

KINDERGARTEN SCREENING SCORES OF ESL STUDENTS

By

David Wayne Dickinson

B.Ed., The University of British Columbia, 1980

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES  
Education Psychology and Special Education Department  
University of British Columbia

We accept this thesis as conforming  
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

June 1989

© David Wayne Dickinson, 1989

5.1

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of SPECIAL EDUCATION

The University of British Columbia  
Vancouver, Canada

Date AUG 4 1989

## ABSTRACT

The purpose of the present study was to investigate the scores of children who learned English as a second language (L2) in comparison with children who learned English as a first language (L1). Specifically, the kindergarten screening scores of L2 children were analysed considering the variables of: preschool experience, screening date, age at time of screening and the kindergarten screening scores of children for which English is their first language. To investigate these variables the Florida Kindergarten Screening Battery scores of 79 L1 and 79 L2 children were compared to determine some of the differences between both groups.

The rationale for the present study is founded upon the fact that tests in general, and specifically the Florida Kindergarten Screening Battery are administered, interpreted and used for placement decisions, as if L2 children are identical to L1 children. In general, very little data was available as to how the performances of L1 children on these measures vary; even less information exists for children from Indo-Canadian or Oriental ethnic groups.

Students included in the present study attended kindergarten in the Vancouver Public School system during the 1987/1988 school year. Excluded from the study were students who were repeating kindergarten, enrolled in a French immersion kindergarten program, had an unknown preschool history or proven hearing, visual, intellectual or

emotional problems. Students were randomly selected and matched for English language ability (L1/L2), sex and financial status.

Data used in the study had been previously collected during the 1987/1988 kindergarten screening by Vancouver school personnel. One way and two factor analyses of variance were used to test for equal means between groups and Pearson Product-Moment Correlations were used to determine the amount of relationship between individual factors within each group. Results indicated low positive correlations between preschool experience and subtest scores on the Peabody Picture Vocabulary Test-Revised and the Recognition-Discrimination Test for L2 students. Low positive correlations were also found between age at time of screening and scores on the Test of Visual-Motor Integration for L1 students. Results also indicated that: L1 students score significantly higher on the Peabody Picture Vocabulary Test, L2 students score significantly higher on the Test of Visual-Motor Integration and that screening date (September versus January) does not have a statistically significant amount of impact upon test scores of L2 children on the Florida Kindergarten Screening Battery.

It was concluded that because of the differences between groups, cross comparisons between ethnic groups should be made with caution until clarified by further research.

# TABLE OF CONTENTS

|  | Page |
|--|------|
| Abstract .....   | ii   |
| Acknowledgements .....   | vii  |
| List of Tables .....   | vi   |
| 1 INTRODUCTION .....   | 1    |
| 2 REVIEW OF THE LITERATURE .....                                   | 6    |
| 2.1 Findings of previous L2 assessment<br>and classification ..... | 6    |
| 2.2 Inherent factors in tests .....                                | 7    |
| 2.3 Factors Associated with Testing                                |      |
| 2.3.1 Differences in Test Scores between<br>Ethnic Groups .....    | 10   |
| 2.3.2 Early Screening .....  | 11   |
| 2.3.3 Preschool Experience .....                                   | 14   |
| 2.4 Factors within the L2 population                               |      |
| 2.4.1 Length of time to Acquire Competency<br>in English .....     | 15   |
| 2.4.2 Social Style .....   | 17   |
| 2.4.3 Family attitudes and Involvement ..                          | 18   |
| 2.4.4 Consequences of L2 Aquisition.....                           | 20   |
| 2.4.5 Social class .....   | 22   |
| 2.5 Summary .....  | 25   |
| 3 METHODOLOGY .....  | 27   |
| 3.1 Purpose .....  | 27   |
| 3.2 Subjects .....   | 27   |
| 3.3 Instrumentation .....  | 28   |
| 3.4 Procedure and Data Collection .....                            | 32   |
| 3.5 Operational Definitions .....                                  | 33   |
| 3.6 Variables .....  | 35   |
| 3.7 Hypotheses .....   | 35   |
| 3.8 Data Analysis .....  | 36   |
| 3.8.1 Hypotheses 1 and 4 .....                                     | 36   |
| 3.8.2 Hypothesis 2 .....   | 36   |
| 3.8.3 Hypothesis 3 .....   | 36   |
| 4 RESULTS .....  | 37   |
| 4.1 Results .....  | 37   |
| 4.2 The Sample .....   | 37   |
| 4.3 Tests of Hypotheses  |      |
| 4.3.1 Hypothesis 1 .....   | 40   |
| 4.3.2 Hypothesis 2 .....   | 41   |
| 4.3.3 Hypothesis 3 .....   | 43   |

|   |  |    |
|---|--|----|
|   | 4.3.4 Hypothesis 4 .....                   | 47 |
|   | 4.4 Summary .....                          | 49 |
| 5 | DISCUSSION                                 |    |
|   | 5.1 Introduction .....                     | 51 |
|   | 5.3 Discussion .....                       | 51 |
|   | 5.3.1 Preschool Experience .....           | 53 |
|   | 5.3.2 Early and Late Screening .....       | 56 |
|   | 5.3.3 Test Scores L1 versus L2 .....       | 57 |
|   | 5.3.4 Age and Test Scores .....            | 60 |
|   | 5.4 Educational Implications .....         | 62 |
|   | 5.5 Limitations of the Study .....         | 65 |
|   | 5.6 Implications for Further Research .... | 66 |
|   | REFERENCES .....                           | 67 |

# LIST OF TABLES

| Table   | Page |
|---|------|
| 1. Population Sample by Dominant Home Language .....  | 38   |
| 2. Population Sample by Number and Sex .....  | 39   |
| 3. Correlations, Scores to Preschool Experience, L2 Students .....                          | 40   |
| 4. Analysis of Variance for L2 Early/Late Screening Scores .....                            | 42   |
| 5. Mean Scores: Early/Late Screened L2 Students .....                                       | 43   |
| 6. Analysis of Variance Comparing Date of Screening and Language Group on Test Scores ..... | 45   |
| 7. Cell Means: Scores L1 and L2 Students  | 46   |
| 8. Correlations: Test Scores Screening Age .....  | 48   |
| 9. Correlations between Tests for L1 and L2 Students .....                                  | 48   |
| 10. Summary of Statistically Significant Findings, .....                                    | 53   |

## ACKNOWLEDGEMENTS

I wish to express my appreciation for my family's support and tolerance while completing this thesis. I also wish to express my appreciation to my thesis supervisor, Dr. Randy Cranston, for sharing his expertise and his endless enthusiasm and patience, and to the other committee members, Dr. Perry Leslie and Dr. Margret Early for their guidance and continued interest in this project.

A final word of thanks to Dr. Todd Rogers for his generous assistance with the statistical procedures and data analysis and to Sharon Reid at the Vancouver School Board for her help in obtaining data and information.



## CHAPTER ONE

### Introduction

A major focus of education in North America is the early detection of children with learning difficulties; the reason for this early screening is the belief that the earlier the identification the greater the potential for remediation (Blachman, 1983; Neisworth & Bagnato, 1986; Tollefson, Rodriquez, Glazzard, 1982; Ysseldyke, Thurlow, O'Sullivan & Bursaw, 1986). Another reason often stated for early screening and subsequent remediation is that secondary emotional problems will develop if a process of early identification and remediation is not implemented (Dunleavy, Hansen, Szasz & Baade, 1981; Smith & Wilborn, 1977). A number of British Columbia school districts are responding to these concerns by relying upon early screening batteries to assist in the detection of learning problems (La Torre, Hawkhead, Kawahira & Billow, 1982; O'Connor, 1982; Wedell, 1980).

This emphasis on the early screening of children for learning difficulties has been criticized (Judy, 1986; Kraayenoord, 1983). Judy feels that in order for a screening test to be useful for educational assessment it should reflect school curriculum. She further criticizes early screening batteries as failing to reflect school curriculum and questions whether the diagnostic information and subsequent programs developed from these screening

batteries actually meet the needs of these children.

The use of early screening has even been implicated in the creation of learning disabilities (Hammond, 1986; Lerner, 1976; Wanczycki, 1983). Wanczycki feels that the task of identifying at risk children is very difficult at best and is compounded at the preschool and kindergarten level due to developmental lag, language and cultural background. She believes that identifying and labelling a child at an early age may lead to the realization of a "self-fulfilling prophecy" and questions if the benefits of early identification outweigh the possible damaging or negative effects of such recognition.

Also, the efficacy of early intervention has been questioned. White (1986) believes that the reason why so many questions about the efficacy of early intervention persist despite hundreds of research studies is because of a lack of information:

Contrary to the conclusions of many previous reviewers and textbook authors, there simply is not enough information to be confident about the long-term impact of early intervention with handicapped children [disadvantaged and at risk], and evidence in support of many of the commonly held positions about mediating variables (e.g., parental involvement at age of start) is either nonexistent or contradictory (p. 412). Similarly, there is a shortage of information about the

tests and batteries themselves that are used for kindergarten screening. Judy (1986) suggests that educators often prefer screening batteries with visual, auditory and motor skills components even though statistical proof of their importance in early screening has not been demonstrated.

Additional concerns of early screening are the accuracy and interpretation of early screening measures and variability in the reasons why children are referred for additional assessment or special programs. Thurlow, O'Sullivan, and Ysseldyke (1986) state that the technical adequacy of early screening tests is questionable and cite evidence which suggests that while the use of newer screening measures is increasing, only one sixth of early screening measures currently used have adequate validity, reliability or norming. Meisels (1987) states that the faulty interpretation or administration of screening tests ultimately results in the incorrect identification of children for special services or the exclusion of children from special services when required. Thurlow et al. also found, in the analysis of data from nearly 400 school districts in Minnesota, that no single factor consistently determined screening referral rates; each district had its own internal reasons for identification by the early screening battery.

A problem that is more relevant to Vancouver is the potential identification of learning difficulties, due to a second language, rather than a real learning problem. A number of authors (Cummins, 1985; Ovando & Collier, 1985; Willig & Greenberg, 1986) are concerned that children who are L2 are being referred to special education programs solely because of a poor proficiency with the English language. An additional complexity is a tendency for English as a Second Language children (L2) of equal ability but differing cultural backgrounds to obtain dissimilar scores on standardized tests due to their cultural background. Gardner (1986) found significant differences between the test scores of Cantonese and Punjabi speaking students on the Kaufman Assessment Battery for Children (Kaufman & Kaufman, 1983). Gardner concluded that discrepancies due to cultural differences may have serious implications upon placement decisions.

A number of other factors may have a significant impact upon the test scores. For example, while the effects of preschool experience or social class upon the kindergarten screening scores of L2 children is unknown, the preschool experience of children in their first language has been found to correlate positively with academic achievement (Gleitman & Rozin, 1973; Zuccheromaglio, Pontecordo, Tonnuci & Blachowicz, 1986). In addition, social class has also been found to affect the test scores of children in their

first language. Bloom (1964) and Coleman (1975) found that a low social class adversely affected school success.

Even when English is not a factor, culturally different backgrounds may result in test score differences. In a 1985 study, Sharpley and Stone (1985) explored the effects of cultural differences upon test results of Australian school children when using the Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981). They concluded that caution was needed in drawing inferences when using American norms to interpret the test scores of children from cultures other than American.

