The Role of Ethnicity and Perceptions of the Family Environment in Self-determination among Students with Disabilities

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THE ROLE OF ETHNICITY AND PERCEPTIONS
OF THE FAMILY ENVIRONMENT IN SELF-DETERMINATION
AMONG STUDENTS WITH DISABILITIES

By

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THE ROLE OF ETHNICITY AND PERCEPTIONS OF THE FAMILY ENVIRONMENT IN SELF-DETERMINATION AMONG STUDENTS WITH DISABILITIES

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Considerable research exists on the importance of self-determination in the transition of students with disabilities from high school. Much of this research has focused on conditions in the family that may nurture and support the development of self-determined motivation. These conditions, as described by Self-Determination Theory, include support for autonomy, relatedness and competence. Little data exists, however, on whether the conditions in the family environment associated with self-determination vary depending on students’ ethnic backgrounds. Participants consisted of 138 Latino and Anglo students with disabilities enrolled in six high schools within a large urban school district. Self-determination was measured using the Arc Self-Determination Scale (Wehmeyer & Kelchner). Students’ perceptions of their family environment were measured using six subscales from the Family Environment Scale (Moos & Moos). Latino students scored significantly higher than Anglo students in level of self-determination, but no significant differences were found in perceptions of the family environment between the two groups. Self-determination was regressed on the family environment subscales and no significant effect sizes were obtained for the sample as a whole ($R^2 = .044, F (6, 129) = .993, p = .433$). However, comparisons between Latinos and Anglos on the relationship between perceptions of the family environment and self-
determination suggested that family environments associated with Autonomy were more related to levels of self-determination in Anglo than in Latino students. Family environments associated with Cohesiveness, Achievement Orientation and Control were more highly related to level of self-determination for Latino than for Anglo students. The study has practical implications for parents and school practitioners when planning for transition and implementing strategies to develop self-determination for students with disabilities.
Dedication

This work is dedicated to my wonderful daughter Jennifer, who made me wonder if, and how, I might have affected the process of her becoming self-determined.
Acknowledgements

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Chapter 1

Introduction

The concept of self-determination has been studied extensively as it relates to the provision of services for persons with disabilities (Wolfensberger, 1972, Nirje, 1970), and in the field of special education (Algozzine, Browder, Karvonen, Test, & Wood, 2001; Field, & Hoffman, 2002; Malian, & Nevin, 2002; Mithaug, 1996; Wehmeyer, 2001). An underlying assumption in this research is that if individuals with disabilities are to enjoy a high quality of life, they must have the ability and opportunity to make their own decisions and be in charge of their destinies. In special education, there has been an increasing emphasis on the role of self-determination as it relates to the transition of students with disabilities into post-secondary education, employment, or assisted living communities. Self-determination is no longer viewed as pertaining exclusively to the world of adults. On the contrary, the prevailing notion is that opportunities for self-determination and the capacity to be self-determined should be developed as early as possible.

Theories on the development of self-determination, though they may differ in some respects, all have one element in common: Self-determination is both intrinsic to the individual and is enhanced through environmental factors (Abery, 1994; Deci and Ryan, 1985, 2000, 2003, 2007; Mithaug, 1992; Wehmeyer, 2001). Many researchers agree on the conditions that should be present to nurture the development of self-determination. These include providing autonomy support, feelings of competence, and a sense of relatedness with others. However, the impact of cultural and familial variables that may affect the relationship between environmental conditions and the development
of self-determination is less clear. The proposed study will examine the relationship between perceptions of the family environment and self-determination in high school students with disabilities. Further, this study will make a contribution to research in this field by investigating whether cultural variables such as ethnicity play a role in the relationship between the family environment and levels of self-determination.

Wehmeyer (2001) traces the origins of the concept of self-determination and the treatment of individuals with disabilities to the writings of Nirje in Wolfensberger. Nirje (1972) stated that a major component of the principle of normalization in providing services to individuals with disabilities is to provide the same level of respect to which any human being is entitled. In his view, the wishes and desires of individuals with disabilities must be taken into consideration. He pointed out that it is especially difficult for someone who is “impaired” to achieve the ability to manage his own life as an individual, since others devalue him. Nevertheless, Nirje felt that society had a responsibility to grant individuals with disabilities the same opportunities for self-determination available to everyone. Nirje and Wolfensber’s arguments may have reached a receptive audience. The Education of All Handicapped Children Act, also known as PL 94-142 was enacted in 1975 to provide specialized services for students with disabilities. It was later renamed the Individuals with Disabilities Act (IDEA) in 1990.

The two most recent authorizations of IDEA have placed an increased importance on the transition of students from high school into the community as well as the role of self-determination in making a successful transition. The 1997 reauthorization of IDEA defined transition as:
34) TRANSITION SERVICES - The term “transition services” means a coordinated set of activities for a child with a disability that--

(A) is designed to be a results-oriented process, that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child's movement from school to post-school activities, including post-secondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation.

Later, in the 2004 reauthorization of IDEA, changes were made in the way schools would be expected to provide transition services to students in special education programs. Two of these changes spoke directly to the importance of self-determination as an important element of the transition process. First, transition services must be “… based on the individual child’s needs, taking into account the child’s strengths, preferences, and interests.” Second, “the LEA must invite a child with a disability to attend the child’s Individual Education Plan (IEP) Team meeting if a purpose of the meeting will be the consideration of the postsecondary goals for the child and the transition services needed to assist the child in reaching those goals under §300.320(b [34 CFR 300.321(b)] [20 U.S.C. 1414(d) (1) (B)].” Both of these changes reflected a greater emphasis on children with disabilities being at the center of planning for their own future.

In practice, these changes are expected to alter the ways schools approach the transition process. Students with disabilities are expected to have greater opportunities to make choices about their preferred transition outcomes, be more directly involved in all phases of the decision making-process, and be made more aware of their rights and
responsibilities under the law. This means that students must understand their disability and be able to advocate for themselves in order to obtain services. The ability to successfully advocate for oneself involves self-determination. In high school, accommodations are arranged through IEP meetings with teachers, parents, administrators and special education personnel. The student need not, and often does not, have to request any of these services in order to receive them. Since IDEA only covers students in grades K-12, however, this changes when the student graduates from high school.

Once a student with a disability leaves high school, services that were provided under IDEA are no longer automatically offered. Even though some students may continue to receive services through non-profit agencies or governmental entities such as the Division of Vocational Rehabilitation, the student must apply for these services. The student must be able to advocate for the need to have those services. Though some post-secondary institutions or employers may provide accommodations under the Americans with Disabilities Act, individuals with disabilities are not necessarily entitled to them. Students with disabilities must leave high school with a good understanding of their strengths and weaknesses. They must understand their rights and responsibilities. They must have knowledge of how to request assistance from organizations that provide services.
Theoretical Models of Self-Determination

Wehmeyer and his colleagues (1998) defined self-determination as:

…a combination of skills, knowledge and beliefs that helps them [students] engage in goal-directed, self-regulated, autonomous behavior. Self-determination requires an understanding of one’s strengths and limitations and a belief in oneself as capable and effective. When acting on the basis of these skills and attitudes, individuals have greater ability to take control of their lives and assume the role of successful adults in our society (Field, Martin, Miller, Ward and Wehmeyer, 1998, p. 2).

Wehmeyer (2001) elaborated on this definition and proposed a functional theory of self-determination. In his view, the individual is a causal agent. The extent to which the individual acts as a causal agent in his life is a result of four distinct but interrelated factors. These are:

a) Behavioral Autonomy: It is the outcome of the process of individuation and includes acting according to your own preferences, interests or abilities, and independently, free from undue external influence or interference.

b) Self-Regulated Behavior: It includes the use of self-management strategies such as self-monitoring, self-instruction, self-evaluation, self-reinforcement, goal-setting, problem-solving and decision-making behaviors.

c) Psychological Empowerment: It involves perceived control achieved through problem-solving behavior and that one can achieve desired outcomes.
d) **Self-Realization**: This forms through self-knowledge and self-understanding, and is similar, but not identical to, previous conceptualizations of terms such as self-actualization and self-awareness.

The elements described above develop as a result of intrinsic and environmental factors that interact with each other to generate relative levels of self-determination. These factors are opportunity, perceptions/beliefs, and capacity. A key element of Wehmeyer’s functional theory is the concept of *interdependence*. This means that individuals are not completely independent or autonomous. Individuals function in relation to other people and the environment in general. Therefore, people are always subject to influence or even interference.

Earlier, Deci and Ryan (1985) proposed a theory of the development of intrinsic motivation and they have highlighted key points of Self-Determination Theory (SDT) in more recent work (2000, 2007). They explain the process whereby extrinsic motivations become internalized. Self-determination is, in their view, the extent to which the individual is motivated by these internalized motivations rather than extrinsic motivations. Self-determined motivations require higher levels of self-regulation. Thus, SDT proposes that motivations vary along a continuum of extrinsic to intrinsic motivation. Extrinsic motivations are governed by external rewards. Extrinsically motivated behaviors are not inherently satisfying. Rather, they are responses to reward and punishment. On the other hand, intrinsic motivations produce behaviors that are inherently satisfying in their own right and do not depend on external rewards or punishments.
According to Deci and Ryan (2000), extrinsic goals become self-determined to the extent that conditions that lead to the satisfaction of the needs of autonomy, relatedness and competence have been met. Autonomy means contexts that will foster autonomous regulation, thus allowing the person to feel competent, related and autonomous. Support for autonomy allows individuals to actively transform values into their own. According to SDT, family environments that promote autonomy are more likely to yield self-determined goal pursuing behavior.

Relatedness means that since extrinsically motivated behaviors are not inherently interesting, the primary reason people initially perform such actions is because the behaviors are prompted, modeled, or valued by significant others to whom they feel, or want to feel, attached. Internalization is more likely when there are supports for feelings of relatedness. Family environments that promote relatedness are more likely to lead to self-determined behavior.

Competence means that people are more likely to adopt activities that relevant groups value when they feel efficacious with respect to those activities. They suggest that supports for competence should facilitate internalization. Family environments that promote feelings of self-efficacy will lead to higher levels of self-determined behavior.

Deci and Ryan (2000) argue that environments that nurture these conditions will necessarily lead to higher levels of self-determined motivation. The proposed study will examine if the relationship between these conditions and self-determination varies as a function of ethnicity. The authors (2000, 2003, and 2007) conducted several studies on the conditions in the family environment that are associated with the development of self-determined behavior. These studies suggest that certain conditions, specifically feelings
associated with the family or group, will facilitate the internalization of values and behaviors that are endorsed in the family setting. Feeling competent to enact behaviors will tend to increase the chances of internalizing the regulation of those behaviors. Being encouraged to think about the value of the behavior will facilitate identifying with and integrating the behavior’s value and regulation. Their theory also proposes that significant others who encourage children to explore and initiate behaviors that are interesting to them will be more likely to internalize motivations.

Figure 1 provides a visual depiction of the relationship between conditions in the family environment and self-determined motivation.
Figure 1
Adaptation of Deci and Ryan’s Model of the Relationship between
Environmental Conditions and Self-Determined Motivation

ENVIRONMENTAL CONDITIONS

High Level of Environmental Support

Support for Need for Autonomy
Support for Need for Relatedness
Support for Need for Competency

Low Level of Environmental Support

LEVEL OF SELF-DETERMINATION

High Level of Self-Determination
Intrinsic Motivation

Autonomy
Self-Regulation
Psychological Empowerment
Self-Realization

Low Level of Self-Determination
Extrinsic Motivation
According to the authors, the basic needs for relatedness, competence and autonomy are universal (2007). Therefore, their theory would predict that the family conditions associated with the development of self-determination are similar across cultures.

