

**The Effect of Socio-Economic Characteristics on  
Parenting and Child Outcomes**

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## Introduction

Children from lower socio-economic backgrounds are at risk for lower achievement, behavioral problems, dropping out of school, health problems, anxiety, depression, and other negative outcomes (McLoyd, 1998; Klerman, 1991; McLeod & Shanahan, 1993). Indeed, much literature has been written about the impact of poverty and low socioeconomic status on the mental health and cognitive outcomes of adults as well as children (McLoyd, 1998; Ramey & Ramey, 1998; Sugland, Zaslow, Blumenthal, Moore, Smith, Brooks-Gunn, Griffin, Coates, Bradley, 1995; McLoyd & Wilson, 1991). McLoyd's (1998) recent review of the impact of socio-economic status (SES) on child development suggests that these problems do not necessarily arise directly from low SES but from the impact it has on the parents of the children, which in turn, influences the socio-emotional development of the children. The literature on resiliency finds that children who have an adult who cares about them, are of average to above average intelligence, and can regulate their behavior and emotions are likely to succeed in life no matter what type of environment they live in (Masten & Coatsworth, 1998). These results are, in part, attributable to good parenting practices. Parents who use a proactive parenting style (warm, structured, and consistent) for their children are more likely to promote prosocial behavior and academic readiness (Masten & Coatsworth, 1998; Way and Rossermann, 1995). Unfortunately, the literature on SES and parenting has shown that impoverished parents, especially mothers, are more punitive and less affectionate and supportive of their children (McLoyd & Wilson, 1991). Psychological distress caused by the consequences of poverty related to this type of parenting, in turn, impacts the mental health and cognitive outcomes of the children (Sugland et al., 1995;

McLoyd & Wilson, 1991). Many of these studies have looked at particular populations when examining these issues, what is needed in order to understand parental influences more fully is a more representative sample that examines the impact of a wide range of socioeconomic status. This paper will examine the impact of SES and parenting practices on cognitive, socio-emotional and behavior problem outcomes of children using a model derived from the Eccles (1993) model of parenting effects on child outcomes using a new national sample of children from all levels of SES.

### Eccles Model of Parenting

Eccles and colleagues (1993) have focused on the influences of parenting by examining (1) role modeling, (2) the ways in which parents structure their children's experiences, and (3) through the feedback they provide regarding their view of their children's world and experience. They found that the most critical aspects of good parenting involve: general emotional warmth and supportiveness; timing and magnitude of independence training; general parental child-rearing beliefs, values, and goals as well as sex-typed goals; general child-rearing style in terms of authority structure and discipline techniques and affective relations; personal efficacy, and other indicators of general mental health; and the quality of organizational management of household activities. Figure 1 is the model derived from these views and examines the longitudinal influences of parenting on the development of children. Using this model Eccles and colleagues have shown parents' perceptions of their children's ability and effort predict their children's self- and task-perceptions in math, English, sports and the social world (Frome & Eccles, 1998; Jacobs, 1992; Jacobs & Eccles, 1992; Wigfield et al., 1998). In fact parents' perceptions are a stronger predictor of children's self-perceptions than their children's own

grades; furthermore, parents' perceptions mediate the relation between children's grades and children's self- and task-perceptions. Using this model as a guide, a similar model was developed using information from the Panel Study of Dynamics-Child Development Supplement (PSID-CDS). This model includes the major constructs outlined in the Eccles Model (see Figures 1 & 2) but does not contain all of the individual indicators of these constructs due to the unavailability of these indicators in this PSID-CDS dataset. Thus, using the revised model as a guide, it is hypothesized that parenting expectations and parenting behaviors over and above the influence of socio-economic factors will impact academic achievement, self-concept of ability, and behavior problems.

### **Sample and Measures**

Data from a national, cross-sectional study of children, the 1997 Child Development Supplement of the Panel Study of Income Dynamics, was used for this study. The subjects are 974 children (48% male, 52% female) age 8-12 ( $M=10.75$ ). This sample is comprised of children who are approximately 46% Caucasian, 42% African-American, and 12% other ethnic races. In 1997, PSID families with children 0-12 completed an extensive battery of interviews and questionnaires regarding up to two randomly chosen children from their family. This study focuses on two of these questionnaires, the Primary Caregiver Interview regarding the child and the Child Interview which contains the standardized achievement test and self-concept inventory.