Much controversy remains over the validity and ultimate usefulness of kindergarten screening tests due to a lack of information about their inherent biases and interpretation. These biases and interpretations are even less understood with kindergarten L2 children. The purpose of this study is to examine the kindergarten screening scores of L2 children (Oriental/Indo-Canadian) as compared to the variables of: preschool experience, screening date, age at time of screening and the kindergarten screening scores of children for whom English is their First Language (L1 children).

The following chapter will review the literature associated with the assessment of L2 children; specifically the factors that are directly or indirectly related to the L2 population and the consequences of those factors.

## CHAPTER TWO

### Review of Literature

One of the underlying issues pertaining to kindergarten screening and a major purpose of this study, is the use of an English Language based kindergarten screening battery to assess the learning ability of English as a Second Language (L2) children. Specifically, this issue generates concerns in three areas. First, what is the impact of factors that are inherent in screening tests such as cultural bias and inappropriate norms? Second, what is the impact of date of screening, which is determined by the individual schools? Third, what is the effect of the factors that L2 students bring to the testing situation such as having a first language other than English, age at screening, preschool experience and possibly being from a lower social economic status?

#### Findings of Previous L2 Assessment and Classification

The results of previous testing and subsequent classification of L2 children has been well documented for several years by the over representation of ethnic students in American special education classes (Dunn, 1968; Mercer, 1973). Over representation of L2 students has been similarly reported in Canada by Shapson and Purbbo (1981), who found that minority language children were over-represented in non-academic programs in the Toronto school system. Despite extensive litigation as a consequence of

the overrepresentation of L2 students in special programs, Wright and Santa Cruz (1983) found that ethnic/racial minorities still were over represented in California, particularly in programs for the learning disabled and mentally handicapped. They concluded that "strong and persistent forces must be mitigating against greater ethnic parity in special education" (p. 394).

#### Inherent Factors in Tests

There are two potential factors that possibly bias test scores and contribute to the misclassification of L2 children: cultural bias within the battery and cultural groups not being represented in the norm population (Sattler, 1982).

The cultural bias of tests continues to be vigorously debated by various educators (Cummins, 1985; Flaughter, 1978; Sattler, 1982). The issues around culturally biased testing according to Sattler (1982) can be described in terms of inappropriate norms, test bias (i.e., tests with norms based upon middle class white students and inherent American cultural biases) and the poor test taking skills of ethnic minority students. The former two factors in conjunction with an unfamiliarity of standardized test format, procedures and unproductive test strategies are believed to significantly affect test scores. Sattler (1988) states that:

Some ethnic minority children may fail to comprehend or accept the achievement aspects of the test situation, however. [sic] They may view it as an enjoyable child-adult encounter, rather than as a time to achieve; or, if they recognize the problem-solving aspects of the situation, they may ignore them. (p. 570)

It is important to note though, that Sattler (1982) as well as a number of other authors (Flaughter, 1978; Green, 1978) concluded that the crucial arguments surrounding culture bias have little if any merit. Flaughter states that all tests inevitably will be culturally biased but suggests that even after the removal of the biased items, the mean scores for the populations of minority students do not change significantly.

The concern that national norms are not appropriate for minority language children and result in questionable validity and reliability has been expressed by Mercer (1973) and Cummins (1980). Often, however, the norms used to assess L2 children have been derived from an exclusively Anglo population, as is the case with the Florida Kindergarten Screening Battery (Gotts, 1980). When a standardized test normed on native speakers is administered to a culturally/language different child, Fine (1988) suggests that we are really asking, "On this test, how closely does the student resemble native English-Speaking



students in terms of background, school experience, knowledge and skills?" (p. 23).

Although a lot of effort has gone into creating culture free tests, this effort has been generally acknowledged as futile (Ovando & Collier, 1985). Instead, inherent cultural biases have been acknowledged and efforts have gone towards creating culturally fair tests (Ovando & Collier, 1985; Sattler, 1982).

In order to address the difficulties associated with the testing of L2 children, it has been suggested that the use of standardized tests with L2 students be restricted. The English as a Second Language Resource Book for British Columbia (1981) states that, "There is no justification for using the results of standardized tests to assess E.S.L./D. students' abilities unless one is testing for the withdrawal of E.S.L./D. support" (p. 43). However, Fine (1988) suggests the utilization of standardized tests as diagnostic rather than survey instruments. Fine further suggests that standardized tests should be used as a reference for improvement rather than comparing the skills of L2 students to L1 norms. Reschly (cited in Samuda, 1985), states that there are three simplistic non-solutions to the assessment of L2 children, (a) the banning of IQ tests without addressing the educational failure of students, (b) the use of pluralistic norms with conventional tests unrelated to programming and remediation, and (c) the use of IQ tests as

screening and placement devices which would lead to disproportionate classification of minorities in special education classes with resultant ineffective programming.

The suggestion of a number of authors is the use of standardized testing in addition to socio-cultural information when assessing L2 students (Fine, 1988; Hilliard, 1980; Samuda, 1985; Reschly & Sabers, 1979). Samuda, believes that for L2 students (excluding demonstrably evident cases), traditional classifications (i.e., mentally retarded) should be abandoned. Instead students should be labeled in relation to their perceived needs (i.e., English as a Second Language). Samuda also suggests that the only rational purpose for testing for all students is to improve instruction.

#### Factors associated with Testing

##### Differences in Test Scores between Ethnic groups

Although differences between ethnic groups are reduced when matched for socio-economic status, a number of studies have indicated that differences exist in test scores between various ethnic groups. Umansky and Cohen (1980), found that there were significant differences between white and non-whites (American Indian, Hispanic, Black, Oriental) on memory tasks on the McCarthy Kindergarten Screening Test (McCarthy, 1972). On the Kaufman Assessment Battery for Children (K-ABC)(Kaufman & Kaufman, 1983), Cantonese speaking children were found to have superior spatial skills

as compared to the English and Punjabi speaking children (Gardner, 1986). Samuda (1984) suggests that sometimes it is forgotten that standardized tests do not necessarily have the same meaning for a child from a different culture since academic skills such as speed or individual effort may not necessarily be stressed in that culture. Supporting this viewpoint is research by Ravin, Bar-Tal, Ravin & Bar-Tal (1980) that suggests the causal perception of achievement may vary between cultural groups.

#### Early Screening

Another concern of kindergarten screening is with the early screening of average but late maturing students. Although there is a general agreement on the necessity of early screening, there is disagreement about the effects of screening age.

Erion (1987), reviewed school records to determine if any possible correlations between chronological age and identification of a learning disability existed. Children classified as learning disabled had evidenced significant underachievement and had achieved a low score on tests of visual or auditory discrimination. Erion discovered a moderate correlation ( $r=.53$ ) between children's ages upon entrance into school and the classification of a learning disability. A number of authors (Hammond, 1986; Shepard & Smith 1986; Wancxycki, 1983) have expressed a concern about the effects of premature identification and subsequent

remediation where no disability exists. Wood, Powell and Knight (1984) summarize the concerns with the following statement:

Children who are mislabeled "special needs" simply because of developmental youngness risk a school life of unnecessary failure. Professionals charged with assessment of children at school entrance need a deeper appreciation for developmental (sic) to avoid the labeling of so many young children (p. 11).

However, other authors have suggested that the effects of screening age are minimal. A synthesis of research on school readiness by Shepard and Smith (1986) concluded that the major point to be made when considering practical rather than statistical significance is that achievement differences between the oldest and the youngest first graders are small, in the order of 7 or 8 percentile points. A study by May and Welch (1986) similarly concluded that if there is an age effect it is relatively small and tends to disappear in the later grades. May and Welch conclude that:

Perhaps it is time for the readiness debate to become an issue of making the school ready for the variety of children that exist, rather than attempting to make the children ready for the school by manipulating school entrance age based on birthday, sex or developmental age. (p. 104)

For L2 children, the effects of a different language or culture in addition to the previous factors raises further concerns about premature assessment. Fine (1988) states that testing the culturally/language different student too early, "can result in a frustrating, discouraging, experience for the child, often impacting negatively on interest, motivation, confidence and self-esteem" (p. 23). Fine further states that inappropriate assessment may result in incorrect placement and subsequent placement or intervention.

As a result of concerns about the possible effects that social, cultural, economic and language factors (as previously outlined), may have upon the test scores of L2 students, school boards with L2 populations usually modify the testing instrument (Samuda, 1980) or defer assessment until a later date (Fine, 1988). Schools within the Vancouver school system with high L2 populations may defer September/October kindergarten screening until January of the kindergarten school year. A number of school districts in Ontario with high L2 populations will postpone testing for an even longer period of time (2 years) (Fine, 1988). The difficulty with postponing testing, is that remediation is more effective the sooner it occurs and that the early appraisal of special needs children is crucial (Neisworth & Bagnato, 1986). Cummins (1980) cautions that a serious objection to delaying the assessment of L2 children is,

"that early identification of learning disabilities becomes impossible" (p. 109).

While there is general support in the literature suggesting the modification of tests and postponement of testing dates for L2 children, in the present review of literature, no empirical research was discovered supporting these practices.

#### Preschool Experience

While there is a positive correlation between preschool experience and academic achievement of children in their first language (Gleitman, Rozin, 1973; Zuccheromaglio, Pontecordo, Tonnuci & Blachowicz, 1986), correlations have been tentative for second language children. In a 1983 review of developments in preschool education, Clark states that children without prior preschool experience, have a greater chance of being labelled as inattentive, immature or of limited language competence and not yet ready for reading. She further comments that for L2 students going directly from the home to kindergarten, "Such problems could be magnified and even more complex for a child from an ethnic minority background or the child for whom English is a second language" (p. 116).

In a study of the long term effects of preschool experience on minority language children, Evans (1985) compared the academic achievement and sentiment of 44 high school students (with preschool experience) to that of a

control group. Eleven years had lapsed since the subjects had attended preschool and they were matched to the control group by age, sex, grade and ethnicity. Evans concluded that the, "type or amount of preschool experience as defined by this study shows no general carry-over effect for measured school achievement and sentiment into the middle and senior high school years" (p. 199). Evans states that there have been mixed results from studies on the effects of preschool experience and hypothesizes that these findings are not surprising, "... in the absence of powerful and sustained follow-through procedures" (p. 201).

#### Factors within the L2 Population

##### Length of Time to Acquire Competency in English

Language ability has an obvious impact upon the test results of L2 children (Ovando & Collier, 1985; Willig & Greenberg, 1986). There is evidence to suggest that L2 students take several years after becoming fluent in English to catch up to their English as a First Language (L1) peers (Collier, 1987; Cummins, 1980; Fine, 1988). In a 1980 report of an ongoing study, Cummins examined the psychological assessments of over 400 immigrant children. Cummins found that although L2 children can usually converse fluently in English within two years, it took those who arrived in Canada at age 6 or after between 5 and 6 years on the average to approach grade norms in English vocabulary. A more recent study by Collier (1987) analysed the length of

time required by 1,548 L2 students (grades 4, 6, 8 and 11) to become proficient in English for academic purposes. The results of her study indicated that the length of time required by children who entered an ESL program to reach proficiency in English was (a) 3 to 8 years for children 5 to 7 years of age, (b) 2 to 5 years for children 8 to 11 years of age (c) 6 to 8 years for children 12 to 15 years of age. Collier concludes that:

Whereas some groups may reach proficiency in some subjects in as little as 2 years, it is projected that at least 4-8 years may be required for all ages of LEP [Limited English Proficiency] students to reach national grade-level norms of native speakers in all subject areas of language and academic achievement, as measured on standardized tests. (p. 617)

A factor that may affect the number of years to reach proficiency is the age that a child begins acquiring a second language. Ireton (1981) comments that the language development is accelerated between the ages of two and seven and it is believed that prior to six years of age most children have not assimilated the internal structure of their native language. A hypothesis expressed by some authors is that introduction of a second major language prior to this date has the potential to negatively affect a child's competence in either language (Cummins, 1978; Ireton, 1981; Jakobovitz, as cited in Vilke, 1988). For this



reason, some authors (Hakuta & Gould, 1987; McLaughlin, 1986) support the concept that a child receive instruction solely in their first language, through the initial grades of school, until their formal language skills are solidified.

