Hong Kong's Young Children

Their Early Development and Learning

Sylvia Opper

The Hong Kong National Report, part 2, of the first phase of the Preprimary Project of the International Association for the Evaluation of Educational Achievement (IEA)

A summarized Chinese translation by Veronica Yeung Wong Wai Yum

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1

Introduction

This chapter is a general introduction to the Preprimary Project (PPP) of the International Association for the Evaluation of Educational Achievement (IEA), its rationale, background, conceptual framework, aims, and methodology. It presents a brief description of the scope and administration of the first phase of a three-phase study into preprimary children, and highlights the major questions raised.

RATIONALE, BACKGROUND AND CONCEPTUAL FRAMEWORK OF THE STUDY

The period from three to six years is crucial in human development. These are the formative years when children build the foundations for future learning, and are introduced to the values and behaviours of their culture. Experiences and learning during this period have an important influence on subsequent development. Despite a growing awareness of the importance of this early period and an increasing body of information on development and the effects of early experiences on later achievement in Western countries, little is known about early development and learning, the settings in which such learning occurs, and the effects of early learning and experiences on later school achievement, in many non-Western cultures.

One organization that is well placed to carry out studies into factors that influence school achievement in different cultures is the IEA, a research organization that for many years has been conducting cross-national studies into school achievement at the secondary and primary levels. During the 1970s educators in many countries, recognizing the role of education in social and economic change, became increasingly interested in preprimary education. A major concern at that time was the contribution of early learning experiences to achievement at subsequent levels of education. A move into preprimary education seemed a natural expansion for IEA studies.

The IEA General Assembly therefore adopted a proposal for a three-

phase study of four-year-old children, the role that early education and care plays in their lives, and the effect that it has on their immediate development and learning at the preschool level and on their later achievement in primary school.

The overall conceptual framework of the PPP is based on Bronfenbrenner's ecological perspective (Bronfenbrenner, 1979) which views child development and socialization as resulting from children's interactions with different levels of the environment. One of these levels is the microsystem which consists of socialization settings such as the immediate family and other institutions, for instance preschools, which children regularly attend. The macrosystem, consisting of various cultural and social factors that indirectly affect children's experiences, is another level that influences development and learning.

In Hong Kong the microsystem of preschool children is unique. Every child from the age of 3 onwards, and many as young as 2 years old, attend a group education and care setting for part of each weekday. For 85% of children, this setting is a kindergarten where they attend a half-day programme. The remaining 15% attend day nurseries which usually offer full-day programmes. Kindergartens and day nurseries are a crucial setting in the microsystem of young children growing up in Hong Kong. The macrosystem of Hong Kong preschool children includes the locality in which they reside, and where their preschool is located. In view of the importance of preschools as ecological settings for Hong Kong's young children, the PPP study seeks to identify these settings, investigate their structure and processes, and explain relationships between these settings and children's development.

Aims

The overall aim of the preprimary study is to investigate the impact of early education and care on later school achievement. In addition, each of the three phases has its own specific aims. The international aim of Phase 1, entitled the Inventory of Settings, is to obtain descriptive data on the facilities available to and used by four-year-olds in the participating countries of the study. An additional aim of the Hong Kong study is to collect a data base on early development and learning in preschool children aged three to five years. The aims of Phase 2, entitled the Quality of Life Study, are to describe the life experiences and development of children in the early education and care settings available in each country, and explore the relationships between these settings and children's development. The aim of Phase 3, the Follow-up Study, is to investigate the role that early childhood education and care plays in preparing children for formal schooling. This third phase will focus on the relationships between the experiences of the children in Phase 2 and their subsequent development, social competence and achievement during the early years of primary school.

Methodology of IEA PPP

Similar to previous IEA studies, the PPP has both an international component, and a section devoted to national concerns and issues. To allow for international comparisons, all participating countries adopt a common, mutually accepted basic research plan. The cross-national data obtained by means of this common research plan provide a valuable baseline from which to examine a wider range of experiences than would be available within any single country. The data also tests the generalizability across different cultures of country-specific explanations, which in the case of the PPP are those of relationships between early experiences, and development and school achievement in the early primary years. To ensure that participants also address the salient issues of each country, national research teams include national options to the basic research plan through country-specific questions or by means of major elaborations of the research design. These national options provide information relevant to public policy formulation or educational and curriculum planning within specific countries.

