World Scientific News

The Family-School Connection: Parental Influences in Academic Achievement and the Underlying Gender Differences

Madhavi Menon

Department of Psychology and Neuroscience, College of Psychology,
Nova Southeastern University, 3301 College Avenue, Fort Lauderdale, FL 33314, USA

E-mail address: madhavi@nova.edu

ABSTRACT

Research from multiple traditions demonstrates the impact of children's social environments on their academic motivation, learning, and achievement. The present literature review attempts to better understand the family-school relationship, with a particular emphasis on parental influences on the child's academic achievement and later career development. This paper focuses on the proximal (parent-child interactions) and distal (familial social/cultural context) dimension. Additionally, an attempt is made to understand the gender differences that are seen in children in their academic preferences and later career choices.

Keywords: Academic achievement, Parental influences, Gender differences

INTRODUCTION

When explaining motivational dynamics in school, we often come across differences in children's beliefs and capacities. Decades of research show that children's self-perceptions, such as self-efficacy, goal orientations, or autonomy, are robust predictors of motivation and performance in school, both concurrently and over many years (Stipek, 2002). At the same time, however, researchers note the centrality of social factors in children's motivation

(Eccles, Wigfield & Schiefele, 1998; Goldstein, 1999; Juvonen & Wentzel, 1996). Research from multiple traditions demonstrates the impact on children's motivation and learning of relationships with parents (Steinberg, Darling, & Fletcher, 1995), teachers (Stipek, 2002), and peers (Hymel, Comfort, Schonert-Reichl, & McDougall, 1996).

Grotevant and Cooper (1988) believe that parents play an influential role in their child's academic achievement as well as later career aspirations. Both theory (e.g., Soresi, Nota, Ferrari, & Ginevra, 2014; Eccles, 1993; Roe, 1957; Super, 1990) and research (e.g., Deimer, 2007; Eccles, Barber, & Jozefowicz, 1998; Fitzgerald & Betz, 1983; Penick & Jepsen, 1992) have focused on the family's role in influencing children's occupational aspirations. For instance, Roe's (1957) theory highlights the significance of early parent-child relationship in later career development, while Holland (1985) stresses the environments that parents create for their children such that "types produce types". Other studies on academic achievement have focused on demographic or structural strain influences (McLoyd, 1998; White, 1982 etc.), such that we now know that other ecological variables such as SES, social class, ethnicity, race etc., influence a child's school adjustment and achievement.

Most of the research on parental influences on children's academic achievement and later career development can be classified as either focusing on the *distal dimensions* or structural features of the family such as socioeconomic status or parental occupation, or the *proximal dimensions* vis a vis the process variables, such as parenting practices, and methods of socialization (Grotevant & Cooper, 1988; Schulenberg, Vondracek & Crouter, 1984). The present paper attempts to better understand the family-school relationship, with a particular emphasis on parental influences on the child's academic achievement and later career development, by focusing on the proximal (parent-child interactions) and distal (social and cultural context of the family-e.g. socio economic class etc) dimension. Additionally, an attempt is made to understand the gender differences that are seen in children in their academic preferences and later career choices. To this end, this paper will explore the structural as well as the process variables, especially focusing on the process or proximal variables including socialization and parental expectancies, and the structural or distal variables including socio economic status of the family and ethnicity, with a special emphasis on understanding gender differences in these domains.

Process / Proximal Variables

Socialization

Child rearing strategies reflect adaptations by parents or other caregivers to help prepare children for success in the culture. According to familial socialization explanations we can account for achievement differences by taking into account the extent to which different sorts of parenting practices are used. Parents may influence children's development via modeling, as mothers and fathers have traditionally differed in their roles and status.

Specifically, the type of socialization practices directed towards girls and boys may reflect the existing opportunity structures for men and women in a particular community, which could influence academic and career achievements. Gender differences in attitudes about various domains within math and science appear to develop in childhood. Multiple causes for the gender gap in mathematics and science educational and career attainment have been explored in recent decades, including biologically based ability differences and individual characteristics such as self-efficacy (e.g., Bandura, Barbaranelli, Vittorio-Caprara,

& Pastorelli, 2001). Although these explanations have each received some support, recent studies (Brasswell, Lutkus, Grigg, Santapau, Tay-Lim & Johnson, 2001; Hall, Davis, Bolen, & Chia, 1999; Hyde, 1997) reveal that previously reported differences between boys' and girls' abilities in math and science have decreased substantially in recent years. The narrowing gender gap in performance has led researchers to focus on socialization, and attitudinal rather than biological explanations for gender differences in college majors and career choices. One of the most consistent findings in this line of research has been the vital role played by parents as socializers of their children's academic achievement, including gender differences in ability perceptions, course selection, and college major.

Further, since gender inequities in the larger society do tend to shape the nature of children's and adult's microsystems, therefore the extent of children's development is largely an adaptation to their existing opportunities (Leaper, 2002).

