of making concrete stimuli more complex for some students.

Each participant will be given a measure to assess the level of both self-efficacy and overexcitability. These measures will be presented in a written format. The results will be tabulated and then statistically correlated. Each student will be given an identification number so that all responses can be kept strictly confidential. There is no mental or physical risk involved in the study. Questions will be on the topics of internal motivation, confidence in learning ability, and in the above five areas. The investigation will take no more that three hours over a period of two weeks. There is no experimentation or treatment involved in the investigation. This study will only collect data. The participation is voluntary and there is no penalty for refusal to participate. You are free to withdraw consent at any time during the investigation. Authorization for the study has been obtained from OSU and Tulsa Public Schools.

This investigation will, hopefully, increase knowledge of emotional development, intrinsic motivation, and study the relationship between these concepts.

Please feel free to contact me at 641-1766 (school) or 749-3633 (home) if you have any questions concerning this investigation. I may also be contacted by mail at 2177 S. 67th E. Ave., Tulsa, Ok. 74129. You may also contact Jennifer Moore, IRB, 305 Whitehurst, Stillwater, Ok., 74078; 405-744-5700.

Thank you for your consideration and, hopefully, your participation.

Debra Hull, Enterprise Coordinator

If you have agreed to let your child participate, please sign.

I HAVE READ AND FULLY UNDERSTAND THE CONSENT FORM. I SIGN IT FREELY AND VOLUNTARILY. A COPY HAS BEEN GIVEN TO ME.

DATE:_____
TIME:_____

SIGNED:_____

APPENDIX B

O.S.U. INSTITUTIONAL REVIEW BOARD

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 04-16-96 IRB#: ED-96-114

Proposal Title: THE RELATIONSHIP OF SELF-EFFICACY AND THE OVEREXCITABILITIES

Principal Investigator(s): Diane Montgomery, Debra F. Hull

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Please add the following individual as a contact person at the university:

Jennifer Moore, IRB, 305 Whitehurst, Stillwater, OK, 74078;
405-744-5700

Signature: _____ Date: May 2, 1996
Chair of Institutional Review Board

APPENDIX C

LOCAL SCHOOL SYSTEM APPROVAL

TO: Debra Hull

FROM: Jerry Roger

DATE: March 25, 1996

I am pleased to report that Tulsa Public Schools has approved your master's thesis research contingent on parental approval of all students included in the research.

Congratulations on reaching this stage of your master's program, and continued good luck.

3027 SOUTH NEW HAVEN P.O. BOX 470208 TULSA, OKLAHOMA 74147-0208 (918) 746-6800

APPENDIX D

DEFINITION OF TERMS

DEFINITION OF TERMS

The terms are defined relative to the Theory of Positive Disintegration (Dabrowski, 1964).

1. **ADJUSTMENT**, a state of harmony resulting from bringing oneself into agreement with other individuals, or with a pattern, principle or ideal. Social adjustment is usually thought of as the ability to live in harmony with social norms and act successfully in one's society which practically amounts to a conformity to prevailing social standards, patterns, customs, beliefs and evaluations. This has always been widely considered to be a symptom of mental health. On the other hand, social maladjustment is almost always identified with mental disturbance. From the standpoint of the theory of positive disintegration this view is basically erroneous and the simple concept of adjustment is considered useless and misleading. Instead a distinction is made between positive and negative adjustment, and positive and negative maladjustment (Dabrowski, 1964).

Negative maladjustment (Nondevelopmental Maladjustment), means acceptance and conformity, without an independent critical evaluation, to the norms, customs, and mores that prevail in one's social environment. Negative adjustment may also take the form of acceptance of one's actual needs and inclinations without attempts to modify and transform them creatively. This kind of adjustment is incompatible with the autonomy and authenticity of the individual. It does not yield any positive developmental results either for the individual or for the society (Dabrowski, 1964).

Positive adjustment, a new hierarchy of values , consciously developed and subordinated to the personality ideal. While negative adjustment consists in undiscriminating adjustment to "what is", positive adjustment may be called adjustment to "what ought to be". Such adjustment is a result of the operation of the developmental instinct and implies the necessity of partial maladjustment to the prevailing social patterns as well as inner conflicts and tensions characteristic of the processes of positive disintegration. positive adjustment attains its full, mature form only at the stage of secondary integration in which inner conflicts decrease and fundamental agreement between personality and its ideal has been attained (Dabrowski, 1964).