PHASE ONE OF THE PREPRIMARY PROJECT

Hong Kong has been an active participating member in Phase 1 after receiving funding from the Strategic Grants Research Committee of the University of Hong Kong. The Hong Kong research team was located within the Department of Education of the University of Hong Kong, which is the overall IEA centre for Hong Kong. The team has been assisted by a local Advisory Committee consisting of representatives (listed in Appendix I), from the following organizations:

- Department of Education, The University of Hong Kong
- School of Education, The Chinese University of Hong Kong
- Kindergarten Inspectorate, Education Department
- Social Work Section (Family and Child Care), Social Welfare Department
- Child Care Division, Hong Kong Council of Social Services
- Hong Kong Council of Early Childhood Education and Services

Phase 1 of the PPP consisted of two major components. On the one hand the cross-national research plan was intended to identify and describe the characteristics of out-of-home settings for preprimary children, the factors that determine the use of such settings, and the daily experiences of preprimary children. The results of this component have been published in *Hong Kong's Young Children: Their Preschools and Families* (Opper, 1992). The second component, or national option, which provides the content of the present publication, consists of an investigation into child development and learning in Hong Kong children during the preschool years. This component provides details on five developmental areas in 3, 4, and 5-year-old children which could serve as a useful database for teachers, caregivers and parents

of children of this age group. These areas are motor, personal and social, cognitive, language, and preacademic learning.

MAJOR VARIABLES AND QUESTIONS OF THE EARLY DEVELOPMENT AND LEARNING STUDY

A number of studies of development in infants and young children conducted in Western countries have resulted in norms for ages of acquisition of various skills during the period from birth to 6 years (Sanford and Zelman, 1981; Ames et al., 1980). Cultures which lack their own research on child development have tended to adopt these Western developmental norms for their children, particularly in early childhood education where there is an increasing trend for programmes to be developmentally based. However, a growing awareness that such norms may not always be applicable to other populations has led researchers in some countries to attempt to establish local norms. The present study, which is a first attempt to provide developmental norms on Hong Kong Chinese preschool children, presents data on the age of acquisition of various motor, personal, social, cognitive, language and preacademic skills in children aged 3 to 5 years.

Hong Kong preschool children differ from each other along a number of dimensions. Some of these, such as age, gender or length of attendance in preschool, are universal. Others, such as type of preschool or locality, are more specific to the Hong Kong context. The five major categories of variables selected for this study are age, gender, length of child's attendance in preschool referred to here as batch, type of preschool, and locality of preschool. These variables are described below.

Age

The sample children for the developmental outcomes component of the PPP Phase 1 range from three years (3 years 0 months to 3 years 11 months) to five years inclusive (5 years 0 months to 5 years 11 months). During this three-year period tremendous changes occur in the development of competencies and skills. Three-year-old children are relatively immature, taking their first steps away from infancy but still very dependent upon the adults around them. By contrast, six-year-olds are relatively complex, sophisticated, and independent persons who have acquired a large number of physical, personal, social, intellectual and linguistic skills. Such generalizations about preschool children convey only a broad picture that is of little help to adults whose aim is to promote early development and learning. More precise details on the specific skills, knowledge and understandings of Hong Kong Chinese children at each of the three age levels from three to five years, and of the changes that occur between each level, are needed. This study investigates the general effects of age on a variety of child outcomes in five developmental areas.

Gender

One variable of particular interest in developmental psychology is the effect of a child's gender on behaviour, particularly at this early stage of life. Are boys more efficient than girls in physical skills? Are girls more efficient in language? Or are there no significant gender differences between children aged three to five years? The present study investigates this issue of the influence of gender on behaviour in relationship to Hong Kong preschool children aged 3-5 years in the various developmental areas selected.

Effect of Preschool (Batch)

Another major issue in developmental psychology is the relative influence of maturation and environment on children's behaviour. Do the developmental differences that may be found between young children come about as a result of physical growth and mental maturation, or do various environmental factors have some effect on these changes? The present study investigates one such environmental factor. It compares developmental outcomes of children within rather than between age levels by using a research design that examines the performance of a sample of children of approximately the same age at three periods during the school year. In this way, the effect of age or maturation is held constant to allow for the study of the effects of length of time in preschool on development and learning. The sample children were divided into three batches, A, B, and C, which represent different periods during the data collection year: October-December, January-March, and April-June respectively. The age of the sample children of each batch was kept as close as possible to the midpoint of the age range, three years six months, four years six months, and five years six months. Any differences found in child development related to the variable of batch would suggest that length of attendance at preschool during a single school year has an effect on early development.

Type of Preschool

The two types of regular daily early education and care programmes in existence in Hong Kong, kindergartens and day nurseries, are covered by separate governmental ordinances. Kindergartens are regulated by the Education Department, fall within the scope of the Education Ordinance, and have primarily an educational function. Day nurseries are regulated by the Social Welfare Department and are governed by the Child Care Centres Ordinance, which specifically mandates that care and supervision should be the main functions of all child care centres, including day nurseries. These administrative and functional differences result in different programmes for young children. Do they also result in differences in child development?

Locality of Preschool

Hong Kong preschools are found in all three administrative regions of the territory: Hong Kong Island, Kowloon, and the New Territories. Despite some similarities between these three localities due to the ethnic, linguistic and cultural homogeneity of the population of the territory, there are also important differences, particularly in the residential patterns of the three localities. Large population centres have been in existence for a longer period in Hong Kong Island and certain parts of Kowloon, than in the New Territories. The latter locality generally consist of new towns built during the past decade, and a few remaining rural villages. These new towns are largely populated by young families of lower to middle socio-economic status. These locality differences result in differences in preschool programmes (Opper, 1992). Are these locality differences also reflected in differences in child development?

