# The Relationship between Academic Achievement and Teacher Expectations of Native Children in a Northern Community School

**Winston E. Rampaul, Motie Singh and John Didyk**

Age-grade retardation and academic deceleration among Native learners have motivated the authors to investigate the relationship between academic achievement and teacher expectations in a small northern Manitoba community school. Grade three and four children were administered the Canadian Test of Basic Skills to estimate their academic achievement. The Teacher Rating of Pupil Attitude was used to ascertain teacher expectations. Correlations were obtained using the Pearson-Product-Moment correlation technique. The correlation between academic achievement and teacher expectations for grade three (N = 22) was statistically significant at .64 ($p < .05$); for grade four (N = 19) .45, significant at ($p < .05$); and for the total group (N = 41) .50, significant at ($p < .05$). Recommendations center on the need to advance consciousness among teachers of Native learners of their potential influence on the achievement levels of their students. Communication of high expectations and related teaching competencies, specifically of a diagnostic-prescriptive nature, might be helpful in alleviating a problem that is already approximating crisis proportions. It is also suggested that a follow-up study with a larger sample, opportunities for cross-validation, and pre- and post-measures be carried out.

Over the last few decades, growing attention has been focused on the education of Canada's Native peoples. The inadequacy of Native participation among the educated and economically successful classes of society in the past has concerned educators. Studies have established an age-grade retardation and academic deceleration of Native children (Kirkness, 1978; Lenton, 1979). More specifically, lack of knowledge of basic operations in the major curricular areas, especially in language arts and mathematics, has been established (Kirkness, 1978). Several solutions aimed at mitigating the problem of relatively low academic achievement among Native learners have been suggested over the last two decades. These include better teacher selection (Kirkness, 1978), specialized preparation of teachers (Lenton, 1979), frequent assessment and remediation efforts (Glock, 1972), and appropriate teacher attitude and expectations (Clifton, 1979).

Academic achievement has been known to improve as a result of high teacher expectations in non-Native samples (Rosenthal & Jacobson,

1968). Good and Brophy (1980) have suggested that appropriate expectations rather than high expectations communicated to the learners are desirable. Several studies have investigated and found positive relationships between self-concept and academic achievement (Brookover & Gottlieb, 1964; Caplin, 1969; Deo & Sharma, 1970; Alvord & Glass, 1974). However, these studies and others have not dealt with Native children in a northern community school and did not investigate the relationship between teacher expectations and academic achievement.

The literature pertaining to academic achievement research involving Native children is sparse. In one study, Lenton (1979) observed that teachers associated Indian children with negative attitudes, lack of career goals, low motivation, and poor performance. More empirical evidence is needed about Native teachers and Native teacher-related variables in order to add to their meaningfulness and provide guidelines for effective teacher behaviours.

According to MacKinnon (1962), the two major categories that determine a teacher's evaluation of the learner's performance are background information and present performance. It seems that teacher knowledge of background information about the learner has a "halo effect" which can either lower or raise the teacher's estimate of the learner's performance. When communicated to the learner, this may serve to fulfill the teacher's prophecy (MacKinnon, 1962). The teacher's prevailing attitude towards the child's potential and capability is transmitted to the child by means of gestures, and oral and written expressions, thus serving to create for the child the upper limits of functioning.

A number of studies (Rosenthal & Johnson, 1968; Rosenthal, 1971) have been undertaken to investigate whether teacher expectation of pupils' intellectual competence can serve as an educational self-fulfilling prophecy. The studies have consistently shown a positive relationship between teacher expectation and pupil achievement. Moreover, they have found that a positive change in teacher expectation can lead to an improvement in students' intellectual performance. In a follow-up study on Rosenthal and Jacobson's work, Cooper (1971) conducted two experiments in an attempt to discover the processes by which teacher expectation is communicated. One experiment was based on the assumption that a student's perception of success or failure can be translated into behaviour; the other was an observation of the number of "eye glances" the teacher made at students who were either succeeding or failing. Cooper found that there were differences in the ways teachers treated children who were expected to perform well and children who were not expected to perform well. When teachers thought they were dealing with bright students, they smiled and nodded more, physically leaned toward them, and looked them in the eyes. Also, teachers praised high-expectation students

more, while low-expectation students were criticized more (Good and Brophy, 1977).

