

THE INFLUENCE OF GENDER AND COUNTRY OF
ORIGIN ON THE OVEREXCITABILITIES
OF AMERICAN AND KOREAN HIGH
SCHOOL STUDENTS WITH
HIGH ABILITY

By

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Chapter I

INTRODUCTION

Although the terminology used has varied, education regarding students of high ability has been researched, discussed and debated for more than a century (Friedman-Nimz, O'Brien, & Frey, 2005). Numerous definitions of giftedness have been proposed with varying degrees of complexity (Ackerman, 1997). More recently, the social and emotional needs of individuals with high abilities have been of great concern to researchers and educators alike (Cross, 2004; Hebert & Neumeister, 2002; and Neihart, Reis, Robinson & Moon, 2002). When discussing the needs of students of high ability, advocates for these students continue to emphasize the importance of meeting the social and emotional needs of the student (Hebert & Neumeister, 2002; Neihart, Reis, Robinson & Moon, 2002; Piechowski, 1979) in addition to providing for their individual intellectual needs. Cross (2004) indicates that it is the job of educators to meet all of the needs of gifted students, and in order to do this, he states that one must examine the psychological development of students in complex ways.

According to Yoo and Moon (2006) "studies suggest that gifted students may have various personality characteristics, such as perfectionism, excitability, sensitivity, intensity," (p. 53) which may result in gifted students "being detached, feeling isolated from their less gifted peers, or having difficulty with self-regulation." (p. 53). Reis (1998)

suggested that gender effects the emotional needs of gifted students when she pointed out talented females may have a diminished belief in their own ability or reduced feelings of self-confidence. Understanding, recognizing, and providing for these emotional differences and needs of gifted students is necessary in order to avoid such negative results as those indicated by Grassley (2006) that “many gifted and talented children lose interest in school and as a result, may achieve below grade level expectations” (p. 2). Neihart, Reis, Robinson and Moon (2002) go so far as to suggest that most of the emotional concerns of gifted students may be based in school environments that are not making appropriate adaptations to meet the needs of these gifted students.

In considering emotional needs of gifted students, one might ask, “What is it that makes one person respond to a given situation one way yet another individual respond in a completely different manner?” When two gifted students of similar ability react to the same situation, what makes one student persist, and yet the other student gives up? To address these questions and understand the variance in individual emotional responses, Dabrowski (1964) posed a theory of emotional development. This theory has been of great interest to those concerned with education and of particular interest to those involved with the education of gifted students.

Kazimierz Dabrowski’s Theory

Kazimierz Dabrowski’s poses a theory of emotional development based on innate factors, environmental influences, and intensity of experiences which may be enhanced in individuals where there is a heightening of psychomotor, imaginal, sensual, affectional and mental excitabilities (Dabrowski, 1967). It is this heightened super

sensitivity to stimuli (Bouchard, 2004) in these five areas that has come to be known as Dabrowski's overexcitabilities (OE) and is of particular interest to those involved in gifted education. These overexcitabilities may be looked at as a wealth of physical energy, a flamboyant imagination, a keen awareness of the senses, a depth of ability to care, and compelling intellectual inquisitiveness (Silverman, 1994). Piechowski (1979) describes these five overexcitabilities identified by Dabrowski as:

Psychomotor Overexcitability: The manifestations of psychomotor excitability are essentially of two kinds: surplus of energy and nervousness. In nervousness, the emotional tension is translated into psychomotor activity such as tics, nail biting, or impulsive behavior... The surplus of energy can be observed in animated gestures and taking on self-imposed tasks...

Sensual Overexcitability: Sensual overexcitability is expressed in heightened experiencing of sensory pleasures and in seeking sensual outlets for inner tension...other manifestations of sensual overexcitability include...marked interest in clothes and appearance, fondness for jewelry and ornaments...

Intellectual Overexcitability: The manifestations of intellectual overexcitability are associated with an intensified and accelerated activity of the mind. Its strongest expressions have more to do with striving for understanding, probing the unknown, and love of truth than with learning per se or academic achievement...

Imaginational Overexcitability: The presence of imaginational overexcitability can be inferred from frequent distraction, wandering attention, and daydreaming. These occur as a consequence of free play of the imagination.

Here, too, belong illusions, animistic thinking, expressive image and metaphor, invention and fantasy...

Emotional Overexcitability: Among the five forms of psychic overexcitability, the manifestations of emotional overexcitability are the most numerous. They include certain characteristic and easily recognizable somatic expressions, extremes of feeling, inhibition, strong affective memory, concern with death, anxieties, fears, feelings of guilt, and depressive and suicidal moods... (Piechowski, 1979, pp. 32-38).

These overexcitabilities may occur singularly, in groups, or in pairs and in differing levels of intensity (Silverman, 1994) depending on the circumstance and the individual.

Several researchers have pointed to Dabrowski's overexcitabilities as important indicators of the emotional needs of high ability students. Piechowski (1979) found Dabrowski's overexcitabilities expressive of the emotional needs of the gifted. Neihart, Reis, Robinson, and Moon (2002) indicate that "Many gifted students may experience high levels of intensity and sensitivity and may appear at odds with their peers" (p. 51), signifying a connection to Dabrowski's overexcitabilities. Gardner (2003) discusses gifted students potential susceptibility to depression which indicates the super sensitivity or depth of emotion Dabrowski describes when discussing the concept of emotional overexcitabilities.

According to Dabrowski's Theory of Positive Disintegration (1964), emotional development may be distinguished at five levels. Dabrowski's theory indicates progression from one level to another occurs via conflict. These levels are not progressed through at any particular age or time period in ones life and may actually occur

concurrently (Piiro, 2004). There is no guarantee that a person will progress through all five stages. In fact, few people probably reach the fifth level which is considered beyond that of Maslow's self-actualized person in that "selflessness and a sense of universal unity prevail" (Piiro, 1999, p. 25). By recognizing the five stages, one may understand a great deal about a particular individual's emotional development.