ORGANIZATION OF THIS REPORT

The present publication, which is the second volume to present the findings of Phase 1 of the PPP, covers the developmental outcomes of the sample children. The focus is local Chinese children of three age levels, 3, 4 and 5 years.

Chapter 2 covers sampling procedures and strategies, gives brief descriptions of the various developmental instruments used, describes the actual administration of the study, and provides some family background information on the sample children. Chapters 3 through 7 present the actual findings as they relate to the variable of age. Chapter 3 covers motor development and some aspects of the health of the sample children. Chapter 4 presents personal and social development, and examines interactive skills, self-awareness, self-care and social competency. Chapter 5 presents the findings on various aspects of cognition; chapter 6 covers receptive and expressive language; and chapter 7 presents findings on three areas of preacademic learning, number, prewriting, and the learning of the English alphabet. Chapter 8 presents an integration of the findings of the previous five chapters on the different developmental areas in the form of three profiles of early development and learning, one for each of the age levels studied. Chapter 9 presents the findings on the four other variables studied, gender, effect of time spent in preschool, type and locality of the preschool. Finally, chapter 10 presents a summary and discussion of the findings as they relate to the research questions, and draws general conclusions. Appendices include the developmental outcome instruments, detailed tables showing the findings for each developmental area, and other relevant information. Throughout the report, when referring to a child the terms he and she are used interchangeably.

2

Sampling, Instruments, Administration of the Study and Sample Description

SAMPLING

This study of child development in Hong Kong preschool children is a national option component of Phase 1 of the IEA Preprimary Project, an international survey into the preschools and families of young children, whose findings have been written up elsewhere (Opper, 1992). Sampling procedures for both the IEA survey and this optional Hong Kong study of child development were more or less identical with respect to target population, sampling methods, sample children, selection of data collectors, and schedule of data collection. The main difference was the instruments: for the survey component this consisted of a questionnaire to parents, whereas for the developmental component the instruments consisted of tests of various aspects of child development.

Target population

The target population for the child development component of the IEA Preprimary Project was all Cantonese-speaking children within the age range of three years six months, four years six months, and five years six months, plus or minus six months, attending a registered preschool in Hong Kong, either kindergarten or nursery. The three age groups of the target age range, 3 years 0 months to 3 years 11 months, 4 years 0 months to 4 years 11 months, and 5 years 0 months to 5 years 11 months, are found in three educational levels in kindergartens: nursery, lower kindergarten and upper kindergarten classes respectively, and in the corresponding classes for the three age groups in day nurseries.

Intended and Achieved Sample Size

The sample children for the developmental component of this study were the same as for the Hong Kong study on preschools and families. The intended sample size was fixed at 3000 children, 1000 at each of the preschool educational levels. This figure was determined by the size of the four-year-old sample for the IEA international survey, which was calculated to be 1000 children, equally distributed by sex, according to a formula recommended by the IEA Sampling Committee (Opper, 1992). The achieved sample size sometimes varied for individual tests, but in most cases was close to the intended sample size.

Sample Stratification

A two-stage stratified sampling procedure was used to select the sample children for the local study. Three factors were adopted as stratum descriptors: locality, type of preschool, and size of preschool. Locality refers to the three administrative districts of the territory of Hong Kong: Hong Kong Island, Kowloon, and the New Territories. Type of preschool refers to kindergartens and day nurseries. Size of preschool refers to large and small preschools. Large kindergartens were defined as those with an enrolment of 250 children or more; small ones with an enrolment of 249 children or fewer. Large day nurseries were defined as those with two classes of 4-year-old children, and small ones as having only one class of this age group.

First stage sampling: selection of preschools First stage sampling involved a proportionate random sampling of preschools within each locality by type and size, with the probability of a preschool being chosen in proportion to the overall distribution of preschools. To achieve the targeted number of children, at least 67 preschools were needed. A set of 80 preschools, randomly selected from within the localities by type and size, was invited to participate in the study. If any of these did not have children at one of the age levels studied, another preschool was selected. Any selected preschool that declined to participate in the study was replaced by another from the same set. Initially 73 preschools agreed to participate in the study. Five of these withdrew early in the study, leaving 68 preschools. Although this was one above the original estimation, it was decided to keep all these preschools in case others withdrew during the period of data collection. The reluctance of some of the selected preschools to participate in the study prevented a completely representative sample, particularly with respect to size. Since this resulted in some empty cells, size was later excluded as a sample descriptor. Table 2.1 shows the distribution of the achieved sample of 68 preschools, 58 kindergartens and 10 day nurseries, by type, size and locality.