Good and Brophy (1977) have explained that "teacher expectations do not, ipso facto, influence student behaviour. If student behaviour is influenced, it is through teacher behaviour or classroom management" (p. 385). Because teachers expect specific behaviour and achievement from particular students, they behave differently towards different students. Thus, it is teacher behaviour that tells students what behaviour and achievement teachers expect. If teacher behaviour is consistent over a period of time, student achievement and behaviour will conform more and more closely to the expected norm.

The actual dynamics of self-fulfilling prophecies in the classroom have been oversimplified. Expecting high accomplishments is not the end-all. Teachers who expect high accomplishments must give assignments consistent with their expectations so that students are required to put forth the necessary effort. High expectations must also be communicated to students by what teachers say or how they say it, by facial expressions, and perhaps by other physical gestures (Page, 1971; Rosenthal & Jacobson, 1968). These direct and indirect messages not only convey to students that they must work hard, but as well, serve to improve their self-image: "Students who sense that their teacher thinks highly of their ability feel increased confidence in that ability, expect more from themselves, and have higher self-esteem" (Davis, 1983).

Although Rosenthal has been severely criticized (Clairborn, 1969), Silberman (1969) and Baker and Crist (1971) have offered evidence to support the notion that teacher expectations, at least, do affect teacher behaviour toward the student, student behaviour, and student achievement. Rosenthal (1971) noted that heightening the awareness of teacher expectations can result in a change of attitude in teachers, particularly those who teach the educationally disadvantaged child. Native children of northern communities could be regarded as educationally disadvantaged since they are functioning below the Canadian norms in the basic skills and show age-grade retardation (Kirkness, 1978). Although it is not conclusive whether it is the classroom arrangement, specific behaviours, or a combination thereof that influence student achievement, teacher behaviour warrants serious consideration as a factor in promoting student achievement. It would, therefore, appear that the concept of "self-fulfilling prophecy" could, when used constructively, effect a recognizable positive difference with respect to academic achievement in classrooms attended by Native children.

This study attempts to determine the relationship between academic achievement and teacher expectation of Cree children in a northern Manitoba community school.

Academic achievement usually refers to "the extent or degree of mastery of certain areas or studies as measured by some specific instrument or test" (Caplin, 1966, p. 14). In this study, academic achievement was represented by the total score obtained from three subject areas: Language Arts, Mathematics, and Work Study Skills on the *Canadian Test of Basic Skills* (1976), levels nine and ten.

Teacher expectation is the teacher's preconceived concept of the student's ability. In this study, teacher expectation was determined by the score from an adaptation of the *Teacher Rating of Pupil Attitude Scale* which was developed at Tennessee Technology University in 1969.

It was hypothesized that a positive relationship exists between academic achievement and teacher expectation.

## METHOD

### Subjects

This study was carried out in Brochet School which is situated in Brochet, a northern Manitoba community, about 900 miles north of Winnipeg. The present population of this community is 491 and includes 469 Cree Indians and 22 Euro-Canadians. Literacy in English among the adult population is about 50 percent; Cree is the language spoken in the community. The isolation, the remoteness of this community, and the lack of recreational facilities and professional personnel qualify it as a disadvantaged environment for both the Euro-Canadians and the Indians.