### Social Style

Additional factors which affect the acquisition of a second language are the social style of the child and the attitude/interaction of his family with the majority culture.

Studies have indicated that the more social a child is with his peers the more likely he will acquire English at a faster rate (Chesterfield, Barrows-Chesterfield, Hayes-Latimer & Chavez, 1983; McGroarty, 1984; Strong, 1983). Strong concluded that children who acquired English at the greatest speed were more likely to interact with a wider variety of peers, were more talkative, responsive and gregarious than children who acquired language at a slower rate. In a review of recent studies of communicative competence for second language students, McGroarty similarly concludes that there is a strong social component to communicative competence in schools and cites several studies which, "... have shown just how critical social relationships are in achieving and maintaining language competence in and out of school" (p. 264). An underlying

factor affecting the socialization ability of a L2 child are stereotypes associated with an ethnic group. Harikuta and Gould (1987), cite studies that indicate that if non-English speaking children in the mainstream classrooms come from groups that are negatively stereotyped by their English speaking peers, then minimal interaction between both groups may occur.

#### Family Attitudes and Involvement

Several factors within the family such as attitude towards the majority culture (Berryman, 1983; Cummins 1981), the value placed upon literacy and quality and quantity of English spoken (Connor, 1983; Wells, 1981) have also been found to affect the rate of acquisition of second language skills. Berryman (1983) states that what seems to be a handicap in the acquisition of a second language is the ambivalent attitude of immigrant parents toward the majority culture and language. Similarly, Cummins (1981) also believes that parental attitude is a key determinant in the variation in academic achievement shown by groups of children from different cultures:

... minority language children will tend to perform well in school when they are highly motivated to learn the majority language and to identify with the majority culture. Parental encouragement to do this is extremely important. However, parents will be unable to provide adequate encouragement when they feel

hostile towards the majority group and insecure about the value of their own culture. In these cases children's performance in school as well as the proficiency they develop in both languages will tend to reflect the ambivalent attitude of their parents (p.25).

The successful use of language in society is believed to be greatly influenced by the home environment and parental involvement (Ganguly, 1985). In a 1981 study, Wells concluded that school success for L2 students is related to the quality and quantity of communication, the value placed on literacy in the home and how parents transmit this value to their children. Guebert (1983) identified 4 additional factors that are important to second language acquisition: mother tongue maintenance, prior experiences with literacy, relevance of reading materials, and levels of proficiency demanded by the school.

Further factors that affect the acquisition of a second language are, (a) the modeling of incorrect English by parents (Ganguly, 1985), (b) the percentage of English spoken at home (Connor, 1983) and (c) the effect of differing dialects of English (Taylor, 1974).

Within the L2 population, Cummins (1984), studied a group of 428 minority language children, grades one to eight, who had been referred for psychological assessment within a large Canadian urban school district.

Approximately half of the students in the study (54 percent) were born outside of Canada. Cummins found significant differences between Canadian born and foreign born L2 students; Canadian born L2 students performed consistently better on achievement tests and the WISC-R. This is consistent with the conclusions of Cohen and Manion (1983), that poor school performance is generally only found in the first generation immigrants but not subsequent generations of immigrants. Similarly, Shapson and Purbbo (1981) report that minority language children who were not born in Canada tended to be overrepresented in non-academic programs in the Toronto school system. These differences are probably a reflection of the increased acculturation of the Canadian born L2 child and the modification of parental attitudes towards Canadian culture; nevertheless, they do point to an important consideration when evaluating test results.

#### Consequences of L2 Aquisition

Cummins (1980) found that if L2 children are capable of speaking English, irrespective of its quality, they are considered proficient enough by teachers and psychologists to compete with L1 peers academically. Maldonado-Colon (1986) raises the concern that this faulty assumption can lead to false interpretations of assessment results. He believes that questionable special education placements of language minority students indicate that assessment personnel are treating language minority children as

pathological cases and are ignoring the impact of a different language background. Buttler (1986) echoes these concerns noting that L2 children are being classified as handicapped. In agreement with the statements of the previous two authors, Ovando and Collier (1985) rationalize that until L2 students have a reasonable mastery of the English language, all tests, regardless of their purpose will become tests of English proficiency.

A number of authors also believe that L2 students are at risk of dropping out of school due to the difficulty of learning English (Guebert, 1983; Steinburg & Chan, 1984; Tighe, 1986). It has also been suggested that L2 students may fail to acquire competence in either language (Dopke, 1986). In a 1978 article, Cummins hypothesized that the development of competence in a second language is related to a child's competence in his first. Guebert (1983), states that minority language children may not be able to maintain their first language ability because of the majority language of the school and community. Consequently, Guebert hypothesized that minority language children may not be able to maintain an adequate ability level in their first language with which to develop concepts in the second language (balance effect). Lambert and Taylor (1984) expand upon Guebert's hypothesis by stating that there are situations where the learning of a second language may be additive (no loss to the first language) or subtractive

(loss to first language). An example of an additive situation is where a majority culture, middle class child is learning a second language by choice as opposed to a subtractive situation where a minority culture, low social class child is learning a second language out of necessity.

The initial findings of the last stage of a three stage longitudinal study by Vilke (1988), failed to find evidence to support the hypothesis of a "balance effect", that the acquisition of a second language is detrimental to a child's native language, academic achievement or intellectual development. In her study, grade two children were instructed in English for two periods each week. When this group (80 students) was re-examined in the final year of primary school, no "balance effect" was observed. It is important to note however that these students were surrounded by the language and culture of their native country and were approximately 8 years old.

In summary there is general support by a number of authors (Cummins, 1978; Guebert, 1983; Harikuta & Gould, 1987; Lambert & Taylor), for the concept that it is important children attain competency in their native language (approximately 6 years of age), prior to major interference from a second language.

### Social Class

Low social class has been found to impact negatively on the test scores of L1 children while for L2 children there

is a lack of data of the affects of social-economic status (Ganguly, 1985). In general for L1 children, researchers have found that social class correlates positively with achievement (Coleman, 1975; Connor, 1983; Mills, 1983; Nafstad, 1982). Globerson (1983) found empirical evidence for the belief that low social class children lag behind higher social class children academically. He feels this lag is a direct result of cultural deprivation albeit their cognitive potentials are the same. Walker (1985) found that low socio-economic children were inclined to act impulsively on achievement and intelligence tests and this factor coupled with a poor enviromental background tends to lower their scores.

A further variable that contributes to depressed test scores is the tendency of low socio-economic children to be satisfied with incomplete information and to communicate using the informal language of the lower class. A 1974 study by Pozner and Saltz (cited in Nafstad 1982), using games with preschool children from low socio-economic families, found that they were more often satisfied when only some of the rules had been explained to them and had difficulty explaining the rules to other children. Nafstad (1982) states that children from different socio-economic groups have different but equally effective patterns of communication, however since the school system adopts the communication pattern of the middle class, children from

lower socio-economic backgrounds are at a disadvantage. Nafstad further states that although children from lower socio-economic backgrounds are able to produce the formal language of the schools, they "are different in their evaluations of situations calling for an elaborated code" (p. 136).

In a study of motivational factors in the performance of 48 economically disadvantaged children (ages 4 to 5 1/2 years), Zigler, Abelson and Seitz (1973) found that disadvantaged children were more apprehensive towards the testing situation than advantaged children and as a result received lower ability scores. Leitz (1972) in a study comparing the perceptual motor abilities of disadvantaged and advantaged kindergarten children concluded that on individual perceptual motor tests advantaged kindergarten children performed significantly better than disadvantaged kindergarten children.

For L2 there is a "great paucity" (Ganguly, 1985) of information about the impact of socio-economic factors since the majority of studies concentrate on the attainment of a second language. One of the findings of Ganguly's study was, "that there is a strong relationship between socio-economic status as measured here and the aquisition of skills in the second language" (p. 125).

Jensen (1980) found the discrepancy between the verbal test scores for white and ethnic groups was markedly reduced



when the groups were roughly equated for socio-economic status. More recent studies (Cohen & Manion, 1983; Philips, 1986) also indicate that the discrepancy in test scores for L1 and L2 children is greatly diminished when matched for financial status.

#### Summary

In summary, the literature associated with the kindergarten screening of L2 students often supports opposing views in the absence of substantial evidence. It seems that kindergarten screening is generally accepted as an essential strategy for assessing the ability level of children, even though there is very little empirical data supporting early intervention. There is also controversial evidence that suggests that early assessment in kindergarten may ultimately create learning difficulties in children who are merely lagging in their development.

For L2 students, a number of factors such as culture bias, preschool experience, date of screening and age at time of assessment all have an undetermined effect on test results. As Samuda (1985) suggests, the reason for poor test scores by L2 students is, "compounded by such additional factors as language, cultural patterns, values, and self-concept" (p. 54). Attempts to address these issues by altering the administration date or procedures produces uncertain results. Subsequently, there is uncertainty in the interpretation of test scores for L2 children. Perhaps

the reason for opposing views in research is that we still know very little about the process of learning a second language (Vilke, 1988) and have only vague notions about the language demands placed on students by the school and how language proficient a child needs to be to succeed in school (McGroarty, 1984).

The following chapter will outline the purpose and methodology of the present study.

## CHAPTER THREE

### Methodology

This chapter presents the methodology of the present study. First the purpose for the study is stated, followed by information on subjects, instrumentation and data collection. Operational definitions, variables and hypotheses are then outlined. Finally, information on data analysis and implications are presented.

#### Purpose

Through the gathering of data from selected Vancouver schools, the present study has addressed some of the concerns related to the screening of L2 children in kindergarten. Data gathered have provided information on the relationships between the kindergarten screening scores of L2 children (Oriental/Indo-Canadian) and the variables of: preschool experience, screening date, age at time of screening and the kindergarten screening scores of children for whom English is their First Language (L1 children).

#### Subjects

The subjects in this study were kindergarten school students in the Vancouver school system for the 1987/1988 school year. These students were from the three major cultural groups within the Vancouver school system: Indo Canadian, Oriental and Anglo. Subjects were designated as L2 in the present study if the predominant home language was not English. Financial status of the subjects was

determined by using data from the Canadian Census Tract Survey (1986). Every five years Statistics Canada undertakes a survey of each household in Canada. These data are then analyzed and compiled into the Canadian Census Tract Survey. Subjects excluded from the study were those students who were not entering kindergarten for the first time, those who had an unknown preschool experience, those who were enrolled in a French immersion kindergarten program and those who had proven hearing, visual, intellectual or emotional problems.