Positive Maladjustment, includes both partial adjustment to what is and increasing adjustment to higher levels of development. It consists of a conflict with, and a denial and rejection of those standards, patterns, attitudes, demands and expectations of one's environment which are incompatible with one's growing awareness of loyalty to a higher scale of values. Positive maladjustment is a prerequisite to the development towards authenticity (Dabrowski, 1964).

Negative Maladjustment, consists of a denial and rejection of social norms, customs, and accepted patterns of behavior, but not for the sake of a higher scale of values, but rather because of one's subordination to primitive urges and nondevelopmental, pathologically deformed structures and functions. In the extreme it takes the form of psychosis, psychopathy, and criminal activity (Dabrowski, 1964).

2. **ASTONISHMENT WITH ONESELF**, the feeling that some of one's mental qualities and dynamisms are surprising and unexpected. It has a

distinct intellectual component and is one of the earliest developmental dynamisms active at the time of transition from unilevel to multilevel disintegration. It is usually accompanied by the feeling of disquietude and discontent with oneself (Dabrowski, 1964).

3. **AUTHENTICITY, AUTHENTISM**, a dynamism which consists in the feeling, awareness and expression of one's own emotional, intellectual and volitional attitudes, achieved through autonomous developmental transformations of one's own hierarchy of values and aims. It involves a high degree of insight into one's self. Authenticity is a symptom of independence from lower instinctive levels and selective independence from influences of the external environment and the inner psychic milieu. It brings about a high degree of unity of one's thinking, emotions and activity. Authentism involves conscious activity in accordance with one's "inner truth". The appearance and growth of authentism results from the operation of such dynamisms as dissatisfaction with oneself, autonomy, the third factor, positive maladjustment, "subject-object" in oneself, inner psychic transformation and the personality ideal (Dabrowski, 1964).

4. **AUTONOMY**, consciously developed independence from lower level drives and from some influences of the external environment. Autonomy is possible only as a result of the operation of other dynamisms of the inner psychic milieu, mainly the third factor (Dabrowski, 1964).

5. **CREATIVE INSTINCT**, a dynamism which consists of the search for new and qualitatively different experiences. It appears and grows at a relatively high

level of development. Arising from the negative experience of excessive saturation with actual conditions, it is associated with the dynamisms of dissatisfaction with oneself, and the environment, the third factor, the desire to transform oneself, prospection and authenticity. It is not necessarily associated with a global development of mental functions and structures. It appears in the first phase of multilevel disintegration (Dabrowski, 1964). See multilevel disintegration p.76.

6. **DEVELOPMENTAL INSTINCT**, Instinct of a most general and basic nature, a "mother's instinct" in relation to all other instincts; the source of all developmental forces of an individual. It finds its expression particularly in such dynamisms as dissatisfaction with oneself, feelings of inferiority towards oneself, the third factor, inner psychic transformation, disposing and directing center at a higher level, autonomy and authentism, personality ideal. It acts differently at different stages of development, pushing the individual towards higher and higher developmental levels. It operates with variable intensity in most human individuals; among those with the ability for accelerated development it takes the form of education-of -oneself and autopsychotherapy (Dabrowski, 1964).

7. **DISINTEGRATION**, consists of loosening, disorganization or dissolution of mental structures and functions. The term covers a wide range of states from temporary loosening of contact with reality observable in severe fatigue, boredom, depression, stress, mental conflicts, disequilibrium, neurosis or psychoneurosis to a split of personality in schizophrenia. "Normal" symptoms of disintegration are distinctly and almost universally observable at the time of

