

Review

The effects of poverty on academic achievement

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Poverty, which forms a specific culture and way of life, is a growing issue in the United States. The number of Americans living in poverty is continually increasing. Poverty indicates the extent to which an individual does without resources. Resources can include financial, emotional, mental, spiritual, and physical resources as well as support systems, relationships, role models, and knowledge of hidden rules. Poverty directly affects academic achievement due to the lack of resources available for student success. Low achievement is closely correlated with lack of resources, and numerous studies have documented the correlation between low socioeconomic status and low achievement. Several strategies exist to assist teachers in closing the poverty achievement gap for students.

Key words: Poverty, family income, achievement gap, academic gap.

INTRODUCTION

In the United States (US), the gaps in achievement among poor and advantaged students are substantial (Rowan et al., 2004). Through multiple studies, The U.S. Department of Education (2001: 8) has indicated results that “clearly demonstrated that student and school poverty adversely affected student achievement”. The U.S. Department of Education (2001) found the following key findings regarding the effects of poverty on student achievement in a study conducted on third through fifth grade students from 71 high-poverty schools: The students scored below norms in all years and grades tested; students who lived in poverty scored significantly worse than other students; schools with the highest percentages of poor students scored significantly worse initially, but closed the gap slightly as time progressed. Numerous individual studies have found similar results. In his fiscal 2010 budget proposal, President Barack Obama called for neighborhoods modeled after the Harlem Children’s Zone to improve the lives of children living in poverty (Aarons, 2009).

ACHIEVEMENT OF LOW-INCOME STUDENTS

A study conducted by Sum and Fogg (1991) found that poor students are ranked in the 19th percentile on assessments while students from a mid-upper income family are ranked in the 66th percentile on assessments. In data from the Early Childhood Longitudinal Study (ECLS) measuring kindergarten students achievement on the ECLS reading achievement assessment, low-income students scored at about the 30th percentile, middle-income students scored at about the 45th percentile, and upper-income students scores at about the 70th percentile (Rowan et al., 2004). Students from low income families consistently, regardless of ethnicity or race, score well below average (Bergeson, 2006). For example, in one study, 43.5% of low-income students did not successfully meet any of the required subject area assessments while only 13.2% of low-income students met all of the required subject area assessments (Bergeson, 2006). Similar studies have found comparable results (Bergeson, 2006). Poverty effects on the child increase with the duration of poverty (Table 3). “Children who lived in persistently poor families scored 6 to 9 points lower on the various assessments than children who were never poor” (Smith et al., 1997: 164). The extent of poverty has a significant

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Table 1. Poor children and adults in the United States, 1959 to 1989.

Year	Percent		
	Children (≤ 17 years)	Adults (18 - 64 years)	Elders (65 years)
1959	27.3	17.0	35.2
1969	14.0	8.7	25.3
1979	16.4	8.9	15.2
1989	19.6	10.2	11.4

Source: Brooks-Gunn et al. (1997: 4)

Table 2. Coefficients as related to income-to-needs.

Income-to-needs category	High school graduation baseline	College attendance	Years of schooling
0.6-0.9	1.35	1.11	0.62
0.9-1.3	1.18	1.22	0.63
1.3-1.8	2.65	1.26	1.03
1.8-2.2	2.04	0.68	0.44
2.2-2.3	2.16	1.01	0.62
2.3-2.8	2.83	0.84	0.91
2.8-3.6	2.73	1.64	1.44
3.6-4.6	3.55	1.31	1.31
≥4.6	12.30	1.70	1.33

Source: Teachman et al. (1996: 417)

effect. Children from very poor households, income below 50% of the poverty line scored 7 to 12 points lower than children from near-poor households while children in poor households, income between 50 to 100% of poverty line, scored 4 to 7 points lower (Smith et al., 1997).