Table 2.1 Number of Preschools by Type, Size and Locality

Locality	Kindergarten		Day Nursery		Total
	Large	Small	Large	Small	
Hong Kong	13	10	2	2	27
Kowloon	11	4	0	3	18
New Territories	12	8	0	3	23
Total	36	22	2	8	68

Second-stage sampling: selection of children Second-stage sampling involved selecting from each of the sample preschools chosen during the first stage one class of children at each of the three educational levels, followed by random sampling by the research team of 15 children of the appropriate age within each class. Since the testing was intended to last approximately nine months, and a certain degree of attrition was expected, it was decided to over-sample the number of children at all three levels. In each of the sample preschools, the principal or supervisor selected classes of children at each of the three levels to participate in the study. Generally only one class of children was selected for each level, but in some of the larger preschools more than one class was included. Kindergarten teachers and child care workers of the selected classes were requested to send their class register to the research team which randomly selected 15 children within the age range to constitute the sample of children. In order to control for seasonal effects on the children; to keep their ages as close to the target age as possible; to study the effects of length of attendance in preschool; and to facilitate data collection throughout the data collection year from October to the following June, three sampling points were selected: 15 November 1987, 14 February 1988, and 15 May 1988. Three data collection periods were scheduled to coincide with these sampling points: October-December, January-March, and April-June. Children from these data collection periods were identified as belonging to batches A, B, and C respectively. Five children from each class whose age was nearest the mid-point of the age group were selected for testing during each of the three data collection periods. The achieved overall sample of children for the developmental testing consisted of 3038 children. Table 2.2 shows the distribution of the achieved sample of children by age level, gender, type of preschool, locality, and batch.

Differences between the intended and achieved samples were due to various reasons. At the level of the preschool, some principals, particularly those from the New Territories, were very cautious about participating in a type of study never attempted before in Hong Kong. Principals of preschools on Hong Kong Island were more willing to cooperate, which accounts for an over-representation of preschools from this locality. At the level of the class, some teachers resigned or withdrew from the study due to pressure

Table 2.2 Number of Children by Age, Gender, Type of Preschool, Locality and Batch (N=3038)

Age	3 years	4 years	5 years
	983	966	1089
Gender	Female	Male	
	1494	1544	
Type of Preschool	Kindergarten	Day Nursery	
	2684	354	
Locality	HK Island	Kowloon	New Territories
	1098	833	1107
Batch	A	B	C
	1041	1010	987

of work. At the level of the child, some children withdrew from the study during the year of data collection due to enrolment in another preschool or departure from Hong Kong. Furthermore, some children were absent from the preschool on the day or days when testing for a particular developmental area was conducted. This resulted in the variation in achieved sample size for the various developmental tests.

INSTRUMENTS

One major aim of the developmental component of the Preprimary Project was to gather data from Hong Kong preschool children in order to establish a normative framework of development for preschool Chinese children. Since this was the first attempt to gather information on young children within the preschool setting in Hong Kong, it was decided to initially gain a broad overview of development and include skills in a variety of developmental areas. The results could thus provide a database for the preparation of profiles of Hong Kong Chinese children aged three to five years. The selection of test items was for the most part based on abilities that the existing literature on developmental assessment and testing from elsewhere indicated were important for children of the target age to acquire. Of particular importance were skills that allow young children to adjust to the preschool setting.

Selection and Translation of Instruments

Prior to selecting the instruments for this component of the study, the research team carried out an extensive search of the literature on developmental assessment and testing. In view of the lack of standardized instruments and existing norms for the development of young children in Hong Kong, especially within the preschool setting, the items selected for

the present study were to a large extent based on instruments from Western countries. Several of these instruments included identical items. For example, the gross motor skill of walking up and down stairs alternating feet was found in at least three different tests, as was the ability to name three common objects. The major differences between the tests were methodological, such as details of instructions, scoring methods, or scope of coverage.

In the selection and development of items for the present study, particular reference was made to the Learning Accomplishment Profile — LAP (Sanford and Zelman, 1981). The LAP is a comprehensive criterion-referenced test for children in the age range from three to six years with items in seven developmental areas: gross motor, fine motor, pre-writing, cognition, language, self-help and personal-social development. This test was compiled using items from 27 developmental scales, checklists, or tests, used extensively in the United Kingdom and the United States. Reference was also made to a local instrument, the Developmental Assessment Chart or DAC (Heep Hong and Opper, 1988), a developmental assessment chart developed for Hong Kong preschool handicapped children aged 1 month to 6 years.

Translation Into Chinese

The various instruments were translated into Chinese by a bilingual person whose mother tongue was Cantonese and whose English was fluent. The translated version was back-translated into English by another bilingual person whose mother tongue was Cantonese and whose English was also fluent. The two English versions, original and back-translation, were compared and very few differences in meaning were found. The two translators discussed these differences and agreed upon a final Chinese version.

