



Value Accessibility and Teachers' Ability to Encourage Independent and Critical Thought in Students

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Abstract. This study examines the hypothesis that teachers' educational values predict their behavior and students' attributes when these values function as chronically accessible, positively valenced categories which are linked discriminantly to perceptions of specific behaviors. This hypothesis was tested in relation to the value of Encouraging Independent Thought (EIT). Fifty-two teachers were administered, in individual sessions, a sorting task and questionnaires assessing the variables of interest. Several months later, the 1,614 students of these teachers completed questionnaires assessing teacher behaviors and students' attributes. Discriminant accessibility of the value of EIT in teachers predicted two value consistent teacher behaviors: showing tolerance for independent and critical students' opinions and showing interest in and respect for students' ideas – as well as two students' attributes: assignment of little importance to the value of conformity and sense of acceptance by classmates. The findings demonstrate the theoretical usefulness of the notion of discriminant accessibility of values and suggest that, as part of teacher education programs, it is important to strengthen teachers' inclinations to examine the contribution of concrete actions to the realization of abstract values. Discriminant accessibility of the value of EIT also appears to enhance teachers' ability to foster critical thinking in students.

Many authors view values as concepts describing general desirable dispositions or end states which guide the selection and evaluation of specific behaviors (e.g., Allport, 1961; Morris, 1956; Rokeach, 1973; Schwartz, 1992; Schwartz & Bilsky, 1987; Scott, 1965; Smith, 1979; Williams, 1968). The impact of values on behavior and interpersonal outcomes is particularly emphasized by theorists of socialization, moral education, and the "hidden curriculum," who assume that teachers' or parents' values exert considerable influence on children's personality and values (Bloss, 1982; Carbone, 1987; Giroux & Purple, 1983; Inkeles, 1969; Parsons, 1955).

In contrast to the importance assigned to values as determinants of action, research and theory focusing on the effects of attitudes and personal dispositions on

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behavior suggest that the link between values and behavior cannot be taken for granted. According to Ajzen and Fishbein (1980), personal dispositions and attitudes are less likely to predict behavior if they are defined in a general way. Ajzen (1987) and Epstein (1980), following classical test theory, suggest that personal dispositions are more likely to predict behavior if they are defined as aggregates of specific behaviors representing the disposition of interest.

Given that values are usually conceptualized (and measured) as general abstractions and not as aggregates of specific behaviors (Allport, 1961; Kohn, 1963, 1977; Luster, Rhodes, & Haas, 1989; Schwartz, 1992; Schwartz & Bilsky, 1987, 1990; Rokeach, 1973), it follows that values may often fail to influence behavior or that their influence may be indirect and complex, and therefore difficult to detect. Research shows that values are often related to behavior in cases involving consequential decisions which are made at one point in time and in which the alternatives are sharp and salient – as, for example, when making professional choices (Feather, 1970; Huntley & Davis, 1983; Rokeach, 1973; Rokeach, Miller, & Snyder, 1971), when voting (Schwartz, 1995), and when joining ideological or religious organizations (Rokeach, 1973). There is also evidence that values predict religious behavior (Schwartz & Huisman, 1995). However, in cases involving ongoing interpersonal interaction across time (for example, degree of helping or degree of autonomy given or sought in a particular relationship), there is little direct evidence that values indeed predict behavior (Aronfreed, 1969; Emmerich & Goldman, 1983; Kohlberg, 1969; Lockwood, 1976).

In view of the of the problems involved in the prediction of behavior from values, the major purposes of this article are to describe one process by which values may affect behavior and then to test several hypotheses derived from the proposed formulation. The proposed account of the value behavior link is based on research and theory concerning construct accessibility (Bargh, Bond, Lombardi, & Tota, 1986; Bruner, 1957; Higgins, 1989; Higgins & King, 1981; Wyer & Srull, 1989) as well as on Rokeach's (1973) and Schwartz's (1992) conceptions of values. The proposed approach is also consistent with Hodges and Baron's (1992) ecological approach to values and with Lewin's (1951) and Feather's (1990, 1992) conceptions of values as valence-inducing constructs.

According to the proposed approach, values which affect behavior are assumed to function as chronically accessible, positively valenced categories. The process by which values influence behavior is assumed to involve two stages. The first stage can be described as the *discriminant valence-induction phase*, a phrase borrowed from Lewin (1951) and Feather (1990, 1992). In this stage, value concepts which are readily accessible are frequently and discriminantly used to categorize (encode) perceptions of specific behaviors that are linked to the value concept and are viewed as instances (or manifestations) of that concept.

The linkage of perceptions of specific behaviors to a positively valenced value concept is likely to change the valence of the attitudes held in relation to those behaviors, particularly in cases where the initial affective response to the encoded

behaviors is neutral or ambivalent. Thus, the categorization of a previously neutral behavior as an instance of a positively valenced value concept is likely to increase the positivity of the attitude held in relation to that behavior. Similarly, the encoding of a previously neutral behavior as inconsistent with a positively valenced value concept is likely to decrease the positivity of the attitude held in relation to that behavior.

The second stage of the process by which values are assumed to influence behavior can be described as the *behavior-selection phase*. In this phase, behaviors which are categorized as good instances of a certain value concept (and therefore arouse positive feelings), are selected as primary candidates for enactment. The actual enactment of these, positively valenced, value linked behaviors depends on various personal and situational factors (for example, the factors specified in Ajzen's, 1987, theory of reasoned action or in Feather's, 1990, 1992, formulation of the value behavior link). However, in general, behaviors which evoke a more positive attitude in the actor are more likely to be enacted.