Through multiple studies on various age groups (Table 1, Figure 1), middle adolescents tend to display the effects of poverty most prominently (Halpern-Felscher, et al., 1997). For middle adolescent students, the family economic risk and the level of neighborhood risk predicted behavior risk factors for all subgroups (Halpern-Felscher et al., 1997). Family income level was a predictor of school completion for all subgroups as well (Halpern-Felscher et al., 1997). By contrast, a few studies have found little correlation between income and academic achievement. A study conducted by Mayer (1997) tested students in reading and mathematics prior to an increase in income followed by a post-test after the increase in income. The findings indicate the effect on reading scores ranges from a small negative effect to a small positive effect while the effect on mathematics scores is slightly greater (Mayer, 1997). An additional study conducted by Mayer (1997) studied the test scores of siblings, testing one sibling prior to an increase in

parental income and one sibling after an increase in parental income. The study found that “changes in income between siblings have a very small and statistically insignificant effect on children’s test scores and educational attainment” (Mayer, 1997: 96). Thus, studies showed that there is no correlation between student’s test scores and income level. The occasional lack of correlation between income and achievement in some studies may be due to the source of the income.

THE EFFECTS OF WELFARE INCOME

Additional studies seek to determine the effects of income from welfare versus income from other sources. This information is vital because “one child in seven in the United States is in a family that receives ‘welfare’ or cash income through the Aid to Families with Dependent Children (AFCD) program” (Zill et al., 1995). Research indicates that receiving welfare had a negative effect on academic achievement (Peters and Mullis, 1997). A study conducted by Zill et al. (1995) measures the effects of receiving welfare assistance. Some of the results from the study indicate that “welfare children are twice as likely

Table 3. Effects of family income on children's performance on measures of ability and achievement.

Stage in which income was measured	Size of effect		
	Large	small or moderate	None
Early childhood	*Bayley IQ score		
	*PPVT-R score		
	*Stanford-Binet score		
	*PPVT score		
	*PPVT-R score		
	*PIAT Math score		
	*PIAT Reading score		
Early and middle childhood	*PIAT Math score		*Completed schooling
	*PIAT Reading score		
Middle childhood			*Behind in grade for age
Middle childhood and adolescence	*Family income		
	*Men's labor income		*Odds of completing high school
	*Men's hourly earnings		
	*Men's work hours		
Adolescence			*AFQT score
			*Completed schooling
			*Odds of attending college
			*Completed schooling
			*Odds of family poverty

Source: Duncan and Brooks-Gunn (1996: 598).

to fail in school" (Zill et al., 1995: 44). In addition, welfare children are much more likely to have discipline problems in school than non-poor children (Zill et al., 1995). Children from families who are long-term recipients of AFCD show significantly lower academic achievement than children from families who are short-term recipients of AFCD (Zill et al., 1995). Mayer (1997) states the following effects of welfare income: reduction in students chances of graduating in high school, effect of the student's eventual years of education, negative effect on earnings and hours of work, and a negative effect on young children's test scores (Figure 2 and Table 3).

Many possible reasons for these effects are provided to include the possibility that "welfare receipt is a proxy for severe material deprivation" (Mayer, 1997: 81). An additional possibility for the negative effects of receiving welfare assistance is that children from welfare families are often raised in homes that lack intellectual stimulation, emotional support, a literate environment, and a physically safe environment (Zill et al., 1995). In contrast, research indicates that "income from child support payments improves children's educational attainment more than income from welfare or mother's

work" (Mayer, 1997: 81). One of the primary findings from a study conducted by Morris et al. (2002: 4) indicates that programs which "increase both parental employment and income by providing a supplement to the earnings of welfare recipients when they go to work improve the school achievement of their elementary school-age children".

EFFECTS OF MOTHER'S EDUCATION LEVEL

In addition to the effects of income, the mother's education level has an effect on student academic achievement. In many studies, mother's education had a more significant effect on children's scores than income. Through multiple studies, the mother's educational level was a predictor of school completion for all middle adolescents participating in the studies (Halpern-Felscher et al., 1997). Peters and Mullis (1997) found that parental education had a significant effect on academic achievement. The mother's education level had a 20% higher affect than the father's education level on the academic outcomes of adolescents (Peters and Mullis, 1997). This