Dabrowski (1967) recognizes individual sensitivities but indicates that one's personality is "...an effect of the process of positive disintegration. In other words, positive disintegration, when developing correctly, leads to the building of personality and to the realization of its ideal" (p. 144). This indicates that the process an individual is exposed to while developing one's personality has much to do with the final product. One's country of origin is a part of this process as each country has its own unique customs, traditions and values. Cross (2004) indicates that one's place of birth or rearing plays a part in the student's ability to attain his/her potential. These cultural differences are often classified in broader terms such as eastern or western cultures, but recognized for their influence on individuals' unique understandings and practices (Chia, 2003; Chinniah, 2003; Floyd, 1999; Ho, 2004).

Although numerous international comparisons have been made of students' academic performance and achievement (Goldstein, 2004; Hanushek, 2005; Sharma, 2003; Tymms, Merrell & Jones, 2004) as well as international comparisons of youth health issues (Jobe, 2003) in an attempt to improve current practices, few international comparisons have been made regarding students' emotional development. With growing concern for the social and emotional well being of students due to the increased number of emotional and behavioral problems currently disabling children (Barlow &

Underdown, 2005), international comparisons of emotional development must be considered in an attempt to identify and adapt educational policies and procedures that encourage positive emotional development. Stone (2000) and Epstein (1988) indicate that studies should go beyond comparative educational studies, which only seeks to improve their own systems by gaining knowledge of other systems, to cross-cultural studies of gifted students by going beyond the schools to the cultures that account for their distinct differences. Cross (2004) calls for recognition of factors of chance (such as place of birth/culture) in being gifted and appropriate training for school personnel to attend to these factors.

Statement of the Problem

The social and emotional development of gifted students continues to be a concern for educators of high ability students. Although some initial studies have been conducted indicating the value of Dabrowski's overexcitabilities in identifying giftedness, the value of these overexcitabilities as indicators of emotional development needs to be further explored in order to provide for gifted students' social and emotional needs, and to determine if these overexcitabilities may be used to recognize differences in the emotional needs or development based on such factors as gender or country of origin.

Purpose of the Study

The purpose of this study was to examine the influence of country of origin and gender on the overexcitabilities (OE) of American and Korean high school students with high ability. The OEQ II Inventory was used to determine the OE of each subject in the study.

Significance of the Study

This study should have important information for the field of education. This study provides information for educators of students with high abilities as well as providing additional material for educational researchers. Although archival data were used, the comparisons of the data between the studies provides further confirmation of the value of overexcitabilities as a tool for identifying the needs of high ability students, particularly as a tool for recognizing potential in a precise area or field for advanced development, as well as an indicator of emotional development. Focal points for future research studies concerning possible cultural influences on identified areas of strength regarding overexcitabilities are indicated by this international study. This study provides information regarding possible cultural influences on gender and the overexcitabilities of high ability students indicating directions for future research studies in this area.

Assumptions

- 1) It is assumed that the OEQ II has some reliability and validity to measure OE.
- 2) It is assumed that students reported their OE accurately on the OEQ II.
- 3) It is assumed that the information presented in the two previous studies (Gladwell & Liopsis, 2005; Moon & Montgomery, 2005) was accurate and that no errors occurred when the results were calculated in these studies.

Limitations

One limitation of the study is the influence of factors outside of culture. Although the study may indicate differences being attributed to culture, without the benefit of controls others factors more specific to the time of the study or the individual groups of students studied etc. may account for these differences.

A second limitation of the study is the generalizability of the study. Because the study used a relatively limited number of students from relatively limited geographical regions (Korean students were all from Seoul, and American students were all from Ohio) and no random sampling was used, further research with broader geographical parameters, larger populations and random sampling needs to be done before any findings can be generalized to populations.

Definition of Terms

High ability students – students who by some formal process, usually including but not limited to an IQ test, have been identified as possessing aptitude, skill, or talents beyond that of their same age peers. This term and the term gifted may be interchanged with this same meaning within this thesis. However, the term gifted appears to be more frequently referenced in studies of American students, while the term high ability would more likely be used in studies regarding Korean students. The term talented may be used in this same regard although it indicates advanced development beyond the area of intellect alone.

Overexcitabilities – a heightening of psychomotor, imaginal, sensual, emotional and intellectual expressions (Dabrowski, 1967), an enhanced sensitivity to stimuli (Bouchard, 2004).

Emotional Development – This is used in the framework designated by Dabrowski's Theory of Positive Disintegration in consideration of the five levels of development. OEs serve as indicators of dynamisms of key, level three development in a particular area.

International Comparison – a comparison regarding individuals who when studied were educated and resided in entirely different countries. The students in this study were not necessarily born in the country of origin, but rather attend high school in Korea or America.

Developmental Potential – a theoretical construct indicating the innate or intrinsic faculty which will determine the highest level of development that particular individual may aspire to under optimal conditions. Advanced developmental potential is indicated by OE in one or more areas.

Organization of the Study

This study is organized into five main sections. These five sections include an introduction to the study, a review of the literature relevant to the study, the methods used by the study including data analysis conducted, results of the study, and a discussion of the findings.

The introduction to the study provides background information on the problem, a formal statement of the problem and the purpose of the study, defines vague terms,

provides information regarding the significance of the study, and discusses its limitations and the assumptions made by the study. The review of the literature provides information on cultural influences, information related to the sensitivities and emotional needs of gifted students, observations about OEs, and the influence gender may have on emotional development. At the end of the literature review there is a summary of the review that presents major findings relevant to the problem and directs the study. Following the literature review the methodology section provides a brief description of the topics addressed by the study, information regarding the participants in the study, a description of the instrument (the OEQ II) and its reliability and validity, a description of the design and procedures used, an analysis of data that discusses the statistical techniques used in the study, and a summary of the of the methods information. The results section provides information on the descriptive results and statistics, information on the data analysis techniques used, and the results of the data analysis. Finally, the discussion of findings summarizes the findings of the study, presents conclusions that were made based on the results of this study, and offers implications that were made based on the study.

Chapter II

REVIEW OF THE LITERATURE

The purpose of this study was to examine the influence of country of origin and gender on the OE of American and Korean high school students with high ability. This section reviews literature related to cultural influences, the sensitivities and emotional needs of gifted students, measurement of OEs, and the influence of gender. After reviewing relevant literature, a summary of the pertinent information is presented.