It is important to note that the proposed formulation (concerning the process linking values and behavior) is consistent with a substantial body of empirical research. The notion that accessible and affectively unambiguous constructs (such as values) influence the interpretation and evaluation of ambiguous, construct-related behavioral descriptions is supported by considerable research in the area of construct accessibility, motivation and spontaneous trait inferences (Assor & Aldor, 1993; Bargh et al., 1986; Higgins, Bargh, & Lombardi, 1985; Higgins & King, 1981; Higgins, Rholes, & Jones, 1977; Moskowitz & Roman, 1992). As for the assumption that behaviors arousing more positive attitudes are more likely to be enacted in behavior, this notion appears in both Ajzen's (1987) and Fazio's (1990) empirically based theories of the determinants of attitude-behavior consistency.¹

I now illustrate how the proposed thesis may be applied to the educational value of Encouraging Independent Thought (EIT) in children. Let us imagine that the value of EIT functions as an accessible, positively valenced, category for a certain teacher. Let us also imagine that the teacher is confronted with serious students' criticisms regarding his or her grading procedures and is facing the dilemma of responding seriously (i.e., listening to the students' arguments and then discussing them) versus ignoring the criticisms.

As is often the case in such situations, our teacher's initial affective response to the behavioral option of "responding seriously to the students' criticisms" is ambivalent. On one hand, the teacher suspects that a serious response would prolong the period of unpleasant exposure to ego-threatening complaints. On the other, such a response may also arouse students' respect and willingness to learn.

In the situation described above, how would the value of EIT affect the teacher's behavior? According to the proposed formulation, since EIT is an accessible value category, it is used to categorize "serious response to criticism" as a manifestation of the positively valenced concept of EIT. This linkage (between the behavioral option and the concept) results in an increase in the positivity of the attitude held

in relation to the behavioral option of “serious response” and therefore increases the likelihood for its enactment. In a similar way, the categorization of the affectively ambiguous behavior of “ignoring criticism” as inconsistent with the positively valenced concept of EIT, makes the attitude held in relation to this behavior more negative, and the increased negativity of the attitude held in relation to the behavior of “ignoring criticism” reduces the likelihood for its enactment.

It is important to note that the behavioral effects of discriminant value accessibility are not necessarily immediate. Thus, in many cases in which the initial response is value inconsistent, subsequent behavior may be consistent with the relevant value, reflecting an attempt to compensate for one’s initially inconsistent behavior. Our teacher, for example, might have felt threatened by the students’ criticisms, and therefore, his or her initial response was to ignore them. However, as he or she recalls the response (and as the concept of EIT is highly accessible for the teacher), he or she will need to confront the fact that the behavior of “ignoring criticism” is inconsistent with the positively valenced value of EIT. To reduce the negative self-evaluation and feelings resulting from this detected value behavior inconsistency, the teacher may then take compensatory, value consistent actions (for example, by initiating a class discussion of his or her grading policy). The above argument suggests, among other things, that the behavioral effects of discriminantly accessible values will be found to be stronger when examined for aggregates of behaviors over time.²

Based on the foregoing analysis, it is proposed that concepts of desirable general dispositions (i.e., values) are likely to predict behavior when the following three conditions are met: (a) the relevant concepts function as chronically accessible categories which are linked discriminantly to perceptions of specific behaviors, (b) the initial affective response of the actor to the predicted behaviors is neutral or ambivalent, and (c) the predicted behavioral effects are measured for aggregates of behaviors over time.

It is important to note that the phenomenon of discriminant accessibility of a value concept is clearly distinct from the phenomenon of “declared value importance.” Thus, people may describe a certain value concept as very important for them and yet use this concept infrequently and/or indiscriminantly. Consequently, the correlations between measures of value importance and measures of discriminant accessibility may not be high, and value importance scores should not be viewed as alternative indicators of discriminant accessibility.

THE PRESENT STUDY

To examine the usefulness of the discriminant-accessibility approach, the present study focused on the educational value of Encouraging Independent Thought in the classroom. It was assumed that teachers’ discriminant and frequent use of this value as a positively valenced category predicts both value consistent behaviors by those teachers and value consistent student outcomes.

The two value consistent dimensions of teacher behavior examined in this study were: (a) Showing Tolerance of Independent or Critical student Opinions (Tolerance) and (b) Showing Interest in and Respect for students' Ideas (Interest and Respect). The dimension of Tolerance was chosen since it is clearly consistent with the value of Encouraging Independent Thought in the classroom. The dimension of Interest and Respect refers to teachers' behaviors such as listening carefully and paying attention to ideas expressed by each student. This latter dimension was identified by Schwartz (1987) in two factor-analyses of students' ratings of teachers' behaviors. Theoretically, behaviors constituting this dimension can be thought of as concrete manifestations of the construct of unconditioned positive regard (Rogers, 1959).

Interviews with teachers (Assor & Raveh, 1993) indicated that they usually react in an ambivalent way to the option of displaying tolerance for students' criticisms and showing interest and respect for the ideas of *all* the students in the classroom. While both behaviors are viewed as desirable educational ideals, they are also described as problematic because they may lead to loss of control and/or to less efficient learning of the class as a whole.

The behavioral dimensions of Tolerance and Interest and Respect were measured via class ratings of teachers' behavior on a variety of relevant items. Thus, the behavioral dimensions chosen for study satisfied the two conditions under which value-behavior consistency was expected to occur: they arouse ambivalence; and they consist of aggregates of behaviors.

The present study focused on four kinds of value consistent student outcomes: (a) the importance ascribed by students to the values of *self-direction* and *conformity* and (b) children's self-perceptions of their own *cognitive competence* and *acceptance by classmates*.