There are several noteworthy problems and trends that seem to be associated with this study. First of all, the considerable increase in the funding of Indian education has not been matched by corresponding increases in the relevance of their curricula or the success rates of their educational system (Department of Indian Affairs and Northern Development, 1980). Leadership, both in terms of their communities and their educational system, remains hampered and adversely affected by low family incomes, geographical isolation, and fragmentation. These factors all seem to contribute to the lack of high quality education. Other problems center on age-grade deceleration, conflict between school curricula and home education, and the need for more specialized training and cross-cultural orientation of non-Indians as teachers of Native children. Renaud (Note 2) has noted the importance of the teacher's knowledge of the child's cultural environment.

On the other hand, there are some positive trends. Natives are becoming more involved in educational decision-making at the community and provincial levels. There is greater participation in higher education by

Natives and a progressive development of culturally relevant curricula. The quality of teacher training is improving and more Native teachers are being trained. Orientation sessions of new Native teachers are now focusing on curriculum planning, cultural orientation, and differences. Although Indian education has its problems, there are flashes of progress in many places.

Brochet School was established in 1949 by the Department of Education. The school existed as a one-teacher school for over 15 years (Darveau, Note 1). Presently, the school has an enrollment of 189 students and a staff of 14 teachers including two teacher aides. The school population is 97% Cree-speaking and English is a second language for almost all the children. The school includes students from nursery to grade nine, after which the graduating students attend secondary schools in other communities in the province.

The subjects of the study were two male teachers and their classes: 22 grade three students (12 boys and 10 girls) and 19 grade four students (7 boys and 12 girls). The total number of students was 41 (19 boys and 22 girls). Selection of subjects was done on the basis of the willingness of teachers to participate in the study.

### Instruments

The instruments used were *The Canadian Tests of Basic Skills* (CTBS) and *The Teacher Rating of Pupil Attitude* (TRPA).

#### CANADIAN TESTS OF BASIC SKILLS

Form 3, Levels 9-14 of the CTBS (King, 1982) is intended for use in grades three to eight. The tests are designed to assess levels of skill development in reading, vocabulary, the mechanics of written language, methods of study, and mathematics. The original standardization in 1966 was on a norm population of 30,000 English speaking children from 225 sample schools in Canada (Buros, 1972). Again in 1973, standardization was done with samples chosen from 137 schools representing all provinces.

With respect to the reliability and validity of the CTBS, Birch (1972) states that "it is reassuring to be able to use tests like the CTBS for it has such a long line of respected antecedents that its status need never be in doubt" (p. 6).

King (1982) suggests, however, that content validity should be established by each province since the CTBS attempts to sample curricula across Canada and will be insensitive to local or provincial emphasis.

Reliability for the CTBS varies from test to test and grade to grade. Internal consistency reliability coefficients range from .87 to .96, while

composite reliability coefficients range from .97 to .98 for all grades (King, 1982).

The entire test battery requires four hours and four minutes to complete in four sessions. The Kuder-Richardson reliability coefficient obtained in the present study for grade three was .89, and for grade four, .41. In comparison to the reliability coefficient for grade three, the grade four reliability was surprising low, perhaps due to the small number of students and the narrow range of marks.

## TEACHER RATING OF PUPIL ATTITUDE

The instrument for teacher rating of pupil attitude used in this study was an adaptation of the *Teacher Rating of Pupil Attitude Scale* that was developed at Tennessee Technology University for use in assessing teacher expectations of pupils who needed help in overcoming their cultural, social, and educational deficiencies. The TRPA was chosen as a measuring instrument because it was originally designed for use with culturally disadvantaged children and minority groups. It was used with success in a three-year demonstration program sponsored by Project Upper Cumberland (Flanders, 1969).

The TRPA, in its original form, consists of eleven statements. Teachers rated students twice on how they expected them to perform, once at the commencement and again at the end of the academic year. For the present study, five more statements were added to include the teacher's assessment of the student's academic ability. Furthermore, the teacher rated each student only once, at the end of the last semester. Each statement was rated on a five-point scale: 1) never, 2) seldom, 3) occasionally, 4) often, and 5) always. The scores were summed to give a teacher expectation score for the student.