#### Instrumentation

Every kindergarten student in Vancouver is currently tested with a modification (Vancouver School Board, 1985) of the Florida Kindergarten Screening Battery (Satz & Fletcher, 1982). The Florida Kindergarten Screening Battery is a kindergarten screening battery composed of the following tests: the Peabody Picture Vocabulary Test-Revised (PPVT-R) (Dunn & Dunn, 1981), the Recognition-Discrimination Test, the Beery Developmental Test of Visual Motor Integration (VMI) (Beery, 1967), Alphabet Recitation and Finger Localization. The Peabody Picture Vocabulary Test-Revised is a multiple choice test designed to evaluate the receptive (hearing) vocabulary ability of children or adults. On this measure the subject is asked to point to the drawing that best illustrates each vocabulary word. For the Recognition-Discrimination test, a child is asked to identify a

geometric stimulus among a group of four designs. The Beery Developmental Test of Visual Motor Integration measures visual-motor ability by asking the child to duplicate a set of 24 increasingly difficult designs using pencil and paper. On the Alphabet Recitation measure a child is required to recite the alphabet as accurately as possible. For the Finger Localization measure a child is asked to tap out a series of increasingly difficult patterns with each finger.

The Florida Kindergarten Screening Battery was developed from a large scale study, the Florida Longitudinal Project, into the factors associated with reading success and failure (Gates, 1984). This battery was designed to predict the likelihood that an individual kindergarten child would manifest learning problems three years later, at the end of grade 2 (Satz & Fletcher, 1982).

The strength of the battery is dependent upon two factors: the inclusion of two normed tests, the PPVT-R and the VMI (Gotts, 1980), and the use of a longitudinal design in the development of the battery (Gates, 1984).

In an attempt to compensate for biasing factors in the assessment of L2 students a number of school districts have adopted a modified assessment procedure. Samuda (1980) found that approximately 82% of all school boards in Ontario modified tests when evaluating L2 students. Vancouver schools have an overall L2 population of approximately 48 percent (V.S.B., 1982). Those schools in Vancouver with a

large L2 population usually have a late kindergarten screening date.

Gotts (1975) in his review of the Florida Kindergarten Screening Battery, found it more accurate at assessing learning difficulties than kindergarten teachers who had known the children for a year. Gotts' overall evaluation of the battery was that it represented a promising kindergarten screening battery that was only partially developed. He also felt that it was much easier to use by paraprofessionals than other elaborate batteries. White, Batini, Satz and Friel (1979), in a three year follow up of Australian school children using the Florida Kindergarten Screening Battery, found that 75 percent of children identified as having a high risk of reading failure by the screening battery in kindergarten, showed symptoms of reading failure in grade three. Noteably, the sample was drawn from a population of which 30 percent were L2 children and included some children who could not speak or understand English. Fletcher and Satz (1982), in a follow-up study of the Florida Longitudinal Project, found that seven years after the initial assessment the Florida Kindergarten Screening Battery had accurately classified 77 percent of the kindergarten children. In a cross validation study of Florida Kindergarten Screening Battery results, within the Vancouver Public School System, Latorre (1985) found that the battery accurately predicted 81 percent of readers that

would be below average by the end of grade one. Latorre also found that while the battery predicted almost all of the L2 children who became poor readers (90.9%) it also tended to over-classify L2 children into risk groups.

In contrast to the previous reports, in a 1984 test review, Gates criticizes the standardization of the battery. He reports that the 1970 standardization of the Florida Kindergarten Screening Battery was performed on a sample of 497 predominantly middle and upper class males from one county in Florida. Similarly Gotts (1980) states that the Alphabet Recitation, Recognition-Discrimination and Finger Localization subtests cannot be viewed as adequately normed due to the disproportionately large number of white males from a high socio-economic background. Gotts therefore concludes that the validity of these three measures is in question. Both authors suggest that to use the battery extensive local validation or restandardization is necessary.

A number of concerns exist with the PPVT-R in relation to its correlation to intelligence, achievement and usage with other cultures. Although instructions issued with the Florida Kindergarten Screening Battery direct users to convert PPVT-R standard scores into PPVT deviation I.Q. scores (Saltz & Fletcher, 1982), a number of authors caution against its use as an intellectual screening device (Alpater & Handal, 1986; Bracken & Prasse, 1983; Carvajal, Mcvey,

Sellers, Weyland & McKnab, 1987)). The PPVT-R has been found to have only a moderate correlation to other predictors of achievement (Breen, 1983; Naglieri & Pfeiffer, 1983). In addition, other studies have cautioned against the use of the PPVT-R with other cultures (Sattler & Altes, 1984; Sharpley & Stone, 1985). Sattler (1982) found the PPVT-R to be highly culturally loaded because the stimuli pictures call for culture specific information.

In order to meet previous criticisms and develop an accurate and reliable measure of reading ability for the Vancouver kindergarten population the Florida Kindergarten Screening Battery has been modified for use in Vancouver by the implementation of a Vancouver weighting formula and the exclusion of the Finger Localization Test from the battery (V.S.B., 1985). A consequence of Latorre's 1985 study of Vancouver kindergarten student scores on the Florida Kindergarten Screening Battery was the development of separate discriminant functions for L1 and L2 kindergarten students. The discriminant functions for the battery are recalculated every two years and the individual weights of the variables are adjusted at this time to result in a set of discriminant functions which have acceptable rates of true positives and false positives (VSB, 1986).

#### Procedure and Data Collection

Of the 77 public elementary schools in Vancouver, 10 schools were randomly selected (5 from a low financial



status area and 5 from a medium or high financial status area). From each school up to 20 L2 and 20 L1 students were randomly selected into a sample of Oriental/Indo Canadian and Anglo groups of equal size and sex. Alternate ethnicities were excluded in order to concentrate on the two largest L2 groups in the Vancouver school system (V.S.B., 1982). Using this procedure a group of one hundred and fifty-eight students formed the sample for this study.

Data required for the study had previously been collected during the 1987/1988 kindergarten screening by Vancouver school personnel. After the initial collection data were collated into a computer data file by Vancouver school personnel.

#### Operational Definitions

English Language Ability: The ability level of a child to communicate orally in English as compared to his L1 peers.

Ethnic Group: A cultural group of people with common characteristics, language or customs.

Financial status: Low financial status refers to a family income less than 20,000 dollars per year as determined by the 1986 Canadian Census Tract. Medium or high financial status refers to incomes over this level.

Florida Kindergarten Screening Battery: A kindergarten screening battery containing the following tests: the Beery Test of Visual Motor Integration (Beery, 1967),

Recognition-Discrimination, Peabody Picture Vocabulary Test-Revised (Dunn & Dunn, 1981), Alphabet Recitation, Finger Localization.

Indo Canadian: A person of East Indian ancestry and culture.

Kindergarten: First level of primary school for the school year preceeding grade one. Admission requires a minimum age of five years on or before December 31 of the enrollment year.

L1: Children whose first language or home language is English.

L2: Children whose first language or home language is different from English. For the purpose of this study this difference will be determined by the dominant language spoken at home, as stated on the parent interview form for kindergarten screening (VSB, 1985). The terms L2 and minority language will be used synonymously.

Oriental: a person of Chinese, Japanese or Vietnamese ancestry and culture.

Preschool: A licensed or unlicensed centre providing enrollment for children too young to attend kindergarten. In this study preschool and daycare will be used synonymously.

### Variables

The independent variables are:

1. preschool experience.
2. date of kindergarten screening.
3. age at time of screening.
4. ethnicity ( Oriental, Indo Canadian, Anglo )
5. English Language ability.

The dependent variable is the subtest scores on the kindergarten screening battery.

### Hypotheses

1. There is no correlation between the kindergarten screening scores of L2 students and preschool experience.
2. There is no significant difference between the scores of L2 students who are screened early (September-October) and L2 students who are screened late (January).
3. There is no significant difference between kindergarten screening scores of L2 students and the kindergarten screening scores of L1 students screened at the same time.
4. There is no correlation between age at time of screening and the screening scores of L2 / L1 students.

## Data Analysis

### Hypotheses 1 and 4

The significance of any relationship between the variables in the first and fourth hypotheses was determined using Pearson Product-Moment correlations as provided by the SPSSX subprogram (Nie, Hull, Jenkins, Steinbrenner & Bent, 1986). For these analyses the .05 level of significance was used.

### Hypothesis 2

A one-way analysis of variance was computed on the second hypothesis using the SPSSX ONEWAY subprogram (Nie et al., 1986). On this hypothesis a more stringent level of significance (.01) was utilized in data analysis to control for the effect of unequal cell numbers.

### Hypothesis 3

A two factor analysis of variance was computed on this hypothesis using the SPSSX ANOVA subprogram (Nie et al., 1986). On this hypothesis a more stringent level of significance (.01) was utilized in data analysis to control for the effect of unequal cell numbers.

## CHAPTER 4

### Results

This chapter presents a description of the final sample of students. The results of the data analyses described in the previous chapter are discussed in relation to the four hypotheses tested in this investigation.

### The Sample

The Florida Kindergarten Screening Battery scores of kindergarten children attending Vancouver Public Schools during the 1987/1988 school year formed the sample for the present study. The sample was composed of children from one of three general ethnic groups, Anglo-Saxon, Indo-Canadian and Oriental, for which English is either a second or first language. A breakdown of the sample population is illustrated in Table 1.

A total of 10 schools were randomly selected from the 77 elementary schools in the Vancouver School District. Five schools from catchment areas having yearly family incomes over 20,000 dollars and five schools having yearly family incomes under 20,000 dollars were pooled. This process resulted in a total of 441 students being selected into a strata from which the sample population for the study was drawn. Students who spoke English as their first language (L1) were matched with students who spoke English as a second language (L2) in each catchment area. All children in the study had been previously identified by

their kindergarten teachers as having English as a first or second language.

Table 1

Population Sample by Dominant Home Language

| Home Language | a<br><u>n</u> | b<br><u>%</u> |
|---------------|---------------|---------------|
| Cantonese     | 46            | 29.1%         |
| Chinese       | 4             | 2.5%          |
| English       | 79            | 50.0%         |
| Hindi         | 4             | 2.5%          |
| Japanese      | 3             | 1.9%          |
| Mandarin      | 3             | 1.9%          |
| Punjabi       | 13            | 8.2%          |
| Vietnamese    | 6             | 3.8%          |

Note. Ethnic groups included in the sample are representative of those ethnicities in the Vancouver kindergarten student population (1987/1988).

a

Number of students

b

Percentage of sample, does not total 100% due to rounding

One hundred and fifty-eight of the 441 randomly sampled students, (79 L1 students and 79 L2 students) met the criteria required for this study: they were not enrolled in French Immersion kindergarten classes, they had not repeated kindergarten and their preschool attendance was documented. Flordia Kindergarten Screening Battery scores from each randomly selected student were pooled into the sample used for the present study. The main hypotheses were then analysed using these pooled scores. This sample was composed of 76 males and 82 females and represents

approximately four percent of Vancouver's 3,949 kindergarten students enrolled in the public school system.

The average age of the sample was approximately 5 years, 5 months. The sample as indicated in Table 2, is skewed towards lower financial status due to the higher number of L1 and L2 students from the 5 school catchment areas with a low financial status. Approximately 75 percent ( $n=118$ ) of the sample population is from a school catchment area with a low financial status (median income less than 20,000 dollars).