It seems reasonable to posit that teachers who are high in the discriminant accessibility of EIT are likely to foster the value of self-direction in their students. In addition, the value of conformity has been found to be negatively related to the value of self-direction across a number of cultures (see Kohn & Schooler, 1983; Schwartz & Bilsky, 1987, 1990). Therefore, discriminant accessibility of the value of EIT in teachers should generate low ratings for the value of conformity in students.

Students' perceptions of their cognitive competence and acceptance by classmates were investigated because these two potential outcomes were assumed to support the expression of students' independent thought in the classroom.

While the primary objective of the present study was to test the hypothesis that discriminant accessibility of value concepts predicts value consistent behaviors and outcomes, the present study also had a secondary goal. This goal was to explore the processes by which discriminant accessibility of teachers' EIT influences children's outcomes. More specifically, it was assumed that the influence of teachers' discriminant accessibility of EIT on the endorsement of the values of self-direction and conformity by students is mediated by teachers' tolerance

of independent student opinions. Acceptance of independent student opinions by teachers is likely to promote endorsement of the value of self-direction by students (and to diminish their enthusiasm for the value of conformity) because it indicates that an independent orientation is valued by the teacher.

As for students' self-perceptions of cognitive competence and acceptance by classmates, it was assumed that the influence of discriminant accessibility of teachers' EIT value on these student outcomes would be mediated by teachers' display of interest in and respect for students' ideas. Teacher behaviors expressing interest in the ideas of all students (irrespective of the cleverness or originality of these ideas) were expected to contribute to students' sense of cognitive competence and social-acceptance because these behaviors are likely to be interpreted by students as indicating that the teacher thinks that each class member is interesting, important, and competent.

HYPOTHESES

Based on the foregoing considerations, two major hypotheses were formulated:

1. Discriminant accessibility of the value of EIT among teachers is associated with the enactment of two types of value consistent teacher behaviors: (a) behaviors showing tolerance of independent and critical students' opinions, and (b) behaviors showing interest and respect for students' ideas.
2. Discriminant accessibility of the value of EIT among teachers is associated with the following student characteristics: (a) endorsement of the value of self-direction and rejection of the value of conformity and (b) self-perceptions of cognitive competence and acceptance by classmates.

In addition, two additional hypotheses were also examined:

3. The relations between discriminant accessibility of teachers' value of EIT and students' endorsement of the values of self-direction and conformity are mediated by teachers' tolerant behavior.
4. The relations between discriminant accessibility of teachers' value of EIT and students' sense of cognitive competence and acceptance by classmates are mediated by teachers' display of interest and respect for students' ideas.

Method

SUBJECTS AND PROCEDURE

The study involved 52 female teachers and 1,614 students from Grades 3–6 in eight secular schools in Israel. All the teachers fulfilled a role which in Hebrew is called "mechanechet." (The English equivalent of this term is "educator.") The "mechanechet" is the teacher who is responsible for the class conduct and its moral and social education. In elementary school such teachers also spend much more time than others with the class. All the teachers in the study had at least four years of teaching experience.

A female research assistant met individually with each teacher (not in the classroom). The meeting took place six to seven months after the beginning of the school year. In this session, the teacher completed a sorting task, a scale designed to assess discriminant accessibility of the value of EIT as a goal category, and three other instruments that were used to assess the construct validity of the sorting task. To control for possible order effects, the instruments were administered in two orders.

Two to three weeks later, some respondents also completed another instrument which was also used to assess construct validity: the Events Questionnaire (Due to technical problems, the Events Questionnaire was administered to a reduced sample of 23 teachers.) Then, five to eight weeks after the first session with the teacher, the students of each teacher completed questionnaires assessing teacher behaviors and student characteristics. The questionnaires were administered by two research assistants while the teacher was not present in class.

The eight schools sampled were selected to represent a variety of student populations in terms of level of parental education and socioeconomic status.

ASSESSING THE DISCRIMINANT ACCESSIBILITY OF EIT AS A POSITIVELY VALENCED CONCEPT

The discriminant accessibility of the value Encouraging Independent Thought was assessed by a classification task, whereas the positive valence of this concept was assessed by a Likert-type scale. Both instruments were administered individually to teachers. In the classification task, the teacher was asked to sort 12 teacher behaviors into groups "according to the kind of student's characteristics which these behaviors may help to foster." Each teacher behavior was listed on a separate card. After the teacher finished sorting the cards into separate piles, he or she was asked to name each group of behaviors. Six of the 12 teacher behaviors had been previously assessed by a group of 18 education experts (including experienced teachers) as fostering independent thinking in students. Four other teacher behaviors had been assessed as facilitating the development of consideration for others. Finally, the last two behaviors had been assessed as fostering conformity in students.

The experts' classification served as criteria for discriminant accessibility of the concept of EIT. Using this method, lack of discrimination was assumed to occur when the teacher placed behavioral instances under the heading of EIT which, according to the experts, clearly did not reflect that concept.³

Low accessibility was indicated when the teacher did not use the concept of EIT to classify behavioral instances which, according to experts, reflected that value. It will be recalled that the classification task asked subjects to generate their *own* category names. Therefore, based on the logic and methods of construct accessibility research (cf. Higgins, 1989), it can be assumed that, when the concept of EIT was not used spontaneously to organize relevant behavioral instances, this concept was less accessible than other concepts.⁴

Thus, the discriminant accessibility of the value concept of EIT was measured by the degree of agreement between the teacher and the experts in the sorting of behavioral items considered by the experts to be prototypical instances of the concept Encouraging Independent Thought. Degree of agreement was computed by means of Cohen's (1968) weighted Kappa coefficient. A detailed description of the construction of the Independence Agreement (IA) score is presented in Appendix A.

