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# An Exploration of the Impact of Personality Factors on Comprehension

*Nancy Boraks, Mary Brittain, Fred Linder,  
Dave Bauer*

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## Introduction

The relationship of personality factors to reading achievement has been accepted and explored. However, acceptance has often been based on intuition, experience and diverse, not conclusive research. Exploration has often been based on the need for additional strategies for diagnosing and developing reading abilities and reading appreciation. This study explores the relationship between specific personality factors and reading comprehension in order to offer new frameworks for instruction.

## Background

The theoretical basis for relating comprehension and personality is drawn from writings on literary appreciation. Rosenblatt's (1978) reader response theory indicates that readers create or perceive meaning in terms of their own experiences. Beach and Hynds (1984) in an excellent review of factors influencing response to literature also suggest that readers' recreate literary works in accordance with their own psychological predispositions (p. 465). However, much of the research in this area has been done with high school and adult readers. The impact of personality factors on reading with younger children needs to be explored further.

Schmeck (1988) makes it clear that it is important and useful to identify "educationally relevant personal attributes," but reading researchers seem to be doing less and less in this area. For example, the yearly IRA *Annual Summary of Investigations Relating to Reading* annually includes up to 800 studies, but over the past five years has listed fewer than a dozen studies on the relationship of personal variables and general comprehension (Weintraub, 1988, 1989, 1990, 1991, 1992).

Our own initial research explored the relationship of personality to reading comprehension in an attempt to assess the impact of student responses to chosen versus required books (Boraks, Brittain, Linder, 1991, 1992). During the course of that research the Maslow need hierarchy emerged as an intriguing variable. Moreover, other personality variables seemed to play a controlling role in comprehension. This suggested the need to clarify the relationship between comprehension and personality variables.

### Purposes of the study

This study explores the relationship between comprehension and three personality variables: locus of control, attitude, and Maslow's need hierarchy. The first purpose is to analyze the separateness or overlapping nature of these variables and the impact of each on reading comprehension. Personality variables selected offer frameworks for teacher questions and discussions which can develop and determine prerequisites to comprehension. Therefore, the second purpose is to clarify how personality variables can inform reading research and instruction.

This study is considered exploratory because: (a) statistical and conceptual analysis are *post hoc*, dictated by emerging patterns found in student responses and (b) a new instrument to measure one variable (need hierarchy) is utilized. A description and rationale for including each personality variable is presented below.

**Locus of Control.** Social learning theory and the locus of control construct have been used to explain the perceived relationship between behavior and its consequences (Rotter, 1966; Lefcourt, 1982, 1983). The locus of control construct stresses the idea that behaviors are determined simultaneously by the variables of expectancy and reinforcement. Internal control refers to the belief that reinforcement is contingent on one's own behavior, while external control refers to the belief that fate, luck, chance, or powerful others dominate outcomes. The relationship between locus of control and achievement has been well-documented: Internally controlled learners tend to be higher achievers (Lefcourt, 1982; Ames and Ames, 1984; Dweck & Elliott, 1983).

**Attitude.** Attitude here refers to how children feel about recreational and school reading. Teachers believe and reading theorists maintain that attitude affects reading achievement. That is, children who enjoy reading tend to be children who read better. There is ample empirical evidence to support this view (Anderson, Wilson, & Fielding, 1986; Greany, 1980; Morrow, 1983).

**Need Hierarchy.** Need hierarchy is considered *here* as a larger construct meant to tap reader's life experiences. This construct emerged in an earlier study as we attempted to do a content analysis of children's responses to the question: "What part of the book did you like best?" We had intended to use literary frameworks for analyzing responses until it became clear that children's responses fell rather neatly into Maslow's need hierarchy (Boraks, Brittain, Linder, 1992). Maslow's (1970) need hierarchy or theory of motivation posits two categories of needs: deficiency needs and being needs. Deficiency needs include the physiological (food, shelter), safety, love and belonging, and esteem. Being needs include the need to actualize one's potential and maintain openness to new knowledge/experiences. Positing a relationship between comprehension and needs is tenable. In fact, parallel to our own research, Heylighen (1992) conceptualized a cognitive component within the Maslow's hierarchy, noting that "many, if not most of the characteristics of self-actualization . . . are cognitive: accurate perception, creative problem solving, effective decision making, capacity for learning. . ." (p. 46).