puberty and menopause, also at times of critical experiences, suffering inner conflicts, intense joy or exaltation, etc. Disintegration is unilevel (or horizontal), if there are protracted and recurrent conflicts between drives and emotional states of a similar developmental level and of the same intensity, e.g. states of ambivalence and ambitendency, propulsion toward and repulsion from the same object, rapidly changing states of joy and sadness, excitement and depression without the tendency towards stabilization within a hierarchy. It is characteristic of unilevel disintegration that conflicts are accompanied by a lack or by a minimal degree of consciousness and self-consciousness, self-control and ability to transform stimuli. Disintegration is multilevel (or vertical). If there are conflicts between higher and lower levels of instinctive, emotional or intellectual functions, e.g. higher and lower forms of the sexual instinct, or the instinct of self-preservation, etc. It consists mainly in differentiation and hierarchization of various levels of functions with a tendency towards gradual stabilization of a new hierarchy. In the course of positive multilevel disintegration, primitive animalistic drives and structures are subject to a disintegration, that is weakening, loosening and even total destruction under the impact of developmental dynamisms and gradually give way to new, higher levels and new, higher structures. There is a growth of consciousness of inner conflicts, self-consciousness and self-control. The processes of inner psychic transformation gain in intensity and authenticity . There is a gradual build-up of the inner psychic milieu with its main dynamisms such as "subject-object" in oneself, the third factor, inner psychic transformation, autonomy and authentism, and the personality ideal.

Multilevel integration includes two phases. The first is spontaneous, as it is characterized by a relative predominance of spontaneous

developmental forces and the second is organized (self-directed), as it is in the period of conscious organization and direction of the processes of disintegration towards secondary integration and personality. Negative disintegration is characterized by the presence and operation of dissolving dynamisms and by the lack of developmental dynamisms. It occurs almost solely at the stage of unilevel disintegration and may end in dissolution of mental structures (chronic mental illness).

Positive or developmental disintegration effects a weakening and dissolution of lower level structures and functions, gradual generation and growth of higher levels of mental functions and culminates in personality integration. Its characteristics are the presence and operation of, psychoneurosis with all their protective (defensive) and creative forces. The process of positive disintegration starts from primitive integration and develops through the following four stages: (1) unilevel disintegration, if it shows some nuclei of self-consciousness, (2) spontaneous multilevel disintegrations, (3) organized multilevel disintegration, (4) transition from multilevel disintegration to secondary integration. It culminates in global secondary integration at a new, higher level.

Global disintegration involves all main mental functions. It comes about either as a result of fundamental transformations in the full cycle of the process of positive disintegration or as a result of many partial disintegrations, or as an outcome of the collaboration of both above processes. It transforms the whole mental structure and thus paves the way for a new global integration at the level of personality.

Partial multilevel disintegration occurs within one or a few interconnected dynamisms. Its outcome is either a return to a lower primitive

integration, or a transformation into a global disintegration, or, in case of multilevel partial disintegration, a partial integration at a higher level. Partial multilevel disintegration is a result of limited hereditary endowment and psychic experiences limited to a narrow sphere. These cause a loosening or disintegration of narrow, primitive structures. The partial secondary integration at a higher level, which usually follows, is a result of inner psychic transformation within a limited area. An accumulation of a great number of partial integrations at a higher level may culminate in a global disintegration and later formation of personality. Partial disintegrations culminating in partial integrations at higher levels are the usual endpoint of mental development of people with average sensitivity and average endowment (Dabrowski, 1964).

8. **DISPOSING AND DIRECTING CENTER** is the dynamism which determines each act of an individual as well as his long range behavior, plans and aspirations. It performs the following: programming, planning, organizing, collaborating, general and concrete deciding. At a lower level its role is fulfilled by various primitive drives (e.g. sexual, self-preservation, etc.) which temporarily or permanently direct and control an individual's life and conscious activities. Only at a higher stage, particularly during multilevel disintegration, the disposing and directing center appears and develops as an independent dynamism, not identical with any one or any combination of other dynamisms. At the level of primitive integration, the role of the disposing and directing center is taken by primitive drives which dominate and subordinate other functions. At the stage of unilevel disintegration and during the earlier period of multilevel disintegration this role is played alternatively by different dynamisms, often of a contrary nature. At higher phases of multilevel disintegration, the disposing and

directing center starts operating as a dynamism not identical with any other function, although collaborating closely with the highest dynamisms of the inner psychic milieu, such as the third factor, inner psychic transformation, autonomy, authentism, and the ideal of personality. At secondary integration it is incorporated into the personality which exercises synthetic activity and superior control over all human actions (Dabrowski, 1964).

