

# Semantically Different: Preservice Teachers' Reactions to the Gifted Student Concept

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**ABSTRACT** Human reactions to words contain both meaning and feelings. Cognitive meaning is conditioned by affective contexts. The impact of a videotaped-based intervention on preservice teachers' semantic reactions to the concept of gifted students was investigated. Prior research with the same sample showed that nearly 50% of the students in an identified gifted population felt "doomed" to nonsuccess because of their teachers' preconceptions. Research methods used in the present study included focus-group-generated tapes of both achieving and underachieving gifted students; semantic differential scales on the evaluative, potency, and activity dimensions; and posttesting of participants' attitudes and perceptions.

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This study grew out of a long-term involvement with and concern for the large number of students identified as gifted whose performance in school indicated a considerable discrepancy between their academic potential and their academic performance. Specifically, the idea for the study developed from an analysis of ethnographic data collected from a series of focus group interviews of underachieving gifted students conducted by two of the authors (Ribich & Barone, 1988). In reviewing the transcribed data of the videotaped focus groups, we noted that underachieving gifted students frequently commented that they "didn't stand a chance" in many teachers' classrooms, meaning that they were not given an equitable chance to succeed. One young man's comments were particularly telling: "Before I even walk across the room the first day of class, the teacher has made some judgment about me." The frequency of such comments led us to consider whether those student self-perceptions were in any way accurate. Is it possible that the students were stereotyped by their clothing, their walk, or some pheromone they emitted as they entered the room that caused their teachers to label them as nonachievers and/or trouble?

The issue of teacher expectancy elicited recollections of the Pygmalion studies (Rosenthal & Jacobsen, 1988) in which the impact of teacher expectations on students' achievement and intellectual growth were explored experi-

mentally. Students for whom intellectual growth was expected were described as having a better chance of being successful in the future, and they were deemed to be more interesting, curious and happy, more appealing, adjusted and affectionate, and less in need of social approval. Overall, children for whom intellectual growth was expected were perceived by their teachers as more intellectually alive and autonomous (Rosenthal, 1991).

Studies have shown that attitudes, beliefs, and dispositions determine how beginning teachers define and respond to their specific teaching situations (Goodman, 1985; Zeichner, 1986). Beliefs about students create the "interpretative lenses" through which teachers form attitudes concerning reasonable and proper behavior for their students (Bullough, 1987). Research also indicates that teachers have concerns about working with students whose cultural, racial, ethnic, and socioeconomic backgrounds, as well as abilities, are vastly different from their own (Marshall, 1993). Prospective teachers' attitudes and subsequent dispositions and actions are not easily identified. However, latent fears, attitudes, and misconceptions may well shape the social-emotional climate in their future classrooms. It was not surprising that the results of the aforementioned studies showed that teachers' attitudes and expectations significantly affect students' achievement, motivation, and intellectual growth. Based on reports by students who participated in our original focus group study, we decided to experimentally explore preservice teachers' attitudes and expectancies concerning the concept of gifted students.

We addressed four major questions in this study:

1. What perceptions do preservice teachers have of the concept of gifted students?
2. Do the perceptions that preservice teachers have of the concept of gifted students change as the result of an intervention stimulus?

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3. What are the direction and intensity of the perceptual shift after such an intervention?

4. Are the direction and intensity of a perceptual shift related to the content of the intervention stimulus?

We used the semantic differential to investigate these questions. The psychometric basis for using this technique is discussed in the following section.

### The Semantic Differential

A semantic differential is essentially a combination of controlled association and scaling procedures designed as a technique for measuring meaning. It is a general way to gather information about a question, is highly generalizable, and can be adapted to the requirements of a research problem. There are no standard concepts and no standard scales. The nature of the problem chiefly defines the class and form of the concept under investigation (Osgood & Suci, 1978). Semantic scales such as the Likert and the Staple fit into this category as well (Munshi, 1990).

It has long been recognized that the precision (reliability) and accuracy (validity) of verbal instruments are determined by the design and construction of the scales (Thurstone, 1928). Ultimately, the quality of a scale is determined by its ability to accurately reflect the attitude or opinion to be measured. The instrument designer must provide the respondents with a suitable vehicle for expression and must gather the data in a form that can be analyzed by conventional statistical procedures (Munshi, 1990).