There are conceptual overlaps between attitude, locus of control, and level of need. The increasing quality of independence and positiveness at successive stages of Maslow's need hierarchy suggest relationships with locus of control and attitude; locus of control, attitude, and level of need may simply be aspects of a single construct.

## Method

### Sample

All fourth and fifth grade students in a Southeastern urban school were involved in the study. The majority of the children were Black. The school was chosen because the administration and teachers (four) expressed a strong interest in learning as much about improving reading comprehension as possible. There were 52 fourth graders and 51 fifth graders involved in the study; 44 male students and 59 female students.

## Measures

**Comprehension.** Comprehension measurement is a difficult and still emerging field. Cross and Paris (1987) state that reading comprehension is "a multifaceted construct influenced by a variety of cognitive, social and affective variables" (p314). They suggest that selection of a comprehension test be based on matching purpose for testing with critical test properties. The comprehension measure used in this exploratory study, *Iowa Test of Basic Skills* (ITBS), has most of the required properties (Lane, 1992). This measure was a part of the regular school assessment program. A second measure of comprehension, teacher's perception of students' comprehension, was also used. Teachers were also asked to rate student reading comprehension on a three point scale (low, middle, high).

**Locus of control scale.** Used extensively in research, *The Nowicki-Strickland Locus of Control Scale* (1973) (short form for grades 3-6) has had validity and reliability established (Robinson & Shaver, 1980). This is a 19 item scale, with a simple yes/no response format.

**Attitude Scale.** The manner in which attitude affects comprehension has not been clearly articulated and instruments to capture attitude are still considered exploratory. However, of several well-researched instruments, the McKenna and Kear (1990) *Elementary Reading Attitude Scale* was used because of strong construct validity and well-documented internal reliability (McKenna & Kear, 1990). The scale, attractive and appealing to children, uses Garfield (the comic strip cat) pictured as happy to unhappy on a four-point scale. There are 20 items, tapping attitude toward school and recreational reading.

**Need Hierarchy Scale.** No Maslow-type scale, relating need perception to reading comprehension or tapping aspects of children's needs was found in the literature. As Neher (1991) stated, Maslow is quoted extensively but his name "is seldom cited in research literature on motivation . . . which means his theory . . . lies outside the mainstream of testing and critical evaluation" (p. 90). This may be because Maslow wanted the need hierarchy considered as an integrated, interactive whole.

However, even critics of Maslow's need hierarchy find the "stages simple and consistent" . . . and capable of being measured objectively (Heyligher, 1992). The need hierarchy instrument developed for this exploratory study includes three scales. Two scales have open-ended questions: Scale I asks students to make three wishes (wish scale, items 1-3); Scale II asks students to identify the most positive experience in their lives (critical incident scale, item 4); Scale III explores the potential of students to identify motivation needs of characters in a story (literary

scale, items 5-7). The literary scale includes three multiple choice (closed) questions to tap preference for character need/motivation, problem and solution level. Item alternatives match each level of Maslow's hierarchy. Responses were coded on a 5 point scale: (1) physiological and safety, (2) love and belonging, (3) esteem, (4) self-actualization, and (5) need to know and understand (see Chart 1). The wish and critical incident format are frequently used to tap level of need.

Teacher Questionnaire. To determine the role of the teacher in the personality/comprehension relationship, we considered teacher stance. Teachers identified what characteristic they try to develop most in their students. We used personality characteristics capturing the main construct of each of the three personality scales to form optional responses: positive attitude, independence, awareness of others, responsibility to others. Teachers were also asked which of these characteristics they were most successful in developing in boys and which in girls.

### Procedures

All students received the ITBS test in March, 1992, as part of their regular school testing program. We analyzed only the comprehension section of the ITBS. The personality scales were administered in November, 1992. Teachers read the locus of control, attitude, and Maslow's need hierarchy questionnaires to the children, thereby controlling for impact of reading ability. Prompted by initial analysis of children's data, the teacher questionnaire followed.