For instance, Astin (1984) studied a need-based sociopolitical model of career development and work behavior addressing the role of the family of origin. She found that women were more likely to pursue a variety of different occupations if exposed to a number of different jobs and careers and if taught that these occupations are available to them. Similar to this model, Betz and Hackett (1997) explicated a model of career choice based on Bandura's self-efficacy model. Their model lends credence to the role of family-of-origin experiences, which include role models, gender role socialization, socioeconomic status, and cultural values. They used the four sources of efficacy information postulated by Bandura (1986), i.e., performance accomplishments, vicarious learning, emotional arousal, and verbal persuasion to describe the development of career self-efficacy beliefs. Betz and Hackett postulated that women's career self-efficacy is different from men's, because gender role socialization can limit women in the labor force as well as in their range of career options. Further, they theorized that if an individual's family does not have a high expectation of her, then the use of her capabilities and talents might also be limited.

Parents may also influence gender differences in their children's academic achievement in a more direct manner via differential treatment of daughters and sons. For instance, one form of differential treatment may occur through the direct instruction or the guided participation of the child in cultural practices (e.g., Bussey & Bandura, 1999). A second form of differential treatment is through the type of expectations that a parent imposes on a child (for example, parents may convey gender-stereotyped expectations that science and mathematics are difficult for girls—Eccles, Freedman-Doan, Frome, Jacobs &Yoon, 2000; Tenenbaum & Leaper, 2003). A third way in which parents may treat sons and daughters differently is through the types of opportunities they provide or encourage. Finally, parents may treat their sons and daughters differently with regards to how they monitor and manage their children's activities.

Frome and Eccles (1998) study gives strong support for this postulation. They studied the relationship between parents' perceptions of their adolescent children and the children's self and task perceptions in math and English. Their study focused on the mediating role of parents' perceptions between grades and adolescents' self-perceptions and also explored the gendered nature of parents' perceptions. Frome and Eccles found that parents' perceptions mediated the relationship between their adolescent children's grades and the adolescent's own self and task perceptions in both spheres, further suggesting that parents' perceptions had a stronger influence on children's perceptions than children's own grades.

Regarding provision of opportunities, Serbin, Zelkowitz, Doyle and Gold (1990) observed that the types of toys that parents select and encourage in daughters and sons may indirectly influence academic interests and achievement. They observed that access to masculine-stereotyped toys and activities in the home was a reliable predictor for academic achievement in girls and boys, and this association was particularly strong with regards to measures emphasizing visual-spatial ability.

Parental Expectations and Goal Orientations

Parents are believed to convey their achievement perspectives to children through the way they interact with them, and the reward systems they establish (Ames & Archer, 1987; Brustad, 1992). For example, parents may express to the child their beliefs about the importance of exerting effort versus outperforming others. In addition, parents may evaluate children on different aspects of their behavior and may communicate to them different types of expectations (Ames & Archer, 1987). For instance, parents may reward their child for working hard regardless of the outcome of the child's efforts. Or, through their daily interactions with the child, they could make explicit their expectations about the child's high performance in school. Thus, parents' achievement goals and associated beliefs as well as their values in the achievement context could become manifest through their daily interactions with children. In turn, children who perceive certain aspects of the achievement situation and certain types of information as salient may adopt a particular achievement goal perspective and belief pattern.

Some evidence has suggested that parents with different goal orientations hold different beliefs about the academic experience of their child. For instance, Ames and Archer (1987) asked mothers of children in kindergarten through fifth grade to report their goal orientation and their views on a range of achievement-related beliefs, including perceptions of success in school, attributions for the child's success in school, and preferred school feedback. Mothers who endorsed a mastery (i.e., task) goal ranked working hard and behaving well as more important than did mothers with performance (i.e., ego) goals. Further, they indicated a preference for information about the child's effort and were more likely to identify effort as the underlying reason for their child's good performance in school. In contrast, performance oriented mothers ranked getting good grades and doing better than others as more important, indicated a preference for feedback about grades and performance relative to other students, and were more likely to believe that ability was primarily responsible for their child's academic performance.

It seems intuitive that parents, who make different attributions and hold different beliefs regarding the relative importance of effort versus outcome, may communicate those beliefs to their children, thereby influencing their children's achievement-related cognitions and subsequent behavior. Indeed, research conducted in academic settings has shown that parental beliefs determine parental actions, which in turn influence children's achievement outcomes. For example, Halle, Kurtz-Costes and Mahoney (1997), found that parents' beliefs about their children's mathematics and reading abilities were related to parental instruction of mathematics and reading at home. Parents' perceptions of children's academic abilities were significantly related to children's achievement within the domains of math and reading. In a related study (Galper, Wigfield & Seefldt, 1997), parents' beliefs about how well their children were doing were related to children's beliefs and attitudes toward school.

Furthermore, parents' beliefs were a significant predictor of children's reading and mathematics achievement.

The influence of parents' actual cognitions on children's beliefs occurs through children's perceptions. For example, Eccles-Parsons (1983), in her model of activity choice, proposed that the individual's goals and general self-schemata are influenced by the socializers' beliefs and behaviors through the individual's perception of these beliefs and behaviors. They argue that it is one's interpretation of reality rather than reality itself that most directly influences activity choices. Thus, the influence of reality on achievement-related beliefs is mediated by interpretative systems. Children's perceptions of the people who interact with them such as parents, teachers, and peers are important in influencing children's beliefs, values and expectations associated with a particular activity (Eccles & Harold, 1991). Ames (1992) has also argued that it is the individual's interpretation of environmental cues, expectations, and rewards that influences a particular goal orientation rather than the actual behavior of significant others.