The primary caregivers of the children in the sample answered questions regarding their children's health, behavior, home environment, child care arrangements, schooling, and food security, this survey (Primary Caregiver Interview) had a 88% response rate for the whole sample. During the primary caregiver interview, children ages 3-12 were administered 4

subscales of the Woodcock-Johnson Achievement test (Letter-Word, Passage Comprehension, Calculations, Applied Problems), the WISC-III Digit Span test, and children 8-12 completed a self-concept inventory; the response rate for this survey (Child Interview) was approximately 81%. The next section details the specific measures used for this study based on the Eccles model of parenting.

#### Parent and Family Characteristic Measures

The parent and family measures used in this study are: the education of the parents, family income, number of children in the family under 18 years of age, and the employment status of parents. The mean for education of the parents (wife and husband) was approximately 13 years which indicates that most of the parents had a slightly above a high school education . The combined family income for this sample averaged approximately 49,400.00. The number of children in the household under 18 years of age, averaged 2.46 with a range of 1 to 8 children. Eighty-three percent of the husbands (coded “1” as “yes employed” and “0” a “not employed”) were employed and 45% of the wives were employed in the sample.

#### Child Characteristic Measures

Three variables were used to represent the child characteristics, gender, previous school performance (held back a grade), and ethnic background. For this analysis, males were given a code of “1” and females a code of “0”. Ethnic background contrasted Caucasian (race=1) with all other Ethnic backgrounds (race=0). This data is cross-sectional and thus there was no previous achievement scores or performance scores available for this sample, hence, a proxy variable (being held back a grade) was used as an indicator of past performance. The variable was coded “1” for “yes” the child was held back a grade and “0” for “no” the child was not held

back. Approximately, 10% of the sample reported being held back or repeating a grade.

### Parents' Expectation Measure

Parents' expectation for achievement was measured with a continuous variable that asked the parent "How much schooling do you expect that (Child) will complete?" The choices ranged from eleventh grade or less to M.D, Law, Ph.D., or other doctoral degree. The mean for the sample was 5.1 indicating that, on average, the parents in this sample expected their children to graduate from a 2-year college.

### Parent Behavior Measures

The short form of the Home Observation for Measurement of the Environment (Caldwell & Bradley, 1984) was used to measure cognitive stimulation and socio-emotional support from the parent. This measure has been heavily studied and is used in many large-scale studies on child development (Sugland, Zaslow, Blumenthal, Moore, Smith, Brooks-Gunn, Griffin, Coates, Bradley, 1995). The reliabilities for the short form are reported to be .71 for the cognitive stimulation scale and .59 for the socio-emotional scale (Sugland, et al., 1995). Items comprising the cognitive stimulation scale include items such as: how often do you read to our child?, how many books does child have?, and how often has a family member arranged to take child to a museum? Examples of items comprising the socio-emotional scale include: how many times in the past week have you shown physical affection?, and how many times in the past week have you praised child.

### Child Outcome Measures

Four measures were used as outcome variables for this study. The Woodcock-Johnson-Revised Tests of Achievement were used as the achievement measure for math and reading.

This assessment is widely used in national longitudinal studies (e.g., National Head Start Transition Project, NICHD National Child Care Project), and has good psychometric properties with reliabilities ranging between .78 and .94 for this age group (8-12 year olds). The Woodcock-Johnson Test was revised in 1988 in order to get a more current normative sample of children for standardization purposes. As stated earlier, 4 subscales were used with this sample, two were combined to create a broad reading variable (Letter-Word and Passage Comprehension) and the other two a broad math variable (Calculations and Applied Problems). The scores used in these analyses are the standardized scores for the broad reading and broad math scales. The Woodcock-Johnson is standardized with a mean of 100 and a standard deviation of 15. The means for both combined scales in this sample are 105.