Table I presents the agreement matrix and the weights used in computing the agreement score. The table also presents the items of the sorting task as classified by the experts.

As for the valence of the value of Encouraging Independent Thought, results showed that out of 52 teachers, only three did not rate this value as positive. These teachers were excluded from further analyses. (The almost unanimous endorsement of the value of EIT was not surprising. This value is strongly espoused in teachers' seminars and inservice courses, and it is frequently discussed in secular educational circles in Israel.)

CONSTRUCT VALIDATION OF THE SORTING-BASED MEASURE OF DISCRIMINANT ACCESSIBILITY OF THE CONCEPT OF EIT: PROCEDURES, MEASURES, AND FINDINGS

The construct validity of the Independence Agreement score was examined by correlating this score with one indicator of convergent validity, one indicator of discriminant validity, and three measures of theoretically related constructs (assessed via methods which were very different from the sorting task).

Convergent Validity

The measure used to assess convergent validity was based on an Events Questionnaire (Assor, 1995b) describing five events in which students behave in ways that were consistent with the value of EIT but inconsistent with other widely accepted values in the Israeli culture.

In each event, the teacher was asked to describe his or her impressions of the student whose behavior reflects independent thinking, write his or her likely response, and then explain it. It was assumed that if the concept of EIT was used frequently and discriminantly by the teacher to organize and evaluate specific behaviors, then this concept would also be used to organize impressions and thoughts in response to the Events Questionnaire.

The alternative measure of discriminant accessibility of EIT was constructed by counting the number of times in which the concept of EIT was used. The count score derived from the Events Questionnaire was called the Concept Use score. The protocols were scored by three judges, and their interrater reliabilities were above .88. The effect of protocol length was controlled for by partialling out the

Table 1. Items of Sorting Task, Agreement Matrix, and Weights Used to Assess Discriminant Accessibility of the Concept of EIT via Cohen's Kappa

Experts' Categories	Teacher's Categories		
	Inde- pendence	Other	Con- formity
<i>Independence – Enhancement Items</i>	0	1	2
1. Teacher (T) asks students to express their disagreements with him or her.			
2. T says his or her opinion at the end of class – debates.			
3. T teaches about historical figures who expressed innovative and unusual ideas.			
4. After T presents his or her views, he or she asks if someone has a different approach.			
5. T encourages students to voice their criticism concerning school rules.			
6. When T makes a mistake, he or she acknowledges it publicly and praises the student who detected it.			
<i>Other Items</i>	1	0	0
1. T expresses appreciation for children who help another student in class.			
2. T insists that students not interrupt each other in class discussions.			
3. T includes in curriculum stories about considerate and tolerant people.			
4. T encourages students to volunteer for various community activities.			
<i>Conformity – Enhancement Items</i>	2	0	0
1. T emphasizes the importance of copying down everything he or she writes on the board.			
2. T expects students to do their work exactly according to his or her instructions.			

Notes:

(1) The items are shortened a little. The original items were somewhat more detailed.

(2) The numbers appearing in cells are weights representing the degree of disagreement between the teacher and the experts in the classification of independence enhancement items; larger weights indicate a lower level of discriminant accessibility of the concept of EIT.

effect of protocol length on the correlation between the Concept Use score and other variables of interest.

The Events Questionnaire was completed in a separate session and – due to school-related limitations – was administered to only 23 teachers. In addition to its role as a convergent validity indicator, the Concept Use score was also used to test the two major hypotheses. However, because this score was available only for less than half of the teachers, it served only as a secondary measure of discriminant accessibility of the concept of EIT.

Discriminant Validity

The measure used to assess discriminant validity was a sorting-based agreement score designed to measure discriminant accessibility of the value of Consideration for Others (Assor, 1995b). The Consideration Agreement score reflected the degree of congruence between the teacher and the experts in the classification of consideration-enhancing behaviors and was constructed in a way that is similar to the way the independence agreement score was constructed.

The Independence Agreement and Consideration Agreement scores assessed the discriminant accessibility of two value concepts which, based on theoretical considerations and previous research (see Schwartz, 1992; Schwartz & Bilsky, 1990) were expected to be unrelated. As the two scores measure two theoretically unrelated constructs using the same sorting method, a low correlation between these scores would support the discriminant validity of the sorting-based agreement score.

The Three Theoretically Related Measures

In addition, the research employed three measures which pertain to various aspects of teachers' thinking concerning the enhancement of independent thought in students. The Discriminant Accessibility score was expected to correlate positively with these measures because all these measures reflect at least some degree of cognitive engagement and familiarity with the concept of Encouraging Independent Thought in students (Assor, 1995b).

The first of the three measures involved ranking the importance of the value of EIT relative to other values. The instrument used for this purpose presented the teacher with 10 traits which he or she might want to foster in his or her students. Two of those traits reflected the value of independent thought, and the remaining eight reflected the values of conformity, benevolence, achievement, nationalism, and hedonism. The measure of relative importance of EIT was correlated positively and significantly with the sorting measure of discriminant accessibility of EIT but not with the sorting measure of consideration. Similarly, it was correlated positively and significantly with the richness of the repertoire of behaviors promoting EIT but not consideration. The relative-importance EIT measure was also correlated significantly and positively with the events-based measure of discriminant access-

ibility of EIT. These findings support the convergent and discriminant validity of the relative importance measure.⁵

The second of the three measures examined the richness of the repertoire of instrumental behaviors generated by the teacher in response to the question: "please describe the things you can do to promote students' tendency to express independent opinions in the classroom."