Cultural Influences

The impact of cultural influences on individuals of high ability and their education is an area in need of further research (Ford, Moore, & Milner, 2005; Kay, 2002; Stone, 2000). When Abraham J. Tannenbaum was interviewed (Kay, 2002), he discussed the mystery of the power of environmental influences as well as the influences of cultural identity and cultural interests. He believes that something other than intelligence quotients must be considered when looking at the great accomplishments which have occurred throughout history in different cultures. He goes so far as to say that every educator who wishes to develop gifted behavior must have what he refers to as “cultural passion” (p. 187) for them to identify with the student’s emotional involvement

in finding a cultural activity in which to shine. This clearly indicates that he believes the emotional needs of gifted students are tied to their cultural identity.

Although Ackerman (1997) stated that the cultural influence biases in her study using the OEQ were not very informative, she indicates that it is possible that future studies may find that different cultures will show different OE profiles; Ackerman points out that similar OE profiles have been found in samples of Venezuelan and American artists. This statement suggests the possible value of OEs in identifying cultural influences on development.

While the research work of Stone (2000) looked primarily at perceived traits of gifted behavior across cultures, her work clearly indicates the need for cross-culture studies in the field of gifted education. Stone points out that while some common traits of gifted behavior can be found across cultures other traits appear to show cultural variance. Stone spends some time discussing differences in cultures particularly Western/Non Western cultures, individualistic/collectivist orientations and religious orientations; however, she indicated that the differences she found in perceived traits of gifted behavior could be linked primarily to individual culture influences.

According to Ford, Moore, and Milner (2005) contact with individuals whose backgrounds are culturally different is increasing, however there are few teachers within the United States who could be considered culturally diverse, and that number is not expected to increase. Ford, Moore and Milner indicate that as a result of the continued increase in student diversity teachers must become more acquainted with the actualities of culture and its influence on teaching as well as learning. Renzulli (2004) indicates that

research in the future should look further at the impact of educational programs on students from different backgrounds.

Sensitivities and Social/ Emotional Needs

The sensitivities of high ability students have been documented by those in the field of gifted education in recent years (Bouchard, 2004; Cross, 2004; Edmunds & Edmunds, 2005; Kay, 2002; Moon & Montgomery, 2005; Neihart, Reis, Robinson & Moon, 2002; Piechowski, 1979; Piirto, 1999; Silverman, 1994; Stone, 2000; Tucker & Hafenstein, 1997); however, implications for educational practices based on the awareness of these sensitivities is still a matter of specific interest. The literature indicated that these sensitivities have been explored as indicators of giftedness which reach beyond the current methods (Ackerman, 1997; Bouchard, 2004; Brown, Renzulli, Gubbins, & Siegle, 2005; Piechowski & Miller, 1995; Wahlberg, 2004), that they may be important catalyst for change in the field of gifted education (Edmunds & Edmunds, 2005; Renzulli, 2004), but they are also important in providing for the emotional needs of gifted students (Bouchard, 2004; Edmunds & Edmunds, 2005; Tucker & Hafenstein, 1997).

Some suggested that these sensitivities should be used in the identification of students with high ability. The research presented by Brown, Renzulli, Gubbins and Siegle (2005) indicated that identification of gifted students should involve procedures that use individual criteria, ongoing assessments, and multiple criteria as opposed to restricting identification based on designated achievement scores provides support for this idea. Ackerman (1997) indicated that overexcitabilities have been shown to

distinguish gifted from non-gifted high school students, and that recognition of overexcitabilities by teachers who have been appropriately trained to recognize their characteristics could assist in recognizing gifted adolescents who would not normally be identified.

Bouchard (2004) addressed the issue of finding alternative methods for identifying high ability students using the sensitivities of these students. She suggested an instrument for measuring Dabrowski's overexcitabilities, a Likert-scaled observation checklist to measure certain personality characteristics of elementary students, as a tool for identification of giftedness. Bouchard discussed the overlap of Dabrowski's overexcitabilities and components of giftedness. She indicated that because these overexcitabilities provide a more holistic understanding of the makeup of giftedness and the needs of gifted individuals, they will better identify giftedness beyond the ability of achievement-oriented strategies. Bouchard pointed out that others researching overexcitabilities have found them to hold promise for being unbiased for gender.

Wahlberg (2004) indicated that overexcitabilities are significantly higher in creatively gifted students. The identification of creative individuals is an important element of identifying gifted students. Identifying creativity in an individual or potential for creativity through overexcitabilities would support the use of overexcitabilities as a tool for recognizing giftedness.

Some suggested that sensitivities should be used to change the direction of education for the gifted. Renzulli (2004) indicated that the concept of giftedness should be broadened to consider traits such as sensitivity to societal concerns, physical or mental energy, optimism etc., and in response redirect interest in education in more socially

constructive directions. In an article discussing the sensitive nature of gifted students, Edmunds and Edmunds (2005) suggested that the sensitivities of gifted students points to potential for making contributions toward humanity. This proposition would imply that sensitivity should be addressed in the process of educating high ability students.

It is apparent that gifted students sensitivities must be considered and emphasized in order to address the student's emotional needs and benefit the student. Edmunds and Edmunds (2005) stated intellectual development cannot be addressed without recognition and awareness of the influence of these sensitivities. They indicated that gifted students' sensitivity show susceptibility to the insensitivities of others. Edmunds and Edmunds pointed out that if emotional intensities are to be a benefit to gifted individuals than more emphasis should be placed on the student's sensitivities than on their talents in order to create a more positive learning environment. Ackerman (1997) indicated that individual OEs may come in any combination, should help contribute to understanding of individual differences among gifted students, and therefore promote tolerance and understanding. Tucker and Hafenstein (1997) indicated the educational importance of the sensitivities of gifted students in a study investigating the influence of Dabrowski's OEs as positive indicators of potential for growth. They stressed the importance of making teachers aware of these overexcitabilities and their benefit for understanding the psychological and educational needs of students. Wahlberg (2004) pointed to a connection of high levels of overexcitability and Maslow's self-actualization. Bouchard (2004) indicated that by viewing the student through his individual OEs educators would be able to look to the behavioral and affective needs of the student in addition to their cognitive needs.