The Eccles Task and Value Perceptions of Ability inventory was used to measure self-concept of math and reading ability. This inventory was created by Eccles and colleagues (1993) to measure self-concept of ability in reading and math as well as other areas such as music, sports, and science. The PSID-CDS focuses only on the math and reading to be consistent with the achievement measure. It was administered to all children 8 and older in this study. The reliabilities are good, the reading scale has a reliability of .86 and the math scale .84. Eccles and her colleagues have used this scale in many studies and the reliabilities remain consistent across different populations of children.

Finally, a 30-item measure developed by Peterson and Zill (1986), the Behavior Problems Index, was used to measure behavior problems in children. This scale was adapted from the Achenbach Behavior Problems Checklist and is used in many national studies (e.g., The National Longitudinal Study of Youth-NLSY). Primary caregivers answer questions regarding external

behavior problems such as aggression and internal problems such as mood changes or anxiety. The total score for the Behavior Problems Index was used in this study, higher scores meant lower behavior problems. For this sample, the scores ranged between 42 and 90 with a mean of 79.6.

## Results

In order to answer our hypotheses regarding the impact of parenting on academic achievement, self-concept, and behavior problems, four hierarchical regressions were used. Hierarchical regressions test theoretical models of prediction and allow the researcher to input variables according to model specifications. The revised model of parental influences seen in Figure 2 guided the entry of variables into the regression equation. General socioeconomic status (SES) was entered first, followed by children's characteristics, parents' expectations, and finally parent behavior. The results from these analyses are in Table 1.

### Academic Achievement

#### *Reading Achievement*

In order to examine the impact of parenting on academic achievement, two hierarchical regressions were completed, one for reading ability and one for math ability. Table 1 shows the results of these regressions. For reading achievement, parent and family characteristics (SES), child characteristics, and parents' expectations all make a significant contribution to the percent of variance accounted for (31%) in the prediction model. There were significant individual indicators for each construct. Indicators of parent and family characteristics showed that the number of children in the home under 18 was a significant indicator,  $t = -2.54, p \leq .01$ , of a decrease in reading achievement scores. There is also a small but non-significant effect,  $t = 1.76$ ,



$p < .10$ , of mother's education, indicating the higher the mother's education, the higher the scores.

For child characteristics, being held back a grade was a highly significant indicator,  $t = -4.67, p < .001$ , of a decrease in reading achievement scores and being male showed a slight but non-significant effect,  $t = -1.70, p < .10$ , on a decrease in reading achievement scores. Being Caucasian was a significant predictor of an increase in reading achievement scores,  $t = 4.72, p < .001$ .

Parents' expectation for schooling was a strong individual contributor to the model. It accounted for 7% of the variance and was a significant predictor,  $t = 7.35, p < .001$ , of increased reading achievement scores. The more the parents expected their children to achieve educationally, the higher the reading achievement scores.

Parent's behaviors did not add significantly to the model in predicting reading performance, but the cognitive stimulation in the home measure was a significant individual indicator of increased reading achievement scores,  $t = 2.09, p < .05$ . The larger the amount of cognitive stimulation available in the home to the child, the higher the reading performance.

### *Math Achievement*

Math achievement scores showed a similar significant prediction pattern to reading achievement, all the model elements except for parent behaviors accounted for a significant percent of the variance accounted for in the model (36%). The individual indicators of the constructs, however, show a different impact on the prediction of math achievement scores. The parent and family characteristics (SES) show that the total family income and education of wife are both significant predictors,  $t = 1.91, p \leq .05; t = 2.50, p \leq .01$ ; respectively, to the increase in math scores. The higher the income and the more educated the wife the higher the math

achievement scores. If the wife works, however, there is a significant decrease,  $t = -2.38, p < .05$ , in the math achievement scores.

Similar to the reading achievement indicators for child characteristics, both gender and repeating or being held back a grade are significant predictors of math achievement scores. If the child is male, then the math achievement scores are more likely to be higher,  $t = 2.92, p < .01$ . Children who have been held back a grade are significantly,  $t = -6.31, p < .001$ , more likely to have lower math achievement scores. Also, being Caucasian significantly predicts and increase in math scores as it did with reading scores,  $t = 4.20, p < .001$ .