Existing theoretical models of self-determination ignore the potential role of ethnicity in the development of self-determination. The underlying processes and environmental conditions leading to self-determined motivation are presumed to apply across cultures. The role of ethnicity in the relationship between supportive environmental conditions and the development of self-determination has not been closely examined in the literature. Research has shown that cultural background is associated with differences in family interaction patterns (Suarez-Orozco, 1989, 1995; Valdes, 1996). If cultural differences affect family interaction patterns, these differences may also be associated with the development of self-determination. Therefore, the purpose of this study is to examine the role of ethnicity and perceptions of the family environment on self-determination among high school students with disabilities.
Chapter 2

Literature Review

The literature reviewed in this section describes: a) studies that have shown a relationship between self-determination and transition outcomes, b) studies that have shown a relationship between family environments and the development of self-determination, c) studies that have examined cultural differences in parenting practices and their effects on self-determined motivation.

Self-Determination and the Transition from High School

In a seminal study on the topic of transition and self-determination, Wehmeyer and Schwartz (1997) collected data on students with cognitive disabilities one year after graduation and compared it to their measured levels of self-determination while in high school. The purpose of the study was to determine if higher levels of self-determination were associated with more desirable transition outcomes. The authors used the Association for Retarded Citizens Self-Determination Scale (AS-DS) as the measure of self-determination. They used a compilation of survey items based on 24 previous studies to measure transition outcomes. They found significant differences between low scoring and high scoring groups and transition outcomes. The higher scoring group was more likely to maintain a checking or savings account, be employed, and earn a higher wage. Wehmeyer, Palmer, Soukup, Garner and Lawrence (2007), using the same self-determination instrument, also found that global self-determination scores were a significant predictor of transition planning knowledge and skills.

Martin and his colleagues focused on the role of self-determination as it relates to the transition IEP process (Martin, Van Dyke, Christensen, Green, Gardner & Lovett,
These studies demonstrated that, after observation of hundreds of IEP transition meetings, special educators, teachers and administrators did almost all of the talking and decision-making in these meetings. Students seldom spoke or expressed an opinion. The authors concluded that students should receive self-determination training in goal setting, planning, and conducting meetings. In Martin et al. (2006), the authors randomly assigned 130 students to one of two groups. One group received instruction in the Self-Directed IEP training program and the other did not. Observational ratings showed that students who received training spent significantly more time talking, discussing their transition goals, and leading meetings.

Trainor et al. (2007) conducted a qualitative study of transitioning females with learning disabilities (LD) and found that women with LD perceived themselves as self-determined, but were unable to provide specific details related to their needs and strengths as they related to post-secondary goals. The authors also found a discrepancy between the participants’ stated goals, such as going to college, and their demonstrated ability to meet those goals (e.g. the student avoided taking difficult courses in high school). Even when employment goals were more clearly articulated, participants demonstrated little knowledge of the job requirements or education prerequisites for those jobs. Participants were generally unfamiliar with the transition planning process and revealed a lack of vocational education and career development opportunities. The study shows a marked discrepancy between the participants’ broad statements about being self-determined and the ability to support those statements with the more specific knowledge and skills needed to accomplish their goals.
Several studies have used structural equation modeling (SEM) to study the relationship between parenting practices, self-determination and transition-related outcomes (Sands, Spencer, Gliner and Swaim, 1999; Guay, Senecal, Gauthier and Fernet, 2003). Guay et al. (2003) used a SEM approach to predict career indecision in college students. The authors used several measures of peer and parental control to predict career indecision as measured on a standardized instrument. Their model showed that perceptions of parental and peer autonomy support were associated with career decision-making self-efficacy and career decision-making autonomy. Career decision-making self-efficacy was more strongly predictive of overall career indecision than career decision-making autonomy. However, perceptions of peer control were the largest predictor of career-making autonomy. Ratelle, Guay, Larose, and Senecal (2004) reported similar findings. Their study showed that children with problems transitioning from high school had parents who were less autonomy supportive and less involved in their schoolwork than students who successfully made the transition.

The Role of Family Environments and the Development of Self-Determination

Bronfenbrenner (1977) presented an ecological theory of individual functioning that was based on the idea that the individual operates within various environmental contexts that influence his behavior. He referred to one of these contexts as the microsystem. The microsystem consists of environments that interact directly with the individual. One of the most important of these is the family environment.

Several studies have demonstrated a connection between family environments that provide autonomy support, the development of self-determined behavior, and positive school outcomes. Grolnick, Krurowski, and Garland, (1999) studied the
A relationship between parenting practices, children’s motivations, and school achievement at several stages in their development. They found that certain aspects of the family environment predict children’s abilities to navigate transitions into junior high school successfully. Specifically, they found that parents who provided autonomy support and who were involved in their children’s school had children who performed better and who demonstrated higher levels of intrinsic motivation. They found this to be particularly true of maternal involvement and autonomy support. The authors concluded that their findings provide strong support for the role of parental resources in building school-relevant motivation in children. Their study suggests that autonomy support, parental involvement, and structure were key factors that predicted positive school-related motivation.

In a related study, Joussemet, Landry, and Koestner (2008) conducted parent observational studies and interviews with parents to determine the correlates of children’s’ self-determined motivation. One finding from their study suggests that parents’ beliefs about their child’s competence may have a strong influence on the extent to which they provide autonomy support. This finding has interesting implications for studies of parenting practices involving students with disabilities, where parents may have developed lower expectations of their child’s ability and competence as a result of their disability. They found that a family environment where structure is provided in a democratic manner, with respect for the child’s feelings and interests, is associated with a host of positive child outcomes. Adolescents who reported that their parents provided autonomy support tended to be more socially and academically adjusted in school. Another study investigated the parental practices of parental conditional vs. unconditional
regard and parental autonomy support showed that, consistent with Deci and Ryan’s theory, parents who provided autonomy support for their children promoted the integration and identification with the value of the behavior more than children who received a different parental style (Roth, 2008).

This research suggests that families play a key role in the development of internalized motivations, values, and self-determined behavior. These studies also suggest that self-determination is an important factor in the successful transition and achievement of students in middle school and high school. However, the impact of ethnicity and culture in the development of motivation and achievement is less conclusively understood, particularly from the point of view of self-determination theory.

The Role of Culture and Ethnicity in Self-Determination

Several studies have reported cultural differences in how parenting practices are associated with self-determined behavior. (Zhang, 2005; Zhang and Benz, 2006: Frankland, Turnbull, Wehmeyer, and Blackmountain, 2004). Zhang (2005) compared special education students from Anglo, Asian and African American backgrounds and found that Anglo children were more involved in activities that reflected personal independence in the home than children of Asian or African American backgrounds. In a review of the self-determination literature with culturally diverse students, Zhang et al. (2006) suggested that even though the concept of self-determination is rooted in Western European values, it still has applicability to persons from diverse cultures. However, the authors also pointed out that if the principles of self-determination are imposed on individuals from diverse cultures without regard to their own cultural values, they might be less likely to internalize values associated with self-determination. Frankland et al.
(2004), in a study of self-determination with people of the Navajo culture, concluded that that though the Navajo valued self-regulation and autonomy, their values were operationalized more in terms of interdependence and group cohesion.

Other studies have focused on the role of self-determination in the transition of culturally linguistically diverse (CLD) female students with LD. (Hogansen, Powers, Geenen, Gil-Kashiwabara & Powers, (2008); Trainor, (2007). Hogansen at al. (2008) found, in a qualitative study, that women with LD expressed educational goals and the desire to start a family upon reaching adulthood, but that parents were at odds with them about the importance of starting a family within five years after high school. They also found a large gap between what the youth and their parents thought were attainable goals. The authors suggested that this schism might be smaller if women with disabilities were provided with routine self-determination training in school, in which case their parents might perceive them as more capable of attaining their goals. Many of the women stressed the importance of autonomy support provided by family teachers and friends, and were disappointed with their experiences in the transition process in school. The authors’ findings call attention to additional barriers facing culturally and linguistically diverse (CLD) students. Families of these students faced stereotypes from school personnel about having lesser aspirations and goals. The authors found that even though the goals for Latino and Anglo women were similar, the way they were expressed could be different. For example, a Latina may go to college but want to stay near her parents’ home. The authors stressed that CLD students and their families were viewed as “pathological” by many school staff, when in reality they were just expressing different views. The authors concluded that the transition outlook for young CLD women is
dismal, and that much work remains in the area of understanding CLD females’ goals in the cultural context of their own families.

These studies indicate that ethnicity may play a role in the development of self-determined motivation. The following research focuses specifically on family environment and parenting practices among Latinos and their relationship with motivation and educational outcomes.

**Differences between Anglo and Latino family environments and self-determination.** Suarez-Orozco (1989) extended and elaborated on Ogbu’s work (1987, 1992) on the dual frame of reference in an ethnographic study of Central American immigrant families and their children who attended two low SES high schools in Southern California. According to Ogbu, voluntary minorities, like many Latino immigrants, develop a dual frame of reference. This means that even though minorities may not be assimilated into the cultural mainstream in this country and may live in poverty, they still consider themselves to have greater educational opportunity relative to their countries of origin. This dual frame may be a source of self-determined motivation in that students may internalize the need to work hard from their parents in order to avoid returning to the conditions of poverty in their country of origin.

Suarez-Orozco found that in spite of the pitiful conditions in the schools he studied, such as rampant drug sales, prostitution and ineffective teachers, students could still be motivated to achieve academically. He interpreted their motivation in terms of their dual frame of reference. Voluntary minorities' perceptions were that even though conditions in the US were less than ideal, they were still far better than in their home countries. Another factor identified by Suarez-Orozco was that students were motivated
out of guilt associated with their parents’ sacrifices. They could not bear to let their parents down, since their parents’ dreams and aspirations were riding on their own academic success. Suarez-Orozco also saw this openly during his observations of parent-child interactions. Parents would use guilt to get the child to succeed in school.

Suarez-Orozco & Suarez-Orozco (1995) conducted an ethnographic study comparing first generation Mexican immigrants and second generation Mexicans to white non-Hispanics born in the United States. They examined a variety of issues impacting on the development of the youths’ self-identity, including the concept of familism. Familism is defined as a “strong identification and attachment of individuals with their families, strong feelings of loyalty, reciprocity, and solidarity among members of the same family” (p. 113-114). They found that this attitude toward the family stood in stark contrast to the pervasive attitude of individualism among youth from Anglo families. White adolescents scored lower than any of the other groups studied on a familism scale. No significant differences were found on the scale between the three Mexican groups studied, suggesting that familism is a cultural characteristic that persists from one generation to the next. The authors also examined youths’ responses to the Thematic Apperception Test and found differences in the prevailing themes when comparing Mexican and Latino youth. Stories told by Mexican youth tended to contain a higher proportion of themes related to family conflict, romance, parents sacrificing themselves so their children can pursue an education, and parents who are nurturing and supportive. Themes from Anglo youth respondents tended to focus on individualism and pursuing an education to move away from parents.
Valdes (1996) conducted an ethnographic study with ten first generation Mexican families and found consistent differences between Latino and Anglo family environments. First, the families were organized “hierarchically”. Each member understood his or her role, and their primary responsibility was to the family. This contrasted with commonly held views of Anglo families that encourage equality and independence. Second, family members did not raise their voice and tended to stay close to the family most of their lives. This contrasted with Anglo family patterns that encouraged assertiveness and an emphasis on high social mobility. Third, and consistent with Suarez-Orozco’s findings, showing gratitude and respect for parents’ sacrifices was a deeply held value. In contrast, the more commonly held Anglo value was that individual effort and merit were more important. Fourth, these differences in family patterns translated to differences in behavior patterns in the classroom. Parents did not expect their children to raise their hands or be among the first to answer questions, since these actions might be viewed as disrespectful. This contrasted with the Anglo view that it was important to demonstrate personal initiative and decisiveness.