OE Measures

The literature indicated that although there is agreement on the definition of OEs which is provided in the works of Piechowski (Mendaglio, 2006), the assessment of OEs has been done using a variety of instruments and techniques. Ackerman (1997), whose work involved gifted adolescents, used the Overexcitability Questionnaire (OEQ). The OEQ (Lysy & Piechowski, 1988) consists of 21 open-ended questions. Individuals provide written responses to describe their personal experiences which are in theory related to OEs. Respondents are allowed as much time as they wish to complete these questions. Scorers of the OEQ are trained raters who assign numerical values to the responses indicating the degree of evidence of a particular OE. Bouchard (2004), whose work involved elementary-age children, created her own instrument (ElemenOE), a 30-item observation checklist. Teachers used this Likert scaled checklist to rate the OEs of their elementary-age students. Tucker and Hafenstein (1997), whose work involved children between the ages of four and six, used a qualitative case-study approach to determine the OEs of the students they studied. This approach used a purposeful sampling and an analysis of observations, documents, and interviews.

The Influence of Gender

The literature indicates that influence of genders on development is another area in need of additional research. Stone (2000) stated “inequities in gender have become a focus of increasing interest and research in the field of gifted and talented” (p. 95). She discussed European research indicating that gifted girls’ needs are not as well recognized or provided for as boys’. She directly addressed the emotional development of American

gifted girls when she discussed earlier studies which indicated American gifted girls may be more susceptible to depression than their intellectually equal males. Stone pointed out that previous research has indicated that sex differences may interact with cultural differences. Edmunds and Edmunds (2005) pointed to emotional differences of gender interacting with culture when they discussed research indicating that American culture is not particularly accepting of outward demonstrations of sensitivity, and that this lack of acceptance of sensitivities may be particularly directed towards males.

Summary

The literature surveyed points to the importance of research concerned with understanding cultural influences on students of high ability. The work reviewed indicated that culture is related to the way gifted students learn; therefore, culture must be considered and must influence the way teachers teach. The literature suggests that cultural influences will be of greater concern in the future due to increasing student diversity.

The literature acknowledged the generally-accepted idea that sensitivities are prevalent in students of high ability, and that these sensitivities must be considered as important factors in gifted students education. Bouchard (2004) advocated for the use of these sensitivities as tools in the identification of gifted students, pointing out the overlap between OEs and components of giftedness. Bouchard indicated the value of OEs in recognizing the behavioral and affective needs of gifted students. Edmunds and Edmunds (2005) indicated the importance of emotional intensities as a component of the gifted child, and the importance of recognition and awareness of the influence of these

sensitivities. Tucker and Hafenstein (1997) discussed OEs as important indicators of potential development.

Although the literature indicated a common definition of OEs, there was little agreement about the method used to measure the OEs of an individual. The instruments used to measure OEs varied. The age of the individual as well as the administration procedures had much to do with this variance.

The literature indicated that the influence of gender is of great interest to those concerned with gifted education, but indicated a need for additional research particularly involved with the emotional needs of gifted students. Stone (2000) in particular discussed studies involving gender and gifted students. The connection between gender and culture was noted by Stone. Edmunds and Edmunds (2005) indicated that culture and gender may interact to influence the emotional needs and development of gifted students.

Chapter III

METHOD

The purpose of this study was to examine the influence of country of origin and gender on the OE of American and Korean high school students with high ability. This chapter contains a list of the hypotheses presented in the study, a discussion of the participants of the study and method of selection followed by information about the instrument (Overexcitabilities Questionnaire – Two), its appropriateness, reliability and validity. The next section describes the design of the study and its appropriateness. The next section describes the procedures used in conducting the study and data analysis used. The final section is a summary of the methods.

Research Questions

The research question that guided this analysis was: What is the influence of gender and country of origin on each of the five separate overexcitabilities for high school students who have high ability?

Hypotheses

This study required multiple hypotheses be explored. These hypotheses were stated in the null.

(1) There will be no differences for American and Korean high school students of high ability on scores of intellectual, emotional, sensual, imaginal, or psychomotor overexcitability.

(2) There will be no differences for male and female high school students of high ability from both countries on scores of intellectual, emotional, sensual, imaginal, or psychomotor overexcitability.

(3) There will be no differences for males and females between American and Korean high school students of high ability on scores of intellectual, emotional, sensual, imaginal, or psychomotor overexcitability

Participants

Two archival studies provided the data from participants for this study (Moon & Montgomery, 2005; Gladwell & Liopsis, 2005). These two studies provided information on two groups of selected students. In selecting these archival studies the similarities in sample size, the age and ability level of the students participating, as well as gender representations were important factors. All students in these two studies were high school students of high ability. Differences in geographic region of the schools attended by the participants were important for the current study so that the influence of culture could be considered with regards to eastern or western cultural influences. The study of students

from Seoul, Korea was used to represent eastern cultural influences, and the study of students from Ohio was used to represent western cultural influences.

American Students - Two hundred twenty seven students participated in the study over a three year period. All students were identified as gifted by the Ohio Rule for the Identification of Gifted Students. Each of these students attended a small private state-funded summer institute in Ashland, Ohio. These students attended either an Arts Institute focusing on the study of arts and humanities or an Academic Institute focusing on the study of mathematics and science. All students who participate in these summer institutes during this time period were included in the research. One hundred thirty-nine of the participants were male and eighty-eight were female. All information on the American students was obtained from the original study (Gladwell & Lioassis, 2005).

Korean Students – Three hundred thirty eight students participated from a total student population of 3,865. All students attended one of four domain-specific high schools, with each sample reflecting the enrollment at each school. All students attending one of these four domain specific high schools in Seoul Korea were invited to participate in the study. The Science school had more males than females; the Foreign Language High School and the Art High Schools had more females than males. One hundred seventeen of the Korean students participating in the study were male, and two hundred twenty-one were female. The students were selected to attend these high schools by competitive examination. All information regarding the Korean Students was gained from the original study (Moon & Montgomery, 2005).