The amount of schooling that parents expect a child to achieve, is also a strong predictor of higher math scores, as it was with reading scores. Children who's parents expect them to go further in education are significantly,  $t = 7.87, p < .001$ , more likely to have higher math scores. This construct in the model accounted for 8% of the variance in the prediction of math achievement scores.

### Problem Behaviors

The hierarchical regressions for predicting behavior problems shows that child characteristics, parents' expectations for schooling, and parent behaviors all make significant contributions to the prediction model but together with parent and family characteristics only account for 7% of the variance (see Figure 3).

Given that the explained variance is small, there are still some interesting individual indicators that were significant in the prediction of problem behaviors. Even though there was no overall significant impact of parent and family characteristics (SES), education of husband was a significant individual indicator,  $t = -2.30, p < .05$ , of an increase in behavior problems.

Surprisingly, the more educated the husband, the more behavior problems were reported.

For child characteristics, being held back or repeating a grade was a significant predictor,  $t = -3.25, p \leq .001$ , of increased parental reports of behavior problems. The final two indicators are parents' expectation of schooling and emotional support in the home (from the parent behavior construct), both predict a reduction in behavior problems,  $t = 2.81, p < .01$ ;  $t = 2.59, p \leq .01$ ; respectively. If parents' expectations for schooling for their children were high and the parents reported high amounts of emotional support then their reports of their children's problem behavior was low.

### Self-Concept of Ability

As with the model for behavior problems, the model for self-concept of ability only accounted for a small percent of the explained variance (6%). The main contributions for the model are the child characteristics and parental expectations for schooling.

The strongest individual indicators are from the child characteristic construct. Being male,  $t = -2.37, p < .05$ , repeating or being held back a grade,  $t = -2.49, p \leq .01$ , and being Caucasian,  $t = -4.56, p < .001$  are predictors of a decrease in self-concept of ability. Parents' expectations for schooling shows a small positive trend,  $t = 1.88, p \leq .06$ , for increasing the self-concept of abilities in children.

## **Discussion**

This study was a preliminary look at the impact of parenting on children using a national sample of children. In general, the revised Eccles (1993) model (Figure 2) of parenting was partially supported for the academic measures. The original model was designed to measure the expectations for achievement and it seems to be a good model for looking at factors that

contribute to achievement outcomes even when revised to include only a subset of the variables that were hypothesized to impact achievement. It is possible, if additional indicators were available to include in this model, that more variance would have been explained. The current model, however, does indicate that socio-economic status, child characteristics, and parents' expectations are important constructs in modeling academic achievement in children. Better measures of parents' actual behaviors need to be examined in the future.

The revised parenting model was not as good at predicting problem behavior and socio-emotional outcomes. As the individual indicators suggest, an emotional connection to the caregiver is important in reducing behavior problems, a finding strongly supported in the literature (e.g., Baumrind, 1978,;Denham, Renwick, & Holt, 1991; Berlin, Brooks-Gunn, Spiker, Zaslow, 1995).

Self-concept of ability was predicted by child characteristics and parents' expectations but this revised model was unable to account for much of the explained variance. This model did not contain many socio-emotional factors of the family that might have helped account for some of the variance. Depression, self-esteem, and self-efficacy of the mothers are important variables that could be added to this model that might be better indicators of self-concept of ability. Indeed, Peck, Davis-Kean, Schnabel, Malanchuk, and Eccles (1999) have found that self-concept is a good predictor of long-term mental health adjustment and that it is stronger at predicting mental health outcomes than academic outcomes. A refinement of the model in the future may help in seeing if mental health measures in the family are better predictors of self-concept of ability.

The strongest finding of this study is the powerful prediction of expectations of schooling

by parents. In all four of the regressions it had a strong impact on the predictor variable. This is a variable that needs to be examined more fully in the future. As stated earlier, Eccles and colleagues have shown support for parents' expectations influencing children's expectations of their own performance. This study shows that it impacts academic achievement, behavior problems, and self-concept of ability even though the nature of the relation is unclear. It is possible that parents are influenced by their children's performance and then make judgements about the children's potential educational success. It is also possible, as the Eccles model suggests, that children are influenced by their parents' expectations and perform accordingly (Eccles, Wigfield, Schiefele, 1997). This will be an important avenue of research to pursue in the future.