The third measure asked teachers to evaluate the contribution of 19 student-traits (behavioral dispositions) to the development of independent thought in students, using three categories: positive contribution, negative contribution, and lack of relationship. The category affiliation of each trait was previously determined by experts' judgements. Teachers' abilities to identify the contribution of various student traits to the development of independent thought was assessed by their degree of agreement with the experts.

These three theoretically related measures of thinking on the concept of independence and the Events measure of the accessibility of EIT were positively and significantly related among themselves, but they were not associated with measures related to the value concept of consideration.

Findings of Validation Study

Table II presents the set of correlations used to assess the construct validity of two sorting-based independence agreement scores.

Inspection of the upper row of Table II indicates that the correlation of the Independence Agreement (IA) score with the convergent validity indicator (the Concept Use score derived from the Events Questionnaire) was clearly higher than the correlation of this measure with the discriminant validity indicator (the sorting measure of discriminant accessibility of the concept of encouraging consideration). In addition, the correlations of the IA score with the three theoretically related measures were positive and significant. Overall, then, the correlations presented in Table II clearly support the construct validity of the Independence Agreement (IA) score. Yet, the moderate correlation between IA and the discriminant validity indicator ($r = .47$) suggests that the IA score may be less discriminant than desirable.

Construction of a Final Independence Agreement Score (FIA) and Evidence for its Construct Validity

In order to improve discriminant validity, a new and Final Independence Agreement (FIA) score was created. This score was generated by partialling out the effect of the Consideration Agreement score on the Independence Agreement score.⁶

Table II shows that the correlations of the FIA score with the three theoretically related measures were not much lower than the correlations obtained with the IA score. These findings indicate that the correlations supporting the construct validity of the IA score were *not* produced by the sorting method or by the theoretically

Table II. Correlations Used to Assess the Construct Validity of the Sorting Based Measures of Discriminant Accessibility of the Concept of EIT

Sorting based measures of discriminant accessibility of the concept of EIT	Theoretically related measures			Convergent validity indicator	Discriminant validity indicator
	Relative importance of the value of EIT (ranking)	Richness of repertoire of behaviors aimed at promoting independent thought	Knowledge of contribution of various traits to the development of independent thought	Frequent use of the concept of EIT in responses to the Events questionnaire	Sorting measure of discriminant accessibility of the concept of consideration (agreement score)
Independence Agreement Score (IA)	.42*	.26*	.39*	.70***	.47**
Final Independence Agreement score (FIA)	.36*	.29*	.39*	.54**	.00

* $p < .05$ ** $P < .01$ *** $p < .001$

irrelevant construct of discriminant accessibility of the concept of encouraging consideration.

MEASURES OF TEACHERS' BEHAVIORS

Teachers' scores on the two behavioral dimensions – Showing Tolerance of Independent and Critical students' Opinions (Tolerance) and Showing Interest in and Respect for students' Ideas (Interest and Respect) – were constructed by averaging the scores assigned to each teacher by his or her students. (The mean number of student raters per teacher was 31.)⁷ The items for both scales were derived from interviews with students and teachers.⁸

The Tolerance scale consisted of nine items. Its internal consistency (Cronbach's Alpha) was 0.71. The two items with the highest correlations with the total scale score were: (a) the teacher is willing to listen to our complaints regarding his or

her behavior and (b) the teacher pays attention only to opinions which are exactly the same as his or hers (reverse scoring).

The Interest and Respect scale included two items which were selected on the basis of a factor analysis conducted in a pilot study. The correlation between these items was .43. These items were: (a) the teacher gives serious consideration to my suggestions and opinions and (b) the teacher does not show interest in my ideas (reverse scoring).

MEASURES OF STUDENTS' AUTONOMY AND CONFORMITY VALUES

Students' values were assessed by means of a questionnaire consisting of three sections. In the first section, students selected the three items which were most important to them, and in the second section, the three least important items. In the last section, each item was rated on a three-point scale. Three values were measured: autonomy, conformity, and prosocial behavior. The value of autonomy was assessed by two items describing teacher behavior: (a) has independent opinions (usually makes up his or her mind by himself or herself and does not copy others' opinions), and (b) has a will of his or her own (usually does what he or she really wants to do, without worrying too much about what others will think). The value of conformity was assessed by two items: (a) neat and orderly and (b) obedient and disciplined. Multi-method-multi-trait analyses performed by Assor and Raveh (1993) supported the construct validity of the scales.⁹ The scores of students in each class were averaged to yield class value scores.

MEASURES OF STUDENTS' SELF-PERCEPTIONS

Students' self-perceptions of cognitive competence were assessed by means of the Hebrew version of Harter's Cognitive Competence scale (see Assor & Levy, 1988; Harter, 1982; and research cited by Assor & Connell, 1992; and Assor, Tzelgov, Thein, Ilardi, & Connell, 1990). Students' self-perceptions of acceptance by classmates were assessed via Assor and Flum's scale of Perceived Acceptance by Classmates. The construct validity of the scale was demonstrated in a number of studies (Assor, 1995b; Assor, Flum, & Meir, 1987). The self-perception scores of the students of each class were averaged to yield class self-perception scores.

The correlations obtained among the class measures are presented in Table III.

Results

TESTING THE MAJOR HYPOTHESES

The first major hypothesis was examined by computing the correlations between the teachers' sorting-based final Independence Agreement score and the events-based Concept Use score (both indicators of discriminant accessibility of EIT) and class' perceptions of teachers' behavior in the two domains of Tolerance and

Table III. Correlations Among the Class-Measures Used To Examine the Hypotheses

	2 ^a	3	4	5	6
<i>Students' ratings of teacher-behavior:</i>					
1. Tolerant teacher behavior (STICO).	.44**	-.31*	-.01	.13	.31*
2. Interested/respectful teacher behavior (SIRI).		-.04	-.12	-.05	.37**
<i>Students' attributes:</i>					
3. Endorsement of the value of conformity by students.			-.08	-.24 ⁺	-.05
4. Endorsement of the value of self-direction by students.				.23 ⁺	.00
5. Students' self-perception of cognitive competence.					.18
6. Students' self-perception of acceptance by classmates.					