Thus, as children get older, parental gender stereotypes regarding girls' and boys' abilities may lead to expectancy effects that influence the children's own academic beliefs and achievements. For instance, in her longitudinal study, Eccles and her colleagues (2000) found that parents endorsed the stereotype that mathematics was more natural for boys than for girls. Also, despite the absence of gender differences in mathematics grades during elementary school, parents tended to underestimate girls' mathematics abilities and to overestimate boys' abilities. Eccles et al. found that, over time, girls' own self-perceptions reflected the parents' stereotypes. The girls increasingly lost confidence in their math skills, and simultaneously lowered their evaluations of the usefulness of mathematics for their future.

Jacobs explored the relationship between academic gender stereotypes and parent-child ability perceptions in two studies (Jacobs, 1991; Jacobs & Eccles, 1992). In the first study Jacobs (1991) found that parents who held gender-stereotypic beliefs about academic ability (e.g., "boys do math") reported higher confidence in their son's mathematical ability while reporting lower confidence for their daughters mathematical ability, irrespective of their child's actual mathematical ability/achievement. Additionally, Jacobs also found that these gender-stereotypic beliefs held by the parents were also linked with children's self-perceptions of mathematical abilities, with boys reporting higher efficacy and predicting future mathematical success as compared to girls, notwithstanding the fact that girls outperformed boys with higher math grades across all ages/grades. In another study, Jacobs and Eccles (1992) reported that mothers' perceptions of their children mediated the relation between past performance and children's self-perceptions of ability. Their results indicate that mothers' perceptions of their children mediate the interaction of child's gender and mothers' gender stereotype on children's self-perceptions.

Tenenbaum and Leaper (2003) explored similar parent-child processes that help explain how parents may contribute to gender differences in science achievement by investigating the role of the family as a context for the gender typing of science achievement. In their investigation, Tenenbaum and Leaper assessed parental engagement with their child (via several structured learning activities that included science and non-science tasks), as well as parents' and adolescents' science related attitudes. Tenenbaum and Leaper found that while there were no gender differences in children's science-related grades or attitudes (self-efficacy and interest), however, the parents were more likely to report that science was less interesting and more difficult for their daughters than sons. Further, they also found that parents' beliefs

significantly predicted children's interest and self-efficacy in science. Finally, when parents' teaching language was examined, fathers tended to use more cognitively demanding speech with sons than with daughters during one of the science tasks. Thus, fathers appear to have demonstrated a gender bias in their encouragement of active problem solving in science activities. In fact research with much younger children has also shown a gender difference in parental encouragement of science. For example, Crowley, Callahan, Tenenbaum and Allen (2001) observed child-gender effects on both mothers' and fathers' explanations to preschool-age children at a science museum. They found that parents were three times more likely to explain exhibits to sons than daughters.

Bleeker and Jacobs (2004) examined the longitudinal associations between mothers' gender-stereotypic beliefs and perceptions regarding their children's academic performance/abilities and their adolescent aged children's later math-science achievement beliefs and career choices. They found that mothers' initial perceptions of their adolescent children's abilities were associated with their adolescents' self-perceived efficacy for math and science over two years. Furthermore, mothers' initial predictions of their children's abilities to succeed in math careers were significantly related to their children's adult career choices (Bleeker & Jacobs, 2004).

Thus, a review of the proximal parental factors influencing children's academic outcomes/achievement suggest that parents may serve as interpreters of reality and providers of experiences to influence their children's activity choices and occupational identities (Eccles, 1993). For instance, parents may act as a filter for their child's experiences and abilities, and thereby impact their children's self-perceptions and task values across achievement-related domains. This parental interpretation of reality which may often be expressed through parental beliefs and perceptions about their child and the value of certain activities, may be communicated in both covert and overt ways. Research supports this view that parental attitudes and opinions do in fact influence the child's own beliefs about themselves and the value of various tasks (e.g., Klebanov & Brooks-Gunn, 1992), as well as their educational and vocational choices (e.g., Eccles et al., 1998; Wilson & Wilson, 1992). For instance, studies have documented a positive association between parents' perceptions of their children's academic skills and adolescents' corresponding self-concepts (e.g., Alexander & Entwisle, 1988; Miller, Manhal, & Mee, 1991).

Additionally, parents can also influence their children's academic activities/achievement by fostering their children's interests and activity choices via the environments they create vis a vis the experiences they provide in the home and their specific parenting practices. In other words, parental academic values and beliefs are often expressed in their choices and actions, which may then be transferred to the child simply by engaging in different activities (Eccles, 1993). For example, parents' who read to their children, emphasize the value of educational pursuits, as opposed to parents who might engage with their children in other ways (e.g. via extracurricular hobbies). Thus, specific parenting behaviors may influence children's activity preferences, their beliefs about themselves, and, ultimately, their educational and occupational choices.