Another important variable across all of the regressions was previous performance (child being held back or repeating a grade). This negatively impacted all of the variables. Repeating a grade corresponded with decreased academic achievement scores; increased problem behaviors; and decreased self-concept of ability in academics. Additional information on what types of children generally fall into this category is important to understand. Do these children have developmental problems, cognitive delays, or socialization problems? It is possible that this is predictive of early disengagement in school that can lead to children dropping out later in their educational career (Alexander, Entwisle, Horsey, 1997). This will be examined in future research examining the predictors of children repeating a grade and the subsequent outcomes of this placement.

In summary, this study has demonstrated that some aspects of parenting are important to the academic achievement, prosocial development, and socio-emotional development.

Differences in the socio-economic factors contributed more to predicting academic achievement than in predicting problem behaviors or self-concept of abilities. Parenting measures will need to be examined more fully in subsequent studies to understand the impact of parenting on development in the pre-adolescent years

## References

Alexander, K.L., Entwisle, D. R., & Horsey, C.S. (1997). From First Grade Forward: Early Foundations of High School Dropout. Sociology of Education, 70, 87-107.

Denham, S. A., Renwick, S. M., & Holt, R. W. (1991). Working and playing together: Prediction of preschool social-emotional competence from mother-child interaction. Child Development, 62(2), 242-249.

Eccles, J. S. (1993). School and family effects on the ontogeny of children's interests, self-perceptions, and activity choice. In J. Jacobs (Ed.), Nebraska Symposium on Motivation, 1992: Developmental perspectives on motivation. (pp. 145-208): Lincoln, NB: University of Nebraska Press.

Eccles, J. S., Wigfield, A., & Schiefele, U. (1997). Motivation. In N. Eisenberg (Ed.), Handbook of Child Psychology, Vol. 3 (5th edition) (5th ed., Vol. 3, pp. 1017-1095). New York: Wiley

Eccles, J., Wigfield, A., Harold, R. D., & Blumenfeld, P. (1993). Age and Gender Differences in Children's Self- and Task Perceptions during Elementary School. Child Development, 64, 830-847.

Frome, P. & Eccles, J. S. (1998). Parental effects on adolescents' academic self-perceptions and interests. Journal of Personality and Social Psychology, 74, 435-452.

Jacobs, J.E., & Eccles, J.S. (1992) The influence of parent stereotypes on parent and child ability beliefs in three domains. Journal of Personality and Social Psychology , 63, 932-944.

Jacobs, J. E. (1992). The influence of gender stereotypes on parent and child math attitudes. Journal of Educational Psychology, 83, 518-527.

Klerman, L. V., (1991). The association between adolescent parenting and childhood poverty. (pp. 79-104. In A. C. Huston (Ed.), Children in Poverty. Cambridge University Press.

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from Research on successful children. American Psychologist, 53(2), 205-220.

McLeod, J., & Shanahan, M. (1993). Poverty, parenting, and children's mental health. American Sociological Review, 58, 351-366.

McLoyd, V. C. (1998). Socioeconomic Disadvantage and child development. . American Psychologist, 53(2), 185-204.

McLoyd, V. C., & Wilson, L., (1991). The strain of living poor: Parenting, social support, and child mental health (pp. 105-135). In A. C. Huston (Ed.), Children in Poverty. Cambridge University Press.

Peck, S. C., Davis-Kean, P. E., Schnabel, K., Malanchuk, O., Eccles, J. S., (1999). Self-esteem does matter: Research on the longitudinal impact of self-esteem. Poster presented at the American Psychological Society Conference, Denver, CO, June, 1999.

Peterson, J. L., & Zill, N. (1986). Marital disruption, parent-child relationships, and behavioral problems in children. Journal of Marriage and the Family, 48(2), 295-307.