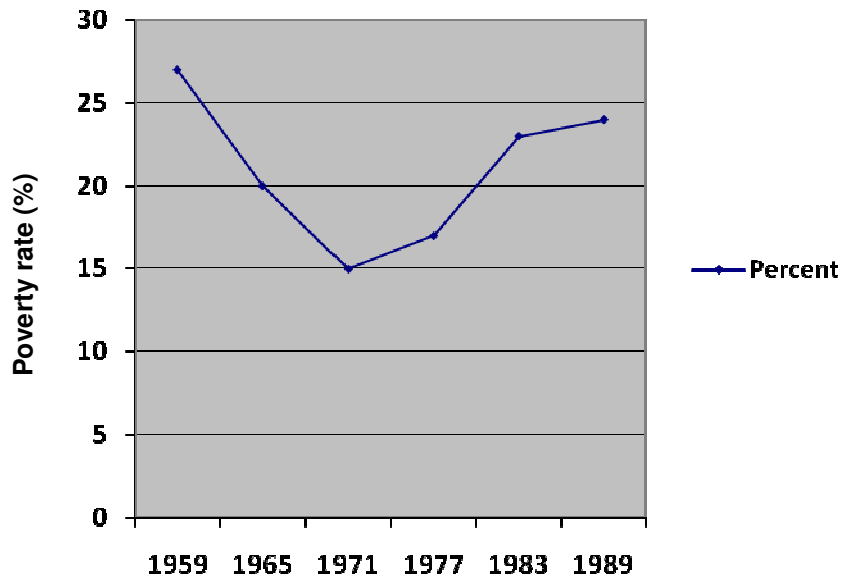


Figure 1. Official poverty rate for children under 18, 1959 to 1993 (Hernandez, 1997: 19).

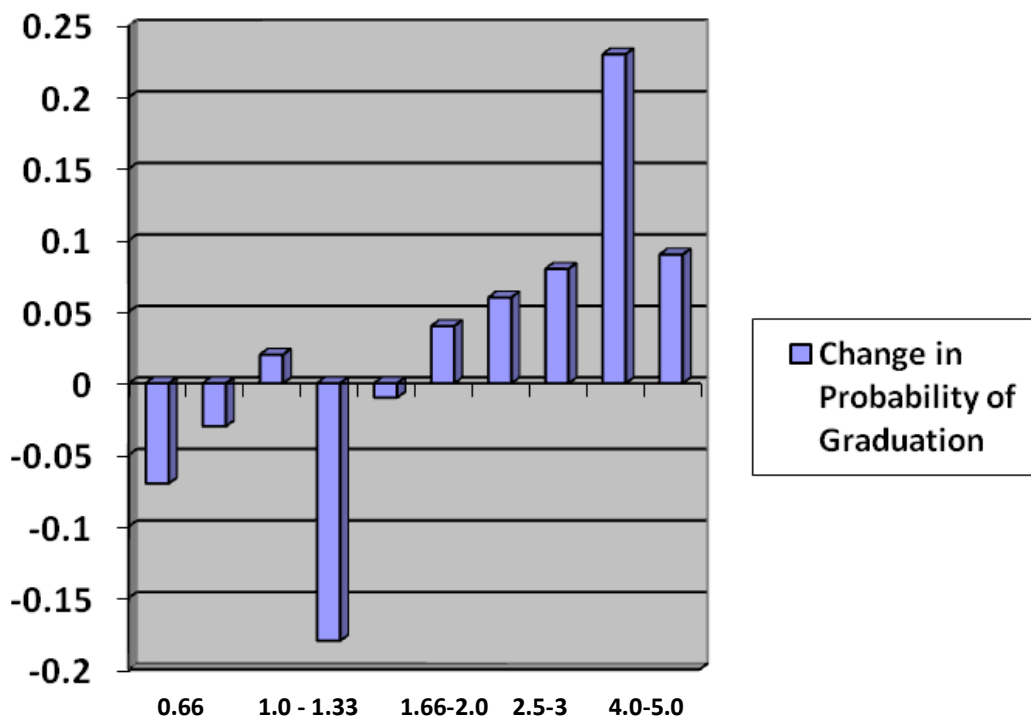


Figure 2. Effect of income-to-needs ratio on high school graduation (Haveman et al., 1996: 442).

result on student achievement is believed to be due to the effect the mother's education has on the "specific ways of talking, playing, interacting, and reading with young children" (Smith et al., 1997). When a variety of

reading materials are available in the home, student scores increased "by more than four points, schooling increased by more than one-third of a year, wages increased by 4%, and labor market experience for

women increased by 0.2 years" (Peters and Mullis, 1997).