Although the sample size of these individual studies was appropriate for their individual school populations, the number of participants and specific locations of the

population was not appropriate for wider generalization. Further studies with more participants, broader geographic parameters, and random sampling are needed in future studies to make the findings more widely generalizable.

Instrument

In both archival studies the Overexcitabilities Questionnaire – II (Falk, Lind, Miller, Piechowski, & Silverman, 1999) was the instrument used to identify students' levels of overexcitabilities in five specific areas (intellectual, emotional, sensual, imaginal, psychomotor) indicating level of emotional development or potential for emotional development in that area. The OEQ II is a fifty item questionnaire using a five-point Likert like scale. The scale indicates to what degree the respondent relates to the item (1=not at all like me, 2=not much like me, 3= somewhat like me, 4=a lot like me, 5=very much like me). These fifty items were compiled from previous instruments used to measure overexcitabilities and responses to these items. The fifty items contain five ten item indicators of a specific overexcitability randomly arranged. Factor analysis conducted by the instrument authors on initial samplings of the OEQ II (completed by individuals ranging in age from 10 to 76) indicated all items had loadings above .5. Each item was measured for internal reliability using Cronbach's alpha. The alpha coefficients were in a range from .84 to .89 (Wahlberg, 2004). The OEQ II was translated and reverse translated for the Korean study.

Research Design

The design chosen for this research study was a descriptive quantitative approach. This study described the findings regarding the overexcitability profiles of high school students from two different geographical regions. These data were statistically analyzed to indicate a possible relationship between culture and the overexcitabilities of American and Korean high school students, as well as a potential relationship between gender and the overexcitabilities of these students.

Procedure

Because this is an archival study, the first step was to obtain written permission to use the data from the earlier studies from Dr. Jane Piirto at Ashland University and Dr. Jeong hwa Moon at JaiNeung College. Upon receiving this permission, the researcher presented the proposal to the review board and requested permission to proceed with this study. After gaining IRB approval to use the data and proceed with the study, the individual data were compiled in order to compare individual scores on each of the five overexcitabilities for possible effects based on culture, then based on gender, and finally based on interaction between culture and gender.

Analysis of Data

One way analysis of variance (ANOVA) was used to determine if a significant difference existed for individual scores on intellectual overexcitability based on the influence of culture. One way analysis of variance (ANOVA) was used to determine if a significant difference existed for individual scores on emotional overexcitability based on

the influence of culture. One way analysis of variance (ANOVA) was used to determine if a significant difference existed for individual scores on sensual overexcitability based on the influence of culture. One way analysis of variance (ANOVA) was used to determine if a significant difference existed for individual scores on imaginal overexcitability based on the influence of culture. One way analysis of variance (ANOVA) was used to determine if a significant difference existed for individual scores on psychomotor overexcitability based on the influence of culture. One way analysis of variance was used to determine if a significant difference existed for scores of each of the five overexcitabilities based on the influence of gender in the same method. Finally ANOVA testing was used to determine if a significant difference existed for scores of each of the five overexcitabilities based on an interaction of culture and gender. Findings from these ANOVA tests were used to make recommendations for appropriate areas for future studies.

Summary

The research question that guided this study was: What is the influence of gender and country of origin on each of five separate overexcitabilities for high school students who have high ability? Three null hypothesis statements were used to address this question. The participants for this study were provided by the data from two previous studies, one study provided the American high school students' data and the other provided the Korean high school students' data. All students who participated were identified as high ability students either by the Ohio Rule or by competitive examination. The instrument used to evaluate OEs of all participants was the OEQ II. The research

design used was a descriptive quantitative approach. The procedures of the study were to gain permission for use of the archival data, gain IRB approval for the study, and then to compile the data to compare the individual scores on each of the five overexcitabilities for possible effects based on culture, gender, or an interaction between culture and gender. Data analysis was performed using one way ANOVA to determine if a significant difference existed for individual scores on each of the five overexcitabilities based on the influence of culture, then likewise to determine the influence of gender. ANOVA testing was used to determine if significant differences existed for scores of each of the five overexcitabilities based on an interaction of culture and gender.

Chapter IV

RESULTS

This chapter reports the results of the statistical analysis utilized in addressing the research question: What is the influence of gender and country of origin on each of the five separate overexcitabilities for high school students who have high ability? This chapter contains descriptive results, descriptive statistics, data analysis, and results sections.

Descriptive Results

The sample was composed of a 565 high school students of high ability who participated in one of two earlier studies (Moon & Montgomery, 2005; Gladwell & Liossis, 2005), one with American students and one with Korean students. There were 227 American students. These students attended a small private state funded summer institute in Ohio, and were identified as gifted by the Ohio Rule for the Identification of Gifted Students. One hundred thirty nine (n=139) of the American students were male, and eighty-eight (n=88) were female. There were 338 Korean students. These students attended one of four high schools, and were admitted based on competitive examinations. One hundred seventeen (n=117) of these students were male, and two hundred twenty-one (n=221) were female.

Descriptive Statistics

The mean and standard deviation (SD) scores for American and Korean students were computed on each of the five overexcitabilities subscales for both males and females and may be located in Table 1.

Table 1: OEQ II Table of Means and Standard Deviations (gender and country)

Overexcitability Score by Gender	American Students Mean	American Students SD	Korean Students Mean	Korean Students SD
Intellectual Scores of Males	3.147	.7140	3.174	.6082
Intellectual Scores of Females	3.057	.7715	3.125	.5515
Emotional Scores of Males	3.713*	.6206	3.613	.5332
Emotional Scores of Females	3.088	.7351	3.623	.4959
Sensual Scores of Males	3.649*	.7314	3.547	.5320
Sensual Scores of Females	3.317	.9109	3.534	.5040
Imaginational Scores of Males	3.776	.6535	3.524	.5435
Imaginational Scores of Females	3.940	.6726	3.592	.5243
Psychomotor Scores of Males	3.025	.8616	3.698	.4842
Psychomotor Scores of Females	3.224	.8644	3.715	.3987

*indicates significant difference while denoting the sex and country of the higher score

Table 2: OEQ II Table of Means and Standard Deviations (gender)