9. **DISQUIETUDE WITH ONESELF**, uneasiness with oneself, one of the earliest developmental dynamisms, active especially at the time of transition from unilevel to multilevel disintegration, frequently taking the form of astonishment with oneself or dissatisfaction with oneself. It consists of astonishment combined with a strong emotional component and evaluative attitude of a medium intensity. Unlike disquietude about oneself, it is not generated by the self-preservation instinct, but rather by the cognitive and developmental instincts (Dabrowski, 1964).

10. **DISSATISFACTION, WITH ONESELF**, is an early form of the dynamisms of valuation. It contains a strong emotional component expressed in disapproval of some of the elements of one's own mental structure (Dabrowski, 1964).

11. **DYNAMISM**, biological or mental forces of a variety of kinds, scopes, levels of development and intensity, decisive with regard to the behavior, activity, development or evolution of man. Instincts, drives and intellectual processes conjoined with emotions constitute specific kinds of dynamisms. (Dabrowski, 1964).

12. **EMPATHY**, see #39 syntony.

13. **FUNCTIONS**, general term to denote mental processes dealing with definite aspects of life.

14. **IDENTIFICATION**, consists of understanding and experiencing of mental states, attitudes, aspirations and activity of other people or of oneself. The capacity for identification is obtainable only at a high level of universal mental development through the process of positive disintegration. Self-conscious and authentic identification is possible only on the foundation of a rich inner psychic milieu. It is preceded by and associated with such dynamisms as "subject-object" in oneself, the third factor and inner psychic transformation.
There is a close association between identification and empathy. Although identification is not mainly intellectual, it has a more distinct intellectual component than empathy. Identification with others expresses the attitude of "klisis" (attraction) independently of the developmental level of the people towards whom this attitude is directed. Identification with oneself expresses the attitude of "klisis" in relation to one's higher levels and "ekidisis" (repulsion) in relation to lower levels. Identification in this conception has a clear positive, developmental and highly conscious nature. It does not involve in any way the process of obliteration or absorption of the other person into oneself or vice versa. It should be clearly distinguished from unconscious or half-conscious identifications which are conspicuous in dancing, singing, sport or fighting. Those forms of identifications are for the most part dependent on biological temperamental factors and do not represent any developmental value

(Dabrowski, 1964).

15. **INFERIORITY TOWARDS ONESELF**, feeling of, consists of the experience of and awareness of the disparity between the level at which one is and the higher level toward which one strives, between what one is and what one ought to be. It comes about as a result of experiences associated with "climbing up" to a higher level and "slipping back." It is an outcome of the shock caused by the realization of one's unfaithfulness to the ideal of personality, to the hierarchy of values which begins to take shape, or already has taken shape, but lacks stability. It is associated with an intensive need to establish a definite hierarchy of values and aims and to transform oneself accordingly. It usually operates in conjunction with the dynamisms "subject- object" in oneself, dissatisfaction with oneself and, at higher levels, with the personality idea (Dabrowski, 1964).

16. **INNER PSYCHIC TRANSFORMATION**, a dynamism which carries out the work of developmental change in man's mental structure. The characteristic aspects of the operation of inner psychic transformation are: (1) transformation of the innate psychological type by introduction of traits of the opposite type (e.g. introduction of traits of introversion into an extrovert mental structure); (2) transformation of somatic determination (biological sequence of the life cycle, aging, disease, etc.) into mental determination (accumulation of mental powers that result in consistent domination and control of somatic determinants). Stimuli received by the psyche are subject to inner psychic transformation. The stimuli can be external or internal (i.e. originating in the

inner psychic milieu). Because of the intervening process of transformation, response is not always directly related to the original stimulus. In the extreme, though not infrequent, case, there might be no external response. Similarly, an external response may be generated without an immediate external stimulus. When the stimuli and responses arise entirely within the inner psychic milieu, we have the process of inner psychic transformation of the milieu itself. As a basic dynamism operating on all levels of the inner milieu, inner psychic transformation cooperates with all dynamisms of that milieu (Dabrowski, 1964).