Table 2

Population Sample by Number and Sex

| School | a    |        | b<br>n | c<br>% |
|--------|------|--------|--------|--------|
|        | Male | Female |        |        |
| 1      | 6    | 6      | 12     | 7.6    |
| 2      | 18   | 20     | 38     | 24.0   |
| 3      | 10   | 14     | 24     | 15.2   |
| 4      | 18   | 4      | 22     | 13.9   |
| 5      | 10   | 12     | 22     | 13.9   |
| 6      | 2    | 0      | 2      | 1.3    |
| 7      | 2    | 4      | 6      | 3.8    |
| 8      | 4    | 10     | 14     | 8.9    |
| 9      | 4    | 6      | 10     | 6.3    |
| 10     | 2    | 6      | 8      | 5.1    |

Note. Ethnic groups included in the sample are representative of those ethnicities in the Vancouver kindergarten student population (1987/1988).

a

Schools 1 to 5 represent children from low financial status families (median yearly income < 20,000) and schools 6 to 10 represent children from medium or high financial status families (median yearly income > 20,000).

b

Number of students

c

May not total 100% due to rounding off

## Tests of Hypotheses

### Hypothesis 1

*There is no correlation between the kindergarten screening scores of L2 students and preschool experience.*

This hypothesis was analysed using Pearson Product-Moment correlations at the .05 level of significance. The null hypothesis is rejected. The probability that a significant sample correlation for the test measures in this hypothesis would appear by chance is less than .05. The following table (Table 3) indicates the correlations of the Florida Kindergarten Screening Battery test scores to preschool experience.

Table 3.

Correlations, Test Measures to Preschool Experience<sup>a</sup>

|        | <u>M</u> | <u>s.d.</u> | <u>r</u> |
|--------|----------|-------------|----------|
| A-R    | 20.29    | 8.72        | .05      |
| PPVT-R | 28.88    | 18.72       | .24*     |
| R-D    | 10.99    | 3.14        | .22*     |
| VMI    | 10.27    | 3.08        | .05      |

Note. A-R = Alphabet Recitation; PPVT-R = Peabody Picture Vocabulary Test-Revised, Form L; R-D = Recognition-Discrimination; VMI = Test of Visual-Motor Integration

<sup>a</sup>

N = 79

\*  $p < .05$

Table 3 indicates that there are low positive correlations between preschool experience and test scores on



the Peabody Picture Vocabulary Test-Revised and the Recognition-Discrimination Test. This indicates that L2 children with preschool experience may score slightly higher on these measures. Correlations for the remaining two measures, Alphabet Recitation Test and Test of Visual-Motor Integration, indicate no systematic relationship between preschool experience and test scores. This suggests that for L2 children, preschool experience does not have a significant effect upon Alphabet Recitation or Visual-Motor Integration test scores.

#### Hypothesis 2

*There is no significant difference between the scores of L2 students who are screened early (September-October) and those L2 students who are screened late (January).*

Test data for this hypothesis were analysed separately by means of independent one way analyses of variance. The null hypothesis is accepted. The probability that a significant difference between test means would appear by chance is greater than .01. Table 4 summarizes the results of a one way analyses of variance of Florida Kindergarten Screening Battery test scores for L2 students who are screened early and screened late.

Table 4

Analysis of Variance for L2 Early/Late Screening Scores

| Subtest | Source  | SS      | df | MS    | F    | p   |
|---------|---------|---------|----|-------|------|-----|
| A-R     | Between | 1.11    | 1  | 1.11  | 0.01 | .90 |
|         | Within  | 5857.02 | 75 | 78.09 |      |     |
|         | Total   | 5858.13 | 76 |       |      |     |

Tests for Homogeneity of Variance: Cochrans  $\underline{C}$  = .54,  $p > .05$   
 Bartlett-Box  $\underline{F}$  = .24,  $p > .05$

|        |         |          |    |        |      |       |
|--------|---------|----------|----|--------|------|-------|
| PPVT-R | Between | 9.31     | 1  | 9.31   | 0.03 | .8729 |
|        | Within  | 27097.91 | 75 | 361.31 |      |       |
|        | Total   | 27107.22 | 76 |        |      |       |

Tests for Homogeneity of Variance: Cochrans  $\underline{C}$  = .53,  $p > .05$   
 Bartlett-Box  $\underline{F}$  = .18,  $p > .05$

|     |         |        |    |       |       |       |
|-----|---------|--------|----|-------|-------|-------|
| R-D | Between | 55.92  | 1  | 55.92 | 6.02* | .0164 |
|     | Within  | 695.87 | 75 | 9.27  |       |       |
|     | Total   | 751.79 | 76 |       |       |       |

Tests for Homogeneity of Variance: Cochrans  $\underline{C}$  = .56,  $p > .05$   
 Bartlett-Box  $\underline{F}$  = .72,  $p > .05$

|     |         |        |    |      |      |       |
|-----|---------|--------|----|------|------|-------|
| VMI | Between | 6.26   | 1  | 6.26 | 0.72 | .4000 |
|     | Within  | 655.20 | 75 | 8.74 |      |       |
|     | Total   | 661.45 | 76 |      |      |       |

Tests for Homogeneity of Variance: Cochrans  $\underline{C}$  = .57,  $p > .05$   
 Bartlett-Box  $\underline{F}$  = .61,  $p > .05$

Note. A-R = Alphabet Recitation; PPVT-R = Peabody Picture Vocabulary Test-Revised, Form L; VMI = Test of Visual-Motor Integration; R-D = Recognition-Discrimination.

\* $p < .05$

Table 4 indicates that none of the Florida Kindergarten Screening Battery subtests were supported at the .01 level of significance. Table 5 indicates that the mean test scores for L2 students who are screened early are higher than the mean score of those students who are screened late.

Table 5.

Mean Scores: Early/Late Screened L2 Students

|                            | Early | Late  |
|----------------------------|-------|-------|
| Alphabet Recitation        | 20.40 | 20.16 |
| Recognition-Discrimination | 11.67 | 9.94  |
| PPVT-R                     | 28.95 | 28.25 |
| VMI                        | 10.42 | 9.84  |

Note. A-R = Alphabet Recitation; PPVT-R = Peabody Picture Vocabulary Test-Revised, Form L; VMI = Test of Visual-Motor Integration; R-D = Recognition-Discrimination.

Since unequal cell numbers indicated a possibility of heterogeneity of cell variances, a test of this factor was made using Cochran's C and Bartlett's Box F. In all cases the degree of heterogeneity was not significant.

Hypothesis 3

*There is no significant difference between kindergarten screening scores of L2 students and L1 students screened at the same time.*

In order to determine if a significant difference exists between kindergarten screening scores of L1 and L2 students screened at the same time, test data for this hypothesis were analysed using a two factor analysis of variance as provided by the SPSSX subprogram (Nie et. al, 1975) at the .01 level of significance. Although the .05 level of significance was originally chosen the .01 level of significance was adopted to control for unequal cell sizes.

The null hypothesis is rejected. The probability that a significant difference between test means would appear by chance is less than .01. The following data in Table 6 indicate a two factor analysis of the test scores on the Florida Kindergarten Screening Battery.

Table 6

Analysis of Variance Comparing Date of Screening and  
Language Group on Test Scores

| Subtest | Source    | <u>SS</u> | <u>df</u> | <u>MS</u> | <u>F</u> | <u>p</u> |
|---------|-----------|-----------|-----------|-----------|----------|----------|
| A-R     | a         |           |           |           |          |          |
|         | Scrm (A)  | 11.26     | 1         | 11.26     | 0.19     | .662     |
|         | b         |           |           |           |          |          |
|         | Flang (B) | 197.60    | 1         | 197.601   | 3.37     | .069     |
|         | A * B     | 23.58     | 1         | 23.58     | 0.40     | .527     |
|         | Remainder | 8926.97   | 152       | 58.73     |          |          |
|         | Total     | 9156.22   | 155       | 59.07     |          |          |
| PPVT-R  | a         |           |           |           |          |          |
|         | Scrm (A)  | 110.80    | 1         | 110.80    | 0.34     | .560     |
|         | b         |           |           |           |          |          |
|         | Flang (B) | 42955.29  | 1         | 42955.29  | 132.56** | .000     |
|         | A * B     | 38.84     | 1         | 38.84     | 0.12     | .730     |
|         | Remainder | 49254.26  | 152       | 324.04    |          |          |
|         | Total     | 92576.97  | 155       | 597.27    |          |          |
| R-D     | a         |           |           |           |          |          |
|         | Scrm (A)  | 23.11     | 1         | 23.11     | 3.15     | .078     |
|         | b         |           |           |           |          |          |
|         | Flang (B) | 2.28      | 1         | 2.28      | 0.31     | .578     |
|         | A * B     | 33.28     | 1         | 33.28     | 4.53*    | .035     |
|         | Remainder | 1116.82   | 152       | 7.35      |          |          |
|         | Total     | 1174      | 155       | 7.58      |          |          |
| VMI     | a         |           |           |           |          |          |
|         | Scrm (A)  | 4.91      | 1         | 4.91      | 0.56     | .456     |
|         | b         |           |           |           |          |          |
|         | Flang (B) | 62.89     | 1         | 62.89     | 7.16**   | .008     |
|         | A * B     | 1.74      | 1         | 1.74      | 0.20     | .657     |
|         | Remainder | 1334.34   | 152       | 8.78      |          |          |
|         | Total     | 1402.69   | 155       | 9.05      |          |          |

Note. A-R = Alphabet Recitation; PPVT-R = Peabody Picture Vocabulary Test-Revised, Form L; R-D = Recognition-Discrimination; VMI = Test of Visual-Motor Integration; N = 156

a

b

Scrm = screening month; Flang = L1 or L2

\* =  $p < .05$       \*\* =  $p < .01$

As Table 6 indicates, a significant difference between L1 and L2 students was found on both the Peabody Picture Vocabulary Test-Revised ( $F = 132.56$ ,  $p = 0.000$ ) and the Test of Visual-Motor Integration ( $F = 7.16$ ,  $p = .008$ ). The probability that a significant sample difference would appear by chance on both measures is less than .01. Although not significant at the .01 level of significance, an analysis of Recognition-Discrimination test scores indicates some interaction between screening month and visual perception.

Cell means (Table 7) indicate that for both early and late screening, L1 students score higher than L2 students on the Peabody Picture Vocabulary Test-Revised, but score below L2 students on the Test of Visual Motor Integration.

Table 7

Cell Means: Test Scores L1 and L2 Students

| Subtest | Early Screening |       | Late Screening |       |
|---------|-----------------|-------|----------------|-------|
|         | L1              | L2    | L1             | L2    |
| A-R     | 22.02           | 20.40 | 23.37          | 20.16 |
| PPVT-R  | 62.98           | 28.96 | 60.23          | 28.25 |
| R-D     | 10.67           | 11.67 | 10.83          | 9.94  |
| VMI     | 8.98            | 10.42 | 8.83           | 9.84  |

Note. A-R = Alphabet Recitation; PPVT-R = Peabody Picture Vocabulary Test-Revised, Form L; R-D = Recognition-Discrimination; VMI = Test of Visual-Motor Integration

#### Hypothesis 4

*There is no correlation between age at time of screening and the screening scores of L2 / L1 students.*

In order to determine if a relationship existed between age at time of screening and screening scores, test data for this hypothesis were analysed using Pearson Product-Moment correlations as provided by the SPSSX subprogram (Nie et. al, 1986) at the .05 level of significance.