Overexcitability	Male	Male	Female	Female
Score	Students	Students	Students	Students
	Mean	SD	Mean	SD
Intellectual	3.159	.6666	3.106	.6216
Emotional	3.668	.5834	3.471	.6220
Sensual	3.602	.6487	3.472	.6522
Imaginational	3.661	.6175	3.691*	.5906
Psychomotor	3.332	.7882	3.575	.6114

*indicates significance and gender of the higher score

Table 3: OEQ II Table of Means and Standard Deviations (country of origin)

Overexcitability	American	American	Korean	Korean
Score by Type	Students	Students	Students	Students
	Mean	SD	Mean	SD
Intellectual	3.112	.7364	3.142	.5713
Emotional	3.471	.7326	3.620	.5084
Sensual	3.520	.8200	3.539	.5131
Imaginational	3.840*	.6643	3.568	.5312
Psychomotor	3.102	.8663	3.709*	.4296

*indicates significance and country with higher score

Data Analysis

In analyzing the research question, “What is the influence of gender and country of origin on each of the five separate overexcitabilities for high school students who have

high ability?” a 2 (Gender) x 2 (Place) between subject analysis of variance (ANOVA) was performed on each of the five subscales of the Overexcitabilities Questionnaire II (OEQII) in order to examine the relationship among gender, country of origin, and overexcitability profile. In each analysis the score on the specific OEQ subscale (intellectual scale, emotional scale, sensual scale, imaginal scale, and psychomotor scale) represented the dependent variable, and the independent variables were gender (male or female) and country of origin (American or Korean). Levene’s Test of Equality of Error Variances was performed, and in 4 of the 5 subcategories .000 significance was found. The fifth subcategory (Imaginational Overexcitability) indicated a significance of .003.

The reliability information for the OEQ II from the two archival studies was not the same. The Korean data reliability was lower for all five overexcitability scales. This may have resulted due to the translation of the OEQ II. The reliability for each subscale of this study is reported using Cronbach’s Alpha scores on the combined data. Table 4 provides details on the reliability of each of the five overexcitability scales for each of the previous studies as well as the combined reliability for this study.

Table 4: Table of Reliabilities

Overexcitability Scale	Reliability for American Data	Reliability for Korean Data	Reliability for Combined Data
Intellectual Scale	.857	.684	.777
Emotional Scale	.798	.660	.738
Sensual Scale	.868	.678	.796
Imaginational Scale	.815	.718	.741
Psychomotor Scale	.881	.571	.817

Results

The ANOVA performed on the Emotional Scale of the OEQ revealed a significant interaction of the effect of gender and the effect of country of origin ($F_{(1, 561)} = 38.284, p < .001$). American males' Emotional Scores were highest, but American females' scores were the lowest. Korean females' scores were higher than Korean males' scores. This indicated that gender differences on this subscale of the OEQ II are qualified by the subject's country of origin, and similarly that country of origin differences on this subscale of the OEQ II are qualified by the subject's gender. Effect size was examined for the interaction on this subscale; a medium effect size was associated with the interaction of gender and country of origin (partial $\eta^2 = .064$). The ANOVA summary is presented in Table 5 for the findings on the Emotional Scale.

Table 5: Emotional Scale ANOVA Summary Table

Source	SS	δf	MS	F	p	Partial η^2
Gender (G)	11.994	1	11.994	35.932	.000 *	.060
Country of Origin (C)	5.990	1	5.990	17.946	.000 *	.031
G x C	12.779	1	12.779	38.284	.000 *	.064
Subjects/GC	187.261	561	.334			
Total	7371.098	565				

The ANOVA analysis of the Sensual Scale revealed a significant interaction of the effect of gender and the effect of country of origin ($F_{(1, 561)} = 7.697$, $p < .001$). American males' Sensual scores were the highest, but American females' scores were the lowest. Korean males' scores were higher than Korean females' scores. This indicated that gender differences on this subscale of the OEQ are qualified by the subject's country of origin, and similarly that country of origin differences on this subscale of the OEQ are qualified by the subject's gender. Effect size was examined for the interaction on this subscale; a small effect size was associated with the interaction of gender and country of origin (partial $\eta^2 = .014$). The observed power (.791, $\alpha = .05$) indicated that these results would be replicated approximately 79% of the time. The ANOVA summary is presented in Table 6 for the findings on the Sensual Scale.

Table 6: Sensual Scale ANOVA Summary Table

Source	SS	δf	MS	F	p	Partial η^2
Gender (G)	3.754	1	3.754	8.973	.003 *	.016
Country of Origin (C)	.421	1	.421	1.005	.317 ns	.002
G x C	3.220	1	3.220	7.697	.006 *	.014
Subjects/GC	234.715	561	.418			
Total	7286.256	565				

The ANOVA analysis of the Imaginational Scale revealed the main effects of both gender ($F_{(1, 561)} = 4.910, p < .003$) and country of origin ($F_{(1,561)} = 33.087, p < .003$) were significant. This means that when examining the scores on Imaginational Overexcitability, females (for both countries) scored significantly higher than males. It means that when examining the scores on Imaginational Overexcitability American students (both genders) scored significantly higher than Korean students. Effect sizes were examined for each main effect. A small effect size was associated with both gender (partial $\eta^2 = .009$) and country of origin (partial $\eta^2 = .056$). The ANOVA summary is presented in Table 7 for the findings on the Imaginational Scale.

Table 7: Imaginational Scale ANOVA Summary Table

Source	SS	δf	MS	F	p	Partial η^2
Gender (G)	1.689	1	1.689	4.910	.027 *	.009
Country of Origin (C)	11.384	1	11.384	33.087	.000 *	.056
G x C	.289	1	.289	.840	.360 ns	.001
Subjects/GC	193.029	561	.344			
Total	7845.150	565				

The ANOVA analysis of the Psychomotor Scale of the OEQ revealed the main effect of country of origin ($F_{(1, 561)} = 104.575$, $p < .001$) was significant. This means that scores of Korean students were significantly higher than scores of American students on the Psychomotor Scale. A large effect size (partial $\eta^2 = .157$) was associated with the main effect of country of origin. The ANOVA summary is presented in Table 8 for the findings on the Psychomotor Scale.