The notion of using polar adjectives to define the termini of semantic dimensions grew out of research on synesthesia (Karwoski & Odbert, 1938). Those researchers and others that followed found that imagery in synthesis is intimately tied to the language metaphor and that both represent semantic relations (Karwoski, Odbert, & Osgood, 1942; Odbert, Karwoski, & Eckerson, 1942; Stagner & Osgood, 1946). The bipolar adjective technique was tested extensively by Osgood at the University of Illinois. Three dominant factors emerged from the factor analysis used in those studies, and they appeared consistently in the same order of magnitude (Osgood et al., 1978). The first factor was clearly identifiable as evaluative by listing scales that have high loadings: good–bad, valuable–worthless, and so forth. The second factor was identified as a potency variable: large–small, strong–weak, and so forth. In general, potency variables have considerable evaluative meaning, but their loadings are generally lower than those on the evaluative scales. The third factor was identified mainly as an activity variable: fast–slow, active–passive, and so forth. Osgood et al., 1978, reported a noticeable tendency for activity variables to be associated with positive evaluation.

The percentage of total variance and common variance accounted for by these three groups of variables suggest that evaluative variables play a dominant role in meaningful

judgments, accounting for more than 70% of the common variance (Osgood et al., 1978). Thus, the attitudinal variable in human thinking appears to be primary.

A semantic differential presents a rationale for the measurement of attitude, which is a major dimension of meaning in general (Osgood et al., 1978). Most authorities agree that attitudes are learned and implicit, and further, are predispositions to respond, particularly in an evaluative sense. It appears safe to suggest, then, that attitude is part of the internal mediational activity that operates between most stimulus and response patterns and that the semantic differential may be used as a generalized attitude scale. Further, all of Osgood's factor analyses produced a dominant evaluative factor. It would be reasonable to assume that attitude is a dominant factor in semantic space and that the semantic differential is an index of attitude, as well as a method of attitude assessment (Osgood, Suci, & Tannenbaum, 1970).

### Method

#### *Participants*

The data reported in this study were collected from a sample of 85 preservice teachers at a medium-sized private university located in the northeastern United States. Participants were enrolled in four different education classes in a common junior core experience. There were 69 female students and 16 male students. Eighty-six percent of the students were under 28 years of age. Forty-seven students were elementary majors, 21 were secondary majors, and 17 were dual majors—elementary and special education.

#### *Instrument*

A semantic differential consisting of 40 scales was administered to four separate classes, two times within a 1-hr period. The groups were enrolled in four different junior core education classes. Each class was advised of the nature of the study in identical terms. Forty semantic differential scales were selected for their validity and reliability. Twenty evaluation scales were chosen as an attitudinal measure (Osgood, Suci, & Tannenbaum, 1967). Attitude is a major dimension of meaning and is a learned and implicit predisposition to respond, especially evaluatively. Therefore, attitudes are a significant part of one's semantic structure and a paramount part of internal mediational activity (Osgood et al., 1967).

The evaluative variable was formed by summing responses to 20 evaluative semantic differential scales. The potential range was 20 to 140; lower scores indicated responses in the direction of good, and higher scores in the direction of bad. The potency and activity variables were formed by summing responses to each of 10 semantic differential scales; the potential range for each of the variables was 10 to 70. A low score indicated responses in the direction of strong as opposed to weak.

## Procedure

In the first administration of the semantic differential, students were asked to respond to the concept of gifted students. After the first administration, the four classes were randomly divided into two groups. Each group viewed a 10-min edited videotape of either achieving or underachieving gifted students. The videotapes were records of focus group interviews conducted with secondary students; during the interviews the students openly and candidly discussed their perceptions of schools, schooling, teachers, peers, parents, and the causes of their achievement or underachievement (Ribich & Barone, 1988, 1990). The students had participated in the original focus group interviews and had been identified as achievers or underachievers by their gifted program coordinators in eight high schools in an urban school district. Immediately following the viewing of the videotapes, we again administered the semantic differential; for the second time, the students responded to the concept of gifted students.