17. **INNER PSYCHIC MILIEU** (internal mental environment), that part of the psyche where man enters into conflict with himself, the totality of mental dynamisms of a low or high degree of consciousness operating in a more or less hierarchical organization. These dynamisms are basically in a relation of cooperation which, however, does not exclude developmental conflicts. They perform the main task of positive disintegration at the stage of multilevel disintegration by participation in the transformation of mental functions and structures in the direction of higher levels up to the level of fully developed personality. All the dynamisms of the inner psychic milieu, largely speaking, may be divided into unilevel and multilevel. Ambivalences and ambitendencies are unilevel dynamisms, all other are multilevel. It may be assumed that nuclei of the inner psychic milieu exist in primitive stages of mental development, particularly at unilevel disintegration. At this stage, however, there is no distinct psychic transformation. Basic primitive drives are active at this stage, with variable intensity and localization in relation to other drives depending on the psychophysiological stage of the individual. Slight somatic and coenestetic disturbances cause various forms of mental disequilibrium and consequently of

primitive psychosomatic conversion. In this way nuclei of the inner psychic milieu arise. The inner psychic milieu in a strict sense (i.e. as a hierarchical structure) arises only at later stages, when the abilities for self-observation and self-control are sufficiently developed (Dabrowski, 1964).

18. **INTEGRATION,** consists in an incorporation of various functions into a coordinated structure showing a dynamic equilibrium which counteracts neurotic responses. From the standpoint of the theory of positive disintegration, it is necessary to distinguish various kinds of integrations at lower and higher levels and conceive of disintegration as a basic process of transition from a lower level integration to a higher one. Consequently, disintegrative processes are considered as developmental, that is positive and basically healthy, while rigid lower level integrations indicate the opposite of mental health negative integration, primitive integration, secondary integration (Dabrowski, 1964).

19. **INTERIORIZATION AND EXTERIORIZATION**, dynamisms which are necessary for the process of inner psychic transformation. Interiorization consists in a conscious and selective introjection of external and internal stimuli in order to submit them to inner psychic transformation before any response is emitted. If the process of inner psychic transformation has taken place, exteriorization takes a form which expresses more the psychological type of the individual than the nature of the stimulus (Dabrowski, 1964).

20. **LEVELS OF FUNCTIONS**, denote quantitative and qualitative changes which occur in different mental functions in the course of development. Generally, lower levels of functions are characterized by automatism,

impulsiveness, stereotypy, lack or low degree of consciousness, lack of inner psychic transformation. Higher levels show distinct consciousness, inner psychic transformation, intellectual components operating in conjunction with higher emotions, and essentially involve creative, autonomous factors. Presently available tests distinguish and measure only the levels of intellectual and psychomotor functions. The theory of positive disintegration provides the principles for similar scales to be developed for other functions. In particular one could develop a scale for degree of emotional development. The distinction between higher and lower levels of functions is fundamental for the conception of mental development.

21. **MENTAL DEVELOPMENT**, autonomous, is the passing from lower level structures and functions to higher levels. It is a result of the process of positive *disintegration. In its beginning* stages, mental development is biologically determined, automatic, unconscious or with a low degree of consciousness, confined within the biological cycle of life and consequently exposed to deterioration with age. In higher stages of development, the inner psychic milieu with its main dynamisms plays an increasingly important role. From the stage of organized multilevel disintegration the highly conscious dynamisms of inner psychic transformation, the third factor, autonomy, and personality ideal determine the direction of development. Conscious and deliberate choice based on many-sided and multilevel insights and understanding replaces unconscious biological drives. Autonomous development transcends the biological cycle of life in a twofold sense: (1) It ceases to be dependent on organic changes such as those characteristic of the periods of puberty, adolescence, menopause, senility, etc. (2) Development remains progressive