Table 8: Psychomotor Scale ANOVA Summary Table

Source	SS	δf	MS	F	p	Partial η^2
Gender (G)	1.488	1	1.488	3.635	.057 ns	.006
Country of Origin (C)	42.804	1	42.804	104.575	.000 *	.157
G x C	1.059	1	1.059	2.586	.108 ns	.005
Subjects/GC	229.625	561	.409			
Total	7065.695	565				

When examining the results of the 2 x 2 ANOVA for the Intellectual Scale, no significant effects were found. This means that based on the scores on the Intellectual Scale, no differences were found that could be accounted for based on gender, country of origin, or an interaction between these two variables. The ANOVA summary is presented in Table 9 for the findings on the Intellectual Scale.

Table 9: Intellectual Scale ANOVA Summary Table

Source	SS	δf	MS	F	p	Partial η^2
Gender (G)	.612	1	.612	1.480	.224 ns	.003
Country of Origin (C)	.294	1	.294	.712	.399 ns	.001
G x C	.054	1	.054	.130	.718 ns	.000
Subjects/GC	231.959	561	.413			
Total	5768.269	565				

Chapter V

DISCUSSION OF FINDINGS

This chapter summarizes the findings of the study, discusses conclusions that can be drawn from the study, and presents implications for theory, practice and future research that can be made based on the study and current literature related to the topic.

Summary of Findings

The purpose of this study was to examine the influence of country of origin and gender on the OE of American and Korean high school students with high ability. The research question, “What is the influence of gender and country of origin on each of the five separate overexcitabilities for high school students who have high ability?” was used to guide the analysis. Three hypothesis statements (stated in the null) were explored in this study. (1) There will be no differences for American and Korean high school students of high ability on scores of intellectual, emotional, sensual, imaginal, or psychomotor overexcitability. (2) There will be no differences for male and female high school students of high ability from both countries on scores of intellectual, emotional, sensual, imaginal, or psychomotor overexcitability. (3) There will be no differences for males and females between American and Korean high school students of high ability on scores of intellectual, emotional, sensual, imaginal, or psychomotor

overexcitability. Data from two archival studies (Moon & Montgomery, 2005; Gladwell & Liossis, 2005) were used to examine these hypotheses. In analyzing the data, a 2 (Gender) x 2 (Place) between subject analysis of variance (ANOVA) was performed on each of the five subscales of the Overexcitabilities Questionnaire II (OEQ) in order to examine the relationship among gender, country of origin, and overexcitability profile. The analysis revealed that there were significant differences for American and Korean high school students of high ability on scores of imaginal and psychomotor overexcitability. Significant differences for male and female high school students of high ability from both countries were found on scores of imaginal overexcitability. The analysis revealed significant differences for males and females between American and Korean high school students of high ability on scores of emotional and sensual overexcitabilities.

Conclusions

The results of this study show that there are differences in the overexcitability profiles of American and Korean high school students of high ability. The results show that both gender and country of origin are contributing influences on the overexcitability profiles of high school students of high ability from Korea and America. The results indicate that there is an interaction of gender and country of origin which is a contributing influence on the overexcitabilities of students of high ability from these two countries.

The influence of country of origin was indicated by the significant differences for American and Korean high school students of high ability on scores of imaginal and psychomotor overexcitability. The results showed that American students (both males and females) had higher scores of imaginal overexcitability than Korean students. The results showed that Korean students (both males and females) had higher scores of psychomotor overexcitability than American students. This information further supports the findings of earlier cross-cultural research studies (Lynn & Song, 1994; Milgram, Dunn & Price, 1993; Sternberg & Zhang, 1998; Stone, 2000) which showed clear cross-cultural differences in such things as creative activity, learning style and mathematics learning.

When considering the vast concept of individualism versus collectivism as discussed in a study by Stone (2000), the results of this study suggest students who are educated in an individualist culture (American) may have higher scores of imaginal overexcitability than students who are educated in a collectivist society (Korea). The higher scores of American students' imaginal overexcitability may have a great deal to say about the way American parents value independence and autonomy, and Korean parents rear their children to become members of the whole family (Stone, 2000). The higher scores of American students imaginal scores might suggest the importance of a system that values independent work as opposed to a system where lessons are more teacher-led as in an Asian (Korea) country as discussed in a study by Stigler and Perry (1995). The psychomotor scores may be a demonstration of the differences in the way Eastern Cultures (Korea) value hard work and Western Cultures (America) seem to place

more importance on the innate abilities of students as Stevenson, Lee, and Chen (1994) suggest.

The influence of gender was indicated by the significant differences for females and males on scores of imaginal overexcitability. The results showed that the scores on imaginal overexcitability for females from their respective countries were significantly higher than the scores on imaginal overexcitability for males (from their respective countries). This finding is of particular interest when considering the studies of Golombok and Fivish (1994), which indicated that measurable differences in the aptitudes of males and females may be the result of some type of interaction between small biological differences, gender differences and socialization experiences. The works of Golombok and Fivish combined with the findings from this study would indicate that the interaction suggested by Golombok and Fivish may occur across cultural boundaries. The influence of gender found in this study is of interest when considering Gregor's (1995) claims that various institutions (such as schools) perpetuate gender inequality. The findings of this study regarding imaginal overexcitability would suggest that education systems from both east and west cultures are perpetuating gender inequality in this area.

The influence of an interaction of gender and country of origin on the overexcitability profiles of students of high ability was indicated by the significant differences found on scores of emotional and sensual overexcitabilities. American males had higher emotional overexcitability than Korean males, but Korean females had higher emotional overexcitability than American females. The scores of sensual overexcitabilities showed the same result. American males scored higher than Korean males, but Korean

females scored higher than American females. These differences may indicate that where one culture is enhancing emotional or sensual overexcitability for males, the other culture does a better job in enhancing these overexcitabilities for females.

Although no significant differences were found for intellectual scores of overexcitability in this study, the observed power on this scale were low (.176) and may not have been full enough to find any true differences in this area. A previous cross-cultural study (Lynn & Song, 1994) showed cultural differences on measures of intelligence. Further research in this area is needed.