## Results

To answer our first research question, we sought to identify preconceptions that the preservice teachers held about the concept of gifted students before they viewed the videotapes. Data representing the preservice teachers' responses to the concept of gifted students before they viewed the videotapes are presented in Table 1. The distributions of scores on all three variables were extremely skewed; the evaluative, potency, and activity scores were concentrated on the positive end of the score range.

To answer the second research question, we explored the perceptions of preservice teachers concerning the concept of gifted students after the teachers had viewed either a videotape of gifted students who were high achievers or a videotape of gifted students who were underachievers. The posttest means for each group of responses on the three semantic differential variables, evaluative, potency, and activity, are reported in Table 2. The means for the group who saw the videotape of achieving gifted students were almost identical to the pretest means presented in Table 1. Viewing the videotape did not result in different responses on the semantic differential variables. The mean scores for the group that saw the tape of underachieving gifted students were noticeably different from the pretest means with the exception of the mean score for the potency variable.

**Table 1.—Prevideotape Responses on Three Semantic Differential Variables to the Concept of Gifted Students**

Variable	<i>M</i>	<i>SD</i>
Evaluative	47.88	14.99
Potency	35.30	8.13
Activity	28.33	8.65

Each of the three semantic differential variables, evaluative, potency, and activity, were analyzed separately with a two-way, mixed-design analysis of variance that controlled experimental error for all four of the research questions. These analyses are presented in Table 3. The two variables in the overall analyses were time (pretest, posttest) and group (achievers' videotape; underachievers' videotape). Thus, the overall analyses tested simultaneously for group differences before and after viewing of the videotapes.

For the evaluative and activity variables, there was an interaction between group and time. Follow-up tests indicated that the first administration of the semantic differential produced similar scores on all variables. Preservice teachers did not significantly change their evaluative or activity responses on the semantic differential after viewing the 10-min videotape of achieving gifted students. Responses on these evaluative and activity variables, however, rose significantly for the preservice teachers who saw the 10-min videotape of underachieving gifted students. There were no significant differences in group scores or between prevideotape and postvideotape measures for the potency variable. This result may be related to the perception that the students on the videotapes were gifted and had potential for academic success.

The third and fourth research questions addressed the direction and intensity of perceptual shift as measured by the semantic differential variables and the relation of the shift to the content of the videotapes. The preservice teachers who saw the videotape of achieving gifted students continued to rate the concept as good, strong, and active on all of the semantic differential variables (see Tables 2 and 3). The preservice teachers who saw the videotape of underachieving gifted students did not change their potency responses, which remained at the strong end of the scale.

**Table 2.—Postvideotape Responses on Three Semantic Differential Variables to the Concept of Gifted Students**

Variable	Achievers		Underachievers	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Evaluative	49.09	17.60	86.13	20.00
Potency	32.86	9.41	33.74	10.41
Activity	27.05	10.26	41.18	11.07

**Table 3.—Two-Way Analyses of Variance on Evaluative, Potency, and Activity Variables**

Variable	Evaluative	Potency	Activity
Effect: Group	32.95*	.09	17.24*
Time	54.07	1.59	18.86*
Group × Time	65.31	.01	28.85*

\* $p < .01$ .

They did, however, register dramatic shifts in their evaluative and activity responses. In each case, a shift of one and a half standard deviations in the bad and passive directions was observed. The postvideotape evaluative and activity means for this group were in the center of the range of possible values, indicating neutral responses to the value and activity of gifted students, in contrast to a strong positive response before viewing the videotape of underachieving gifted students.

### Discussion

Data from this study suggest that preservice teachers' attitudes about the concept of gifted students can be differentially affected by the behavior of the students when they are viewed in a videotape of a focus group interview. Attitudes about the concept of gifted among preservice teachers who viewed the videotape of achieving gifted students remained relatively constant on each of the three sets of scales, as measured by a pre- and postadministration of the semantic differential. However, attitudes about the concept of gifted students among the group of preservice teachers who viewed the videotape of underachieving gifted students changed dramatically on two of the three variables on the semantic differential.