into old age despite somatic deterioration due to biological changes. At higher stages, particularly at secondary integration, a regression to lower levels is no longer possible. Lower level drives, once disintegrated and destroyed, cannot reemerge, while consciously and authentically elaborated higher levels of functions, once integrated into personality, cannot be prevented from operating. The direction of development in its higher stages is derived from the growing insight into and understanding of oneself and the surrounding environment and by the growth of higher emotions, particularly empathy. It is determined by the following guidelines: (1) Openness to new kinds of experiences, increasing sensitivity and growth of both the general potential and specific abilities, the increasing role of conscious and deliberate activities over unconscious and automatic ones, constantly growing control over oneself and the environment. (2) The appearance of a new source of enjoyment resulting from consciously accepted and deliberately developed activities, inspired by a new hierarchy of values (creative work, personal satisfaction from the fulfillment of one's program). The higher the level of development, the greater is the proportion of this type of satisfaction as compared to pleasures derived from appeasing impulsive desires (sensual pleasures, etc.) which are the only accessible kind of pleasures at lower developmental stages. (3) Growing ability for further development. This conception of mental development differs from traditional approaches in the following aspects: (a) It brings out the positive developmental function of the processes of disintegration. (b) It assigns a crucial role to the inner psychic milieu with its main dynamisms of inner psychic transformation, the third factor, autonomy and authentism, disposing and directing center and the personality ideal that is concepts and processes hitherto left out of consideration. (c) It replaces, at a certain level, biological determinants by

psychological, conscious and autonomous determinants. (d) It assumes an empirical hierarchy of levels of functions and consequently growing objectivity of valuation in morals, aesthetics, etc. proportionate to the stage of mental development (Dabrowski, 1964).

22. **MENTAL HEALTH** consists in the functioning of processes which effect development towards higher levels of mental function, towards recognition and realization of. higher intellectual, moral, social and aesthetic values and their organization: into a hierarchy in accordance with one's own authentic ideal of personality (Dabrowski, 1964).

23. **MENTAL ILLNESS** consists in the absence or deficiency of processes which effect development. It takes the form of (1) either a strongly integrated, primitive, psychopathic structure, or (2) a negative, non- developmental disintegration which may end in dissolution of mental structures and functions (psychosis) (Dabrowski, 1964).

24. **NEUROSES,** a term closely related to the term psychoneurosis, denoting mental disturbances with a distinct dysfunction of the sympathetic nervous system or with functional disorders of internal organs. While psychoneuroses can be said to be of a psychic or of a psychosomatic nature, neuroses, in comparison, are rather somatopsychic.

25. **PARTIAL SECONDARY INTEGRATION** consists in a cohesive organization of some of the mental functions at a higher level. It comes about as a result of partial multilevel disintegration and is due to the process of inner

psychic transformation within a limited sphere of functions (Dabrowski,1964).

26. **PERSONALITY**, a harmonious and stable organization of highly refined basic mental qualities and functions (higher emotions, higher instincts, higher intellectual processes, interests, concerns, abilities) which comes about as a result of the full process of positive disintegration and universal mental development. Although personality in its complete, fully developed and fully harmonized form appears only at the stage of secondary integration, it starts taking shape during later stages of multilevel disintegration. Personality is a self-chosen, self-confirmed and self-educating mental structure, i.e. a structure attainable only through an intensive work of developmental dynamisms, particularly such as inner psychic transformation, the third factor, autonomy and authentism . The characteristic features of personality are: experiential awareness of one's personality ideal, the disposing and directing center at its highest level, a high level and great intensity of emotional life, inner psychic transformation and reflection, manifold concerns and interests, openness to the full range of experiences, a high degree of insight into oneself, self-control, ability for further development, presence and strong motivating role of the instincts of creativity and self-perfection. Personality is a stable organization of mental functions in a twofold sense: (1) Once the primitive levels of functions have been disintegrated and destroyed and the higher levels elaborated an integrated into a cohesive, all-around structure, slipping backwards to lower levels is no longer possible. One cannot give up values which one learned to appreciate through an authentic, painful process of inner psychic transformation. (2) Although an individual who attained the level of personality continues to grow and may attain some new qualities, no change of his central

qualities is possible. His individual characteristics of a high developmental level will persist. Personality represents the highest developmental level presently accessible to clinical insight and empirical study. It combines both empirical and evaluative elements. The evaluative element is not arbitrarily postulated, but derived from what is empirically verifiable.and from the general conception of mental development underlying the theory of positive disintegration (personality ideal) (Dabrowski, 1964).