These studies suggest that Latino family interaction patterns and Anglo family interaction patterns are different. If Anglo youth perceive their families as stressing independence as opposed to familism and cohesiveness among family members does this mean that Latino youth are less self-determined? Or is it possible that the cultural dynamics and the values of Latino families, being different from those of Anglo youth, may still develop self-determined motivation even if autonomy support is not as strong? These are important questions in the context of Deci and Ryan’s position that self-determined behavior develops universally without regard to cultural differences.
This study will examine the relationship between perceptions of family environments, ethnicity and self-determination by asking the following research questions:

1. Do Latino and Anglo students differ in their levels of self-determination?
2. Do Latino and Anglo students differ in their perceptions of family environments?
3. Are perceived conditions in the family environment predictive of self-determination?
4. Do perceived conditions in the family environment that may predict self-determination depend on ethnicity?
Chapter 3

Methods

Participants

Participants in this study were recruited as part of a larger study involving school engagement and achievement among both regular and special education students. The total sample consisted of 138 students with disabilities enrolled in six high schools in the Miami Dade County school district. Participants in the study were 138 high school students with disabilities that were coded as Anglo or Latino. This subsample was selected from the larger sample because of the specific questions addressed in this study, which involve comparisons between Latino and Anglo students. The mean age for the participant sample was 17.36 years (range = 14-20 years, $SD = 1.00$). The mean age for Latinos was 17.39, and the mean age for Anglos was 17.28. All of the students in the sample were district identified as meeting the criteria for special education services. Of the sample, 63.8% were students with learning disabilities, 3.8% were emotionally/behaviorally disabled, 4.3% were mildly intellectually disabled, 2.9% were Other Health Impaired, 0.7% were sensory impaired and disability category data were unavailable for the remaining 24.6%. The Other Health Impaired category is typically used to serve students diagnosed with ADHD who are eligible for special education services.

Due to the under-representation of Anglo students in special education as compared to Latino students in the local school district student population, Anglo students were purposely over-sampled in order to obtain a sufficient number of Anglo students to draw comparisons between the two groups. In spite of these efforts however,
the number of Anglo students obtained was relatively low, reflecting the low representation of Anglo students in the district in general and the over representation of minority students in special education.

Ethnicity was determined based on an acculturation survey adapted from Portes and Rumbaut (2001) that asked students various demographic questions about their backgrounds. Students were coded as Latino if they self-reported as Latino or if one or both of their parents was reported as being born in a Hispanic country or Puerto Rico. Students were also coded as Latino if they self-reported as Latino (or from a Hispanic country) and described one or more of their parents’ ancestries as Hispanic, even if both parents were born in the US (third generation). The vast majority of the students were second generation Latino immigrants, students who were born in the US but who had one or both parents that were born elsewhere. Students who self-identified as both black and Hispanic were coded Latino if they met the criteria described above. Students were coded as Anglo if they and both of their parents were born in the US and they identified their race or ethnicity as “white”. Of the 138 students in the sample, 109 (79%) are Latino and 29 (21%) are Anglo. Males comprised 67% of the sample and females the remaining 33%. The breakdown of males as compared to females was virtually identical for Latinos and Anglos.

Procedures

This study was conducted within the context of a larger study within the local school district (IRB #20070782, Dr. Wendy Cavendish, Principal Investigator). The university Institutional Review Board (IRB) and school district approval were obtained. Principals from six high schools were contacted to obtain permission to conduct the
study. Permission was obtained and the Special Education Department (SPED) Chairpersons and/or Program Specialists from each school were contacted to identify students for participation in the study.

Members of the research team distributed parent consent and student assent forms for students under the age of eighteen. Students older than 18 who agreed to participate signed student assent forms. All surveyed students were enrolled in the 10th through 12th grades and had been school district identified as eligible for SPED services.

Once parent permission forms were returned, student assent was obtained, and students were convened to complete the survey measures. The measures were: (1) the Family Environment Scale (Moos & Moos, 2002), and (2) the Arc’s Self-Determination Scale (SDS) (Wehmeyer & Kelchner, 1996) and (3) the Acculturation Questionnaire (Portes & Rumbaut, 2001).

**Administration and scoring of measures.** The measures described below were administered to students in a group setting by the research team. Members of the research team were trained by the Principal Investigator to ensure consistency in the survey administration process. All items on the Family Environment Scale (FES) and Arc Self-determination Scale (SDS) were read aloud to students as they read the items on their own. This was done to accommodate differing ability levels and to ensure consistency in the surveying process. In order to ensure confidentiality, survey instruments were identified by student school ID number, rather than by name. Completed surveys were secured in a locked file cabinet in the Principal Investigator’s office.

Surveys were scored according to procedures contained in the administrator manuals for the measures. Once a group of surveys was scored by one team member, the
scoring was cross-checked by another member and any errors were corrected. One of the four scales of the SDS, Self-Regulation, involves an interpretation of written responses of how students would address certain real-world scenarios. This scale was scored by two members of the research team in accordance with criteria identified in the SDS administration manual. Scoring differences were discussed until 100% agreement was reached.

Once all of the scoring was cross-checked, the data were entered into the database for analysis. The entered data were crossed-checked by another team member to verify accuracy and any errors were corrected.

Measures

The Arc Self-Determination Scale (SDS). The Arc Self-determination Scale (Wehmeyer & Kelchner, 1995) is a measure of students’ perceived levels of self-determination. The SDS is a student self-report measure designed for adolescents with disabilities. The scale was designed as a tool to assess perceptions of self-determination so that educators could collaborate with students and parents to enable students to become more self-determined. The scale is subdivided into four sub-domains: (1) Autonomy measures a sense of personal control over one’s life. It involves the belief that one is acting according to one’s own preferences, interests or abilities. (2) Self-Regulation includes self-management strategies such as self-monitoring, self-instruction, self-evaluation and self-reinforcement. Goal-setting and problem-solving are also associated with this scale. (3) Psychological empowerment involves the perception that one has control over circumstances that are important, that one has the skills and efficacy necessary to achieve desired outcomes, and that identified outcomes will result from
one’s actions. (4) Self-realization involves having reasonably accurate knowledge of one’s interests, abilities and limitations and the capacity to fulfill one’s potential. The scale was normed on 500 general and special education students across five states. The ages of the participants in the norm group ranged from 14-22. Descriptive statistics are provided by gender, and by disability label.

The scale was validated concurrently against three measures. One was a measure of locus of control, the Nowicki-Strickland Internal-External Scale (Nowicki & Duke, 1974). The second was a measure of academic achievement attributions, the Intellectual Achievement Responsibility Questionnaire (Crandall, Katkovsky & Crandall, 1965). The third was a measure of self-efficacy, the Self-Efficacy Scale, (Sherer, Maddux, Mercadante, Prentice-Dunn, Jacobs & Rogers, 1982). The inter-correlations among the four sub-scales of the ARC Self-Determination scale and these other measures are reported as strong to moderate (.25 -.50). The manual also describes various discriminant and factorial analyses that were used to establish the construct validity for the instrument. The internal consistency estimate for the instrument is Cronbach’s Alpha (.90).

**The Family Environment Scale (FES).** The FES (Moos & Moos, 2002) was developed to measure social and environmental characteristics of families. It is based on a three dimensional conceptualization of families. It comes in three forms: the Real Form, the Ideal Form, and the Expectations form. The Real Form is the version that was used in this study, which measures student perceptions of the actual home environment.

The FES consists of 90 items and is scored on a dichotomous scale based on the respondents’ true or false answers. The measure consists of 10 subscales of 9 items each. Six of the subscales are of interest in this study. The subscales of interest are:
• **Cohesion** – the degree of commitment, support and help family members provide for one another. An example of an item on this scale is “Family members really help and support each other.”

• **Expressiveness** – the extent to which family members are encouraged to express their feelings directly. An example of an item on this scale is “We tell each other about our personal problems.”

These two subscales are conceptually related to Deci and Ryan’s notions of *relatedness* as an important condition for the development of self-determination.

• **Independence** – the extent to which family members are assertive, self-sufficient and make their own decisions. An example of an item on this scale is “In our family, we are strongly encouraged to be independent.”

• **Control** – how much set rules and procedures are used to run family life. An example of an item on this scale is “There is one family member who makes most of the decisions.”

These subscales are conceptually related to Deci and Ryan’s notion of *autonomy* as an important condition for the development of self-determination in opposite ways. “Independence” was expected to be positively associated with higher levels of self-determination, whereas “Control” was expected to be inversely related to higher levels of self-determination among Anglos, but not necessarily Latinos. This subscale was reverse coded, where “no” answers will receive a point instead of “yes” answers.

• **Achievement Orientation** – how much activities are cast into an achievement-oriented or competitive framework. An example of an item on this subscale is “Getting ahead in life is very important in our family.”
• *Organization* – the degree of importance of clear organization and structure in planning family life. An example of an item on this subscale is “Being on time is very important in our family.”

Internal consistency estimates for the Form R range between .61 and .78. Inter-correlations between the subscales range from -.53 to .45, which suggest that the subscales, although correlated, are measuring relatively distinct aspects of the family environment. Additional validity evidence is provided through summaries or references to approximately 150 research studies. Many of these present convergent validity for the measure’s 10 subscales. Table 1 illustrates the relationship between the FES subscales and Deci and Ryan’s three psychological needs:

<table>
<thead>
<tr>
<th>FES SUBSCALE</th>
<th>SDT PSYCHOLOGICAL NEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH COHESION</td>
<td></td>
</tr>
<tr>
<td>HIGH EXPRESSIVENESS</td>
<td>NEED FOR RELATEDNESS</td>
</tr>
<tr>
<td>HIGH INDEPENDENCE</td>
<td></td>
</tr>
<tr>
<td>LOW CONTROL</td>
<td>NEED FOR AUTONOMY</td>
</tr>
<tr>
<td>HIGH ACHIEVEMENT ORIENTATION</td>
<td></td>
</tr>
<tr>
<td>HIGH ORGANIZATION</td>
<td>NEED FOR COMPETENCE</td>
</tr>
</tbody>
</table>

**Table 1**

Relationship of FES Subscales to Psychological Needs in Deci and Ryan’s SDT Theory

**Design**

The data were analyzed using analysis of variance procedures and *ordinary least squares multiple linear regression design* (OLS). One advantage of multiple regression
over other statistical methods is that it can accommodate both continuous and categorical independent variables. In this study, the six subscales of interest on the FES are the continuous independent variables and ethnicity is the categorical independent variable. Ethnicity was coded as a “dummy variable”, where Anglo = 0 and Latino = 1.

The analyses consisted of descriptive data, comparisons of means, simultaneous multiple regression, and sequential multiple regressions. Two sequential regression procedures were used. The first consisted of entering variables in two blocks as suggested by Keith (2006) when testing interactions between continuous and categorical variables. The first block (Model 1) regressed self-determination on the six family environment scales and ethnicity. The second block added the interactions of ethnicity and family environment variables. Model 2 consisted of the variables in both blocks.

The second sequential regression procedure was designed to address potential problems with multicollinearity that can occur when composites of variables (such as interaction terms) are entered in the same regression model that contains the variables from which they are derived. This analysis consisted of adding and removing each interaction term individually to Model 1 in order to examine variance explained by each interaction term while reducing multicollinearity.

**Analyses**

**Descriptive analyses and comparisons of means.** Preliminary analyses consisted of descriptive statistics showing frequencies of students on items such as gender, age, and disability category. Overall means were obtained for SDS total score, SDS sub-domain scores and FES mean scores for the six subscales of interest. Mean comparisons were conducted between Latino and Anglo students, males and females, and
students by age. The analyses described in this section addressed the first two research questions: Do Latino and Anglo students differ in their levels of self-determination? Do Latino and Anglo students differ in their perceptions of the family environment?

**OLS regression analyses.** These analyses consisted of simultaneous and sequential multiple regressions. Multiple regressions were conducted regressing SDS total score on the six FES subscales of interest. First, a simultaneous regression was conducted with SDS on the six FES subscales. This analysis addressed the question three: Are perceived conditions in the family environment predictive of self-determination? Then, two sequential multiple regressions were conducted regressing SDS total score first on the six FES subscales and ethnicity (Model 1), and then by adding the interaction terms, which were computed by multiplying the ethnicity dummy variable times each FES subscale (Model 2). The second sequential regression was conducted by adding and removing each interaction term individually from Model 1.

