

# Pygmalion in the Classroom\*

by Robert Rosenthal & Lenore Jacobson

*In 1965 the authors conducted an experiment in a public elementary school, telling teachers that certain children could be expected to be "growth spurters," based on the students' results on the Harvard Test of Inflected Acquisition. In point of fact, the test was nonexistent and those children designated as "spurters" were chosen at random. What Rosenthal and Jacobson hoped to determine by this experiment was the degree (if any) to which changes in teacher expectation produce changes in student achievement.*

The basic question to be answered in this chapter is whether in a period of one year or less the children of whom greater intellectual growth is expected will show greater intellectual growth than the undesignated control-group children. There are also four important subsidiary questions. If there were some advantages to a child whose teacher had favorable expectations for his intellectual development, would these expectancy advantages be greater for:

1. Children in the lower grades or higher grades?
2. Children in the fast track, or medium track, or slow track?
3. Children of one sex rather than the other?
4. Children of minority group or nonminority group status?

## THE MAJOR VARIABLES

### Age

The folk knowledge of our culture, current theories of human development, especially psychoanalytic theory, and the work of the developmental and experimental psychologists and of the ethologists are in agreement on the importance of age as a factor in determining the degree to which an organism can be shaped, molded, or influenced (Scott, 1962). In general, the younger the organism, the greater is thought to be the degree of susceptibility to social influence. In his classic monograph, Coffin (1941) concluded that influenceability increased from infancy to ages seven to nine but decreased after that. More recently in a summary of the evidence bearing on overt social influence on children, Stevenson (1965) reported the greater influenceability of five-year-olds than twelve-year-olds, a finding consistent with Coffin's summary. Both Coffin and Stevenson were writing about more overt social influence than the subtle, unintended influence of teachers' prophecies. Still, it would be interesting to know whether influence processes of a more subtle, unintended form would also show younger children to be the more susceptible.

### Ability

We are also interested in learning whether the children of the three tracks differ in the degree to which they profit from the teachers' favorable expectations. In the case of ability, however, the literature is not so helpful in telling us what we might find. Stevenson (1965) suggested that susceptibility to social influence may not be too contingent on the child's intellectual status, and we know that the three tracks differ considerably in average IQ. One of the most recent discussions of intellectual gains is by Thorndike (1966) who reports that there are only modest correlations between initial intellectual status and changes in intellectual status. In the present research, in any case, we are not so much interested in gains *per se* but rather in the excess of gain that might be shown by the "special" children over the "ordinary" undesignated children. In short, we are interested in differences among the tracks in the degree of expectancy advantage that may be found, but we hardly know what to expect. The matter is further complicated by the fact that the other two variables in which we are interested, sex and minority group status, are not independent of track placement. In the last chapter we saw that boys tend to overpopulate the slow track relative to girls who tend to overpopulate the fast track. Mexican children, Oak School's minority group, tend to overpopulate the slow track and underpopulate the fast track.

### Sex

Whether boys or girls are the more susceptible to social influence processes depends on whether the influencer is male or female (Stevenson, 1965). Since the overwhelming majority of Oak School's teachers are females, the findings from research with lady influencers interest us most. Those findings summarized by Stevenson (1965), suggest that boys should be the more susceptible to social influence. As in the case of the children's age, however

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the social influence processes employed were neither unintended nor very subtle. Effects of teachers' expectations are likely to be both.

### Minority Group Status

The reasons for our interest in the variable of minority-group status need little justification. So much of the literature on the disadvantaged child focuses on the minority-group child that "disadvantaged" almost means "minority group." One of the best known publications dealing with the disadvantaged is called *Youth in the Ghetto*. We shall be especially interested, then, if expectancy advantages occur at all, in whether they benefit minority-group children more or less than nonminority-group children.

At Oak School the minority-group child is Mexican. The definition of a minority-group child in this research, however, was more stringent than simply whether the name was Mexican. To qualify as a "minority-group child," either the child himself or his parents had to come from Mexico, Spanish had to be spoken at home, and the child had to be present for the administration of certain procedures. These procedures, in connection with another study (Jacobson, 1966), included administration of an IQ test in Spanish, a test of reading ability, and the taking of photographs of the child himself. Within this sample of Mexican minority-group children there were variations in how "Mexican" each child looked. A group of ten teachers with no connection to Oak School or its children rated each photograph on "how Mexican the child looked." The definition of how clearly Mexican a child "really" looked was the average rating of all ten teachers. These ratings were highly reliable. The average rating of the same children by the teachers of Oak School was correlated .97 with the ratings of the judges who were not associated with Oak School.

## INTELLECTUAL GROWTH

### Expectancy Advantage by Grades

The bottom row of Table 1 gives the over-all results for Oak School. In the year of the experiment, the undesignated control-group children gained over eight IQ points while the experimental-group children, the special children, gained over twelve. The difference in gains could be ascribed to chance about 2 in 100 times ( $F = 6.35$ ).

The rest of Table 1 and Figure 1 show the gains by children of the two groups separately for each grade. We find increasing expectancy advantage as we go from the sixth to the first grade; the correlation between grade level and magnitude of expectancy advantage ( $r = -.86$ ) was significant at the .03 level. The interaction effect, or likelihood that at different grades there were significantly greater expectancy advantages, was significant at the .07 level ( $F = 2.13$ ). (Interactions, however, are not sensitive to the ordering of differences unless one makes them so with further statistical effects; that is, the  $p$  of .07 is conservative.)

In the first and second grades the effects of teachers' prophecies were dramatic. Table 1 shows that, and so does Table 2 and Figure 2. There we find the percentage of experimental- and control-group children of the first two grades who achieved various amounts of gain. In these grades about every fifth control-group child gained twenty IQ points or more, but of the special children, nearly every second child gained that much.

So far we have told only of the effects of favorable expectancies on total IQ, but Flanagan's TOGA yields separate IQs for the verbal and reasoning spheres of intellectual functioning. These are sufficiently different from each other so it will not be redundant to give the results of each. In the case of verbal IQ the control-group children of the entire school gained just less than eight points, and the special children gained just less than ten, a difference that could easily have arisen by chance. The interaction term was not very significant ( $p < .15$ ) so that we can not conclude greater expectancy advantage at some grade levels than at others. But we do have a special interest now in the first and second graders, and it will do no harm

Table 1  
MEAN GAIN IN TOTAL IQ AFTER ONE YEAR BY EXPERIMENTAL AND CONTROL-GROUP CHILDREN IN EACH OF SIX GRADES

Grade	Control		Experimental		Expectancy Advantage	
	N	Gain	N	Gain	IQ Points	One-Tail $p < .05^a$
1	48	+12.0	7	+27.4	+15.4	.002
2	47	+7.0	12	+16.5	+9.5	.02
3	40	+5.0	14	+5.0	+0.0	
4	49	+2.2	12	+5.6	+3.4	
5	26	+17.5 (-)	9	+17.4 (+)	+0.0	
6	45	+10.7	11	+10.0	-0.7	
Total	255	+8.42	65	+12.22	+3.80	.02

<sup>a</sup> Mean square within treatments within classrooms = 164.24.

Figure 1  
GAINS IN TOTAL IQ IN SIX GRADES