27. **PERSONALITY IDEAL**, is an individual standard against which one evaluates one's actual personality structure. It arises out of one's experience and development. Personality ideal is shaped autonomously and authentically, often in conflict and struggle with the prevalent ideals of society. It is a mental structure which is first intuitively conceived in its broad outline and serves as the empirical model for shaping one's own personality. In proportion to the higher levels of development reached by the individual, his ideal of personality becomes more and more distinct and plays an increasingly significant role in his inner psychic milieu and particularly in the disposing and directing center. This process is called the dynamization of the ideal. The tendency to adjust to the ideal of personality is a form of tendency to adjust to what ought to be and refusal to adjust to lower level emotions and urges. The ideal of personality should not be confused with one-sided developmental programs, e.g. the so called ideal sportsman, businessman, etc., which do not result from an. authentic process of multilevel disintegration and inner psychic transformation, but from lower level emotional and intellectual processes (Dabrowski, 1964).

28. **POSITIVE CONFLICT** is a conflict which incites or intensifies

developmental forces, particularly by disintegrating lower level structures and functions and by deepening the process of self-consciousness and inner psychic transformation. The appearance and development of inner conflicts promotes inhibition and sublimation of external conflicts. Consequently,stresses, critical life experiences, anxieties, depression etc., basically undesirable from the standpoint of mental health, the theory of positive disintegration regards as significant elements in potentially positive development (Dabrowski, 1964).

29. **PRIMITIVE DRIVES,** are those drives which are simple, automatic, involuntary, unconscious or with a relatively low degree of consciousness, stereotyped, constitutionally determined, e.g. low levels of the sexual or maternal instincts (Dabrowski, 1964).

30. **PRIMITIVE INTEGRATION**, or primary integration, an integration of mental functions, subordinated to primitive drives. There is no hierarchy of instincts; their prevalence depends entirely on their momentary greater intensity. Intelligence is used only as a tool, completely subservient to primitive urges, without any transformative role. Interest and adaptation are limited to the satisfaction of primitive desires. There is no inner psychic milieu, no mental transformation of stimuli, no inner conflicts. Primary integration in infants is limited to the satisfaction of the need for food, sleep and motion (Dabrowski, 1964).

31. **PSYCHONEUROSES**, syndromes of the processes of positive disintegration. They show symptoms of disharmony and conflicts within the

inner psychic milieu and with the external environment. The source of disharmony and conflict is a favorable hereditary endowment and the ability to accelerate development through positive disintegration towards personality, i.e. towards a cohesive structure of functions at secondary integration. This conception of psychoneuroses does not consider them pathological, but rather as positive forces in mental development.

Psychoneurotic processes, as any other mental processes, may occur at different levels. The difference may be either interneurotic, i.e. between various kinds of psychoneuroses, or intraneurotic, i.e. within the same kind of psychoneurosis. These differences are a result of the cooperation between "pathological," but positive psychoneurotic dynamisms and related "nonpsychoneurotic" developmental dynamisms (such as interests, concerns, abilities, some of the creative dynamisms etc.). At a high level of development both of the above kinds of mental dynamisms operate in an inseparable interaction. An interneurotic scale would include the following psychoneuroses in the order from lower to higher levels; somatic neuroses, hypochondria, neurasthenia, hysteria, depressive psychoneurosis, anxiety psychoneurosis, infantile psychoneurosis, obsessive psychoneurosis, psychasthenia. Intraneurotic levels are clearly distinguishable in hysteria, from the hysterical character through hysterical conversion to the highest levels of increased emotional and imaginative excitability, high levels of nervousness and tendency towards contemplation. (Dabrowski, 1964).

32. **SECONDARY INTEGRATION**, global, results from the full process of positive disintegration. It is an integration of mental functions at a high level, with a dominant role of higher emotions, indicating a high degree of autonomy

and authenticity . Secondary integration is strictly correlated with personality . To denote an integration subsequent (in time) to a period of disintegration, but not at a higher level, the term reintegration is reserved (Dabrowski, 1964).

33. **SELF-EFFICACY,** personal beliefs about one's capabilities to organize and implement actions necessary to attain designated levels of performance.