However, it is important to note that children are not blindly influenced by these parental values and beliefs. Research suggests that these links are moderated by the quality of the parent-child relationship, with children being more likely to internalize parental values and beliefs if they see their parents as positive role models and share a warm, supportive relationship with them (Mortimer et al., 1986). For example, Mortimer et al. (1986) found that

a warm father-son relationship promoted the development of the child's self-competence, work involvement, and occupational values. Similarly, higher levels of emotional support and attachment to parents has been linked to increased career maturity and progress towards committing to a career among high school and college aged students (Blustein, Walbridge, Friedlander, & Palladino, 1991; Palmer & Cochran, 1988). Further, identification with a parent has also been associated with higher levels of educational achievement, occupational status, and vocational aspirations (Jackson & Meara, 1977; Lunneborg, 1982). Taken together, these findings suggest that certain affective dimensions of the parent-child relationship might modify the messages that parents transmit to their children, the children's receptivity to these messages, or both.

Structural/Distal Variables

Socioeconomic Status and Economic Hardships

It is believed in the social sciences that a family's socioeconomic status (SES) is one of the most important contextual factors related to a child's academic development.

In the past few years, the poverty rate in the United States has reached its highest in twenty years (Proctor, Semega, & Kollar, U.S. Bureau of Census, 2015). Much research has noted that children living in poverty are at greater risk for a range of academic, socio-emotional, behavioral and health problems that could have long term adverse effects (McLoyd, 1998). For instance, some studies have indicated that boys from lower socio-economic households have a higher risk of school dropout (e.g., Rumberger, 1983). This finding is consistent across ethnic groups and gender and is also influential for early high school dropout (Battin-Pearson, Newcomb, Abbott, Hill, Catalano & Hawkins, 2000). Garnier (1997) found that the effect of SES was mediated by academic competence and deviance, as well as other proximal causes such as the home environment, and parental attitudes and values.

It is interesting to note that a moderate to strong association between SES and achievement has been documented, ranging from as low as .15 to as high as .73 (White, 1982). In White's meta-analysis of almost 200 studies, a more moderate correlation of .22 was found when factors such as range restriction in achievement, grade level, and aggregate school data versus individual family level data were controlled for. Further, the correlation increased dramatically to .55 when familial environmental features such as home atmosphere, availability of reading material, and cultural activities etc. were used as proxy indicators of family SES.

Socialization theories have time and again speculated that parenting practices serve as the chief moderating link in the association between SES and children's academic outcomes. For instance, sociological literature has regularly reported that parents' level of education and occupational status are allied with children's educational and occupational aspirations (Fitzgerald & Betz, 1983).

Hence, poverty could affect children not only directly by limiting material resources, but also indirectly through the distress it creates for parents, which in turn undermines parents' capacity for supportive, involved, and consistent parenting (McLoyd, 1998). The general framework for understanding the mediational role that family processes play in linking economic hardship to children's outcomes is drawn from Elder's studies of European American families of the great depression (Elder, 1974; Elder, Van Nguyen, & Caspi, 1985).

In these studies, Elder and his colleagues found few direct effects of economic hardship on children's behavioral and socio-emotional functioning. Rather, adversity was produced indirectly through negative effects on fathers' psychological functioning and parenting behaviors.

Further, studies have also examined the family processes linking economic hardship to children's achievement. Hess and Holloway (1984) found a number of parenting behaviors linking socioeconomic variables to children's school performance, including verbal exchanges between parents and children, parental expectations for achievement, positive affective relationships between parents and children, and discipline and control strategies. Additionally, in a sample of European American two-parent families of adolescent boys, Conger, Conger, Elder, Lorenz, Simons and Whitbeck (1992) found that economic pressures were significantly associated with depression and demoralization in parents; these, in turn, were related to disruptions in such parenting behaviors as involvement, warmth, and discipline practices that were consistent and not overly harsh. These disrupted parenting practices mediated the relation between parents' depressed mood and adolescents' positive adjustment, including school performance and consequent academic and career achievements. In a subsequent study using the same sample, Conger and colleagues found that the effects of economic conditions adolescents' school performance were largely accounted for by the economic pressures these conditions created as well as parents' responses to these pressures (Conger, Conger & Elder, 1997).

Despite numerous studies on the linkages between the family and parent's socio-economic class and the child's academic achievement, there don't seem to be any studies on gender differences. It would be informative to have studies in the area looking at gender differences in child outcomes in disadvantaged environments.

Ethnicity and Race

Entwisle and Hayduk (1982) conducted one of the first revealing prospective studies of the early schooling process with a diverse sample of urban children in Grades 1 through 3. Positing that end-of-term grades in reading, math, and conduct were a function of the child's gender, parents' and students' expectations regarding students' achievement in a subject area, prior subject area grades, the parent's estimate of the child's ability, peer popularity, absences, and race, they found considerable ethnic and gender differences in the early schooling process among a school of White, middle-class students; an integrated school of lower-class students; and a school of Black, lower-class students. Later studies by Entwisle and colleagues further expanded on this model. These studies found, among other things, that the effects of achievement over time are linked to social resources of the school (i.e., teacher expectations and parental estimates of children's ability; Entwisle & Hayduk, 1988) and that the sources of early achievement differ in number and magnitude for Black and White students (Alexander & Entwisle, 1988). These results led Alexander and Entwisle (1988) to conclude that black students will find it more difficult than white youngsters to recover from a shaky start. In this sense, the transition to full-time schooling is both more important and more problematic for minority youngsters.