Since one of the major questions of interest in this study was whether the relationship between family environment and self-determination depends on ethnicity, total self-determination was regressed on the six FES subscales separately for Latinos and Anglos to examine possible differences in the relationship of each of the scales to self-determination. These analyses addressed question four of the study: Do perceived conditions in the family environment that may predict self-determination depend on ethnicity?

**Testing interactions.** Keith (2006) recommends the steps described below when testing interactions in multiple regression. The steps were implemented as follows:
1. Each of the six FES subscales (continuous variables) was centered by subtracting the mean score for each scale to yield six new, centered variables.

2. Each centered FES variable was multiplied times the categorical variable to generate six new interaction terms.

3. This sequential regression was conducted in two steps. The first step consisted of regressing self-determination total score on the original six FES variables plus ethnicity as a main effect.

4. The second step consisted of adding the six centered interaction terms into the model, to determine if there is a sizable increase in the variance explained once the interactions terms are added. The magnitude of and significance of the increase in variance explained ($\Delta R^2$) was then examined.

5. The total self-determination score was regressed on the six original FES subscales to examine differences in the relationships between the six sub-domains and self-determination for Latinos as compared to Anglos.

The analyses are described by the equation below:

$$sd_i = \beta_0 + \beta_{fes1}(X_1 - \bar{X}) - \beta_{fes6}(X_1 - \bar{X}) + \beta_{eth7} + \beta_{8 fes1} (X_1 - \bar{X}) \ast eth - \beta_{13} (X_1 - \bar{X})_{fes6 \ast eth} + e$$

Where:

- $sd_i = \text{The expected self-determination score.}$
- $\beta_0 = \text{the expected self-determination score for an Anglo student with a mean (centered) score on each of the six FES scales.}$
- $\beta_{fes1} - \beta_{fes6} = \text{the expected increase in self-determination with a one unit increase on each of the FES subscales while controlling for ethnicity.}$
- $\beta_{eth7} = \text{the expected change in self-determination for Latinos while controlling for FES.}$
\[ \beta_{\text{fes1*eth}} - \beta_{\text{fes6*eth}} = \text{the expected change in each } \beta_{\text{fes1}} - \beta_{\text{fes6}} \text{ slope as a function of the interaction between family environment and ethnicity.} \]

\[ e = \text{the unexplained error variance in the prediction of sdi.} \]

Question one is addressed through a comparison of the mean scores on SDS between Latinos and Anglos. Question two was addressed through a comparison of the mean scores for Latinos and Anglos on the six FES sub-domains. Question three was addressed by testing the effect size (\( R^2 \)) and the significance of each of the regression coefficients of the six family environment subscales in predicting self-determination. Question four was addressed through analysis of the significance and the effect size of the \( \beta \) for the main effect of ethnicity and through an examination of the interaction terms for each of the FES subscales and the ethnicity dummy variable.

For a visual representation of the conceptual model see Figure 2.

**Figure 2**

**Visual Representation of Conceptual model in Multiple Regression Design**
Chapter Four

Results

Descriptive Analyses and Comparisons of Means on Self-determination

Self-determination Scale. The analyses described in this section address the research question, “Do Latino and Anglo students differ in their levels of self-determination?” Table 2 displays descriptive statistics for the mean scores on SDS by ethnic group.

Table 2
Mean scores on SDS Total Score and Sub-domains by Ethnic Group

<table>
<thead>
<tr>
<th>Group</th>
<th>SDS Scale</th>
<th>Autonomy total score</th>
<th>Self-regulation total score 2A + 2B (0-21)</th>
<th>Section 3: Psychological empowerment (0-16)</th>
<th>Section 4: Self-realization (0-15)</th>
<th>Total self-determination score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo</td>
<td>Mean</td>
<td>58.7143</td>
<td>12.8214</td>
<td>14.3929</td>
<td>11.6786</td>
<td>97.9643</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>23.93797</td>
<td>4.65119</td>
<td>1.89227</td>
<td>2.21198</td>
<td>25.59294</td>
</tr>
<tr>
<td>Latino</td>
<td>Mean</td>
<td>65.5893</td>
<td>12.4685</td>
<td>14.3304</td>
<td>11.9732</td>
<td>104.4054</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>112</td>
<td>112</td>
<td>112</td>
<td>112</td>
<td>112</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>14.02736</td>
<td>4.05153</td>
<td>2.12403</td>
<td>1.95655</td>
<td>17.00715</td>
</tr>
<tr>
<td>Total</td>
<td>Mean</td>
<td>64.2143</td>
<td>12.5396</td>
<td>14.3429</td>
<td>11.9143</td>
<td>103.1079</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>140</td>
<td>139</td>
<td>140</td>
<td>140</td>
<td>139</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>16.61489</td>
<td>4.16380</td>
<td>2.07337</td>
<td>2.00534</td>
<td>19.11623</td>
</tr>
</tbody>
</table>

Latino students scored higher in total Self-determination and Autonomy. In order to further examine these differences, a one-way ANOVA was conducted to determine the significance of the differences between the means.
Table 3 shows a comparison of the means of Latino and Anglo groups on total self-determination and each of the SDS sub-domains. Latinos scored higher than Anglos on three out of the four sub-domains.

Table 3
ANOVA of SDS Total and Sub-domain Scores between Latinos and Anglos

<table>
<thead>
<tr>
<th>Scale</th>
<th></th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy total score</td>
<td>Between Groups</td>
<td>6.828</td>
<td>.047*</td>
<td>.047</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-regulation total score</td>
<td>Between Groups</td>
<td>.232</td>
<td>.631</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 3: psychological empowerment</td>
<td>Between Groups</td>
<td>.106</td>
<td>.745</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 4: Self-realization</td>
<td>Between Groups</td>
<td>.369</td>
<td>.545</td>
<td>.003</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total self-determination score</td>
<td>Between Groups</td>
<td>4.407</td>
<td>.038*</td>
<td>.032</td>
</tr>
<tr>
<td></td>
<td>Within Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * p < .05.

Latinos perceived themselves as higher in total Self-determination and Autonomy than Anglos, and the differences were statistically significant (Autonomy; \(F(1, 135) = 6.83, p = .047, \eta = .047\)); Total self-determination score; \(F(1, 134) = 4.41, p = .038, \eta = .032\).

**Gender differences.** Preliminary analyses of gender differences indicated that females scored significantly higher than males on total self-determination (M for females = 109.41, SD = 15.46; M for males = 99.85, SD = 19.98; \(F(1, 134) = 7.82, p = .006\)). Though the analyses of gender revealed significant differences, gender was not included.
in subsequent analyses for three reasons. First, it was not one of the original research questions posed in the study. Second, the analyses would have required additional sub-grouping by gender which would have been impractical given the relatively small sample size. Third, a preliminary analysis regressing SDS on ethnicity, gender and the six FES sub-scales showed that while gender had a significant main effect, ethnicity also maintained a significant main effect. This finding together with the finding that females scored similarly higher than males on SDS in both groups, suggested that gender would not affect the comparative analyses of the relationship between FES and SDS, which was the primary focus of the study.

**Age differences.** The results of an ANOVA of self-determination score by age showed a significant effect of age on total perceived self-determination ($F (1, 134) = 7.82, p = .035$). These differences are consistent with previously reported research that self-determination tends to increase with age. Age was not included in subsequent analyses because it would not have provided any new information beyond that already provided in the SDS norms.

**Family Environment Subscales (FES).** The analyses described in this section address research question two, “Do Latino and Anglo students differ in their perceptions of the family environment?” Mean scores for the six scales of interest on the FES are provided in Table 4.
### Table 4

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Lower Bound</th>
<th>Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>FES_Cohesiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo</td>
<td>29</td>
<td>5.8966</td>
<td>2.39560</td>
<td>.44485</td>
<td>4.9853</td>
<td>6.8078</td>
<td>1.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Latino</td>
<td>109</td>
<td>6.2477</td>
<td>1.85670</td>
<td>.17784</td>
<td>5.8952</td>
<td>6.6002</td>
<td>1.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Total</td>
<td>138</td>
<td>6.1739</td>
<td>1.97766</td>
<td>.16835</td>
<td>5.8410</td>
<td>6.5068</td>
<td>1.00</td>
<td>9.00</td>
</tr>
<tr>
<td>FES_Expressiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo</td>
<td>29</td>
<td>4.3793</td>
<td>1.61276</td>
<td>.29948</td>
<td>3.7659</td>
<td>4.9928</td>
<td>2.00</td>
<td>8.00</td>
</tr>
<tr>
<td>Latino</td>
<td>109</td>
<td>4.8349</td>
<td>1.56207</td>
<td>.14962</td>
<td>4.5383</td>
<td>5.1314</td>
<td>1.00</td>
<td>8.00</td>
</tr>
<tr>
<td>Total</td>
<td>138</td>
<td>4.7391</td>
<td>1.57792</td>
<td>.13432</td>
<td>4.4735</td>
<td>5.0047</td>
<td>1.00</td>
<td>8.00</td>
</tr>
<tr>
<td>FES_Independence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo</td>
<td>29</td>
<td>6.2586</td>
<td>2.09856</td>
<td>.38969</td>
<td>5.4604</td>
<td>7.0569</td>
<td>1.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Latino</td>
<td>109</td>
<td>5.9495</td>
<td>1.57519</td>
<td>.15088</td>
<td>5.6505</td>
<td>6.2486</td>
<td>2.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Total</td>
<td>138</td>
<td>6.0145</td>
<td>1.69471</td>
<td>.14426</td>
<td>5.7292</td>
<td>6.2998</td>
<td>1.00</td>
<td>9.00</td>
</tr>
<tr>
<td>FES_Achievement_Orientation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo</td>
<td>29</td>
<td>6.1379</td>
<td>1.76724</td>
<td>.32817</td>
<td>5.4657</td>
<td>6.8102</td>
<td>2.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Latino</td>
<td>109</td>
<td>6.5229</td>
<td>1.55514</td>
<td>.14896</td>
<td>6.2277</td>
<td>6.8182</td>
<td>2.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Total</td>
<td>138</td>
<td>6.4420</td>
<td>1.60300</td>
<td>.13646</td>
<td>6.1722</td>
<td>6.7119</td>
<td>2.00</td>
<td>9.00</td>
</tr>
<tr>
<td>FES_Organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo</td>
<td>29</td>
<td>5.5172</td>
<td>2.72057</td>
<td>.50520</td>
<td>4.4824</td>
<td>6.5521</td>
<td>1.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Latino</td>
<td>109</td>
<td>5.6697</td>
<td>1.92837</td>
<td>.18470</td>
<td>5.3036</td>
<td>6.0358</td>
<td>.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Total</td>
<td>138</td>
<td>5.6377</td>
<td>2.10904</td>
<td>.17953</td>
<td>5.2827</td>
<td>5.9927</td>
<td>.00</td>
<td>9.00</td>
</tr>
<tr>
<td>FES_Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglo</td>
<td>29</td>
<td>4.6552</td>
<td>2.09209</td>
<td>.38849</td>
<td>3.8594</td>
<td>5.4510</td>
<td>1.00</td>
<td>8.00</td>
</tr>
<tr>
<td>Latino</td>
<td>109</td>
<td>4.9358</td>
<td>1.67374</td>
<td>.16031</td>
<td>4.6180</td>
<td>5.2536</td>
<td>1.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Total</td>
<td>138</td>
<td>4.8768</td>
<td>1.76255</td>
<td>.15027</td>
<td>4.5797</td>
<td>5.1740</td>
<td>1.00</td>
<td>9.00</td>
</tr>
</tbody>
</table>

An analysis was conducted to determine if the perceptions of the family environment differed significantly between Latino and Anglo students. The results of a multivariate analysis of variance (MANOVA) to determine if perceptions of the family environment on the six scales varied between Latinos and Anglos are reported in Table 5.
The results suggest that Latinos do not differ significantly from Anglos in their perception of their family environments. Analyses of gender differences on perceptions of the family environment showed no significant differences.