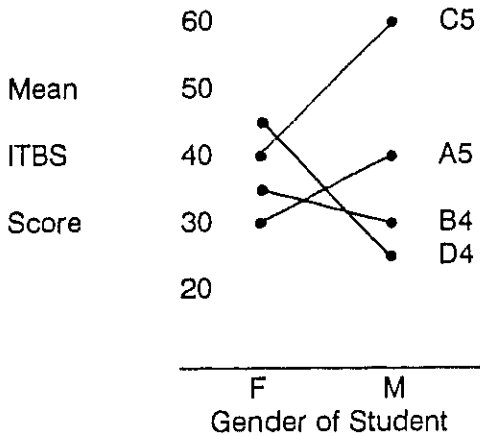
## Results

Children's responses on the three personality instruments were analyzed to determine the impact of grade, gender, and comprehension (ITBS).

ITBS: Comprehension. ITBS scores range from 1-91; the grade four mean score was 34.5; grade 5 mean score was 41. There was an interaction of class x gender (see Figure 1 and Table I). Therefore, gender and grade level were controlled while exploring the data.

Locus of Control. Locus of control as measured by the Nowicki-Strickland scale was positively correlated to reading comprehension as measured by the ITBS ( $r = .304, p = .0052$ ). There was a significant grade-gender interaction [ $F(1,2) = 18.65, p = .0496$ ] for locus of control scores, with mean score about the same for girls in each of the four classes. Mean locus of control scores for fourth grade boys was below that of the girls; mean scores for fifth grade boys was above that of the girls (see

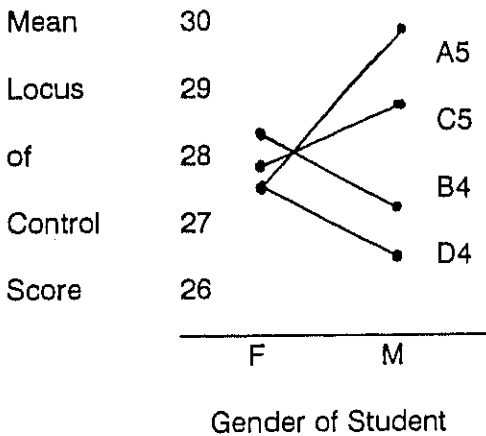
Figure 2 and Table 1). Fifth grade boys had the highest internal locus of control scores followed by fourth grade boys (see Figure 2).



A,B,C,D = Teachers

4,5 = Grade Level

Figure 1. Mean ITBS score by gender and teacher.



A,B,C,D = Teachers

4,5 = Grade Level

Figure 2. Mean locus of control score by gender and teacher.

Attitude. No differences in mean reading attitude scores for different grades or gender occurred (see Figure 3 and Table 1). There was, however, a teacher effect ( $F = 5.80, p = .004$ ). The correlation between the *Elementary Reading Attitude Survey* and the ITBS was not significant nor were the correlations significant for gender or grade level when considered separately. Specific items did correlate with the ITBS. For example, item 5: ("How do you feel about spending free time reading?") was significant for grade four girls ( $r = .598, p = .0016$ ). Several items were negatively correlated with comprehension. For example, item 7: ("How do you feel about reading during summer vacation?") was significant for fourth graders ( $r = -.439, p = .004$ ) and item 16 ("How do you feel when its time for reading class?") was negatively related for fourth and fifth grade girls ( $r = -.324, p = .3145$ ) at the fifth grade level.

Teacher judgment and attitude were not significantly related in this exploratory study. We did find a relationship between ITBS score and teacher judgment ( $r = .64, p = .05$  for grade 4;  $r = .79, p = .05$  for grade 5).