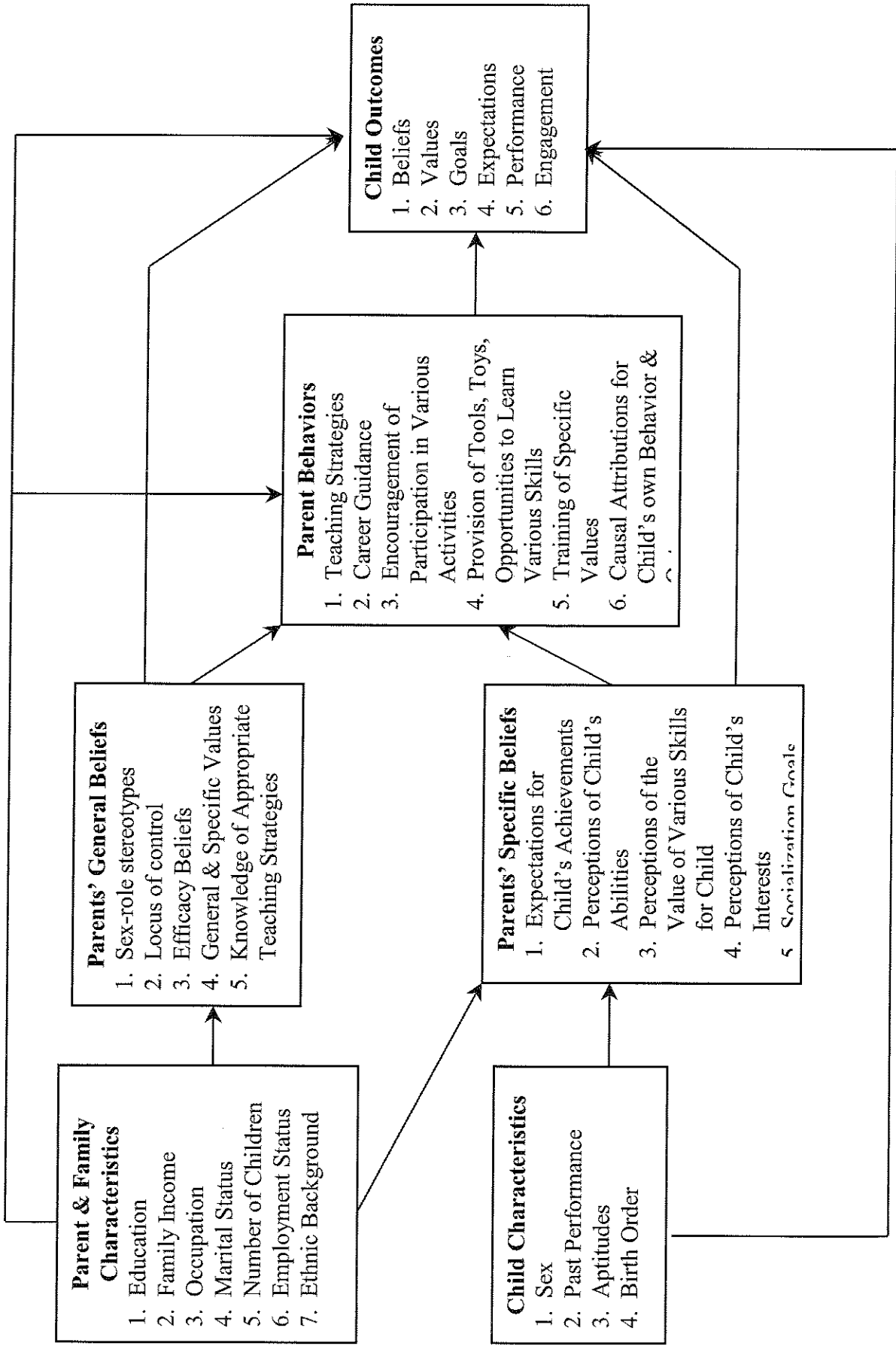
Ramey, C. T. & Ramey, S. L. (1998). Early intervention and early experiences. American Psychologist, 53(2), 109-120.