34. **SELF-PERFECTION INSTINCT** consists in a tendency towards gradual attainment of higher developmental levels and involves the whole mental structure of an individual with a special emphasis on the moral sphere and empathy, has a much wider range than the creative instinct and includes its basic components, arises and develops during both stages of multilevel disintegration, operates in association with the dynamism of inner psychic transformation, the ideal of personality and leads directly to the formation of personality (Dabrowski, 1964).

35. **SHAME**, feeling of, one of the earliest developmental dynamisms, consists in self-conscious distress and embarrassment, results from predominance of external over internal sensitivity, usually is combined with a strong somatic component, with a slight element of anxiety, with a need to withdraw, to hide away. The feeling of shame is usually associated with the dynamism of dissatisfaction with oneself, with the feeling of guilt and with the feeling of inferiority towards other people (Dabrowski, 1964).

36. **SUBJECT-OBJECT IN ONESELF**, one of the main developmental dynamisms which consists in taking interest in and observation of one's own

mental life in an attempt to gain a better understanding of oneself and to evaluate oneself critically. In individuals capable of accelerated and universal development the interest in their inner world may temporarily prevail over the interest in the external world. This dynamism differs from introspection inasmuch as the latter is carried out for purely descriptive, nonevaluative purposes. Unlike introspection, this dynamism has a strong emotional component in spite of its basically intellectual character. It realizes sudden insights, constitutes an essential element in the processes of inner psychic transformation and is the main basically intellectual dynamism of multilevel disintegration. It is a form of interiorized cognitive instinct and appears in correlation with the dynamisms of the third factor, disposing and directing center and ideal of personality.

37 **SYNTONY, EMPATHY**, these terms are used to signify the capacity for insight into and participation in other people's feelings and experiences. It is of importance to distinguish primitive, impulsive forms of syntony, associated with the gregarious instinct, from more conscious and deliberate forms, usually called empathy, which belong to higher emotions, contain strong intellectual components and result from inner psychic transformation and the processes of positive disintegration. An individual having a high level of empathy shows towards others benevolence, readiness and willingness to assist them in their problems, but at the same time may express a disapproval of some of their attitudes and acts (Dabrowski, 1964).

38. **THE THIRD FACTOR,** is independent from and selective with regard to heredity (the first factor), and environment (the second factor). Its selective role

consists in accepting and fostering or rejecting and restraining qualities, inclinations, interests and desires, which one finds either in one's hereditary endowment or in one's social environment. Thus the third factor being a dynamism of conscious choice is a dynamism of valuation. The third factor has a fundamental role in education-of-self, and in autopsychotherapy. Its presence and operation is essential in the development toward autonomy and authenticity. It arises and grows as a resultant of both positive hereditary endowment (especially the ability for inner psychic transformation) and positive environmental influences (Dabrowski,1964).

APPENDIX E

TWO-WAY INTERACTION EFFECT

INTELLECTUAL OVEREXCITABILITY, GENDER, AND GRADE

APPENDIX E

TWO-WAY INTERACTION EFFECT

INTELLECTUAL OVEREXCITABILITY, GENDER, AND GRADE

Total Population			
	2.22		
	(69)		
Gender			
	1	2	
	2.18	2.26	
	(34)	(35)	
Grade			
	6	7	8
	1.83	2.14	2.70
Grade			
	6	7	8
Gender 1	1.60	2.82	2.08
	(10)	(11)	(13)
2	2.00	1.45	3.50
	(14)	(11)	(10)

APPENDIX F

TWO-WAY INTERACTION EFFECT

PSYCHOMOTOR OVEREXCITABILITY, GENDER, AND GRADE

APPENDIX F

TWO-WAY INTERACTION EFFECT

PSYCHOMOTOR OVEREXCITABILITY, GENDER, AND GRADE

Total Population

3.71

(69)

Gender

1	2
3.91	3.51
(34)	(35)

Grade

6	7	8
3.25	4.09	3.83
(24)	(22)	(23)

Grade

		6	7	8
Gender	1	3.50	3.36	4.69
		(10)	(11)	(13)
	2	3.07	4.82	2.70
		(14)	(11)	(10)

VITA

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