The null hypothesis is rejected. The probability that a significant sample correlation for the above test measures would appear by chance is less than .05. The results of this analysis are presented in Table 8. These results indicate a low positive correlation between test scores on the VMI ( $r = 0.23$ ,  $p = 0.045$ ) and age at time of screening for L1 students. Correlations between age at time of screening and other tests on the Florida Kindergarten Screening Battery for L1 students were not significant.

No significant correlations were found between age at time of screening and test measures on the Florida Kindergarten Screening Battery for L2 students.

A post hoc analysis of the data for this hypothesis also indicates several positive correlations at the .01 level of significance, between tests on the Florida Kindergarten Screening Battery for both groups (see Table 9). For L1 students all tests had significant positive

correlations between each other. For L2 students there were few significant positive correlations between tests.

Table 8

Correlations: Test Scores to Screening Age

|        | L1 students |             |          | L2 students |             |          |
|--------|-------------|-------------|----------|-------------|-------------|----------|
|        | <u>M</u>    | <u>s.d.</u> | <u>r</u> | <u>M</u>    | <u>s.d.</u> | <u>r</u> |
| A-R    | 22.53       | 6.31        | .04      | 20.29       | 8.72        | .18      |
| R-D    | 10.73       | 2.32        | -.04     | 10.98       | 3.14        | -.05     |
| PPVT-R | 61.94       | 16.90       | .13      | 28.88       | 18.72       | .18      |
| VMI    | 8.92        | 2.95        | .23*     | 10.27       | 3.09        | .08      |

Note. A-R = Alphabet Recitation; PPVT-R = Peabody Picture Vocabulary Test-Revised, Form L; R-D = Recognition-Discrimination; VMI = Test of Visual-Motor Integration

a

N = 158

\*  $p < .05$

Table 9

Correlations Between Tests for L1 and L2 Students

| Subtest | L1 Students |        |      |      | L2 Students |        |      |      |
|---------|-------------|--------|------|------|-------------|--------|------|------|
|         | A-R         | PPVT-R | R-D  | VMI  | A-R         | PPVT-R | R-D  | VMI  |
| A-R     | 1.0         | .3**   | .4** | .4** | 1.0         | .3**   | .3** | .1   |
| PPVT-R  | .3**        | 1.0    | .4** | .5** | .3**        | 1.0    | .2   | .1   |
| R-D     | .4**        | .4**   | 1.0  | .5** | .3**        | .2     | 1.0  | .5** |
| VMI     | .4**        | .5**   | .5** | 1.0  | .1          | .1     | .5** | 1.0  |

Note. A-R = Alphabet Recitation; PPVT-R = Peabody Picture Vocabulary Test-Revised, Form L; R-D = Recognition-Discrimination; VMI = Test of Visual-Motor Integration

\*\*  $p < .01$



## Summary

One hundred and fifty-eight kindergarten students from one of three general ethnic groups and two financial status levels formed the sample for the present study. Students who spoke English as their first language were matched with students who spoke English as a second language by sex and financial status.

The first and fourth hypotheses were analysed using Pearson Product-Moment correlations at the .05 level of significance. An analysis of the first hypothesis indicated low positive correlations between preschool experience and test scores on the Peabody Picture Vocabulary Test-Revised ( $r=.24$ ) and the Recognition-Discrimination Test ( $r=.22$ ). An analysis of hypothesis number four found a low positive correlation between age at time of screening and test scores on the Test of Visual-Motor Integration for L1 students.

Data for the second hypothesis were analysed using independent one way analyses of variance. This hypothesis was not supported at the .01 level of significance.

The third hypothesis was analysed using a two factor analysis of variance at the .01 level of significance. This level of significance was adopted to control for unequal cell sizes. An analysis of data for this hypothesis found that at both early and late screening dates, L1 students scored significantly higher than L2 students on the Peabody

Picture Vocabulary Test-Revised but below L2 students on the  
Test of Visual Motor Integration.

## CHAPTER 5

### Discussion

#### Introduction

The purpose of this study is to address concerns related to the screening of L2 children by comparing the scores of L2 versus L1 students on the Florida Kindergarten Screening Battery. The present study examined relationships between the variables of: preschool experience, screening date, L1 students and age at time of screening for Oriental and Indo Canadian L2 students.

Instruments used in the study were four subtests of the Florida Kindergarten Screening Battery (Alphabet Recitation, Peabody Picture Vocabulary Test-Revised, Recognition-Discrimination Test and Test of Visual-Motor Integration). The sample size was composed of 158 kindergarten students who had previously been screened using the four subtests of the Florida Kindergarten Screening Battery.

Data for the first and fourth hypotheses were analysed using Pearson Product-Moment correlations as provided by the SPSSX subprogram (Nie et. al, 1986) at the .05 level of significance. Data for the second hypothesis were analysed using independent one way analyses of variance as provided by the SPSSX subprogram at the .05 level of significance. Data for the third hypothesis were analysed using a two factor analysis of variance as provided by the SPSSX subprogram at the .01 level of significance.

A number of confounding factors may have significantly affected the results of the study. Financial status appears to have been a major factor influencing test scores at both screening dates. Differing cultural values within the ethnic groups of the study may have also contributed to increasing or decreasing the significance of the findings. In addition, the time span between screening dates permitted teacher intervention which may have further influenced the results. The combined effect of these factors may have altered the significance of the findings. A summary of statistically significant findings is presented in Table 10.

This final chapter presents: a) a discussion based on the limited sample within the limits of the study, with implications for educational practice b) limitations of the study and c) some implications for further research and practice.

Table 10

Summary of Statistically Significant Findings

|   | A-R | PPVT-R | R-D    | VMI    |
|---|-----|--------|--------|--------|
| Hypothesis 1.<br>L2 Preschool experience              | --  | r=0.24 | r=0.22 | --     |
| Hypothesis 2.<br>L2 Early/Late screening              | --  | --     | a      | --     |
| Hypothesis 3.<br>L1 versus L2, same<br>screening date | --  | F=132  | a      | F=7.16 |
| Hypothesis 4.<br>L1 and L2, test age                  | --  | --     | --     | r=0.23 |

Note. a = significant at .05, hypothesis at .01 level of significance

Discussion

The purpose of the study was to address some of the concerns related to the screening of L2 children in kindergarten, specifically the relationships between the variables of: preschool experience, screening date, L1 students and age at time of screening for Oriental and Indo Canadian L2 students. The following section briefly reviews the literature and discusses the implications arising from each hypothesis.

Preschool experience.

A number of previous studies have failed to consistently determine positive correlations between preschool experience and increased ability on various test measures. While preschool experience has been found to

correlate positively with academic achievement (Gleitman & Rozin, 1973; Zuccheromaglio, Pontecordo, Tonnuci & Blachowicz, 1986), it also has been found to have non-significant correlations (Silva & Bradshaw, 1980). In his review of literature about the effects of preschool experience, Evans (1985) concludes that there is a history of mixed results for the effects of preschool experience and concludes that these conflicting results underscore the need for more study. In his 1985 study of the long term effects of preschool experience, Evans also concludes that there are no main long term effects of preschool experience.

The results of the present study indicate that for L2 children preschool experience does have a low positive correlation with scores on the Peabody Picture Vocabulary Test-Revised and the Recognition-Discrimination Test. This conclusion is in agreement with the findings of previous research for L1 children which also indicates that preschool experience does correlate to academic achievement (Gleitman, Rozin, 1973; Zuccheromaglio, Pontecordo, Tonnuci & Blachowicz, 1986). The data for the present study suggests that preschool experience does result in a slight increase in English receptive vocabulary and visual perception. This correlation does not appear to be a consequence of L2 children coming from medium or high financial status families, since of the 79 L2 children in the study with preschool experience, approximately 82% were from lower

financial status families. Hence any effect that children from medium of higher financial status would have upon increased English language ability would be minimized by the larger lower financial status population.

As both correlations are low, this suggests that the effect of preschool experience upon L2 children is minimal. These low correlations may be a consequence of factors such as greater familiarity with the English language and exposure to visual crafts (e.g., drawing and painting), during the time spent in preschool. It is probable that children with preschool experience accrue a number of benefits and skills in other areas not measured by the Florida Kindergarten Screening Battery e.g., social skills. In addition, children with preschool experience will likely be more familiar with a school environment which will also tend to decrease their anxiety during testing.

In summary, for L2 children preschool experience does have a low positive correlation with test scores on the Peabody Picture Vocabulary Test-Revised and the Recognition Discrimination Test ( $r=.24$  and  $r=.22$  respectively). In addition, preschool experience does not have significant correlations to the Alphabet-Recitation ( $r=.05$ ) and Test of Visual-Motor Integration ( $r=.05$ ) test scores. This suggests that generally for L2 children, preschool experience results in a slight increase in the overall score on the Florida Kindergarten Screening Battery. Although statistically

significant the practical significance of preschool experience upon the Florida Kindergarten Screening Battery appears to be minimal. Caution should therefore be exercised in creating inaccurate expectations by differentiating between L2 students with and without preschool experience.

#### Early and late screening, L2 students.

While some authors suggest the modification of tests or the postponement of the screening date when testing L2 students (Collier, 1987; Cummins, 1980; Fine, 1988; Maldonado-Colon, 1986), no statistical research was discovered supporting these alterations. Therefore there appears to be little information supporting or disagreeing with the findings of the present hypothesis.

For this hypothesis, no significant difference at the .01 level of probability was detected between the scores of L2 children who were screened on different dates (early/late). This initially suggests that the date of screening does not have a significant impact upon the Florida Kindergarten Screening Battery scores of L2 students. However, two factors indicate that a significant difference between both groups of children on subtests of the Florida Kindergarten Screening Battery may exist: (a) the mean Recognition-Discrimination scores of the early screened group of L2 children are higher (despite less time), and (b) the difference between both groups approached



significance ( $p=.016$ ) at the .01 level. Several additional factors may have contributed to the failure to reject the null hypothesis such as the possibility of late screened students (January) benefiting from the extra time (approximately four months), to acquire skills or receive formal educational intervention (English as a Second Language assistance, Speech and Language therapy, etc.). Presumably, both informal and formal intervention by teachers prior to late screening, significantly improves the English Language ability of L2 students. In addition, a greater percentage of those children who were screened late (approximately 23% versus 5% of those screened early) also benefited from preschool experience. This indicates that despite the advantages of extra time (approximately 4 months due to late screening date) to increase recognition discrimination ability and greater school experience, L2 children who are screened late are behind L2 children who are screened early in recognition discrimination. Since the majority of children who are screened early are also from middle or upper financial status families, this also suggests that care should be exercised when comparing the Recognition-Discrimination scores between children from lower and middle/upper financial status families.

#### L1 versus L2 scores.

It is generally believed that the discrepancy between L1 and L2 children is markedly reduced when the groups are

matched for socio-economic status (Cohen & Manion, 1983; Jensen, 1980; Philips, 1986). However, studies have also indicated that even when matched for socio-economic status, differences in test scores exist between various ethnic groups (Altepeter & Handal, 1983; Umansky & Cohen, 1980; Gardner, 1986). Additionally, standardized testing may not necessarily mean the same thing to different ethnic groups (Samuda, 1984). The results of the present study support previous studies which indicate that there are differences in test scores between ethnic groups.