FEDERAL AND STATE POLICIES

Numerous strategies have been implemented in schools seeking to eradicate the negative academic effects of poverty. One of the largest attempts at closing the poverty achievement gap is the "No Child Left Behind law". Phillips and Flashman (2007) studied the effects of the increased student and teacher accountability implemented by the "No Child Left Behind law". Some of the positive results on teacher qualifications due to the "No Child Left Behind law" include an increase in teacher's experience, an increase in the likelihood the teacher is certified, and an increase in the number of teachers who hold advanced degrees (Phillips and Flashman, 2007). The negative results of the "No Child Left Behind law" on teacher qualifications include a reduction in teachers' academic skills and little or no change in the amount of professional development opportunities provided to teachers (Phillips and Flashman, 2007). Overall time spent on the job for teacher's has changed to include more time spent with students outside of normal school hours and more time spent on non-instruction tasks outside of school hours such as preparing lesson plans, grading, and so on (Phillips and Flashman, 2007). The class environment has changed as a result of the No Child Left Behind law to include a reduction in overall class size, allocation of class time per subject as related to the amount of testing of the subject, and evidence of pairing the most experienced and credentialed teachers to the testing grades (Phillips and Flashman, 2007). Some of the most substantial negative effects of the No Child Left Behind law are found to be a reduction in the teacher's sense of autonomy and an increase in teacher turn-over (Phillips and Flashman, 2007). Thus, the evidence indicates that accountability has had some positive and some negative effects with none of the effects disproportionately relating to poor schools versus non-poor schools.

State and district policies as well as resources greatly affect classroom instruction, particularly for at-risk students (Shields, 1991). Principals and teachers need policy makers to support efforts for providing effective instruction to all students. Allington (1991) insists that federal, state, and district policies must be carefully studied in order to document the effectiveness and ineffectiveness of various policies in closing the poverty achievement gap.

CLASSROOM STRATEGIES

Numerous classroom specific strategies have been

researched for effectiveness in closing the poverty achievement gap. Allington (1991) researched variations in classroom instruction for the purpose of locating specific instructional techniques which are effective in teaching literacy to at-risk children. Allington (1991) determined that a key to closing the poverty achievement gap was to assess students through multiple avenues to go beyond standardized testing to include voluntary reading data, holistic assessments of real reading and writing, surveys of parental satisfaction, and an analysis of the progress of all individuals toward academic goals.

Shields (1991) suggest that student learning is affected by three major factors: The school environment, the home or community environment, and the policies of the district and state. A thorough understanding of these factors is vital to closing the poverty achievement gap.

The school environment can encourage or stifle learning (Shields, 1991). Effective schools coordinate cross-curricular activities to provide a connected, meaningful curriculum. This effort requires collaboration among teachers and staff led by an effective leader to organize and maintain the effort. Allington (1991) suggests that instructional techniques and materials must be effectively described providing an interrelationship between curriculum and skills which requires careful planning between teachers and administrators.

FAMILY AND COMMUNITY

Student achievement, particularly for at-risk students, is affected by the values and beliefs of the family and community (Shields, 1991). Some families and communities, particularly in poverty stricken areas, do not value or understand formal education. This leads to students who are unprepared for the school environment. In addition, this leads to misunderstandings regarding student actions and speech by teachers due to variations in norms and values. Effective instruction will allow students to use their own life experiences as a starting point for instruction while adapting instruction to the culture of the students. Teachers should encourage active participation in learning by all students in the classroom in order to encourage at-risk students. Schools must create a partnership with parents seeking to involve parents, particularly those of at-risk students, in the school process while providing tips to parents for assisting students in becoming academically successful.

Through research conducted by Bergeson (2006), the need to create stronger, better partnerships between schools, families, and communities while providing better intervention programs for students struggling with exceptional outside barriers was evident. Redman (2003) suggests that one technique for creating a positive relationship with parents is through the sharing of positive

comments about the student with the parents, particularly for at-risk students. The positive comments about their children helped the parents to feel accepted in the school environment which is typically a large barrier for families living in poverty (Redman, 2003). In turn, the parents were more willing to help with school related activities both in the school and at home, thus creating a partnership between parents and school (Redman, 2003).

CONCLUSION

Poverty significantly affects the resources available to students. Due to this lack of resources, many students struggle to reach the same academic achievement levels of students not living in poverty (Table 2 and Figure 2). The factors affecting student achievement include income, source of income, and the mother's education level. **Although many poor students score below average on assessment measures, instructional techniques and strategies implemented at the classroom, school, district, and government levels can help close the achievement gap by providing students with necessary assistance in order to achieve high performance in academics.**

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