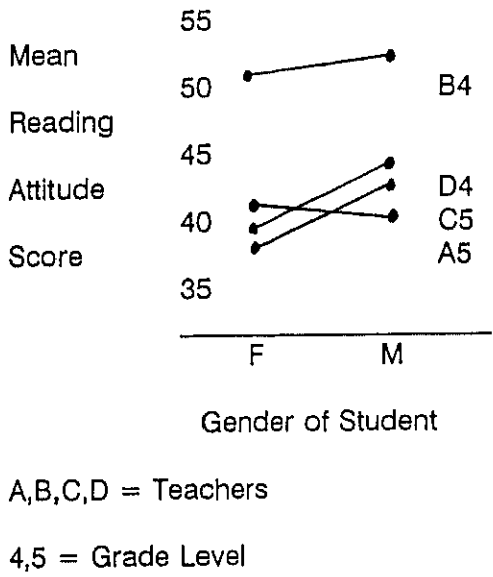
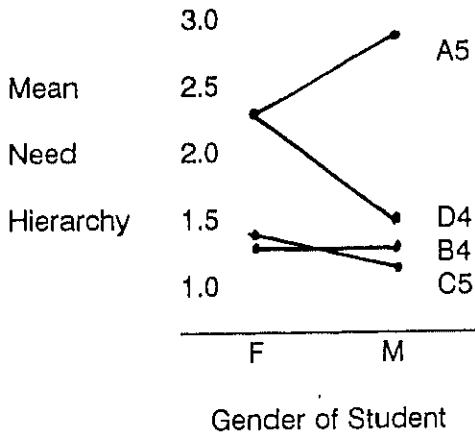


Figure 3. Mean reading attitude score by gender and teacher.



A,B,C,D = Teachers

4,5 = Grade Level

Figure 4. Mean need hierarchy score by gender and teacher.

**Need hierarchy.** The three scales of the need hierarchy instrument were not related and were considered as measuring different constructs here. On scale I, (wish scale) the mean level of students' wishes was 1.45. However, there was a tendency for the third wish to reach a higher level, mean 1.6. Most first and second wishes reflected need for food, shelter, and safety; many third wishes reflected the need for love and belonging (see Chart 1). The nonsignificant intercorrelations of the three wishes also suggest the evolving nature of needs in successive wishes. Diversity existed within and across children. To explore need the highest wish became the unit of analysis analyzed. For the highest level wish a teacher effect and a nearly significant gender  $\times$  teacher interaction emerged (see Figure 4 and Table 1).

The correlation between the ITBS and need hierarchy puzzled us. The overall correlation between wish scale and ITBS for grade 4, was significant ( $r = .422, p = .005$ ), but for grade 5 it was not ( $r = -.233, p = .133$ ). The small negative correlation for this grade appeared to be largely due to the boys responses ( $r = -.600, p = .009$ ) and this appeared to be due to a single teacher (see Figure 4).

**Scale II, Critical incident scale:** The open-ended critical incident scale drew a slightly higher mean response than the wish scale, however, the correlation between the ITBS and critical incident scale did not reach *statistical* significance.



Scale III, Preference in Literature: These objective items, (drawing on what level problem, action, or solution would be preferred in a book) drew the higher mean level of response (2.95-3.42) and suggested a desire to deal with esteem needs but these items also did not correlate significantly with the ITBS.

**Table 1**

**Mean Scores by Teacher and Gender**

Variable	Teacher A	Grade 5	Teacher C	Grade 5
	Female	Male	Female	Male
Locus of Control	27.5	29.6	27.7	28.7
Reading Attitude	41.0	40.2	37.4	42.5
Needs Hierarchy	2.3	2.9	1.4	1.2
ITBS	30.7	39.9	40.1	60.5

Variable	Teacher B	Grade 4	Teacher D	Grade 4
	Female	Male	Female	Male
Locus of Control	28.2	27.4	27.5	26.5
Reading Attitude	52.1	53.0	37.9	43.9
Needs Hierarchy	1.3	1.3	2.3	1.5
ITBS	35.4	27.8	41.9	27.4

**Teacher Questionnaire.** The teacher stance questionnaire clarified teacher impact on student responses to personality measures somewhat. With ITBS as dependent variable, the teacher effect, as Figures 1-4 show, indicate a strong interaction for each personality variable. One class, teacher B, had the highest attitude (grade 4), the class of teacher A had the highest need hierarchy and locus of control scores. A clear gender and teacher (teacher C, grade 5, boys) effect (see Figures 1-4) could be found.

Locus of control, attitude, and need hierarchy seemed conceptually related but no significant statistical intercorrelations among these instruments appeared. This led us to combine scales and relate these to the ITBS but did not increase the power of the relationship among personality variables and comprehension.