Reliability coefficients for the TRPA have not been published, but in this study, the K-R 21 reliability coefficients obtained were .83 for grade three and .93 for grade four.

### Test Administration and Scoring

The CTBS tests were administered and scored in accordance with the directions stated in the manuals. The CTBS tests were administered over a four-day period in both grades.

The Teacher Rating of Pupil Attitude was administered according to the directions.

Data collected on the 22 grade three children and the 19 grade four children were analyzed descriptively (mean, standard deviation, range,

and correlation) for each grade, and for the two grades combined. Correlations among the two sets of scores were computed to identify the relationship.

The raw scores obtained from the above instruments were analyzed using the ST32, a statistical program run on AMDAHL 470/V7 computer at the University of Manitoba (Rollwagen, Note 3).

## RESULTS AND ANALYSIS

Table 1 presents the means, standard deviations, and range for academic achievement, and the means and standard deviations for teacher expectations for grades three and four students. Correlations were determined using the Pearson Product-Moment Correlation and were tested for statistical significance at the .05 level.

Table 1

Means and Standard Deviations of Scores on Academic Achievement and Teacher Expectations for Grades 3 and 4 and for Grades 3 and 4 Combined

| *Measurements* | *Grade* | | |
|---|---|---|---|
| | 3 (N = 22) | 4 (N = 19) | 3 and 4 (N = 41) |
| *Academic Achievement (CTBS)* | | | |
| *Mean* | 126.59 | 131.42 | 128.83 |
| *S.D.* | 28.31 | 12.38 | 22.27 |
| *Range* | 79-168 | 106-156 | 79-168 |
| *Teacher Expectations (TRPA)* | | | |
| *Mean* | 58.86 | 60.68 | 59.71 |
| *S.D.* | 9.12 | 12.78 | 10.86 |

Table 2 presents the correlation coefficients between academic achievement and teacher expectation for grades three and four and for the combined groups.

Table 2

Simple Correlation Coefficients between Teacher Expectation and Academic Achievement for Grades 3 and 4 and for the Combined Groups

| | *Grade 3* N = 22 | | *Grade 4* N = 19 | | *Grades 3 & 4* N = 41 | |
|---|---|---|---|---|---|---|
| *Measurements* | 1 | 2 | 1 | 2 | 1 | 2 |
| 1. *Teacher Expectation (TRPA)* | 1.00 | | 1.00 | | | 1.00 |
| 2. *Academic Achievement (CTBS)* | .64* | 1.00 | .45* | 1.00 | .50* | 1.00 |

*Note.* Critical value of $r$ at .05 is .2605.
*$p < .05$

**Academic Achievement**

GRADE 3

Table 1 shows the range of scores was 79 to 168; the class mean and standard deviation were 126.59 and 28.31, respectively. The mean grade equivalent score for grade three students in Canada is 193 (King, 1982). The mean score of 126 is 1.4 grades below average. A raw score of 79 is 2.3 below grade average while the raw score of 168 is .5 below grade average. This means that all the children in grade three were functioning at least .5 below the grade average of their Canadian peers. Nine of the twenty-two students performed one grade or less below the grade average; four students performed 1.5 grades below average, and nine performed more than 1.5 grades below average. An examination of subscores reveals that the class mean score in vocabulary and language usage was 2 grades below average; the class mean score in mathematics computation was .6 below grade average.

GRADE 4

Table 1 shows the range of scores for grade four was 106 to 156; the class mean and standard deviation were 131.42 and 12.38, repsectively. The mean grade equivalent score for grade four students in Canada is 247 (King, 1982). The mean score of 131.42 is 2.3 grades below average. A raw score of 106 is 2.8 grades below average while the raw score of 156 is 1.8 grades below average. This means that all the children in grade four were functioning, at least 1.8 grades below average. Again an age-grade retardation is recorded. Seven of the nineteeen students performed 2.5 grades

or more below the grade average, nine performed more than 2 grades below average, and three performed more than 1.5 grades below average. An examination of the sub-scores reveals that the class mean score in vocabulary and language usage was 1.5 grades below average; the class mean score in mathematics computation was 1 grade below average.