Developmental Instruments

Instruments for the collection of developmental data include items in the following five areas: motor, personal and social, cognition, language, and preacademic skills. In view of the extensive sample of children of the preprimary study and the relatively large number of developmental tests used, it was necessary to reduce the scope of each test. With this in mind, existing instruments were used selectively and only items which seemed directly relevant and appropriate to Hong Kong preschool children were chosen. The various tests used in the study are described briefly below and details are shown as Appendix II, 2.1–2.5.

Motor Development: Two tests were designed to cover this developmental area: gross motor (Appendix II 2.1a), and fine motor (Appendix II 2.1b). The emphasis for motor development was on obtaining information on the child's

spontaneous performance. Whenever possible data collectors observed the items during regular class activities. Details were also obtained from parents on some aspects of the children's health.

a) Gross Motor: Items of this test include the major gross motor skills that children acquire during the preschool period from three to five years: walking (up and down stairs, on tiptoes, etc.); running (round obstacles, stopping); jumping (forwards, down); hopping and skipping; catching, throwing and kicking balls; and various balance and flexibility items.
b) Fine Motor: Items selected for the fine motor test cover the skills that children acquire throughout the period from three to five years that are particularly emphasized in preschool activities such as painting (grasp of brush, content of picture); writing (grasp of pencil, control of paper); manipulation of plasticine; stringing beads; building blocks; folding and cutting paper; pouring liquids; and finger manipulation.

Personal, Social and Self-care Development: Four tests were designed to cover this developmental area: interactive and self awareness skills (Appendix II, 2.2a-b), self-care (Appendix II, 2.2c), and social competency (Appendix II, 2.2d). Three instruments were used as the basis for the personal, social and self-care items: the Manual for Assessment in Nursery Education, MANE (Bate and Smith, 1978), the California Preschool Social Competency Scale (Levine et al., 1969), and the Humanics National Child Assessment Form. Ages 3–6 (1982).

a) Interactive and Self-awareness: Items for the interactive test include interaction (greetings, taking turns, etc.); playing and knowing names of peers; level of play; and compliance (following instructions and rules, returning toys, helping adults, etc). Those of self-awareness include the child's knowledge of name, own sex, names and number of siblings, home address, current age, and date of birth.
b) Self-care Skills: Self-care items include washing and grooming (dries and washes hands, and face, turns water taps, brushes and combs hair, wipes nose); dressing (hangs clothes on hooks, undresses and dresses, fastens buttons, puts shoes on correct feet, zips zipper); toileting; and eating (drinking, use of knife, and chopsticks).
c) Social Competency: Ten items were selected for the social competency area under three broad categories of social and emotional development that were deemed important for the target children: autonomy and self-control (initiating and completing tasks, concentration in tasks, reaction to frustration, independence); relationships with peers (sharing possessions or toys, borrowing property, returning borrowed property); and social interaction with

adults and peers (communicating wants, conversation skills, response to unfamiliar adults). Unlike the majority of developmental outcome items where information was collected solely by the child's teacher, the information on self-care skills was collected from parents, and that on social competency skills from both teachers and parents.

Cognition: Three tests were designed to cover the cognitive area. One investigated the child's acquisition of various concepts by means of pictures (Appendix II, 2.3a), another tested additional concepts by means of concrete situations (Appendix II, 2.3b), and a third examined some cognitive processes used by young children (Appendix II, 2.3c). Two instruments were used as a basis for the selection of the cognitive items: the MANE (Bate and Smith, 1978), and the Boehm Test of Basic Concepts (1971).

a) Pictorial Concepts: This test includes the recognition of single attributes (size, space, location, similarities and differences); combined attributes (small, round, etc.); association of two familiar objects (shoe-sock/ table/chair, etc.); and sorting.
b) Concrete Situations: This test includes items such as labelling colours and shapes; gender and age discrimination; physical characteristics of objects; and left/right discrimination.
c) Cognitive Processes: This test includes items covering the processes of perception; sequencing; prediction; and memory.

Language: Two tests were designed to cover language, receptive or comprehension (Appendix II 2.4a), and expressive or production (Appendix II 2.4b). A variety of tests were used as a basis for the selection of the language items, including the Verbal Language Developmental Scale (Mecham, 1971), the Sequenced Inventory of Communication Development (Hedrick et al., 1976), the Reynell Developmental Language Scale (NFER, 1969), the LAP (Sanford and Zelman, 1981), and the Uniform Performance Assessment System (White et al., 1978).

a) Receptive Language: The receptive items cover a variety of skills and levels of complexity, both cognitive and linguistic. They include the ability to recognize the functions of common objects (cup-drink, shoe-on foot, knife-to cut, etc.); to identify common actions (run, eat, sleep); respond correctly to the words for spatial and temporal relationships (on, under, behind, etc.); and to understand simple 3-step instructions.
b) Expressive Language: Items of this section were designed to assess the child's level of verbal expression, and cover different levels of abstraction, familiarity and complexity such as describing functions of common objects (cup-drink, shoe-on foot, etc.); naming functions of sense organs (eyes, ears, etc.); reacting to common physical needs

(sleepy, hungry, sad); labelling three basic emotions (sad, happy, angry); naming body parts; naming the composition of objects (book, window, etc.); labelling source of action (what bounces, bites, burns, etc.); expressing knowledge of time and days of week; giving opposites by analogy (hot/cold, big/small, light/dark), or by direct questioning (fast, short, wide); and verbal fluency (producing names of animals).