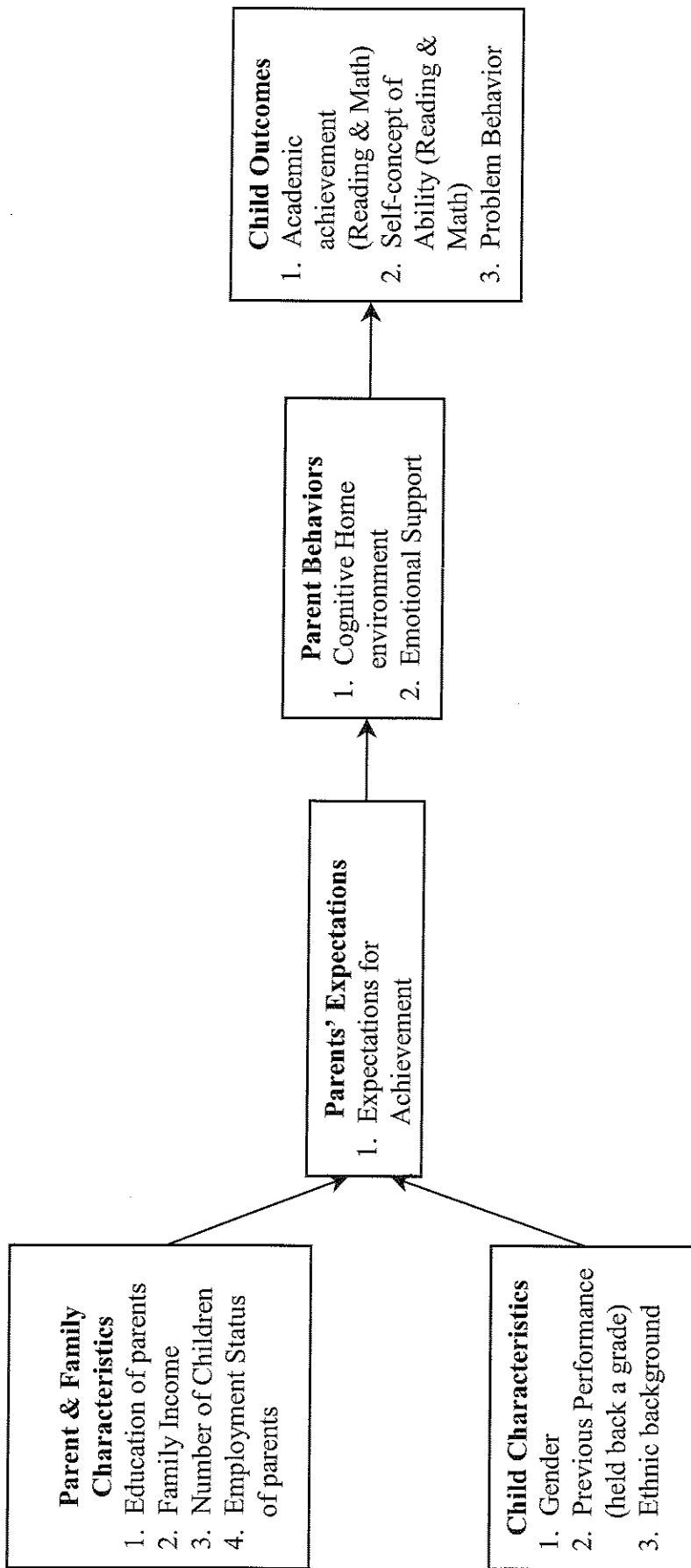
Sugland, B. W., Zaslow, M, Blumenthal, C, Moore, K. A. , Smith, J. R., Brooks-Gunn, J, Griffin, T, Coates, D, & Bradley, R. (1995). The early childhood HOME inventory and Home-Short form in differing racial/ethnic groups: Are there differences in underlying structure, internal consistency of subscales, and patterns of prediction? Journal of Family Issues, *16* (5), 632-663.

Wigfield, A., Rodriguez, D., & Eccles, J. S. (1998). Developmental differences in the prediction of children's self-esteem from their activity-specific competence beliefs. Paper presented at the annual meeting of the American Educational Research Association, San Diego.

**Figure 1: Model of Parental Influences on Eccles, et al. Value Model of Achievement**



**Figure 2: Revised Model of Parental Influences**



**Figure 3: Percent of Variance Accounted for by Parent Model**