The results from a two factor analysis of variance of Peabody Picture Vocabulary Test-Revised scores suggest that the receptive vocabulary of L1 students is significantly higher than that of L2 students. This difference was reflected at both early and late screening dates (see Table 6, Chapter 4). A possible reason for the higher scores of L1 students is their higher English language ability due to the increased number of years of exposure listening to the English language. Subsequently it appears that L2 kindergarten children lag behind their L1 peers in receptive vocabulary and may also lag in other areas of English language ability.

The results from an analysis of test scores for the Test of Visual-Motor Integration indicate that L2 children score significantly higher than L1 children. Mean scores on the Test of Visual-Motor Integration (see Table 7) indicate

that at both early and late screening dates L2 children score significantly higher than L1 children. The higher scores of L2 children suggest that their visual-motor integration skills are advanced in comparison to the L1 group of children. As a number of authors (Gardner, 1986; Samuda, 1984; Sharpley and Stone, 1985) contend that cultural differences may result in differing test scores independent of language, it is possible that cultural differences may have had a significant positive effect upon L2 children's scores on the Test of Visual-Motor Integration. On a related measure (K-ABC)(Kaufman & Kaufman, 1983), Gardner (1986), found that Cantonese speaking children had superior spatial skills as compared to the English and Punjabi speaking children. In the present study, the majority of L2 children were of Oriental ethnicity (Table 1). Possible reasons for L2 children scoring higher on the Test of Visual-Motor Integration may be the size and greater visual demands of the Chinese character system (hence greater repetition and practice effect). Furthermore, cultural values or attitudes may have influenced test behavior and benefited students on this measure.

The interaction (significant at the .05 level) between screening month and language on Recognition-Discrimination test scores is consistent with results noted under hypothesis two. Analysis of hypothesis number two indicated

a significant ( $F = 6.02$ ) amount of variance between the test scores of L2 students who are screened early versus those who are screened late.

#### Age and test scores.

While some researchers suggest that there is an effect between chronological age and difficulty in school (Erion, 1987), and subsequently express concern about the premature labeling of immature children (Hammond, 1986; Wancxycki, 1983), other authors suggest that the effect of chronological age is minimal (May & Welch, 1986; Shepard & Smith 1986). While the results of the present study generally support research that suggests the effect of chronological age is minimal, results also partially support the findings of Erion (1987) which indicated a positive correlation between chronological age and scores on the Test of Visual Motor Integration.

The screening scores of L1 students on the Test of Visual Motor Integration are the only test scores that have a significant but low correlation to age at time of screening. The low significant correlation ( $r = .23$ ) suggests age at time of screening has only a small impact upon the test scores of L1 students. Therefore, it would appear that the effect of a student's age at the time of screening (September/October versus January screening) for L1 students on the Florida Kindergarten Screening Battery is minimal. The absence of a significant correlation for L2 students on

this measure, may indicate that the visual-motor skills of L2 students are not developing as rapidly as L1 students during this period of time.

There is a substantial difference in the number of significant correlations between tests within the Florida Kindergarten Screening Battery and test scores for L1 and L2 children (see Table 8). For L1 students, scores on any one test are significantly correlated to scores on the remaining three measures. For example, scores on the Peabody Picture Vocabulary Test-Revised, correlate positively to scores on the Alphabet Recitation measure, Recognition-Discrimination measure and the test of Visual Motor Integration. However, for L2 students scores on the Peabody Picture Vocabulary Test-Revised, do not have significant correlations to scores on either the Recognition-Discrimination measure or the test of Visual Motor Integration. For L2 students, the following significant correlations exist (a) Peabody Picture Vocabulary Test-Revised to Alphabet Recitation, (b) Test of Visual Motor Integration to Recognition-Discrimination and (c) Alphabet Recitation to Recognition Discrimination. If subsequent research determines causal relationships between subtest scores on the Florida Kindergarten Screening Battery for L2 students, then the difference in the number of correlations between L1 and L2 students possibly reflects the developing acquisition of the English language and North American culture by L2 students.

### Educational Implications

Although the results of the present study indicate that preschool experience has a low positive correlation to the scores of L2 children, this increase may be due to factors that are different from the skills measured by these tests (e.g., anxiety), therefore the evaluation of L2 children with preschool experience should not be differentiated from those without preschool experience. If subsequent research with L2 students determines a causal relationship between preschool experience and academic achievement then the fact that scores on the Florida Kindergarten Screening Battery do not correlate more strongly suggests a number of possibilities, (a) that the skills measured by the Florida Kindergarten Screening Battery are not taught or taught insufficiently in preschool, (b) that L2 preschool children do not benefit from instruction in these skills at this age, (c) that L2 preschool children benefit most from alternate learning such as informal play or maternal interaction or d) the presence of factors that negate the benefits of preschool experience for L2 children (e.g., interfere with cultural values, language formation). If one of these possibilities was determined by subsequent research then instruction could be altered to benefit L2 learning. Why preschool experience did not have a greater effect upon the test scores of L2 children merits further investigation.

If further studies support the conclusion that screening date does not have a significant impact upon test scores, then L2 kindergarten students could be screened at either screening date (late/early), and comparisons between students in either group (late/early) could be directly made. Since the results of the present study suggest that the Recognition-Discrimination test scores between L2 students and between L2 and L1 students may differ significantly, then cross comparisons for this measure should be made with caution until clarified by subsequent research. Most importantly, the reasons why there failed to be significant differences between screening dates despite additional time and possible educational intervention may ultimately have important consequences for the instruction of L2 students.

The results of the comparison of kindergarten screening scores for L1 and L2 children suggest that the receptive vocabulary skills of L2 children have not reached parity with L1 children at either screening date. This implies the need for continued inclusion of L2 students in language support programs (English as a Second Language, etc.). The significantly higher scores of L2 children at both early and late screening on the Test of Visual-Motor Integration agrees with the findings of previous research (Gardner, 1986). This suggests that teachers should have higher expectations for L2 children on visual-motor tasks such as

drawing. These results also suggest that different weighting formulas should be used for L1 and L2 students on the Peabody Picture Vocabulary Test and the Test of Visual-Motor Integration.

The results of the present study indicate that chronological age at time of screening has no practical significance upon subtest scores of the Florida Kindergarten Screening Battery for either L1 or L2 students. This implies that within each group (L1/L2), the subtest scores of kindergarten students who are chronologically younger can be compared to the subtest scores of older peers. It also generally indicates that within each group of children (L1/L2), once children have entered kindergarten, chronological age is not a significant factor in the aquisition of skills as measured by the Florida Kindergarten Screening Battery.

As very little kindergarten research exists for L2 students in Vancouver, this research will add to the body of existing knowledge of kindergarten screening. By identifying the differences between early and late kindergarten screening or between L2 and L1 scores the accuracy of the assessment and subsequent placement process is increased. Moreover, this information may assist in the assignment of financial and human resources.

Ultimately, because of the difficulties in adapting to the Canadian language and culture, L2 students may develop



learning difficulties more frequently than L1 students. Knowledge of how ethnic groups perform differently from the white middle class norm on a kindergarten screening battery benefits both assessment and instruction.

#### Limitations of the Study

As Vancouver has a unique grouping of ethnicities that are in continual flux, generalization of the results to different grade levels, school years, educational or community settings should not be made without further investigation. In addition, since the curriculum and language of the preschools the students attended may vary and the influence of educational intervention such as learning assistance, speech and language therapy is unknown results should not be generalized to groups of kindergarten children in other academic years.

Since the study included more than one ethnicity (Indo Canadian, Oriental and Anglo) comparisons cannot be made between various ethnic groups. Although the study included the three largest ethnic groups in the Vancouver School District it excluded other ethnicities (Italian, Spanish etc.) and other populations (French Immersion, etc.). These other populations may have had a significant effect upon the results. In addition, the small sample size of the study may not accurately reflect the characteristics of the population.

### Implications for Further Research

Since the results of this study are limited to kindergarten children enrolled during the 1987/1988 school year, there is a need for further research with L2 students at other grade levels over a period of time. The rate that L2 students attain visual motor and language skills may vary significantly at higher grade levels and may not parallel the rate that L1 students attain these skills.

Research is needed to determine what specific factors within Preschool and Kindergarten programs are the most beneficial in improving the English language ability of L2 children. For example, would L2 children who attend preschools that use their native language score differently from children who attend English language preschools, or does the number of years of attendance improve scores? What instructional or remedial methods are the most appropriate?

The effect that financial status and individual ethnicity has upon test scores of L2 children needs to be more closely determined. Specifically, why do L2 children score higher than L1 children at both screening dates on the Test of Visual-Motor Integration and what effect does financial status have upon the Recognition-Discrimination test scores of L2 children? Finally, there is a need for research with L2 children who are experiencing learning problems and with L2 children who are in special programs.

## References

Altepeter, T., & Handal, P. (1983). Use of the PPVT-R for intellectual screening with school aged children: A caution. Journal of Pediatric Psychology, 4(2), 195-198.

British Columbia Ministry of Education (1981). English as a Second Language/Dialect resource book for K-12. Ministry of Education.

Blachman, B. (1983). Are we assessing the linguistic factors critical in early reading? Annals of Dyslexia, 33, 91-109.

Bloom, B. (1964). Stability and change in human characteristics. New York: Wiley and Sons

Beery, K. (1967). Developmental Test of Visual-Motor Integration. Chicago: Follett.

Breen, M. (1983). A correlational analysis between the PPVT-R and the Woodcock-Johnson achievement cluster scores for nonreferred regular education and learning disabled students. Psychology in the Schools, 20(3), 295-297.

Buttler, K. (1986). Language research an practice: A major contribution to special education. In J. Morris & B. Blatt, (Eds.), Special Education Research and Trends (pp. 272-302). New York: Pergamon Press.

Chesterfield, R., Barrows-Chesterfield, K., Hayes-Latimer, K. & Chavez, R. (1983). The influence of teachers and peers on second language acquisition in bilingual preschool programs. TESOL Quarterly, 17(3), 401-419.

Clark, M. (1983). Early education: issues and evidence. Educational Review, 35(2). 113-119.

Cohen, L., & Manion, L. (1983). Multicultural classrooms: Perspectives for teachers. London: Croom Helm

Coleman, J. (1975). Methods and results in the IEA studies of effects of school in learning. Review of Educational Research, 45(3), 355-386.

Collier, V. (1987). Age and Rate of Acquisition of Second Language for Academic Purposes. TESOL Quarterly, 21(4), 617-641.

Connor, U. (1983). Predictors of second-language reading performance. Journal of Multilingual and Multicultural Development, 4(4), 271-287.

Cummins, J. (1980). Psychological assessment of immigrant children: Logic or intuition? Journal of Multilingual and Multicultural Development, 1(2), 97-111.

Cummins, J. (1981). Bilingualism and minority language children. Toronto: OISE Press.

Cummins, J. (1984). Bilingualism and special education: Issues in assessment and pedagogy. Avon: Multilingual Matters.

Cummins, J. & Swain, M. (1986). Language proficiency and academic achievement. (pp.138-223). New York: Longman.

Dunleavy, R., Hansen, J., Szasz, C. Baade, L. (1981). Early kindergarten identification of academically not-ready children by use of human figure drawing developmental score. Psychology in the Schools, 18(1), 35-38

Dunn, L. (1968). Special education for the mildly retarded- is much of it justifiable? Exceptional Children, 35, 5-22.