GRADES 3 AND 4 COMBINED

The means, standard deviations, and ranges for grades three and four combined as one group (N = 41) are also presented in Table 1. The range of scores was 79 to 168; the group mean was 128.83 and the standard deviation was 22.27. The mean score of 128.83 was equivalent to 2.3 grades below average.

Since the data were collected during the last month of the school year, the grade equivalent for the grade three students should have been 3.9 or greater. Similarly, the grade equivalent for the grade four students should have been 4.9 or greater. While the grade three students were on the average 1.4 below their grade average, the grade four students were on the average 2.0 grades below their grade average. The findings support those of Kirkness (1978) and Lenton (1979) who concluded that there was an age-grade deceleration for Native children in Canada and that the deceleration tended to increase as the grade level increased.

### Teacher Expectation

The means and standard deviations for grades three and four for teacher expectation are presented in Table 1. The mean for grade three was 58.86 as compared to 60.68 for the grade four students. The mean for grades three and four combined was 59.71.

### Academic Achievement and Teacher Expectations

The correlations between academic achievement and teacher expectations for grade three (N = 22) was .64, significant at $p < .05$; for grade four (N = 19), .45, significant at $p < .05$; for the combined group (N = 41), .50, significant at $p < .05$ (see Table 2). Therefore, the hypothesis that there would be a positive relationship between academic achievement and teacher expectation is supported. It is interesting to note that positive results prevail in grades three and four, and also with the combined group. These findings support those of Rosenthal and Jacobson (1968) and Cooper (1971).

## DISCUSSION

The problem of age-grade retardation at such an early age needs immediate attention, especially since inculcation of faulty conceptions

and incorrect skills can result in progressively increasing experiences of failure and in negative attitudes toward formal schooling. Repeated experiences of failure tend to create generalized attitudes of alienation and estrangement from formal learning opportunities and social institutions associated with the acculturation process. The end result is a school drop-out who is severely handicapped in terms of participation in a technological society. Upward economic and social mobility become extremely difficult.

The Native learner is handicapped by a largely middle-class curriculum and culture. The education of the culturally different Native learner has become increasingly important for teacher educators. In Manitoba, the northern Manitoba and inner-city teacher education programs are institutional efforts designed to address the particular needs of Native children. Because they live and are educated in an isolated community, the Native learners lack the economic and social privileges that could furnish them with the opportunities to unlock their potential ability. Home, environmental, and school factors have been cited as influential determinants of school achievement. Scarr and Weinburg (1976) have mentioned a good home environment, opportunities for language and number skills at home, and concentrated environmental enrichment as imperative for the offsetting of cultural deficiency. Stone and Nielsen (1982) have identified such extra-school variables as library facilities, books and periodicals, individualized learning packages, social support opportunities for enlarging vocabulary, and exposure to appropriate models of good language usage.

Within the school environment, deliberate efforts have to be made to accommodate children during the transitional periods of acculturation, and to study the dynamics and interplay of the variables involved in school learning. The literature reveals that self-concept, teacher-expectation, and creativity are crucial elements of academic achievement. Further study into their effect on Native learners and an increased understanding of these and other important variables could prove to be most helpful.

Perhaps the problem of academic retardation might be attacked directly. Remedial measures might include considerations for relevant learner entry behaviours, identification of precise behavioural objectives, prescriptive teaching, continued monitoring, and moment-to-moment "dip-sticking." Undoubtedly, these competencies demand specialized training and education of teachers of Native learners.