Researchers have explored the connection between family-of-origin experiences and academic achievement and later career-development constructs through theory and empirical research. For example, Hotchkiss and Borrow (1984) postulated that parental social status may affect the number of years their adult child spends receiving formal career/occupational

training. Similarly, Herr and Lear (1984) suggest that the underlying rules and boundaries that contribute to the flexibility vis a vis closed nature of the family system, influence the range of choices and freedom with decision making available to adult children at the time of career entry. Scholars interested in African American career development have developed models that discuss the career development of African Americans and its interaction with family-of-origin experiences. For instance, Dillard and Campbell (1981) investigated how parental influence shaped the career development of African American, Puerto Rican, and Caucasian adolescents. Their data indicated that the African American adolescents in the sample were swayed most by the influence of their parents. In particular, African American adolescents, more than their Puerto Rican and Caucasian peers, tended to choose careers that were expected by their parents and engaged in more collective career decision-making. Though not extensive, existing research on African Americans has confirmed the importance of the family to career development. Research studies have focused on pertinent demographic variables such as socioeconomic status and the educational level of parents (Metcalfe, 1987), parental influence on aspirations (Dillard & Campbell, 1981), and cultural-specific familial phenomena (Naidoo, 1990). In addition, scholars have noted that the African American cultural value of collectivism plays a role in their career decision-making (Cheatham, 1990; Dillard & Campbell, 1981; Parham & Austin, 1994).

Pearson and Bieschke (2001) report that even in the face of racism, African American women have pursued career goals and maintained successful careers, and they believe that while this persistence can theoretically be ascribed to several phenomena—yet, the most notable supportive factor has been the family experience. Pearson and Bieschke studied African American women in the midpoint of their careers and found that the most salient variables related to career development included family emphasis on education, relationships with family members, and family's social and economic resources.

Further, McWhirter, Hackett and Bandalos (1998) studied a structural model predicting the educational and career expectations of Mexican American high school girls and compared those with Mexican American boys. Predictors included socioeconomic status, acculturation, academic achievement, instrumentality, expressiveness, gender role attitudes, parental and teacher support, family and career commitment, and perceptions of barriers. Their results provided evidence supporting the primacy of cultural influences over gender in predicting the educational and career expectations of Mexican American girls.

Thus, the literature concentrating on SES and academic achievement suggest a positive relationship between the two, albeit mediated by other proximal variables like parenting behaviors, attitudes, values, socialization practices etc. Further, while few studies focused on gender differences in the economically disadvantaged class, studies with ethnic minorities showed that academic outcomes and later career choices were mediated by parenting practices, behaviors and attitudes. The above review of familial structural variables definitely support the notion that the parent's demographics is an important contextual factors related to the child's academic development.

Further, the review of literature does suggest that more research needs to be done in order to further explore the gender differences in the linkages between parent-child interactions and parental demographics. For instance, are the effects of SES/ethnicity mainly mediated through general family functioning, or are parent-child interactions more important? In other words, is it possible for a child in depressed economic circumstances, whose family is generally well functioning, to still be disadvantaged at school because his or her parents are

simply not able, in terms of time, to be as supportive, encouraging, and helpful with school responsibilities? Would the gender/intellectual ability of the child in this situation make a difference in this scenario?

Some of these questions are answered by a conceptual model proposed by Ryan and Adams (1995). Their model integrates the proximal (parental influences) and distal causes (demographic, economic influences) for studying the family–school connection in which attention is directed to processes operating within the family that might facilitate children's school success. The model depicts the dozens (or hundreds) of potential school-related family context and family process variables grouped into nested classes or levels of variables. This model is similar to one proposed by Bronfenbrenner (1986) in which levels of environmental influence are imbedded within various systems. However, it differs from Bronfenbrenner's in that the model is primarily a within-the-family perspective.

Ryan and Adams (1995) model places the child's outcome at the center and depicts the remaining classes of variables in concentric arrays moving outward from the child outcomes along a proximal–distal dimension of immediacy of direct influence (or associations) on the outcomes. In the model, Level 0 or the most proximal influence denotes *child-schooling outcomes,* which could include grades, achievements, social behaviors (which tend to vary by gender), or personal goals. At Level 1 are the *child's personal characteristics,* such as ability, skills, gender, and personality traits. Levels 2 and 3 of the model include parent–child interactions (which as has been found by Tenenbaum & Leaper, 2003, vary according to the child's gender). The general domain of parent–child relationships is subdivided: *School-focused parent–child interactions* is Level 2, and *general parent–child interactions* is Level 3, somewhat more distant from the outcomes. Level 3 variables are those that characterize the overall nature of the relationships between parents and children, whether or not school is a particular focus of the relationship. The model locates *general family processes* at Level 4. Variables of this type reflect interaction patterns or family atmospheres that can be said to typify the whole family rather than particular subsets of relationships within the family. Level 5 consists of *personal characteristics of parents,* such as maternal depression or parental educational aspiration for their children. Finally, at Level 6 is a large class of variables that capture the *social and cultural context of the family.* Typical variables at Level 6 are socioeconomic status, family income, ethnic group membership, and parental education. The Ryan and Adams (1995) model definitely helps in integrating the two seemingly diverse lines of research—direct parental influences (via parental attitudes, values etc) and less direct parental demographic influences (ethnicity, SES, race etc.).