^a The names of the measures appear in the vertical column.

⁺p < .10, *p < .05, **p < .01, one tailed.

Interest-Respect. The obtained correlations are presented in Table IV (upper left corner). As expected, all four correlations were positive and significant. These findings support the hypothesis that frequent and discriminant use of the value concept of EIT by teachers predicts value consistent teacher behaviors.

The second major hypothesis was tested by computing the correlations between teachers' Final Independence Agreement and Concept Use scores and the following class' (i.e., students') characteristics: (a) endorsement of the values of autonomy and conformity, and (b) perceptions of cognitive competence and acceptance by classmates. These correlations are also presented in Table IV.

Inspection of the relevant correlations in Table IV indicates that the second hypothesis received only partial support. Thus, as expected, discriminant accessibility of the value of EIT for teachers (as indicated by the Final Independence Agreement and Concept Use scores) was correlated negatively and significantly with endorsement of the value of conformity by students, and positively and significantly with perceived acceptance by classmates. However, discriminant accessibility of EIT was found to be unrelated to students' endorsement of the value of autonomy and their perceived cognitive competence.

Table IV also presents correlations involving two additional value related measures: (a) the relative importance of the value of EIT (based on a ranking procedure) and (b) the sorting measure of discriminant accessibility of the concept of encouraging consideration. Table IV shows no significant correlations between these

Table IV. Correlations Among Measures of Teachers' Thinking on Values and Measures of Teacher Behavior and Students' Attributes

Measures of teachers' behavior and students' attributes	Measures of Teachers' Thinking on Values			
	Sorting-based measure of discriminant accessibility of the concept EIT (FIA score)	Events-based measure of discriminant accessibility of EIT (Concept Use score)	Relative-importance of EIT (a ranking measure)	Sorting-based measure of discriminant accessibility of the concept of consideration
Tolerant teacher behavior	.34*	.31*	.12	-.02
Interested/respectful teacher behavior	.33*	.38*	.08	.05
Endorsement of the value of conformity by students	-.30*	-.29*	-.03	.06
Endorsement of the value of self-direction by students	.01	-.09	-.01	-.02
Students' self-perceptions of cognitive competence	.02	-.01	.02	.00
Students' self-perceived acceptance by classmates	.42**	.30**	.09	.07

^A The correlations involving the Concept Use score are partial correlations, controlling for protocol length, and based on 23 teachers and classes. The rest of the correlations are based on 49 classes.

⁺ $p < .10$, * $p < .05$, ** $p < .01$

measures and the dependent variables. Thus, in the present study, the discriminant accessibility measures predicted the dependent variables better than a more traditional ranking measure.

The finding that the sorting measure of EIT predicted independence-related outcomes more effectively than the sorting measure of consideration suggests that the positive results obtained for this measure cannot be attributed to a general cognitive capacity which categorization measures may capture. If this was the case, then the consideration sorting measure should have also produced significant results.

TESTING THE SECONDARY (MEDIATION) HYPOTHESES

The two secondary hypotheses focus on the teacher behavior factors mediating the relations between discriminant accessibility of EIT (as measured by the teachers' FIA score) and four student attributes: conformity endorsement, autonomy endorsement, perceived acceptance by classmates, and perceived cognitive competence. Table IV shows that teachers' FIA scores correlated significantly with only two student attributes: conformity-endorsement and perceived-acceptance. Consequently, the mediation hypotheses were tested only in relation to those two characteristics.

The first mediation hypothesis predicted that the effect of discriminant accessibility of EIT (as measured by the teacher's FIA score) on students' endorsement of conformity would be mediated by tolerant teacher behavior. To support that hypothesis, it is necessary to show that: (a) the zero-order correlations among FIA, tolerant teacher behavior, and conformity endorsement are significant and (b) when the effect of tolerant teacher behavior is controlled, the semipartial correlation between FIA and conformity-endorsement is nonsignificant (see Baron & Kenny, 1986).

Tables III and IV show that the correlations among tolerant teacher behavior, conformity endorsement, and FIA were significant. Also as expected, the significant zero-order correlation between FIA and conformity-endorsement ($r = -.30$) became nonsignificant when the effect of tolerant teacher behavior was controlled (the semipartial correlation was $-.18$). Thus, the partialling of tolerant teacher behavior reduced 64% of the variance accounted by FIA. However, given that the decrease in the size of the correlation was modest and the n was small, it seems reasonable to conclude that the results provided only limited support for the first hypothesis.

The second mediation hypothesis predicted that the effect of teachers' FIA score on perceived-acceptance (in students) would be mediated by respectful teacher behavior. Tables III and IV show that the correlations among FIA, respectful teacher behavior, and perceived acceptance were significant. However, unexpectedly, the significant zero-order correlation between FIA and perceived-acceptance ($r = .42$) stayed significant also when the effect of respectful teacher behavior was controlled (the semipartial correlation was $.32$). Thus, the partialling out of respectful teacher

behavior reduced only 42% of the variance accounted by FIA. This means that the results did not support the second mediation hypothesis.

Discussion

Overall, the findings of this study supported the hypothesis that discriminant accessibility of the value concept of EIT for teachers predicts value consistent teacher behaviors. On a more general level, its findings are consistent with the notion that adults' values influence their behavior by acting as positively valenced concepts which are used discriminantly and frequently to evaluate specific behaviors.