**Multiple regression analyses (MR).** In order to address the question of whether perceptions of the family environment are associated with self-determination, a simultaneous MR was conducted regressing total self-determination on the six FES scales. The results of the regression analysis are shown in Table 6.
Table 6
Simultaneous Multiple Regression of Total Self-determination on Six FES Subscales

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
</tr>
<tr>
<td>(Constant)</td>
<td>79.474</td>
<td>.000</td>
<td>7.052</td>
</tr>
<tr>
<td>FES_Cohesiveness</td>
<td>.852</td>
<td>.089</td>
<td>.887</td>
</tr>
<tr>
<td>FES_Expressiveness</td>
<td>.884</td>
<td>.073</td>
<td>.741</td>
</tr>
<tr>
<td>FES_Independence</td>
<td>1.342</td>
<td>.118</td>
<td>1.244</td>
</tr>
<tr>
<td>FES_Achievement_Orientation</td>
<td>.870</td>
<td>.073</td>
<td>.775</td>
</tr>
<tr>
<td>FES_Organization</td>
<td>-.129</td>
<td>-.014</td>
<td>-.138</td>
</tr>
<tr>
<td>FES_Control</td>
<td>.203</td>
<td>.019</td>
<td>.190</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.044</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F$</td>
<td>.993</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$P$</td>
<td>.443</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results indicate that the six FES subscales do not significantly predict total self-determination score ($R^2 = .044, F(6, 129) = .993, p = .433$).

One of the premises of this study was that perceptions of the family environment would predict self-determination differently depending on ethnicity. It is possible that perceptions of certain family elements may be related to self-determination in opposite ways depending on ethnicity, which could cancel each other out when analyzing these elements for the group as a whole. In order to address this issue, we conducted a sequential multiple regression analysis to address the question of the effect of ethnicity as a moderator on the relationship between perceptions of the family environment and self-determination. The variables were entered in two steps using the SPSS default of forced entry. Procedures described in Keith (2006) were followed as described in the previous
section. The first step consisted of entering the six FES subscales plus ethnicity. The correlation matrix for the first model, consisting of regressing SDS on the six FES subscales and ethnicity is displayed in Table 7.
Table 7
Correlation Matrix of SDS, Six FES Subscales and Ethnicity
Sequential Regression Model 1

<table>
<thead>
<tr>
<th>Total self-determination score</th>
<th>FES_Cohesiveness</th>
<th>FES_Expressiveness</th>
<th>FES_Independence</th>
<th>FES_Achievement_Orientation</th>
<th>FES_Organization</th>
<th>FES_Control</th>
<th>Ethnicity dummy coded; 1= Latino</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total self-determination score</td>
<td>1.000</td>
<td>.132</td>
<td>.106</td>
<td>.154*</td>
<td>.104</td>
<td>.065</td>
<td>-.005</td>
</tr>
<tr>
<td>FES_Cohesiveness</td>
<td>.132</td>
<td>1.000</td>
<td>.250*</td>
<td>.176*</td>
<td>.122</td>
<td>.400*</td>
<td>.046 (0)</td>
</tr>
<tr>
<td>FES_Expressiveness</td>
<td>.106</td>
<td>.250*</td>
<td>1.000</td>
<td>.167*</td>
<td>-.064</td>
<td>-.142*</td>
<td>-.355*</td>
</tr>
<tr>
<td>FES_Independence</td>
<td>.154*</td>
<td>.176*</td>
<td>.167*</td>
<td>1.000</td>
<td>.202*</td>
<td>.259*</td>
<td>-.163*</td>
</tr>
<tr>
<td>FES_Achievement_Orientation</td>
<td>.104</td>
<td>.122</td>
<td>-.064</td>
<td>.202*</td>
<td>1.000</td>
<td>.268*</td>
<td>.282*</td>
</tr>
<tr>
<td>FES_Organization</td>
<td>.065</td>
<td>.400*</td>
<td>-.142*</td>
<td>.259*</td>
<td>.268*</td>
<td>1.000</td>
<td>.228*</td>
</tr>
<tr>
<td>FES_Control</td>
<td>-.005</td>
<td>.046</td>
<td>-.355*</td>
<td>-.163*</td>
<td>.282*</td>
<td>.228*</td>
<td>1.000</td>
</tr>
<tr>
<td>Ethnicity dummy coded; 1= Latino</td>
<td>.178*</td>
<td>.075</td>
<td>.115</td>
<td>-.065</td>
<td>.106</td>
<td>.028</td>
<td>.069 (1)</td>
</tr>
</tbody>
</table>

* P < .05, one-tailed test.
The results of the correlation matrix show that the indicated variables were statistically significant ($p < .05$). These intercorrelations were expected and are similar to those reported in the administration manual. The subscales are not independent constructs. Families who promote cohesiveness, for example, would also be expected to promote expressiveness. Families who promote control on the other hand, would not be expected to also promote expressiveness. Rather, an inverse relationship would be expected.

The second step consisted of adding the interaction terms for the six FES subscales with ethnicity, centered. This became Model 2. The results are displayed in Table 8.
Table 8
SDS Regressed on Six FES Subscales, Ethnicity, and Six Interaction Terms

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>FES_Cohesiveness</td>
<td>.805</td>
<td>.951</td>
<td>.084</td>
</tr>
<tr>
<td>FES_Expressiveness</td>
<td>.552</td>
<td>1.193</td>
<td>.046</td>
</tr>
<tr>
<td>FES_Independence</td>
<td>1.562</td>
<td>1.074</td>
<td>.137</td>
</tr>
<tr>
<td>FES_Achievement_Orientation</td>
<td>.647</td>
<td>1.117</td>
<td>.054</td>
</tr>
<tr>
<td>FES_Organization</td>
<td>-.165</td>
<td>.923</td>
<td>-.018</td>
</tr>
<tr>
<td>FES_Control</td>
<td>.074</td>
<td>1.064</td>
<td>.007</td>
</tr>
<tr>
<td>Latino/white dummy coded;</td>
<td>7.904</td>
<td>4.052</td>
<td>.170</td>
</tr>
<tr>
<td>Model 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FES_Cohesiveness</td>
<td>-.248</td>
<td>2.182</td>
<td>-.026</td>
</tr>
<tr>
<td>FES_Expressiveness</td>
<td>4.118</td>
<td>2.642</td>
<td>.342</td>
</tr>
<tr>
<td>FES_Independence</td>
<td>3.881</td>
<td>2.020</td>
<td>.341</td>
</tr>
<tr>
<td>FES_Achievement_Orientation</td>
<td>-2.159</td>
<td>2.659</td>
<td>-.181</td>
</tr>
<tr>
<td>FES_Organization</td>
<td>-1.092</td>
<td>2.048</td>
<td>-.121</td>
</tr>
<tr>
<td>FES_Control</td>
<td>-1.397</td>
<td>2.041</td>
<td>-.129</td>
</tr>
<tr>
<td>Latino/white dummy coded;</td>
<td>8.606</td>
<td>4.101</td>
<td>.185</td>
</tr>
<tr>
<td>ethfesoscohcentered</td>
<td>1.452</td>
<td>2.426</td>
<td>.126</td>
</tr>
<tr>
<td>ethfesosexpcentered</td>
<td>-3.855</td>
<td>2.968</td>
<td>-.281</td>
</tr>
<tr>
<td>ethfesosindcentered</td>
<td>-2.586</td>
<td>2.384</td>
<td>-.186</td>
</tr>
<tr>
<td>ethfesosachcentered</td>
<td>3.538</td>
<td>2.932</td>
<td>.254</td>
</tr>
<tr>
<td>ethfesosorgcentered</td>
<td>1.036</td>
<td>2.318</td>
<td>.093</td>
</tr>
<tr>
<td>ethfesoscontcentered</td>
<td>2.382</td>
<td>2.412</td>
<td>.185</td>
</tr>
</tbody>
</table>

$R^2_{Model 1} = .072$

$F = 1.413$

$P = .206$

$AR^2_{Model 2} = .068$

$F_{change} = 1.608$

$P_{change} = .150$

$R^2_{Model 2} = .140$

$F = 1.525$

$P = .118$

* $P < .05$
The addition of the six FES subscales x ethnicity variable virtually doubled the variance explained in the model (Δ = .068, \( F(7, 6) = 1.61, p = .150 \)), though the increase was not statistically significant. The addition of the interaction variables increased the variance explained from 7.2% to 14.0%. In addition, the main effect of ethnicity was significant in the overall model (\( \beta = 8.61, p = .038 \)).

There are at least two possible reasons for why the addition of the interaction terms was not statistically significant. The first lies in the small sample size, particularly in the Anglo group. The second lies in the concept of *multicollinearity*. Multicollinearity exists when independent variables used in the regression analysis are not independent of each other. High tolerance values and low VIF coefficients suggest the variables are independent. Conversely, low tolerance values and high VIF coefficients suggest the variables are more dependent on each other. The addition of the interaction terms increased the collinearity of each of the predictors. This occurred because the interaction terms are composites of the original FES subscales, and therefore share a considerable amount of variance. Keith (2006) points out that VIF values in the six to seven range are flags for high levels of multicollinearity. Cohen, on the other hand (in Keith, 2006) uses a benchmark VIF value of 10.00. High multicollinearity can contribute to increased standard error, which tends to reduce the likelihood of obtaining statistical significance, in spite of the moderate effect sizes.

In order to address the issue of multicollinearity, each interaction term was entered and removed individually from Model 1 to assess the change in \( R^2 \) and determine possible statistical significance. The results of these regression sub-models are described in Table 9.
Table 9  
Sub-model Regression Coefficients for Ethnicity by FES Interaction Terms
Entered and Removed Sequentially

<table>
<thead>
<tr>
<th></th>
<th>Beta In</th>
<th>t</th>
<th>Sig.</th>
<th>ΔR</th>
<th>Tolerance</th>
<th>VIF</th>
<th>Minimum Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethfescohecentered</td>
<td>.116*</td>
<td>.724</td>
<td>.471</td>
<td>.004</td>
<td>.283</td>
<td>3.532</td>
<td>.233</td>
</tr>
<tr>
<td>ethfesexpcentered</td>
<td>-.288*</td>
<td>-1.545</td>
<td>.125</td>
<td>.017</td>
<td>.206</td>
<td>4.854</td>
<td>.198</td>
</tr>
<tr>
<td>ethfesindcentered</td>
<td>-.087*</td>
<td>-0.571</td>
<td>.569</td>
<td>.002</td>
<td>.311</td>
<td>3.220</td>
<td>.281</td>
</tr>
<tr>
<td>ethfesachcentered</td>
<td>.312*</td>
<td>1.790</td>
<td>.076</td>
<td>.023</td>
<td>.235</td>
<td>4.252</td>
<td>.210</td>
</tr>
<tr>
<td>ethfesorgcentered</td>
<td>.173*</td>
<td>1.138</td>
<td>.257</td>
<td>.009</td>
<td>.312</td>
<td>3.208</td>
<td>.265</td>
</tr>
<tr>
<td>ethfesconcentered</td>
<td>.364*</td>
<td>2.271</td>
<td>.025*</td>
<td>.036</td>
<td>.273</td>
<td>3.658</td>
<td>.272</td>
</tr>
</tbody>
</table>

* P < .05

This analysis shows that the Control by Ethnicity interaction explained a statistically significant amount of change in variance explained ($\beta = .364$, $t = 2.271$, $\Delta R = .036$, $p = .025$). The interaction terms for Achievement by Ethnicity and Expressiveness by Ethnicity, though not statistically significant, each contributed 2.3% and 1.7% to the variance explained when added and removed individually to Model 1. All of the variables met the minimum multicollinearity limits for this analysis.