CONCLUSION

The review of literature suggests that the Ryan and Adams (1995) model can be applied to better understand the family-school relationship, by focusing on the proximal (parent-child interactions) and distal (social and cultural context of the family) dimension. Additionally, the gender differences seen in academic achievement arising from differential socialization and parental expectancies and goal orientations, and the general literature examining the family-school link, is clearly amenable to the organizational structure the model offers. Hence, future studies in the field of gender differences in academic achievement could use

this model, as it appears to offer a promising tool to assist research, as it is sufficiently open in definition and broad in scope to permit application to a wide variety of areas.

References

[1] Alexander, K. L., & Entwisle, D. R. (1988). Achievement in the first two years of school: Patterns and processes. *Monographs of the Society for Research in Child Development*, 53(2, Serial No. 218).

[2] Ames C, & Archer J. (1987). Mothers' beliefs about the role of ability and effort in school learning. *Journal of Educational Psychology*: 79, 409-414.

[3] Ames C. (1992). Achievement goals, motivational climate, and motivational processes. In: Roberts GC, ed. *Motivation in Sport and Exercise*. Champaign, IL: Human Kinetics, 161-176.

[4] Astin, H. S. (1984). The meaning of work in women's lives: A sociopsychological model of career choice and work behavior. *The Counseling Psychologist*, 12, 117-126.

[5] Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. (Englewood Cliffs, NJ: Prentice Hall.)

[6] Bandura, A., Barbaranelli, C., Vittorio-Caprara, G. V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development*, 72, 187-206.

[7] Battin-Pearson, S. R., Newcomb, M. D., Abbott, R. D., Hill, K. G., Catalano, R. F.,& Hawkins, J. D. (2000). Predictors of early high school dropout: A test of five theories. *Journal of Educational Psychology, 92,* 568-582.

[8] Betz, N. E., & Hackett, G. (1997). Applications of self-efficacy theory to the career assessment of women. *Journal of Career Assessment,* 5, 383-402.

[9] Bleeker, M. M., & Jacobs, J. E. (2004). Achievement in math and science: Do mothers' beliefs matter 12 years later? *Journal of Educational Psychology, 96,* 97-109.

[10] Blustein, D. L., Walbridge, M. M., Friedlander, M. L., & Palladino, D. E. (1991). Contributions to psychological separation and parental attachment to the career development process. *Journal of Counseling Psychology*, 38, 39-50.

[11] Braswell, J. S., Lutkus, A. D., Grigg, W. S., Santapau, S. L., Tay-Lim, B.,& Johnson, M. (2001). The nation's report card: Mathematics 2000 ((National Center for Education Statistics Rep. No. 2001-517). Jessup, MD: Education Publication Center.)

[12] Brustad R. J. (1992). Integrating socialization influences into the study of children's motivation in sport. *Journal of Sport and Exercise Psychology*: 14, 59-77.

[13] Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development. *Psychological Review,* 106, 676-719.

[14] Cheatham, H. E. (1990). Africentricity and career development. *Career Development Quarterly,* 38, 334-346.

[15] Conger, R. D., Conger, K. J., & Elder, G. H. (1997). Family economic hardship and adolescent adjustment: Mediating and moderating processes. In G.J. Duncan & J. Brooks-Gunn (Eds). *Consequences of growing up poor*, pp. 288-310). New York: russel Sage Foundation.

[16] Conger, R. D., Conger, K. J., Elder, G. H., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). A family process model of economic hardship and adjustment of early adolescent boys. *Child Development,* 63, 526-541.

[17] Crowley, K., Callanan, M. A., Tenenbaum, H. R.,& Allen, E.(2001). Parents explain more often to boys than to girls during shared scientific thinking. *Psychological Science,* 12, 258-261.

[18] Diemer, M. A. (2007). Parental and school influences upon the career development of poor youth of color. *Journal of Vocational Behavior,* 70(3), 502-524.

[19] Dillard, J. M., & Campbell, N. J. (1981). Influences of Puerto Rican, Black, and Anglo parents' career behavior on their adolescent children's career development. *Vocational Guidance Quarterly,* 30, 139-148.

[20] Eccles J. S. & Harold R. (1991). Gender differences in sport involvement: Applying the Eccles expectancy-value model. *Journal of Applied Sport Psychology,* 3, 7-35.

[21] Eccles, J. S. (1993). School and family effects on the ontogeny of children's interests, self-perceptions, and activity choices. In R. Dienstbier & J. E. Jacobs (Eds.), *Developmental perspectives on motivation* (Vol. 40, pp. 145-208). Lincoln: University of Nebraska Press.

[22] Eccles, J. S., Barber, B., & Jozefowicz, D. H. (1998). Linking gender to educational occupational, and recreational choices: Applying the Eccles et al. model of achievement-related choices. In W. B. Swann, J. H. Langlois, & L. A. Gilbert (Eds.), *The many faces of gender: The multidimensional model of Janet Spence*. Washington, DC: APA Press.

[23] Eccles, J. S., Wigfield, A., Harold, R., & Blumenfeld, P. (1993). Age and gender differences in children's self- and task perceptions during elementary school. *Child Development,* 64, 830-847.