Given the positive findings of this study, it might be interesting to examine additional components of the theoretical conception underlying the present research. For example, it may be interesting to test the two stage model of the process mediating the effects of discriminant value accessibility on behavior (i.e., the "valence induction" phase, and the "behavior selection" phase). Also worthy of investigation is the assumption that discriminant accessibility of a given value concept may affect behavior in a delayed and compensatory way (that is, discriminant accessibility leads to attempts to compensate for initial responses which are inconsistent with one's value concept).

Future research may also examine the contribution of discriminant value accessibility to intergenerational value transmission. In this domain, it might be particularly important to explore the relations between value accessibility in parents and the degree of flexibility which parents manifest in their attempts to transmit their values to children.

Given the correlational design of the study, it can be claimed that the thought-behavior relations detected in this study may be explained by a "school ethos" effect. Thus, it is possible that tolerant and respectful teacher behaviors and discriminant accessibility of the concept of EIT for teachers are both products of a certain school ethos. For example, a school with a strong progressive tradition may be likely to foster the type of thinking and behavior examined in this study in relation to the value of EIT.

The alternative explanation involving school ethos assumes that classes belonging to different schools differ significantly, and in the same direction, both on the sorting measure (i.e., discriminant accessibility of the concept of EIT) and on the teacher behavior measures. Examination of the relevant class scores revealed no evidence for a school-affiliation effect, and this rules out one alternative explanation of the thought-behavior link observed in this study.

To reduce the plausibility of other alternative explanations, and to provide firmer and more direct support for the processes assumed to mediate the effect of discriminant accessibility on the enactment of value consistent behaviors, it may be necessary to use quasi-experimental or experimental designs. Finally, to demonstrate the generality of the proposed formulation, it would be necessary to examine educational values other than EIT.

The findings pertaining to the Relative Importance measure are of special interest since this instrument represents a more traditional way of assessing values. The failure of this measure to predict behavior and student outcomes cannot be ascribed to a low variance problem since this measure did produce positive and significant correlations with other theoretically related measures of teacher thinking on the value of EIT. An attempt to improve the results by using the relative importance scores of both EIT and conformity as predictors was also unsuccessful. However, it is possible that using a whole system of values as a predictor (see Schwartz, 1995) might have resulted in stronger effects.

The results of this study clearly *do not* suggest that discriminant accessibility of a value is, in general, a better predictor of behavior than Declared Relative Importance. First, according to the proposed approach, discriminant accessibility is a particularly strong predictor of behavior only when the initial response to the relevant value related behaviors is neutral or ambivalent. Second, it might be that, in the present study, Declared Relative Importance was a poor predictor because of a social-desirability bias which operated specifically in relation to the value of EIT. Thus, it is possible that discriminant accessibility is a better predictor than declared importance only when the relevant value has a high level of social desirability.

The findings of the present study *do* suggest the existence of a strong link between teachers' thoughts and behaviors pertaining to the enhancement of students' autonomy and students' sense of acceptance by classmates. Furthermore, the data collected in this study also showed that students' perceptions of teachers' tolerance for critical opinions predicted endorsement of the value of "consideration of others" by students. Thus, it is possible that teachers' cognitive and behavioral investment in the goal (value) of fostering students' autonomy contributes to a prosocial classroom climate.

One possible explanation for the apparent link between autonomy-supportive orientation in teachers and prosocial orientation in children is that teachers' tolerant and autonomy-supportive behavior is viewed by children primarily as a model of a prosocial, considerate, orientation. It is possible that students start to interpret teachers' autonomy-supportive behavior as an indicator of the desirability of autonomy only when they become adolescent, and autonomy then turns into a central concern for them.

The findings of the present study are partially consistent with the notion that adults' values can affect the development of some values and self-perceptions in children. Thus, discriminant accessibility of the value of EIT (for teachers) predicted the assignment of little importance to the value of conformity and self-perceived acceptance by classmates but did not predict endorsement of the value of autonomy and self-perceived cognitive competence. The failure to predict the value of autonomy and perceived cognitive competence may result from the fact that the influence of teachers on these characteristics is negligible relative to the influence of other, more potent, factors (see Assor & Connell, 1992; Assor et al., 1990, on factors affecting children's perceived academic competence).

EDUCATIONAL IMPLICATIONS

The present study has several interesting implications for the training and development of teachers.

Courses Focusing on Educational Values

The finding that discriminant and chronic accessibility of an educational value predicts value consistent behavior suggests that courses aimed at sharpening and clarifying teachers' thinking on values may have important behavioral consequences. This finding also suggests that a large part of courses dealing with educational values and goals should focus on teachers' inclination and capacity to perform frequent and discriminant evaluations of the contribution of their concrete behaviors to the realization of their abstract educational values. Thus, in addition to activities aimed at examining the fundamental justification for one's values and clarifying one's value hierarchy, it appears important to focus on the extent to which one's specific behaviors actually reflect and promote one's values.

This objective can be obtained by what may be called "value directed reflection and action process" (Assor, 1995a, 1996). This process consists of cycles of reflection and planning, implementation, and subsequent reflection and revision. The hypothesis that a thorough and prolonged process of value directed reflection enhances teachers' educational effectiveness is presently being investigated (Assor, 1995b).

Clarifying the Concept of the "Reflective Practitioner"

The present study may also contribute to the clarification and specification of the concept of reflection in education. In recent years, there has been much educational discourse on the topic of enhancing teachers' reflective capacity. Yet, the concept of reflection has often been used in a general and somewhat non-informative way (Korthagen & Wubbels, 1995). Analysis of reflective processes suggests that they can include a number of mental skills which may be aimed at a variety of self-related actions, assumptions, and beliefs. It is often unclear which of these skills are particularly important to foster, and for what purpose. The present study may contribute to a more specific definition of the concept of the "reflective teacher" by demonstrating the importance of one component of the reflective process: the inclination and capacity to examine the contribution of one's concrete behaviors to the realization of one's abstract values. It appears that this reflective disposition may enhance teachers' ability to express and transmit their values.