The results of this study are both somewhat predictable and puzzling. One might expect to see a change in participants' attitudes about the concept of gifted students after viewing the focus group interview with underachieving gifted students. Underachieving students tend to exhibit behaviors that can frequently elicit negative feelings and reactions in teachers. Those behaviors are often the first line of defense the students use to cope with their underachievement. However, the rapidity and intensity of the shift in attitude that occurred among the preservice teachers after watching a 10-min videotaped interview of underachieving gifted students were not anticipated. There are three possible explanations for this finding.

First, the videotaped segment of underachievers was powerful enough to challenge the fundamental assumptions and attitudes that the preservice teachers held about gifted students, and viewing it caused a profound shift in their attitudes (Osgood & Tannenbaum, 1955). Second, the attitudes expressed on the pretest semantic differential dealt with an abstract and idealized notion of gifted students and was not based on direct task experience (Breer & Locke, 1965). The experience of viewing the videotapes challenged this abstract and idealized notion. Third, the brief exposure to the videotape of underachieving gifted students elicited latent subconscious stereotypes and biases held by the preservice candidates (McDiarmid, 1993). The behaviors that the gifted students exhibited on the videotape may have betrayed the concept of giftedness held by the preservice teachers. The fact that the preservice teachers experienced a significant negative shift in their perceptions of gifted students based on a brief exposure to underachieving gifted

students on a videotape is a matter for serious consideration in the preparation of teacher candidates.

### Implications for Preservice Teacher Training

The need to examine stereotypes and explore the concept of teacher expectancy is a vital element in all preservice teacher education programs. The literature has been replete with studies concerning the relationship between teacher expectancy and student achievement since publication of "Pygmalion in the Classroom" in the mid 1960s (Rosenthal & Jacobsen, 1988). However, studies that explore teacher expectancy in regard to specific school populations are scarce (Rosenthal, 1991).

The results of this study should be of particular interest to teacher educators. The dramatic shift in attitude toward gifted underachievers highlights how quickly stereotypes may be reinforced or abandoned and how expectations may be reduced as a result of a shift in attitude. The issue of teacher expectancy, therefore, is worthy of considerable attention, particularly with regard to what preservice teachers experience in their field work. This study may well challenge many current assumptions and practices about indiscriminately assigning preservice teacher candidates to earlier and more frequent field experiences. The practice of requiring unsupervised field experiences for preservice teacher candidates may be seriously challenged by this study. We found that, if not critically examined, even brief negative vicarious experiences may reinforce latent biases and stereotypes. Field experiences need to be carefully selected and supervised. Preservice teacher candidates must be given opportunities to process and critically examine the dynamics they have observed and to make application of this information to teaching different populations of students (National Center for Research on Teacher Learning, 1993).

The results of this study are consistent with the outcomes of more than 30 published studies reviewed by Rosenthal (1991) relevant to the effects of teacher expectancy; they lend additional empirical support for the four-factor theory explicated in Rosenthal's description of the mediation effects of attitude on teacher expectancy. The negative change in attitudes on both the evaluation and activity scales on the semantic differential suggests that teachers tend to create a chilling and less supportive social-emotional environment for students who they perceive to be underachievers or not worthy of the label *gifted*.

Teacher candidates need to be trained in techniques that help to create warm and supportive social-emotional climates for all students. If, as the Rosenthal (1991) studies suggest, the climate that teachers create is precedent to instructional input, teacher attitudes and the subsequent classroom climate will determine the level and quality of teacher input for different groups of students.

Programs need to be developed that help preservice teacher candidates go beyond first and often negative impressions of the myriad groups of students who form

the pluralistic society found in our nation's schools. The problems of underachievement are not going to disappear. Preservice teacher candidates must be prepared to deal with the schools as they exist. Also, preservice teacher candidates must be taught how to use the information about the diverse groups that constitute our schools so that they can adapt instruction to fit the idiosyncratic needs of all learners.

Are underachieving gifted students not given a chance? The results of this study suggest that students' perceptions may be accurate. Even a brief exposure to underachieving gifted students may elicit negative and hostile stereotypes that shape teacher attitudes and expectations regarding these students—attitudes and expectations that become barriers to the process of teaching and learning and belie the egalitarian ideals that form the philosophical foundations of the nation's schools.

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