Dunn, L. & Dunn, L. (1981). Peabody Picture Vocabulary Test-Revised. Circle Pines, MN: American Guidance Service.

Erion, J. (1987). Chronological age, immaturity and the identification of learning disabilities. Education Research Quarterly, 11(1), 2-7.

Evans, E. (1985). Longitudinal follow-up assessment of differential preschool experience for low income minority group children. Journal of Educational Research, 78(4), 197-202.

Fine, J. (1988). Standardized tests and the culturally/language different student. Ontario Education, May/June, 23-24.

Flaughter, R. (1978). The many definitions of test bias. American Psychologist, 33, 671-679.

Fletcher, J., & Satz, P. (1982). Kindergarten prediction of reading achievement: A seven year longitudinal follow-up. Educational and Psychological Measurement, 42(2), 681-685.

Gardner, J. (1986). A comparison of the K-ABC and WISC-R for Cantonese, English and Punjabi speaking Canadians. Canadian Journal of School Psychology, 2, 45-53.

Gates, R. (1984). Florida Kindergarten Screening Battery. Journal of Clinical Neuropsychology, 6(4), 459-465.

Ganguly, S. (1985). Ego-attitudes in second language learning, a socio-economic analysis. Journal of Multilingual and Multicultural Development, 6(2), 117-133.

Gleitmann, L., & Rozin, P. (1973). Teaching reading by use of a syllabary. Reading Research Quarterly, 8, 447-483.

Globerson, T. (1983). Mental capacity and cognitive functioning: Developmental and social class differences. Developmental Psychology, 19, 225-230.

Gotts, E. (1980). Florida Kindergarten Screening Battery. In O. Buros, (Ed), Mental measurement yearbook. 583 - 585.

Green, B. (1978). In defense of measurement. American Psychologist, 33, 664-670.

Guebert, L. (1983). Learning to read in a second language. TESL Talk, 15(1,2), 52-59.

Hakuta, K. & Gould, L. (1987). Synthesis of Research on Bilingual Education. Educational Leadership, 44(6), 38-45.

Hammond, C. (1986). " Not ready! Don't rush me!". Childhood Education, 62(4), 276 - 278.

Hilliard, A. (1980). Cultural diversity and special education. Exceptional Children, 46, 584-588.

Jensen, A. (1980). Bias in mental testing. New York: Free Press.

Judy, J. (1986). Early screening is essential for educational accountability: Response to Salzer and to Shepard and Smith. Education Leadership, 44(3), 87-88.

Kaufman, A. & Kaufman, N. (1983). Kaufman Assessment Battery for Children. Circle Pines, MN: American Guidance Service.

Klein, A. (1978). The validity of the Beery test of visual-motor integration in predicting achievement in kindergarten, first and second grades. Educational and Psychological Measurement, 38(2), 457-461.

Kraayenoord, C. (1983). Preschool screening for learning disabilities: Is it warranted? New Zealand Journal for Educational Studies, 18(1), 48-58.

Ireton, E. (1981). Learning a Second Language. The Clearing House, 54, 326-329.

Latorre, R. (1985). Kindergarten screening: A cross-validation of the Florida Kindergarten Screening Battery. The Alberta Journal of Educational Research, 16(3), 174-190.

LaTorre, R. Hawkhead, P., Kawahira, T., & Bilow, D. (1982). Kindergarten screening pilot project in Vancouver schools 1979-1980. A two year follow up of the McCarthy Screening Test. B.C. Journal of Special Education, 6, 23-41.

Lambert, E. & Taylor, D. (1984). Language in the education of ethnic minority children in Canada. In R.J. Samuda, J.W. Berry & M. Laferriere (Eds.), Multiculturalism in Canada Social and Educational Perspectives (pp. 201-228). Toronto: Allyn and Bacon.

Lietz, E. (1972). Perceptual-Motor Abilities of Disadvantaged and Advantaged Kindergarten Children. Perceptual and Motor Skills, 87, 887-890.

Maldonado-Colon, E. (1986). Assessment: Considerations upon interpreting data of linguistically / culturally different students referred for disabilities or disorders. In A. Willig & H. Greenberg, (Eds.), Bilingualism and learning disabilities. New York: American.

May, D. & Welch, E. (1986). Screening for school readiness: The influence of birthdate and sex. Psychology in the Schools, 23, 100-105.

McCarthy, D. (1972). Manual for the McCarthy Scales of Children's Abilities. New York: Psychological Corporation.

McGroarty, M. (1984). Some meanings of communicative competence for second language students. TESOL Quarterly, 16(2), 257-270.

- McLaughlin, B. (1989). Are immersion programs the answer for bilingual education in the United States? The Bilingual Review, 11 (1), 3-11.
- Meisels, S. (1987). Uses and abuses of developmental screening and school readiness testing. Young Children, 42 (2), 6-7.
- Mercer, J. (1973). Labelling the mentally retarded. Berkeley:University of California Press.
- Mills, B. (1983). The effects of socioeconomic status on young children's readiness for school. Early Child Development and Care, 11(3/4), 267-273.
- Nafstad, H. (1982). Preschool children: Inquiry into interconnections between social class, language and training programs. Scandinavian Journal of Educational Research, 26(3), 121-139.
- Nagleri, J., & Pfeiffer, S. (1983). Stability, concurrent and predictive validity of the PPVT-R. Journal of Clinical Psychology, 39(4), 965-967.
- Neisworth, J., & Bagnato, S. (1986). Curriculum-based developmental assessment: Congruence of testing and teaching. School Psychology Review, 15(2), 180-199.
- Nie, H., Hull, C.N., Jenkins, J.G., Steinbrenner K. & Bent, D.H. (1986). SPSSX: Statistical Package for the Social Sciences (2nd ed.). New York: McGraw-Hill.
- O'Connor, A. (1982). Early screening - some problems and practices. B.C. Journal of Special Education, 4, 271-282.
- Ovando, C., & Collier, V. (1985). Bilingual and L2 classrooms. New York: McGraw-Hill.
- Philips, C. (1986). Educational under-achievement in different ethnic groups. Educational Research, 21(2), 116-130.
- Ravin, A., Bar-Tal, D., Ravin, A. & Bar-Tal, Y. (1980). Causal perceptions of success and failure by advantaged and disadvantaged pupils. British Journal of Psychology, 50, 137-146.

Reschly, D. & Sabers, D. (1979). Analysis of test bias in four groups with the regression definition. Journal of Educational Measurement, 16(1), 1-9.

Samuda, R. (1980). Testing, Assessment, Counselling and Placement of Ethnic Minority Students: Current Methods in Ontario. Ontario Ministry of Education.

Samuda, R. (1984). Assessing the abilities of a minority students within a multiethnic milieu. In R.J. Samuda, J.W. Berry & M. Laferriere (Eds.), Multiculturalism in Canada Social and Educational Perspectives (pp. 353-367). Toronto: Allyn and Bacon.

Samuda, R. (1985). Racism & the assessment of minorities: Implications, consequences, alternatives. Intercultural Social Sciences.

Satz, P., & Fletcher J. (1982). Manual for the Florida Kindergarten Screening Battery. Odesa, FL: Psychological Assessment Resources.

Sattler, J. (1982). Assessment of children's intelligence and special abilities (2nd ed.). Boston: Allyn and Bacon.

Sattler, J. (1988). Assessment of children (3rd ed.). San Diego: Jerome M Sattler.

Sattler, J., & Altes, L. (1984). Performance of bilingual and monolingual Hispanic children on the Peabody Picture Vocabulary Test-Revised and the McCarthy Perceptual Performance Scale. Psychology in the Schools, 21(7), 313 - 316.

Shapson, S., & Purbbo, M. (1981). A transition program for Italian children. Canadian Modern Language Review, 33(4), 486-496.

Sharpley, C. & Stone, J. (1985). An exploratory investigation to detect cross-cultural differences on the PPVT-R. Psychology in the Schools, 22(9), 383 - 386.

Shepard, L., Smith, M. (1986). Synthesis of research on school readiness and kindergarten retention. Educational Leadership, 44(7), 78-85.



Silva, P. & Bradshaw, J. (1980). Some factors contributing to intelligence at age of school entry. British Journal of Educational Psychology, 50, 10-15.

Smith, D., & Wilborn, B. (1977). Specific predictors of learning difficulties. Academic Therapy, 12(4), 471-477.

Strong, M. (1983). Social styles and the second language acquisition of Spanish-speaking kindergartners. TESOL Quarterly, 17(3), 241-258.

Taylor, F. (1974). Race, school and community: A study of research and literature. Slough: NFER

Tollefson, N., Rodriguez, R., & Glazzard, P. (1982). Predicting reading achievement for kindergarten boys and girls. Psychology in the Schools, 22(1). 34-39.

Thurlow, M., O'Sullivan, P., Ysseldyke, J. (1986). Early screening for special education: How accurate? Educational Leadership, 44(3), 93-95.

Tighe, V. (1986). Old issues and helpful hints: Content area reading for second language learners. Reading Improvement, 23(4), 293-298.

Umanasky, W. & Cohen, L. (1980). Race and sex differences on the McCarthy Screening Test. Psychology in the Schools, 17, 400-404.

Vancouver School Board. (1986). Procedure for changing the weights (every two years). Determining the discriminant functions for the district elementary assessment program's kindergarten classification. Vancouver School Board.

Vancouver School Board. (1985). Resource guide for the elementary assessment program. Vancouver School Board.

Vancouver School Board. (1982). Survey of pupils for whom English is a second language. Vancouver School Board.

Vilke, M. (1988). Some psychological aspects of early second-language acquisition. Journal of Multilingual and Multicultural Development, 9(1&2), 115-128.

Walker, W. (1985). Interactional effects of socioeconomic status and cognitive tempo on WISC-R performance. Measurement and Evaluation in Counseling and Development, 18(2).

Wancxycki, W. (1983). The kindergarten early identification component of Bill 82. Special Education in Canada, 57(1), 25-29.

Wedell, K. (1980). Assessing special education needs. B.C. Journal of Special Education, 7, 345-350.

Wells, G. (1981). Some antecedents of early educational attainment. British Journal of Sociology of Education, 2, 181-200.

White, R. (1986). Efficacy of early intervention. The Journal of Special Education, 19(4), 401 - 415.

White, M., Batini, P., Satz, P. & Friel J. (1979) Predictive validity of a screening battery for children 'at risk' for reading failure. The British Journal of Educational Psychology, 49, 132-137.

Wood, C., Powell, M., Knight, R. (1984). Predicting school readiness: The validity of developmental age. Journal of Learning Disabilities, 17(1), 8-11.

Wright, P. & Santa Cruz, R. (1983). Ethnic composition of special education programs in California. Learning Disability Quarterly, 6(4), 387-394.

Ysseldyke, J., Thurlow, M., O'Sullivan, P., & Bursaw, R. (1986). Current screening and diagnostic practices in a state offering free preschool screening since 1977: Implications for the field. Journal of Psychoeducational Assessment, 4(3), 191-201.

Zigler, E., Abelson, W., Seitz, V. (1973). Motivational factors in the performance of economically disadvantaged children on the Peabody Picture Vocabulary Test. Child Development, 44, 294-303.

Zucchermaglio, C., Pontecordo, C., Tonucci, F., & Blachowicz, C. (1986). Literacy and linguistic awareness: A study of Italian first grade students. Reading Psychology, 7, 11-25.