Teacher Education Practices Leading to the Enhancement of Critical Thinking in Students

The present study suggests teacher education methods which may increase teachers' tendency to foster critical thinking in students. More specifically, it appears

that training practices which enhance teachers' inclination to examine the relations between their concrete behaviors and the value of Encouraging Independent Thought are likely to enhance teachers' inclination to encourage critical thinking in students. For example, those teachers may show the desired attribute of openness to criticism (Passmore, 1980; Paul, 1987). Perhaps they would also model critical behavior, prefer explanation over power assertion as a disciplinary technique, and allow students' opinions to affect the content and structure of learning and the rules of conduct in the classroom. These possibilities are presently being examined in a new research project (Assor, 1995b).

Conclusion

The findings of the present study may stimulate further research into the nature and functioning of values as affectively loaded general concepts. Such research may help to complement, and perhaps balance, the emphasis on very specific attitudes in social psychological research (Ajzen, 1987; Fazio, 1990).

In particular, values, as they are conceptualized in this article, are expected to play an important role in the prediction of personal experiential characteristics such as teachers' sense of meaning or coherence (Antonovsky, 1987), children's perceptions of teachers and parents, and the impact of parents on children's characteristics.

Notes

1. The two theorists do not claim that attitude positivity is the only (or major) determinant of attitude-behavior consistency. However, both acknowledge it as an important factor.
2. The utility of such an approach to the measurement of behavioral effects of personal dispositions was demonstrated by Epstein (1980) and Azjen (1987). Yet, the notion of compensatory long term effects adds another reason for the adoption of this measurement approach in the case of values.
3. It is important to clarify that the term "discriminant use" does not reflect a belief in the existence of absolute criteria for judging "correct" or discriminant use of a value concept. Rather, it implies that the way in which the teacher uses the concept does not deviate strongly from the way it is used by the majority of senior and influential members of his or her culture.
4. As was already noted, the notion of "relevant" behavioral instances refers to instances which, according to dominant cultural definitions, are good instances of the concept of EIT.
5. In the Relative Importance measure, the teacher was asked to first choose the two traits he or she considered most important, then the two traits somewhat less important, and so on until he or she reached the two least important (or undesirable) traits. The importance score (for each of the ten traits) could range between one and five. The mean Relative Importance score for the value of EIT was 3.92 (S.D = 1.04). Assor (1995a) found that the Relative Importance EIT score was positively related to teachers' attitudes concerning fostering critical student opinions, choice in the classroom, and the delegation of influence and power to students.
6. The results obtained with the FIA and IA scores were, in fact, very similar.
7. The method of assessing teachers' behavior by means of students' ratings has several advantages. First, Schwartz (1985, 1987) had previously found that students' and principals' ratings of teachers' behavior correlated positively and significantly. Second, the fact that each teacher's

- behavior was rated by many raters was likely to minimize the effects of observers' characteristics on the teacher behaviors being rated.
8. As part of the pilot study, students also rated their teachers on several additional measures. The pattern of correlations among the Interest-Respect and Tolerance scales and these additional measures also supported the construct validity of both scales. Thus, the Interest and Respect scale correlated more strongly than Tolerance with Teachers' Concern With Students' Uniqueness and Teachers' Tendency to Avoid Hurting Students' Feelings (Schwartz, 1985, 1987), whereas Tolerance correlated more strongly with the frequency in which the teacher conducted class discussions or sought students' opinions in designing the curriculum.
 9. To allow multi-method measurement, two types of scores were created for each value: a comparative, and a noncomparative, score. The comparative value score was based on the section of the questionnaire which asked the students to choose the most and the least important value items. The noncomparative value score was based on the section allowing independent rating of each item. In view of the sizable correlations between the comparative and noncomparative measures, these two types of measures were first standardized and then combined for each student.

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Appendix A: Construction of the Independence Agreement Score

The first step was to divide the behaviors included in the sorting task according to their classification by the experts into the following three categories: independence-enhancement, conformity-enhancement, and "other." Then the groups of behavioral items created by each teacher were assigned (by two trained judges) to the same three general categories. The interjudge reliability in assigning teacher items to the three groups (Cohen's Kappa) was .91. The sorting of the 12 items according to both the individual teacher and the experts allowed construction of a 3×3 agreement matrix for each teacher (see Cohen, 1968). In this matrix there are four cells which represent various kinds of disagreement between the experts and the individual teacher in the sorting of "independence-enhancing" items.

A weight of 2 was given to the two cells representing the assignment of experts' "conformity-enhancing" items to teacher's "independence-enhancement" category, and vice versa. These disagreements (i.e., cells) received a relatively large weight because they suggest a quite low level of discrimination. A weight of 1 was given to the cells representing the assignment of experts' "independence-enhancing" behaviors to teacher's "other" category, and vice versa. These classifications (cells) received a moderately low weight because they do not necessarily indicate indiscriminant use of the concept of EIT. Disagreements involving the sorting of conformity items to the "other" category and vice versa received weights of zero. Teachers were not penalized for these disagreements because they are not directly related to the category of independence enhancement.

The raw agreement score had a positive correlation with the order in which the instruments were completed. The order effect was controlled via residual agreement scores that were created by partialling out the effect of order on raw-agreement scores. A more detailed description of the considerations underlying the construction of the agreement score can be obtained from the author.