[24] Eccles, J. S., Freedman-Doan, C., Frome, P., Jacobs, J.,& Yoon, S. K.(2000). Gender-role socialization in the family: A longitudinal approach. (In T. Eckes & H. M. Trautner (Eds.), The developmental social psychology of gender (pp. 333-360). Mahwah, NJ: Erlbaum.)

[25] Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. (In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Social and personality development* (Vol. 4, pp. 1017-1095). New York: Wiley.)

[26] Eccles-Parsons J. S. (1983). Expectancies, values, and academic behaviors. In: Spence JT, ed. *Achievement and Achievement Motives*. San Francisco: WH Freeman and Company, 75-146.

[27] Elder, G. H. (1974). *Children of the Great depression.* Chicago: University of Chicago Press.

[28] Elder, G. H., Van Nguyen, T., & Caspt, A. (1985). Linking family hardship to children's lives. *Child Development,* 56, 361-375.

[29] Entwisle, D. R. & Hayduk, L. A. (1982). *Early schooling: Cognitive and affective outcomes.* (Baltimore: Johns Hopkins University Press)

[30] Entwisle, D. R. & Hayduk, L. A. (1988). Lasting effects of elementary school. *Sociology of Education,* 61, 147-159.

[31] Fitzgerald, L. F., & Betz, N. E. (1983). Issues in the vocational psychology of women. *In W. B. Walsh & S. H. Osipow (Eds.), Handbook of vocational psychology*: Vol. 1. Foundations (pp. 83-159). Hillsdale, NJ: Erlbaum.

[32] Frome, P.,& Eccles, J. A. (1998). Parents' influence on children's achievement-related perceptions. *Journal of Personality and Social Psychology,* 2, 435-452

[33] Galper A, Wigfield A, Seefeldt C. (1997). Head start parents' beliefs about their children's abilities, task values, and performances on different activities. *Child Development*, 68, 897-907.

[34] Goldstein, L. S. (1999). The relational zone: The role of caring relationships in the co-construction of mind. *American Educational Research Journal,* 36, 647-673.

[35] Grotevant, H. D., & Cooper, C. R. (1988). The role of family experience in career exploration: A lifespan perspective. In P. B. Baltes, D. C. Featherman, & R. M. Lerner (Eds.), *Lifespan development and behavior*, Vol. 8. Hillsdale, NJ: Erlbaum.

[36] Hall, C. W., Davis, N. B., Bolen, L. M., & Chia, R. (1999). Gender and racial differences in mathematical performance. *Journal of Social Psychology,* 139, 677-689.

[37] Halle, T.G., Kurtz-Costes B., Mahoney, J.L. (1997). Family influences on school achievement in low-income African American children. *Journal of Educational Psychology*, 89, 527-537.

[38] Herr, E.,& Lear, P. B. (1984). The family as an influence on the career development. (In J. C. Hansen & S. H. Cramer (Eds.), Perspectives on work and the family (pp. 1-13). Rockville, MD: Aspen System Cooperation.)

[39] Hess, R. D. & Holloway, S. D. (1985). Family and school as educational institutions.(In R. D. Parke (Ed.), *Review of child development research* (Vol. 7, pp. 179-222). Chicago: University of Chicago Press.)

[40] Holland, J. L. (1985). Making vocational choices: A theory of vocational personalities and work environments (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

[41] Hotchkiss, L., & Borrow, H. (1984). Sociological perspectives on career choice and attainment. (In D. Brown & L. Brooks (Eds.), Career choice and development (pp. 137-168). San Francisco: Jossey-Bass.)

[42] Hyde, J. S. (1997). Gender differences in math performance: Not big, not biological. (In M. R. Walsh (Ed.), Women, men, and gender: Ongoing debates (pp. 271–287). New Haven, CT: Yale University Press.)

[43] Hymel, S., Comfort, C., Schonert-Reichl, K., & McDougall, P. (1996). Academic failure and school dropout: The influence of peers.In J. Juvonen & K. R. Wentzel

(Eds.), *Social motivation: Understanding children's school adjustment* (pp. 313-345). New York: Cambridge University Press.

[44] Jackson, R. M., & Meara, N. M. (1977). Father identification, achievement, and occupational behavior of rural youth: 5-year follow-up. *Journal of Vocational Behavior*, 10, 82-91.

[45] Jacobs, J. E.(1991). Influence of gender stereotypes on parent and child mathematics attitudes. *Journal of Educational Psychology,* 83, 518-527.

[46] Jacobs, J. E.,& Eccles, J. S. (1992). The impact of mothers' gender-role stereotypic beliefs on mothers' and children's ability perceptions. *Journal of Personality and Social Psychology*, 63, 932-944.

[47] Juvonen, J.,& Wentzel, K. R. (1996). *Social motivation: Understanding children's school adjustment.* New York: Cambridge University Press.

[48] Klebanov, P., & Brooks-Gunn, J. (1992). Impact of maternal attitudes, girls' adjustment, and cognitive skills upon academic performance in middle and high school. *Journal of Research on Adolescence,* 2, 81-102.

[49] Leaper, C.(2002). Parenting girls and boys. In M. H. Bornstein (Ed.), Handbook of parenting: Vol. 1. Children and parenting (2nd ed., pp. 127-152). Mahwah, NJ: Erlbaum.