Preacademic skills: A number of tests were designed to cover three areas of preacademic skills, number (Appendix II, 2.5a), prewriting and recognition of the English alphabet (Appendix II, 2.5b). One major source for the selection of the preacademic items was the LAP (Sanford and Zelman, 1981).

a) Number: Three aspects were included in the number tests: maths and number concepts, number recognition and symbols, and simple arithmetic.
   Maths and Number Concepts: Items of this test include the understanding of quantity terms (big/small, many/few, etc.); order (first, second, third, etc.); space (middle); and fractions (half, quarter, third).
   Number Skills: Items of this test include various aspects of counting; recognizing numerals; matching sets to numerals; ordering series (by size, length); knowledge of time and fractions; identifying coins; and using number knowledge in practical situations (dialing telephone, stating number of fingers on two hands).
   Arithmetic: This test includes items of simple addition and subtraction (written and mental).
b) Prewriting: Prewriting items comprise the following: drawing a house; and person; writing numerals (1–100); writing own name (Chinese, English); and copying shapes, letters, and imaginary Chinese characters.
c) Alphabet: This test involves recognizing and naming all 26 letters of the alphabet for both capitals and small letters.

Piloting of Instruments

To ensure that the wording of the questions and the format of the instruments were appropriate for the target children, all instruments were piloted prior to their final adoption. In some cases, several pilot tests were necessary before the research team felt satisfied with the form and substance of the instruments. Three pilot tests were carried out with the developmental instruments. During the first test 13 children, 7 boys and 6 girls, were given the cognitive, language, and preacademic items. Feedback from this test helped to modify the original instruments. In particular it was found necessary to administer the tests in several sessions so as to maintain

children's interest and motivation. Test instructions for some items needed modification since the children found them too long and complex.

A second pilot test was held with 15 children, 8 boys and 7 girls, selected from three preschools, using a revised version of the above tests. Results indicated that the children were better able to respond to the items of this shortened version. However, materials for some items still needed modification. It was also decided to prepare a testing manual for use by the data collectors, giving detailed instructions on administering and scoring the test items.

A third pilot test was held in which members of the research team as well as preschool teachers acted as testers. Not only were additional tests included in this third piloting, such as gross and fine motor, personal and social, and additional preacademic skills, but it was also an opportunity to pilot the testing manual with preschool teachers.

Findings of this final pilot session indicated that preschool teachers could be reliable data collectors. However, they needed training prior to data collection. Close supervision, guidance and assistance were also required throughout the data collection period. It was decided to combine instructions and scoring for each developmental test on a single sheet in order to reduce the amount of paper work for the data collectors.

After these three pilot sessions, the developmental instruments were finalized and printed. A comprehensive testing kit was prepared for each data collector containing the testing materials and the administration instructions/scoring sheets for each batch of five children.

ADMINISTRATION OF THE STUDY

Recruitment of Preschools

This preprimary study needed careful planning to ensure the close co-operation of kindergarten and day nursery supervisors, teachers and children. The research team adopted a number of measures to achieve this co-operation. One crucial measure was to obtain official government approval of the study. The Directors of Education and of Social Welfare kindly consented to send letters of endorsement of the study to all kindergartens and day nurseries of the sample pool. In addition, a project Advisory Committee was set up comprising representatives from all major groups interested in the preprimary field. This Committee advised on appropriate steps to take for the recruitment of preschools. An active information campaign was also carried out by the research team, including releases to the mass media, open public meetings to explain the study, and more detailed explanations to potential participating preschools.

Selection and Training of Data Collectors

Selection: In view of the large number of children involved in the developmental component of the preprimary study, class teachers of the sample children were invited to act as data collectors. Preschool principals or supervisors of the sample schools selected classes of children and their teachers for the study. The selected teachers were officially invited by the research team to collaborate in the preprimary study as data collectors. Principals acted as honorary supervisors of data collection in their preschool and gave selected staff the necessary assistance and support.

Training: The research coordinator and senior research assistant, under the supervision of the principal investigator, conducted fifteen half-day training sessions in Cantonese throughout the summer prior to data collection. A total of 220 teachers and 73 supervisors from 83 preschools attended these training sessions. During the training programme details were given on the general background of the IEA Preprimary international and local studies. Participants were instructed in the administration of the developmental instruments as well as other instruments of the study (Opper, 1992). A video prepared in a kindergarten with children of the age levels studied, provided visual details on the specific procedures for all the developmental tests. Participants were given the opportunity to have hands-on experience with the testing procedures for the developmental tasks, and to score some of the items. Time was allowed during training to clarify any problems or questions that data collectors and supervisors might have. Any person wishing to view the video again was invited to visit the research centre. Data collectors were encouraged to contact the research team whenever they felt the need for assistance during the entire data collection period.