The individual entry and removal of the interaction terms highlights the elements of the family environment where Latinos differed the most from Anglos in the association between family environment and SDS. The FES subscales where Latinos were most different from Anglos in explaining levels of self-determination were Control, Achievement, and Expressiveness.
In order to more fully explore the differences in the relationship between perceptions of the family environment and ethnicity, self-determination was regressed on the original six FES subscales separately for each ethnic group. The results of the regression of SDS on the six FES subscales for Anglo students are shown in Table 10.

**Table 10**

**SDS Regressed on Six FES Subscales for Anglos**

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
</tr>
<tr>
<td>(Constant)</td>
<td>81.325</td>
<td>25.134</td>
<td>3.236</td>
<td>.004</td>
</tr>
<tr>
<td>FES_Cohesiveness</td>
<td>-.248</td>
<td>3.185</td>
<td>-.022</td>
<td>-.078</td>
</tr>
<tr>
<td>FES_Expressiveness</td>
<td>4.118</td>
<td>3.856</td>
<td>.251</td>
<td>1.068</td>
</tr>
<tr>
<td>FES_Independence</td>
<td>3.881</td>
<td>2.948</td>
<td>.308</td>
<td>1.316</td>
</tr>
<tr>
<td>FES_Achievement_Orientation</td>
<td>-2.159</td>
<td>3.881</td>
<td>-.144</td>
<td>-.556</td>
</tr>
<tr>
<td>FES_Organization</td>
<td>-1.092</td>
<td>2.990</td>
<td>-.112</td>
<td>--365</td>
</tr>
<tr>
<td>FES_Control</td>
<td>-1.397</td>
<td>2.979</td>
<td>-.110</td>
<td>-.469</td>
</tr>
</tbody>
</table>

\[ R^2 = .170 \]
\[ F = .749 \]
\[ p = .616 \]

The six subscales explained more of the variance in self-determination in the Anglo group than in the combined sample \( R^2_{\text{Anglo}} = .17 \) and \( R^2_{\text{Total group}} = .044 \), respectively) even though there is a high probability that this finding may have occurred by chance due to the small sample size \( p = .616 \). Inspection of the \( \beta \) weights shows that Independence and Expressiveness were the two subscales most predictive of self determination for Anglo students, even though the effects were not significant. In addition, Achievement Orientation, Organization, Control and Cohesiveness were negatively associated with self-determination for Anglo students. Self-determination
Theory would have predicted a negative relationship between Control and self-determination, but the negative direction of the other three variables was unexpected.

Table 11 shows the regression of SDS on the six FES subscales for Latino students.

**Table 11**

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>Std. Error</td>
</tr>
<tr>
<td>(Constant)</td>
<td>74.537</td>
<td>12.688</td>
</tr>
<tr>
<td>FES_Cohesiveness</td>
<td>1.205</td>
<td>.918</td>
</tr>
<tr>
<td>FES_Expressiveness</td>
<td>.263</td>
<td>1.173</td>
</tr>
<tr>
<td>FES_Independence</td>
<td>1.295</td>
<td>1.098</td>
</tr>
<tr>
<td>FES_Achievement_Orientation</td>
<td>1.379</td>
<td>1.072</td>
</tr>
<tr>
<td>FES_Organization</td>
<td>-.056</td>
<td>.942</td>
</tr>
<tr>
<td>FES_Control</td>
<td>.985</td>
<td>1.115</td>
</tr>
</tbody>
</table>

As can be seen in Table 11, on the other hand, the six FES subscales explained less of the variance in self-determination in the Latino sample than in the Anglo sample ($R^2_{\text{Latino}} = .071$ and $R^2_{\text{Anglo}} = .170$). While Independence was also positively associated with self-determination for Latinos, the effect was not as evident. In addition, in the Latino sample, Control, Cohesiveness and Achievement Orientation were positively associated with self-determination, where in the Anglo sample these subscales were negatively associated with self-determination.
Chapter 5
Discussion

The findings provide sufficient evidence to suggest that ethnicity plays a role in students with disabilities’ levels of self-determination. There is also evidence to suggest that ethnicity may play a role in determining which aspects of the family environment are most closely linked to self-determination. Though some of the results discussed in this section were not statistically significant, statistical significance is only one indicator of the importance of research findings. In addition to statistical significance, the practical significance of the findings will also be discussed.

While the research team did not expect that Latinos would perceive themselves as less self-determined than Anglos, neither did we expect that they would perceive themselves as more self-determined. Latino students also scored higher on the SDS sub-domain of Autonomy. One possible explanation for these findings lies in the research that explains academic motivation in recent immigrants. Students who are recent immigrants, or the children of recent immigrants (second generation), report a strong desire to do well academically due to guilt associated with their parents’ sacrifices in immigrating to the US (Suarez-Orozco, 1989, 1995). It is possible that this undercurrent of motivation also explains Latino students’ perceptions of their self-determination. Latino students may want to perceive themselves as self-determined in order to believe they are going to meet their parents’ expectations of success. This explanation is also consistent with the notion of the dual frame of reference in voluntary immigrants (Ogbu, 1987, 1992).

The higher self-determination scores for Latino students may also have to do with the demographics of the community from which the sample was drawn. According to
U.S. Census Bureau figures, some 62.4% of Miami-Dade County residents are Hispanic, 19.5% are black, and 17.8% are white of non-Hispanic origin (US Census Bureau, 2008).

Within the public school system, 56.1% are Hispanic, 30.1% are African American, and 10.9% are white of non-Hispanic origin (Miami Dade County Public Schools, 2007). In this community, Latinos are the majority, many teachers are of Hispanic origin, Spanish use is widespread, and Latinos hold key political and business positions throughout the county (Stepick et al. in Suarez-Orozco & Paez, Eds., 2002). This context may facilitate Latino students’ perceptions that they can act autonomously to reach their goals because they are able to access important resources in their school and community. As a result, Latinos in the Miami community acquire social capital. This notion speaks to an ecological theory approach to the development of self-determination, which states that individual functioning is directly impacted by the various environments in which it occurs (Bronfenbrenner, 1977).

**Perceptions of the Family Environment**

The notion that students from Latino families perceive their family environments differently than students from Anglo families was not supported by the data. It should be noted that this study did not examine actual family interaction patterns, and no conclusions can be drawn about family practices themselves. However, one might expect that if actual differences on the six family environment dimensions did exist, one could also expect to see some meaningful differences in students’ perceptions. Anglo students did report higher levels of Independence than Latino students, and Latino students did report higher levels of Cohesiveness than Anglo students. The direction of these results is consistent with Suarez-Orozco’s work in analyzing Thematic Apperception Test cards,
where Latinos tended to report themes associated with familial relationships and Anglos tended to report themes associated with independence.

It is possible that meaningful differences in family practices between Latinos and Anglos were simply not captured by the measure used in this study. Previous research (Suarez-Orozco, 1989, 1995) has identified the concept of “familism” as a defining factor in Latino families as compared to Anglo families. The concept is defined as a “strong identification and attachment of individuals with their families, strong feelings of loyalty, reciprocity, and solidarity among members of the same family” (p. 113-114). One might have reasonably expected that the FES Cohesiveness sub-domain would have captured some of the essence of familism. Even though Latinos did score higher than Anglos on this sub-domain, the difference was not statistically significant.

The Relationship between Perceptions of the Family Environment on Level of Self-determination

The question of whether perceptions of the family environment were associated with levels of self-determination was addressed through the simultaneous regression analysis of SDS on the six FES subscales for the overall sample. The regression yielded a low and not statistically significant effect size, suggesting that perceptions of the family environment do not sufficiently explain variability in levels of self-determination. This was an unexpected finding based on Deci and Ryan’s theoretical model, as well as other research suggesting that environments that promote autonomy, relatedness and competence nurture the development of self-determination. One possible explanation for this negative finding is that the measure did not adequately capture family environmental conditions considered to be associated with the development of self-determination. This explanation, while possible, is not likely due to the results of the additional analyses that
were performed, which showed that the interaction terms of family environment with ethnicity doubled the variance explained in self-determination.

A more plausible explanation can be found in the results of the separate regressions conducted for each ethnic group. These analyses showed that the relationship between the FES subscales and SDS was in opposite directions on three of the six subscales. Therefore, the net effect sizes for these three scales would be lower for the total sample because the effects would tend to cancel each other out. Cohesiveness, Achievement and Control were positively associated with self-determination in the Latino group, but negatively associated with self-determination in the Anglo group.

**Ethnicity as a moderator of perceptions of family environment on self-determination**

The primary question raised in this study was whether family environment was associated with self-determination differently for Latino students as compared to Anglo students. Self-determination Theory has examined the role of environmental factors that contribute to the development of self-determination without regard to ethnicity. The assumption has been that the conditions that lead to self-determination are the same regardless of ethnicity. These conditions are environments that foster satisfaction of the needs for autonomy, relatedness and competence.

The sequential regression analysis indicated a strong and significant main effect for ethnicity. While this says that ethnicity matters in level of self-determination, it does not mean that it moderates the effect of family environment on self-determination. The second step in the analysis however, the insertion of family environment variable by ethnicity interaction terms, practically doubled the amount of variance explained in self-determination. Keith (2006) points out that when assessing the effects of interactions
entered as a group in a sequential step, as was the case here, the focus should be on the change in variance explained by the group of terms, rather than any single variable.

The coefficients for the six FES subscales in Model 2 (which includes the interaction terms) represent the effect of those variables on self-determination for Anglos. The coefficients for the interaction terms represent the difference between the change in self-determination associated with those variables for Latinos as compared to Anglos: the larger the interaction coefficient, the greater the difference between the two groups. This analysis reveals that:

- Expressiveness and Independence were more predictive of self-determination in Anglos than in Latinos. A 1-point change in Expressiveness was associated with almost a 4-point greater change in self-determination in Anglos than in Latinos. A 1-point change in Independence was associated with a 2.6 point greater change in self-determination for Anglos than Latinos.

- Achievement and Control were more predictive of self-determination in Latinos than in Anglos. A 1-point change in Achievement was associated with about a 3.5-point greater change in self-determination in Latinos than in Anglos. A 1-point change in Control was associated with a 2.4-point greater change in self-determination in Latinos than in Anglos.

The two family environment subscales associated with the need for Autonomy, Independence and Control, were not associated with self determination among Latino students in the direction predicted by theory. Self-determination Theory would predict that high Independence and low Control are associated with self-determination. This
pattern was true for the Anglo group but not for the Latino group. For Latino students, Independence was practically unrelated to self-determination, and increases in perceived control were positively associated with self-determination, contrary to theory.

Separate regression analyses of SDS on the family environment subscales for each ethnic group provide further support for the idea that ethnicity may moderate the effect of perceptions of the family environment on self-determination. Though one must be cautious about drawing conclusions from these analyses due to the small Anglo sample, the analyses are relevant for illustrative purposes. The separate regressions suggest that the six sub-domains explain more than double the variance in SDS for Anglos as compared to Latinos. This finding suggests that perceptions of the family environment, at least as measured on these six sub-domains, are less relevant in explaining differences in self-determination among Latinos than among Anglos.

Further examination of the β weights for the six sub-domains reveals opposite directions for three of some of the FES subscales depending on ethnic group. In the Latino group, Cohesiveness and Control were positively associated with self-determination, whereas the opposite is true in the Anglo group. This finding mirrors ethnographic data collected by the Suarez-Orozcos showing that Latino families tended to be hierarchically structured, with more clearly defined positions in the family, and with decision-making centralized with one or the other parent. So even though perceptions of the family environment between the two groups did not differ there is a clear contrast in the relationship of these perceptions to level of self-determination. This finding suggests that autonomy support may be more important for nurturing self-determination in Anglo students than in Latino students. Similarly, Cohesiveness was positively associated with
self-determination in Latino students, but negatively among Anglo students. This suggests that family environments that support clearly defined roles and hierarchical structures may support self-determination in Latinos but not in Anglos. On the other hand, family environments that promote individualism may be more supportive of self-determination in Anglo students. These findings have important implications for parents and schools when planning programs that enhance self-determination and for transition planning.