[50] Lunneborg, P. W. (1982). Role model influencers of nontraditional professional women. *Journal of Vocational Behavior*, 20, 276-281.

[51] Maccoby, E. E. & Martin, J. A. (1983). Socialization in the context of the family: Parent—child interaction. (In E. M. Hetherington (Ed.), *Handbook of child psychology: Vol. 4. Socialization, personality, and social development.* 4th ed., pp. 1-102). New York: Wiley.

[52] McLoyd, V. (1998). Socioeconomic disadvantage and child development. *American Psychologist,* 53, 185-204.

[53] McWhirter, E. H., Hackett, G. & Bandalos, D. L. (1998). A causal moel of the educational plans and career expectations of Mexican American high school girls. *Journal of Coulnseling Psychology,* 45, 166-181.

[54] Metcalfe, B. A.(1987). Male and female managers: An analysis of biographical and self-concept data. *Work & Stress,* 1, 207-219

[55] Miller, S. A., Manhal, M., & Mee, L. L. (1991). Parental beliefs, parental accuracy, and children's cognitive performance: A search for causal relations. *Developmental Psychology*, 27, 267-276.

[56] Naidoo, A. V. (1990). Factors affecting the career maturity of African American undergraduate students: A causal model. (Unpublished dissertation, Ball State University.)

[57] Palmer, S., & Cochran, L. (1988). Parents as agents of career development. *Journal of Counseling Psychology,* 35, 71-76.

[58] Parham, T. A., & Austin, N. L. (1994). Career development and African Americans: A contextual reappraisal using the nigrescence construct. *Journal of Vocational Behavior,* 44, 139-154.

[59] Pearson, S. M., & Bieschke, K. J. (2001). Succeeding against the odds: An examination of familial influences on the career development of professional African American women. *Journal of Counseling Psychology*, 48, 301-309.

[60] Penick, N. I., & Jepsen, D. A. (1992). Family functioning and adolescent career development. *The Career Development Quarterly*, 40, 208-222.

[61] Proctor, B. D., Semega, J. L., & Kollar, M. A. (2015). Income and Poverty in the United States: 2015. *U.S. Census Bureau.* P60-256(RV)

[62] Roe, A. (1957). Early determinants of vocational choice. *Journal of Counseling Psychology*, 4, 212-217.

[63] Rumberger, R. W. (1987). High school dropouts: A review of issues and evidence. *Review of Educational Research*, 57, 101-121.

[64] Rumberger, R. W. (1995). Dropping out of middle school: A multilevel analysis of students and schools. *American Educational Research Journal,* 32, 58.

[65] Ryan, B. A.,& Adams, G. R.(1995). The family–school relationships model. (In B. A. Ryan, G. R. Adams, T. P. Gullotta, R. P. Weissberg, & R. L. Hampton (Eds.), The family–school connection: Theory, research, and practice (pp. 3-28). Thousand Oaks, CA: Sage.

[66] Schulenberg, J. E., Vondracek, F. W., & Crouter, A. C. (1984). The influence of the family on vocational development. *Journal of Marriage and the Family*, 46, 129-143.

[67] Serbin, L.A., Zelkowitz, P., Doyle, A.-B., & Gold, D. (1990). The socialization of sex-differentiated skills and academic performance: A mediational model. *Sex Roles,* 23, 613-628.

[68] Soresi, S., Nota, L., Ferrari, L., & Ginevra, M. C. (2014). Parental influences on youth's career construction. In G. Arulmani, A. J. Bakshi, F. T. L. Leong & A. G. Watts (Eds.), *Handbook of career development: International perspectives,* pp. 149-172, Springer Science, New York, NY.

[69] Steinberg, L. (1990). Autonomy, conflict, and harmony in the family relationship.(In S. Feldman & G. Elliot (Eds.), *At the threshold: The developing adolescent.* (pp. 255-276). Cambridge, MA: Harvard University Press.)

[70] Steinberg, L., Elmen, J. & Mounts, N. (1989). Authoritative parenting, psychosocial maturity, and academic success among adolescents. *Child Development,* 60, 1424-1436.

[71] Steinberg, L., Darling, N. E.,& Fletcher, A. C. (1995). Authoritative parenting and adolescent adjustment: An ecological journey. In P. Moen, G. H. Elder, Jr., K. Lüscher, & H. E. Quick (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 423-466). Washington, DC: American Psychological Association.

[72] Stipek, D. J. (2002). *Motivation to learn: From theory to practice.* (4th ed.). Needham Heights, MA: Allyn & Bacon.

[73] Super, D. E. (1990). A life-span, life-space approach to career development. In D. Brown & L. Brooks (Eds.), *Career choice and development: Applying contemporary theories to practice* (pp. 197-261). San Francisco, CA: Jossey-Bass.

[74] Tenenbaum, H. R., & Leaper, C. (2003). Parent-child conversations about science: The socialization of gender inequities? *Developmental Psychology,* 39, 34-47.

[75] White, K. (1982). The relation between socioeconomic status and academic achievement. *Psychological Bulletin,* 91, 461-481.

[76] Wilson, P. M., & Wilson, J. R. (1992). Environmental influences on adolescent educational aspirations. *Youth & Society*, 24, 52-70.