Supervision, Consultation and Assistance by the Research Team

Every data collector was contacted at least once, either by telephone or by a preschool visit, during the data collection period. The data collectors all had the telephone number of the research team and were encouraged to use it whenever they had problems or wished to discuss testing procedures.

Attrition of Data Collectors

Several preschools decided immediately after the training programme not to participate in the study. Two of the remainder withdrew in the course of the year of data collection, one because of the closure of the school, and the other due to pressure of work. A total of 68 preschools, 58 kindergartens and 10 nurseries, remained in the study for the developmental component of the preprimary study.

Schedule of Data Collection

The developmental data were collected from October 1987 to June 1988 during three sampling periods, October-December, 1987, January-March, and April-June, 1988.

Organization of Data Collection

Each designated teacher or child care worker collected developmental data on the 15 children of her class that had been randomly selected by the research team from the class register. This sample of 15 children was divided into three batches of 5 children (A, B, and C), one for each data collection period. Children whose age was closest to the mid-point of the age level (3 years 6 months; 4 years 6 months and 5 years 6 months respectively) were selected for each batch. The purpose of this was twofold. First, the ages of the children were kept as close as possible to the mid-point of the target age for the international study. Second, by maintaining age more or less constant across educational level, it was possible to investigate the effects of length of time spent in preschool on child developmental outcomes. As soon as research data had been collected, it was sent to the research team who then forwarded another set of tests for the subsequent batch of children.

Monitoring Procedures

Data collectors sent the data in three batches to the research centre. Upon receipt of each batch the recording sheets were checked to determine the accuracy of reporting. The research team provided guidance and advice for data collectors who reported problems. After reviewing each batch of data for potential problems, the research team despatched the following set of developmental tests for the next batch of children. This new despatch was accompanied by a letter which attempted to clarify important points and prevent future difficulties.

Data Entry and Analysis

All the developmental data were scored and entered into the computer. Analysis of the data involved descriptive statistics such as percentages of success at various test items, as well as t-tests and analysis of variance, ANOVA, between the developmental data and the various variables selected for study.

Results

This publication provides details on the findings for the outcomes in the five developmental areas selected for study. For each developmental area

descriptive statistics giving percentages of success for each item by age are shown. A criterion of acquisition of 66% of the responses was adopted for this study. Since figures have been rounded off to the nearest whole number, totals do not always amount to 100 percent. Comparisons are also made for each developmental area along the dimensions of age, gender, batch, type of preschool, and locality. ANOVA and/or t-tests were calculated for each test at two levels, first for the overall sample, and then at each of the three ages separately. In view of the large size of the sample, a level of $p<.001$ was adopted as the measure of probability.

SAMPLE DESCRIPTION

The majority of the sample children were born in Hong Kong where, at the time of the study, their parents had been living for over 20 years. The children come from relatively small nuclear families with one to three children, and are frequently the oldest or second child in the family. A higher proportion of large families is found in the New Territories than in the two other localities. Children from larger families are more likely to attend kindergartens than day nurseries. Almost all the sample children have Cantonese as their mother tongue. Very few of them speak a second language, but if they do, English is the most commonly spoken, particularly by families from Hong Kong Island.

Living accommodation for the families, which is almost equally divided between rented and self-owned housing, generally consists of one living and two bedrooms. About one third of the families have grandparents or other relatives living with them, although very few have a maid. The standard of living of the homes of these children is relatively high with the majority having television, refrigerator, telephone, radio, and washing machine. On the other hand, very few have a dishwasher, microwave oven, encyclopedia, or computer. Most families have access to a play area for the children, which is used by the majority of the families at least one to two times a week, mostly on weekends.

All parents have completed at least Primary 6 level of education, about one quarter lower secondary, and one third upper secondary level. The vast majority of fathers work full-time, but only half the sample mothers work. More mothers from Hong Kong Island have a job. Fathers tend to work in the sales and production sectors, whereas working mothers tend to have clerical positions. Level of income is highest among Hong Kong Island families where parents are more likely to hold white collar positions, and lowest amongst New Territories families, where mothers often do not work and fathers hold blue collar jobs.

10

Summary and Conclusions

This chapter presents a summary of the major findings of the study in relation to the research questions raised in the first chapter, namely, what are the effects of age, gender, length of time spent in preschool, type of preschool, and locality, on the development of Hong Kong Chinese children aged 3 to 5? To answer these questions, the effect of each of these five variables was examined in terms of its statistical significance for the overall sample of children for each test of the five developmental areas. In addition, the statistical significance of each variable, except age, was examined at each of the three age levels for all tests. The effect of these five variables was also examined by inspecting the data at each age at the level of the individual items of each test. These findings are then compared with those from elsewhere. The chapter concludes with a discussion of the contribution of this study.