The results were less clear on the family environment subscales related to nurturing competence. Achievement Orientation was positively associated with self-determination in the Latino group, but negatively in the Anglo group. Organization was practically unrelated to self-determination for Latino students, and negatively associated with self-determination in the Anglo group. Paradoxically, conditions associated with fostering competence were negatively related to self-determination among Anglo students. This suggests that, contrary to theory, conditions that foster the need for competence are not necessarily associated with increases in self-determination.

The individual entry and removal of interaction terms in the second sequential regression showed that there was a statistically significant difference in the relationship between perceived control in the family environment and level of self-determination, with higher levels of control associated with self-determination in the Latino group but not the Anglo group. This analysis also confirmed the difference in the relationship between Achievement Orientation and self-determination for Latino vs. Anglo students, and the addition of the interaction term approached but did not reach statistical significance.
While some of these differences are not statistically significant, they seem to reflect a pattern. First, perceptions of the family environment are less predictive of self-determination in Latinos than among Anglos. Second, the moderate increase in variance explained by the interaction terms as a group suggests there are meaningful differences in the strength of the relationship between some of the FES sub-domains and SDS depending on ethnic group. Third, the contribution to the variance explained in self-determination by the FES subscales varies by several points on some of the scales depending on ethnicity. Third, for three of the FES subscales, the direction of the relationship between the subscale and SDS are opposite each other depending on group membership. Fourth, the six family environment subscales explain more than twice the amount of variance in self-determination among Anglos than among Latinos, suggesting these variables are less relevant predictors of self-determination for Latinos.

Theoretical models of self-determination such as those proposed by Deci and Ryan suggest that the conditions that support self-determination function independently of ethnicity. Yet, the preliminary evidence presented here suggests that a universal approach to understanding the development of self-determination may fail to adequately account for the role of ethnicity. While conditions that facilitate autonomy may be associated with self-determination in Anglo students, conditions that facilitate Cohesiveness, Control and Achievement may support the development of self-determination among Latino students. These conditions do not necessarily match up with the notions of autonomy, relatedness and competence.

These findings have implications for school transition planning. Rather than uniformly encouraging all students to become autonomous and pursue independent
lifestyles upon graduation, schools need to be sensitive to the possibility that conditions that foster self-determination and successful transition among Latino students may differ from normative expectations. Latino students’ self-determination may be enhanced, for example, by continuing to live with their families after graduation. Further, school conditions that promote structure and group cohesiveness may have a more positive impact on self-determination for Latinos, whereas Anglo students may benefit from conditions that foster independent effort.

These findings support the notion that the conditions that enhance self-determination among Latino students with disabilities may be different than those that enhance self-determination among Anglo students with disabilities. Further research, with larger samples and additional measures of family interaction patterns are needed to more fully address this question. Yet, preliminary evidence exists to pursue further investigation into the question of the relationships between ethnicity, family factors and self-determination.

**Limitations of Study**

This study had several limitations that must be taken into consideration when drawing conclusions from the data and generalizing to a broader population. First, the analyses were run with a sample of Latino and Anglo students. Generalizations made from the data are limited to these groups.

Second, the population was drawn from a community where Latinos represent the dominant group. This environmental factor may have contributed to the higher scores among Latinos on SDS, and this factor would be absent in communities where Latinos represent a disenfranchised minority.
Third, the sample is restricted to students with disabilities, and the results should not be generalized to make comparisons between Latinos and Anglos in the general population. The results may not apply to students without disabilities.

Fourth, as with any research on ethnic differences, the grouping of individuals from a variety of different countries, each with its own culture, into a categorical grouping blurs what may be real differences between these cultures. Real differences in level of self-determination, perceptions of the family environment, and the relationship between the two may exist between students from different Hispanic countries. The aggregate results for the Latino group as a whole may be more or less applicable to students from specific Hispanic countries. Similarly, real differences in self-determination may exist based on generational status. For example, it is possible that effects associated with the dual frame of reference or guilt related to parental sacrifices resulting from immigration may lessen as students become more acculturated. The vast majority of Latino students in this sample were second and first generation immigrants. We would have liked to compare results between these two groups, but sample size limitations made this difficult.

Fifth, the regression analysis of SDS on the six FES sub-domains had low power, meaning that there was a low probability of detecting an effect when in fact it did exist (rejecting the null hypothesis). Therefore, the results for this analysis in particular are not conclusive.

Finally, as with all studies that use self-ratings, the study is limited by the accuracy of self-report measures. These perceptions are, inevitably, subjective.

Implications for Further Research
Much of the research on psychological constructs such as self-determination is conducted without regard to the potential effects of ethnicity. This study suggests that ethnicity may affect levels of self-determination, and that it may moderate the impact of other factors, such as family environment, on self-determination.

One direction for future research is to attempt to replicate the results of this research with a larger sample, particularly of Anglos, in a different community context. These studies should also take into account the variables of gender and age, which our preliminary analyses suggest may be contributing factors.

The relationship between family environment and self-determination needs further exploration. Even though results of this sample, which was limited to Latinos and Anglos, did not show a large effect of family environment on self-determination, this may have been due to the characteristics of the particular sample. Examination of the relationship between aspects of the family environment that might impact on students’ levels of self-determination is important not only from a research point of view, but also because it has important potential applications. Previous research has suggested that families should create conditions in the home environment that nurture self-determination. It is important to more closely examine the specific ways in which families may impact self-determination. This is particularly important if other factors, such as ethnicity, gender and age, moderate the way in which family interaction patterns affect self-determination. Since preliminary analyses of age and gender showed statistically significant main effects in this study, it is possible that they also moderate the effects of family environment on self determination. The conditions that are most favorable to the development of self-determination for females may be different than
those for males. Similarly, the conditions in the family environment that support self-determination may change as students get older.

Another potential area for further research is to conduct qualitative studies of students, parents and teachers to identify factors they may consider important in the development of self-determination. Their responses could identify additional factors that have not yet been studied as they relate to the development of self-determination.

Perhaps most importantly, the question remains as to whether self-determination is equally important to the successful transition of all students with disabilities, irrespective of ethnicity. Even though Latino students perceived themselves as more self-determined, it does not necessarily follow that self-determination is an important cultural value for Latino students. Further qualitative research is needed to identify cultural beliefs about what parents and students consider important for successful transition from high school. Next steps could include examining the relationship between self-determination and transition outcomes, paying close attention to ethnic and gender differences. This type of research is needed to inform school personnel of potential issues that should be taken into account when preparing transition plans for students with disabilities from diverse backgrounds.
References


APPENDICES

Appendix A

Arc Self-determination Scale
The Arc's Self-Determination Scale (Adolescent Version) is a student self-report measure of self-determination designed for use by adolescents with cognitive disabilities. The scale has two primary purposes:

- To provide students with cognitive disabilities and educators a tool that enables them in identifying student strengths and limitations in the area of self-determination, and
- To provide a research tool to examine the relationship between self-determination and factors that promote this important outcome.

The scale has 72 items and is divided into four sections. Each section examines a different essential characteristic of self-determination: Autonomy, Self-Regulation, Psychological Empowerment, and Self Realization. Each section has unique directions that should be read before completing the relevant items. Scoring the scale (see Procedural Guidelines for scoring directions) yields a total self-determination score and subdomain scores in each of the four essential characteristics of self-determination. A comprehensive discussion and exploration of self-determination as an educational outcome is provided in The Arc’s Self-Determination Scale Procedural Guidelines, as well as detailed scoring procedures and a discussion about the use of self-report measures in general. The scale should not be used until the administrator is thoroughly familiar with these issues.

The Arc’s Self-Determination Scale (Adolescent Version) was developed by The Arc National Headquarters with funding from the U.S. Department of Education, Office of Special Education Programs (OSEP), Subcontract Agreement 445024-01. Questions used in Section One (Autonomy) were adapted with permission from Dr. Richard Whitmore, from the Autonomy and Academic Checklist. Questions used in Section Two (Self-Regulation) were adapted with permission from Dr. Richard Whitmore, from the Autonomy and Academic Checklist. Questions used in Section Three (Psychological Empowerment) were adapted with permission from Dr. Richard Whitmore, from the Autonomy and Academic Checklist. Questions used in Section Four (Self Realization) were adapted with permission from Dr. Richard Whitmore, from the Autonomy and Academic Checklist. The Arc gratefully acknowledges the generosity of these researchers.

By Michael Wehmeyer, Ph.D., Principal Investigator
Kathy Kolden, M.Ed., Project Director
Self-Determination Assessment Project

Student’s name ________________________________

Date: ____________

School ________________________________

Teacher’s name ________________________________

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### Section One

**Autonomy**

#### 1A. Independence: Routine personal care and family-oriented functions

<table>
<thead>
<tr>
<th>Question</th>
<th>1A Subtotal</th>
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<tbody>
<tr>
<td>1. I make my own meals or snacks.</td>
<td>I do sometimes when I have the chance.</td>
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<tr>
<td>2. I care for my own clothes, etc.</td>
<td>I do most of the time I have the chance.</td>
</tr>
<tr>
<td>3. I do chores in my home.</td>
<td>I do most of the time I have the chance.</td>
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<tr>
<td>4. I keep my own personal items together.</td>
<td>I do most of the time I have the chance.</td>
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<tr>
<td>5. I do simple first aid or medical care for myself.</td>
<td>I do most of the time I have the chance.</td>
</tr>
<tr>
<td>6. I keep good personal care and grooming.</td>
<td>I do most of the time I have the chance.</td>
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#### 1B. Independence: Interaction with the environment

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<th>Question</th>
<th>1B Subtotal</th>
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<tr>
<td>7. I make friends with other kids.</td>
<td>I do most of the time I have the chance.</td>
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<tr>
<td>8. I use the post office.</td>
<td>I do most of the time I have the chance.</td>
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<tr>
<td>9. I keep my appointments and medications.</td>
<td>I do most of the time I have the chance.</td>
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<tr>
<td>10. I deal with bolscopic at stores and restaurants.</td>
<td>I do most of the time I have the chance.</td>
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#### 1C. Acting on the basis of preferences, beliefs, interests and abilities: Recreational and leisure time

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<th>Question</th>
<th>1C Subtotal</th>
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<tr>
<td>11. I do free time activities based on my interests.</td>
<td>I do most of the time I have the chance.</td>
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<tr>
<td>12. I plan weekend activities that I like to do.</td>
<td>I do most of the time I have the chance.</td>
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<td>13. I am involved in school-based activities.</td>
<td>I do most of the time I have the chance.</td>
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<td>14. My friends and I choose activities that we want to do.</td>
<td>I do most of the time I have the chance.</td>
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<td>15. I am able to write letters, notes or talk on the phone to friends,</td>
<td>I do most of the time I have the chance.</td>
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<td>16. I listen to music that I like.</td>
<td>I do most of the time I have the chance.</td>
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### 1D. Acting on the basis of preferences, beliefs, interests and abilities:

#### Community involvement and interaction

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<td>17. I volunteer in things that I am interested in.</td>
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<td>18. I go to restaurants that I like.</td>
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<td>19. I go to movies, concerts, and dance clubs.</td>
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<td>20. I go shopping or spend time at shopping centers or malls.</td>
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<td>21. I take part in youth group activities (e.g., 4-H, scouting, church groups)</td>
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### 1E. Acting on the basis of preferences, beliefs, interests and abilities:

#### Post-school directions

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<td>22. I do school and free time activities that improve my career chances.</td>
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<td>23. I work on school work that will improve my career chances.</td>
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<td>24. I make long-range career plans.</td>
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<td>25. I work or have worked to earn money.</td>
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<td>26. I am a volunteer or have been a volunteer or in job training.</td>
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<td>27. I have looked into job interests by visiting work sites or talking to people in that job.</td>
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### 1F. Acting on the basis of preferences, beliefs, interests and abilities:

#### Personal expression

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<td>28. I choose my clothes and the personal items I use every day.</td>
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<td>29. I choose my own hairstyle.</td>
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<td>30. I choose gifts to give to family and friends.</td>
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<td>31. I decorate my own room.</td>
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<td>32. I choose how to spend my personal money.</td>
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Please check Section One, A thru F, to make sure there is only one answer for each question.
### Section Two: Self-Regulation

#### Interpersonal Cognitive Problem-Solving

33. **Beginning:** You are setting in a planning meeting with your parents and teachers. You want to take a class where you can learn to work as a cashier in a store. Your parents want you to take the Family and Child Care class. You can only take one of the classes.