Because this study was very limited in the countries that it observed, no broad claims could be made about the results, other than gifted students from both countries demonstrated overexcitabilities and significant differences were found in these overexcitabilities. However, the study certainly suggests a preponderance of possibilities about the influences on the overexcitabilities of high ability students that would provide for future studies in this area.

Implications

This study was done using archival data from independent studies, one Korea and one from America. The results indicated that there were cross-cultural differences in the scores of overexcitabilities in four of the five areas of high school students of high ability from Korea and America. The implications of the study are as follows.

(1) Because this study found significant differences for American and Korean high school students of high ability on scores of intellectual, emotional, sensual, imaginal, or psychomotor overexcitability, future cross-cultural studies should be

done using students from various East/West cultures to see if these differences are consistent. Identification of cultural differences in overexcitability profiles offers educators opportunities to better understand these individuals' social and emotional needs, and an opportunity to identify strengths and weaknesses of particular cultures in providing for the emotional development of these students. The observance of cultural differences in overexcitability profiles would reach beyond the realm of comparative education to the realm of cultural psychology.

(2) Because this study found significant differences for male and female high school students of high ability from both countries on scores of intellectual, emotional, sensual, imaginal, or psychomotor overexcitability, future cross-cultural studies should be done from various East/West cultures to see if these differences are consistent. Knowledge about particular gender differences between cultures would provide educators with information vital to improving the services provide to young gifted students. Gender differences that cross cultural boundaries would provide vital information not only to educators concerned with the social and emotional needs of gifted students but also to the field of cultural psychology.

(3) Because this study found significant differences for males and females between American and Korean high school students of high ability on scores of intellectual, emotional, sensual, imaginal, or psychomotor overexcitability, future cross-cultural studies should be done from various East/West cultures to learn more about the interaction of gender and country of origin. Studies that find (or eliminate) links between culture and gender differences are vital to fully understanding the emotional

development of young gifted students as well as to understanding human development and cultures themselves.

(4) This study was done using gifted high school students. Future studies should be done involving various age levels to learn if these differences appear at a specific time period, gradually develop, or are consistent throughout development. This information would provide information about critical periods of emotional development.

(5) This study supports the value of the OEQII for finding differences in overexcitability profiles of gifted high school students. This would suggest value of this instrument in future experimental studies that look at effects of a treatment on the emotional development of a particular gifted individual.

(6) This study (although it may be used as an international comparative study) is a cross-cultural study. Past research has called for increased cross-cultural research in the field of gifted education. This study would suggest further need and support the value of additional cross-cultural research in the field of gifted education particularly longitudinal cross-cultural studies to determine if such differences as the ones indicated in this study continue to affect the individuals throughout life.

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APPENDIX

Oklahoma State University Institutional Review Board Approval

Oklahoma State University Institutional Review Board

Date: Wednesday, April 19, 2006
IRB Application No ED06129
Proposal Title: The Influence of Gender on Emotional Development of American and Korean High School Students With High Abilities
Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 4/18/2007

Principal Investigator(s)

Shirley Smith 508 Birdsong Edmond, OK 73003	Diane Montgomery 424 Willard Stillwater, OK 74078
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The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415 Whitehurst (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,



Sue C. Jacobs, Chair
Institutional Review Board

VITA

Shirley Janice Smith

Candidate for the Degree of

Master of Science

Thesis: THE INFLUENCE OF GENDER AND COUNTRY OF ORIGIN ON THE OVEREXCITABILITIES OF AMERICAN AND KOREAN HIGH SCHOOL STUDENTS WITH HIGH ABILITY

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Biographical:

Education: Graduated from Kingfisher High School, Kingfisher, Oklahoma in May 1981; received Bachelor of Science degree in Education from Central State University, Edmond, Oklahoma in May 1985. Completed the requirements for the Maser of Science degree with a major in Educational Psychology at Oklahoma State University in December, 2006.

Experience: Employed by Piedmont Public Schools as the Primary Level Elementary Gifted Instructor in August 2006 to present; employed by Oklahoma State University as a graduate teaching assistant and research assistant 2005-2006; employed by Edmond Public Schools as a middle school math instructor 1999-2005; employed by West Fork Public Schools as a first grade teacher 1993-1999; employed by Broken Arrow Public Schools as a middle school instructor 1989-1993; employed by St. Scholastica Montessori School as a 9-12 year-old teacher 1987-1988.

Professional Memberships: Oklahoma Association of Gifted and Talented; National Association of Gifted, Creative and Talented; Oklahoma Educators Association

Name: Shirley Janice Smith

Date of Degree: December, 2006

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: THE INFLUENCE OF GENDER AND COUNTRY OF ORIGIN ON
THE OVEREXCITABILITIES OF AMERICAN AND KOREAN
HIGH SCHOOL STUDENTS WITH HIGH ABILITY

Pages in Study 47

Candidate for the Degree of Master of Science

Major Field of Study: Educational Psychology

Scope and Method of Study: The purpose of this study was to examine the influence of country of origin and gender on the overexcitabilities of American and Korean high school student's with high ability. The Overexcitability Questionnaire (OEQ II) was used to determine the OE of each student. Two archival studies provided the participants for this study. The study compared the OEs of 227 American students identified as gifted by the Ohio Rule for the Identification of Gifted Students to the OEs of 338 Korean students from four domain specific high schools. Korean students were accepted to these schools based on competitive examination. A 2 (Gender) x 2 (Place) subject analysis of variance (ANOVA) was ran on each of five subscales of the OEQ II to examine the relationship among gender, country of origin, and emotional development.

Findings and Conclusions: The results of this study revealed that there were significant differences for American and Korean high school students of high ability on scores of imaginal and psychomotor overexcitability. The ANOVA further revealed significant differences for male and female high school students of high ability from both countries on scores of imaginal overexcitability. Significant differences for males and females between American and Korean high school students of high ability on scores of emotional and sensual overexcitability were also found. Because this study was limited to two specific geographic areas no broad claims could be made about the results, other than gifted students from both countries demonstrated OEs and significant differences were found in these overexcitabilities.

Advisor's Approval: _____