The current literature abounds with suggestions for dealing with problems of school learning. Glasser (1969) has recommended successful and corrective experiences in the very early grades. Houston (1974) and Davies (1973) have developed competency- and performance-based pro-

grams. Gilstrap and Martin (1975) have recommended drill and practice. Other reinforcement-based programs such as precise-teaching (Johnson, 1979), precision-teaching (Sprinthall & Sprinthall, 1981), mastery learning (Gronlund, 1974), criterion-referenced instruction (Popham, 1973), and diagnostic and prescriptive teaching and programming (Stellern, Vasa & Little, 1976) could be helpful.

If, as this study indicates, there is a positive relationship between academic achievement and teacher expectations with respect to Native learners, and if there is a self-fulfilling prophecy effect from teacher expectations, all prospective and in-service teachers of these learners should be so informed in order to avoid the stereotyping that might be taking place as a result of data supporting the academic retardation. It seems plausible, therefore, for teachers to expect their students to do well, to give them more encouragement or more time to answer a question (Good & Brophy, 1978). With consistent daily reinforcement, the students, given more time and encouragement, will do better academically and score better on achievement tests.

It might also be helpful to inform teachers of Native learners of possible sources of teacher expectations. Braun (1976) has developed a general model to describe where teacher expectations come from, how they are communicated to students, and how they are perpetuated by changes in student behaviour. According to the model, teachers form expectations about students' probable classroom behaviour and academic achievement on the basis of information pertaining to sex, intelligence test scores, notes from previous teachers, knowledge of ethnic background, students' physical characteristics, previous achievement, socio-economic class, and actual behaviours.

In addition, it is instructive to note that students seem sensitive to the many behavioural forms in which the teacher communicates the expectation levels. The teacher's posture and facial gestures, the grouping of students, the assigning of different activities, the questions asked, the quality of interaction, and the type of feedback are behaviours that communicate to students just how they are viewed by their teachers (Woolfolk & McCune-Nicolich, 1984). Teacher awareness of these behaviours could make a difference in achievement gains.

## CONCLUSIONS

The problem of the school system's inadequacy in preparing children in the basic skill areas has been a central one, especially for Indian children in Northern Manitoba communities where isolation, remoteness, lack of appropriately skilled educators, and language difficulties prevail. In the face of these disadvantages, concerted efforts have to be made to resolve

the problem of age-grade deceleration which results in academic failure and dropping out of the educational system at a very early age. Basic skills not learned well or not remediated early in the educational process snowball into almost insurmountable academic and psychological problems.

The information obtained in this study could serve the educational community in the following ways:

1. The information gained contributes to our understanding of the nature of academic achievement, especially in relation to teacher expectation.
2. The study establishes a starting point from which more systematic research might ensue to support and reinforce the notion of teacher expectation as a correlate of academic achievement. A further study might center on larger samples of Native children in more than one community school, either at the same or higher grade levels. Consideration should also be given to the inclusion of the design of pre- and post-measures. As well, a cross-validity study involving northern Manitobans of Euro-Canadian origin, focusing on the same two or additional variables, could be undertaken.
3. The results of this study should be shared with pre-service and in-service teachers of all learners. Teacher skills appropriate for maximizing learner opportunities and the specific moment-to-moment classroom behaviours that reflect teacher expectations should be presented to in-service and pre-service teachers for their examination and appraisal.

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**NOTES**

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## THE AUTHORS

Dr. Winston Rampaul has B.A., B.Ed., and M.Ed. degrees from the University of Manitoba and a Ph.D. from the University of Wisconsin in Human Learning. He is now an Associate Professor in the Faculty of Education at the University of Manitoba.

Mr. Motie Singh received his B.A. from the University of Guyana and his M.Ed. degree from the University of Manitoba. Mr. Singh is now a resource teacher in Frontier School Division.

Dr. John Didyk received his Ph.D. from the University of Manitoba and is now a Program Supervisor with the Correspondence Branch at the Manitoba Provincial Department of Education.