   **Middle:**

   - [Blank Line]
   - [Blank Line]
   - [Blank Line]

   **Ending:** The story ends with you taking a vocational class where you will learn to be a cashier.

34. **Beginning:** You hear a friend talking about a new job opening at the local book store. You love books and want a job. You decide you would like to work at the bookstore.

   **Middle:**

   - [Blank Line]
   - [Blank Line]
   - [Blank Line]

   **Ending:** The story ends with you working at the bookstore.

35. **Beginning:** Your friends are acting like they are mad at you. You are upset about this.

   **Middle:**

   - [Blank Line]
   - [Blank Line]
   - [Blank Line]

   **Ending:** The story ends with you and your friends getting along just fine.

36. **Beginning:** You go to your English class one morning and discover your English book is not in your backpack. You are upset because you need that book to do your homework.

   **Middle:**

   - [Blank Line]
   - [Blank Line]
   - [Blank Line]

   **Ending:** The story ends with you using your English book for homework.

---

### Directions:

Each of the following questions tell the beginning of a story and how the story ends. Your job is to tell what happened in the middle of the story, to connect the beginning and the end. Read the beginning and ending for each question, then fill in the BEST answer for the middle of the story. There are no right or wrong answers. Remember, fill in the one answer that you think BEST completes the story.
37. **Beginning:** You are in a club at school. The club advisor announces that the club members will need to elect new officers at the next meeting. You want to be the president of the club.

**Middle:**

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

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

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38. **Beginning:** You are at a new school and you don’t know anyone. You want to have friends.

**Middle:**

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

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

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

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

**Ending:** The story ends with you having many friends at the new school.

**Story Score**

28: **Goal setting and task performance**

**Directions:**

The next three questions ask about your plans for the future. Again, there are no right or wrong answers. For each question, tell if you have made plans for that outcome and, if so, what those plans are and how to meet them.

39. Where do you want to live after you graduate?

- [ ] I have not planned for that yet.
- [ ] I want to live

40. List four things you should do to meet this goal:

1)
2)
3)
4)

40. Where do you want to work after you graduate?

- [ ] I have not planned for that yet.
- [ ] I want to work

41. List four things you should do to meet this goal:

1)
2)
3)
4)

41. What type of transportation do you plan to use after graduation?

- [ ] I have not planned for that yet.
- [ ] I plan to use

42. List four things you should do to meet this goal:

1)
2)
3)
4)
Section Three
Psychological Empowerment

Directions:
Check the answer that BEST describes you.
Choose only one answer for each question.
There are no right or wrong answers.

42. [ ] I usually do what my friends want... or
        [ ] I tell my friends if they are doing something I don't want to do.

43. [ ] I tell others when I have new or different ideas or opinions... or
        [ ] I usually agree with other people's opinions or ideas.

44. [ ] I usually agree with people when they tell me I can't do something... or
        [ ] I tell people when I think I can do something that they tell me I can't.

45. [ ] I tell people when they have hurt my feelings... or
        [ ] I am afraid to tell people when they have hurt my feelings.

46. [ ] I can make my own decisions... or
        [ ] Other people make decisions for me.

47. [ ] Trying hard at school doesn't do me much good... or
        [ ] Trying hard at school will help me get a good job.

48. [ ] I can get what I want by working hard... or
        [ ] I need good luck to get what I want.

49. [ ] If it is no use to keep trying because that won't change things... or
        [ ] I keep trying even after I get something wrong.

50. [ ] I have the ability to do the job I want... or
        [ ] I cannot do what it takes to do the job I want.

51. [ ] I don't know how to make friends... or
        [ ] I know how to make friends.

52. [ ] I am able to work with others... or
        [ ] I cannot work well with others.

53. [ ] I do not make good choices... or
        [ ] I can make good choices.

54. [ ] If I have the ability, I will be able to get the job I want... or
        [ ] I probably will not get the job I want even if I have the ability.

55. [ ] I will have a hard time making new friends... or
        [ ] I will be able to make friends in new situations.

56. [ ] I will be able to work with others if I need to... or
        [ ] I will not be able to work with others if I need to.

57. [ ] My choices will not be honored... or
        [ ] I will be able to make choices that are important to me.

Section 3 Subtotal: ____________________
### Section Four

**Self-Realization**

**Directions:**
Tell whether you think each of these statements describes how you feel about yourself or not. There are no right or wrong answers. Choose only the answer that BEST fits you.

<table>
<thead>
<tr>
<th></th>
<th>58. I do not feel ashamed of any of my emotions.</th>
<th>59. I feel free to be angry at people I care for.</th>
<th>60. I can show my feelings even when people might see me.</th>
<th>61. I can like people even if I don’t agree with them.</th>
<th>62. I am afraid of doing things wrong.</th>
<th>63. It is better to be yourself than to be popular.</th>
<th>64. I am loved because I give love.</th>
<th>65. I know what I do best.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don’t agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>66. I don’t accept my own limitations.</th>
<th>67. I feel I cannot do many things.</th>
<th>68. I like myself.</th>
<th>69. I am not an important person.</th>
<th>70. I know how to make up for my limitations.</th>
<th>71. Other people like me.</th>
<th>72. I am confident in my abilities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Don’t agree</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Section 4 Subtotal**
Scoring Step 1:
Record the raw scores from each section.

Autonomy
1A =
1B =
1C =
1D =
1E =
1F =
Domain Total:

Self-Regulation
2A =
2B =
Domain Total:

Psychological Empowerment
3 =
Domain Total:

Self-Realization
4 =
Domain Total:

Scoring Step 2:
Sum each Domain Total for a Total Score.

Self-Determination Total =

Scoring Step 3:
Using the conversion tables in Appendix A, convert raw scores into percentile scores for comparison with the sample norms (Norm Domain) and the percentage of positive responses (Positive Scores).

Autonomy
1A =
1B =
1C =
1D =
1E =
1F =
Domain Total:

Self-Regulation
2A =
2B =
Domain Total:

Psychological Empowerment
3 =
Domain Total:

Self-Realization
4 =
Domain Total:

Scoring Step 4:
Fill in the graph for the percentile scores from the running sample. From the appropriate percentile down, read the corresponding graph (see example in Scoring Manual).

Scoring Step 5:
Fill in the graph for the percentile scores indicating the percent positive response.

[Graph with categories One to Four and Percentile levels]
Appendix B

Family Environment Scale
Family Environment Scale
Form R
Item Booklet

Rudolf H. Moos

Published by Mind Garden, Inc.
info@mindgarden.com
www.mindgarden.com

Instructions

There are 90 statements in this booklet. They are statements about families. You are to decide which of these statements are true of your family and which are false. Make all your marks on the separate answer sheet. If you think the statement is True or mostly True of your family, make an X in the box labeled T (true). If you think the statement is False or mostly False of your family, make an X in the box labeled F (false).

You may feel that some of the statements are true for some family members and false for others. Mark T if the statement is true for most members. Mark F if the statement is false for most members. If the members are evenly divided, decide what is the stronger overall impression and answer accordingly.

Remember, we would like to know what your family seems like to you. So do not try to figure out how other members see your family, but do give us your general impression of your family for each statement.

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Work Across →

1. Family members really help and support one another.

2. Family members often keep their feelings to themselves.

3. We fight a lot in our family.

4. We don't do things on our own very often in our family.

5. We feel it is important to be the best at whatever you do.

6. We often talk about political and social problems.

7. We spend most weekends and evenings at home.

8. Family members attend church, synagogue, or Sunday School fairly often.

9. Activities in our family are pretty carefully planned.

10. Family members are rarely ordered around.

11. We often seem to be killing time at home.

12. We say anything we want to around home.

13. Family members rarely become openly angry.

14. In our family, we are strongly encouraged to be independent.

15. Getting ahead in life is very important in our family.

16. We rarely go to lectures, plays or concerts.

17. Friends often come over for dinner or to visit.

18. We don't say prayers in our family.

19. We are generally very neat and orderly.

20. There are very few rules to follow in our family.

21. We put a lot of energy into what we do at home.

22. It's hard to "blow off steam" at home without upsetting somebody.

23. Family members sometimes get so angry they throw things.

24. We think things out for ourselves in our family.

25. How much money a person makes is not very important to us.

26. Learning about new and different things is very important in our family.

27. Nobody in our family is active in sports, Little League, bowling, etc.

28. We often talk about the religious meaning of Christmas, Passover, or other holidays.

29. It's often hard to find things when you need them in our household.

30. There is one family member who makes most of the decisions.
31. There is a feeling of togetherness in our family.
32. We tell each other about our personal problems.
33. Family members hardly ever lose their tempers.
34. We come and go as we want to in our family.
35. We believe in competition and “may the best man win.”
36. We are not that interested in cultural activities.
37. We often go to the movies, sports events, camping, etc.
38. We don’t believe in heaven or hell.
39. Being on time is very important in our family.
40. There are set ways of doing things at home.
41. We rarely volunteer when something has to be done at home.
42. If we feel like doing something on the spur of the moment we often just pick up and go.
43. Family members often criticize each other.
44. There is very little privacy in our family.
45. We always strive to do things just a little better the next time.
46. We rarely have intellectual discussions.
47. Everyone in our family has a hobby or two.
48. Family members have strict ideas about what is right and wrong.
49. People change their minds often in our family.
50. There is a strong emphasis on following rules in our family.
51. Family members really back each other up.
52. Someone usually gets upset if you complain in our family.
53. Family members sometimes hit each other.
54. Family members almost always rely on themselves when a problem comes up.
55. Family members rarely worry about job promotions, school grades, etc.
56. Someone in our family plays a musical instrument.
57. Family members are not very involved in recreational activities outside work or school.
58. We believe there are some things you just have to take on faith.
59. Family members make sure their rooms are neat.
60. Everyone has an equal say in family decisions.
61. There is very little group spirit in our family.

62. Money and paying bills is openly talked about in our family.

63. In there’s a disagreement in our family, we try hard to smooth things over and keep the peace.

64. Family members strongly encourage each other to stand up for their rights.

65. In our family, we don’t try that hard to succeed.

66. Family members often go to the library.

67. Family members sometimes attend courses or take lessons for some hobby or interest (outside of school).

68. In our family each person has different ideas about what is right and wrong.

69. Each person’s duties are clearly defined in our family.

70. We can do whatever we want to in our family.

71. We really get along well with each other.

72. We are usually careful about what we say to each other.

73. Family members often try to one-up or outdo each other.

74. It’s hard to be by yourself without hurting someone’s feelings in our household.

75. “Work before play” is the rule in our family.

76. Watching TV is more important than reading in our family.

77. Family members go out a lot.

78. The Bible is a very important book in our home.

79. Money is not handled very carefully in our family.

80. Rules are pretty inflexible in our household.

81. There is plenty of time and attention for everyone in our family.

82. There are a lot of spontaneous discussions in our family.

83. In our family, we believe you don’t ever get anywhere by raising your voice.

84. We are not really encouraged to speak up for ourselves in our family.

85. Family members are often compared with others as to how well they are doing at work or school.

86. Family members really like music, art and literature.

87. Our main form of entertainment is watching TV or listening to the radio.

88. Family members believe that if you sin you will be punished.

89. Dishes are usually done immediately after eating.

90. You can’t get away with much in our family.