## Discussion

Several interesting results materialized: The varied relationship between personality factors and comprehension, the apparent impact of teacher on measured personality variables and the potential of the Maslow need hierarchy instrument.

Results show a clear relationship of ITBS and locus of control consistent with current research (Ames & Ames, 1984; Dweck & Elliott, 1983). Attitude results remain puzzling and inconsistent. The norm groups for the McKenna & Kear *Elementary Reading Attitude Inventory* (1990) show a positive correlation between attitude and achievement. McKenna and Kear used teacher judgment as an indicator of achievement. We used ITBS and teaching judgment. Statistical analysis also differ. McKenna and Kear (1990) use categories (non-parametric analysis) and we used scores as continuous data. The puzzling relationships between teacher judgment of achievement, ITBS and attitude could be considered in several ways. Students had been in their class for two months when judgment was rendered. As noted earlier, administration of the ITBS occurred months prior to the attitude scale. The grade level and gender difference in the relationships between attitude and ITBS suggest the importance of teacher and student gender. It is also possible that the small number of teachers (4) may have highlighted idiosyncratic responses.

There were promising but not significant relationships among the need hierarchy scales (wish, critical incident, and literary). This may be due to the nature of the scales. The wish and critical incident scales were open-ended and the literary scale was closed (multiple choice). Also, the limited number of items (three wishes, one critical incident, three literary items) suggest that the scales must be extended to provide a range of scores and higher internal reliability.

The need hierarchy scales may tap three different aspects of needs: (a) what children say they need, (b) what they see as met needs, and (c) what needs they say they would like addressed in a book. These needs may not be interrelated or interdependent but each scale does seem to pull for a different level of need.

The impact of teacher stance on variables was the one consistent finding. Students in the class where the teacher rated independence

highest (and most important for boys) scored highest in locus of control (with boys scoring higher than girls). The same held true for ratings of attitude and need hierarchy. Keeping in mind that the ITBS was administered prior to the children entering these teachers' classes, we did *not* attribute ITBS scores to the teacher effect. We do suggest that teachers can impact personality variables, as measured here. As we continue to follow these classes, further suggestions on how teacher variables, personality factors, and comprehension interact may appear.

Measures of personality must be cautiously interpreted and limitations of this exploratory study demand even more caution. There is obviously a need to involve a larger population and control for teachers' view of critical personality characteristics. The needs hierarchy instrument must be extended and refined.

### Limitations

This is an exploratory study and statistical analysis was *post hoc*. As discussed above, limited population and the teacher effect suggests the need for a larger teacher population. We also recognize, as Beach and Hynds (1984) point out, that on personality instruments "students providing one surface response may be intending another" (p. 456).

### Implications for Research/Instruction

What potential do these findings have for guiding research and instruction? The consistent showing of teacher effect suggest a teacher may impact student personality variables. This suggests that teachers' stance should be examined and controlled in research related to student personality variables. The implications for instruction are less clear. It should *not* be concluded that teachers who draw children's attention to different need level or locus of control of characters will promote higher comprehension. However, future research might explore tapping stages of children's conceptual and psychological development to promote deeper awareness of character and motivation is indeed limited by a failure to understand that one would search beyond basic needs, then implications for teaching are clear.

Stages of development have been suggested as guides for identifying learners' potential interests and as guides for promoting deeper comprehension and appreciation. For example, teachers are encouraged to consider personality development in selecting children's books (Huck, Hepler, & Hickman, 1993). Milner (1979) taught Kohlberg's stages of moral development to successfully enhance understanding of theme and character. We need to explore further how the Maslow hierarchy and the concept of independence/dependence (locus of control) might lend themselves to use as frameworks for classroom

discussion and questions. The role of teacher stance and personality variables has only begun to yield insights into students' comprehension.

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## Chart 1

### Sample Responses

Sample responses on the Needs Hierarchy Wish Scale included:

Physiological safety: I would like all the money in the world.

I want my own TV, nintendo, home, mall.

Love and belonging: I want to get married.

I want my friend to come play with me after school.

Esteem: I would like to boss my parents around.

I wish I had better grades.

Self-actualization: I wish everyone could like in peace and harmony.

I wish all the homeless would have a place to live.

\*(interrater reliability = .70)