MAJOR HONG KONG FINDINGS RELATED TO RESEARCH VARIABLES

Age

The age-related research question raised in this study is whether there is a difference between the developmental outcomes of Hong Kong Chinese children aged 3, 4, and 5? It is clear from the findings of this study that, of all the variables examined, age has the most marked effect. ANOVA analyses find age to have a highly significant effect for the overall sample for all tests except one in the five areas of development studied: motor, social, cognitive, language, and preacademic (see Table 9.1). This effect is supported by t-test results that show significant differences between the three age levels (3 versus 4 years, 4 versus 5 years, and 3 versus 5 years) for all the tests used, with the exception of language comprehension, where a significant age effect was only found between 3 and 5 years but not between 3 and 4 nor between 4 and 5 years. This effect of age on developmental outcomes is also supported

by the progression in the ages of acquisition of the various skills and behaviours studied, determined in this study by means of a 66% success rate for each test item, that can be clearly seen in the three profiles by age (see Table 8.1). One notable exception to this overall age effect was found in the test for social competence in the home, as assessed by parents, where no significant differences were found for the overall sample, nor at 3 or 5 years.

The findings of an overwhelming effect of age on early child development in Hong Kong are not surprising in view of what is known about young children elsewhere. The preschool period from 3 to 6 years has often been described as the formative years. This is the time when young children acquire many of the skills, abilities and behaviours that form the foundations for later learning. The findings of this study confirm that this is also the case in Hong Kong. Chinese preschool children aged 3 to 5 years become increasingly competent throughout this period as they progressively acquire a vast number of skills and understanding in all areas of development, and show clear differences between their abilities at each age. The answer to the question on the effect of age on child development is positive. Age has an effect during the preschool years on developmental outcomes in all five areas studied.

Gender

The gender-related question as to whether there are developmental differences between preschool boys and girls shows more equivocal findings. Significant differences are found in some but not all areas of development. The area where the most differences are found is social, particularly in interactive and social competency skills, where girls are generally in advance of boys. Less marked but nevertheless significant differences are found in the cognitive, language and preacademic areas, where girls again tend to be in advance of boys. Although the differences are not always statistically significant, girls also appear to be ahead of boys in some aspects of fine motor, and boys appear to be ahead for some aspects of gross motor development. Gender differences for individual items are negligible for cognitive and language development.

Type of Preschool

Significant type of preschool differences between kindergarten and day nursery children were found in the areas of motor, social, and preacademic learning, and to a lesser extent in cognitive and language development. Day nursery children seem to perform better at the younger age of 3 years, but by 4 and 5 years kindergarten children take the lead. This reversal of preschool effect is noted particularly in the areas of motor development and preacademic learning. In social development day nursery children perform better at all three ages.

Locality

Although some significant locality differences were noted between Hong Kong Island, Kowloon and New Territories for the overall sample, their direction is not clear. At no particular age and in no developmental areas does any one locality appear to perform consistently better than the other two. Each locality performs better on some items but not on others, and better at some ages but not at others. Locality does not appear to be a major contributing factor to the developmental outcomes of Hong Kong preschool children.

Length of Time Spent in Preschool

Length of time spent in preschool affects development in all five developmental areas, with the exception of self-care. Preschool experiences seem to have a particularly marked effect in the area of preacademic skills, language production, cognition and relationships with peers. Batch C children who were tested towards the end of the school year, perform better than batch A children who were tested at the beginning of the school year. By and large, children who have spent longer in preschool do better than children who have spent less time there.

COMPARISONS BETWEEN CHILDREN FROM HONG KONG AND ELSEWHERE

How do the findings on Hong Kong Chinese preschool children compare with those from elsewhere? This question will only be examined in relation to the variables of age and gender since these have been studied elsewhere. Type of preschool and locality are purely of local interest. Although length of time spent in preschool is of universal interest in view of the increasing numbers of children who attend preprimary institutions thoughout the world, this variable does not appear to have been studied in a similar way to the present study, which makes comparisons difficult.

Age

From the perspective of age, the question is whether the early development of Hong Kong children is similar or different to that found in their counterparts from other countries? The cross-cultural comparisons presented in chapters 3 to 7 indicate that, for the most part, similarities of child development in different cultures far outweigh differences. For example, at 3 years children from both Hong Kong and elsewhere, particularly the United States, walk upstairs, jump forwards, make simple block constructions, manipulate clay, help adults in simple tasks, wash and dry their hands,

turn taps on and off, understand the concept of different, understand three prepositions, and copy a circle and the letter T. At 4 years children are able to walk downstairs, catch a ball, fold paper, cut along a straight line, dress themselves and button clothes, understand four prepositions, give two opposites, copy a square and a simple word. At 5 years children generally are able to hop on each foot, make a recognizable object from clay, tie a knot, understand concepts of furthest and widest, and tell the use of a clock. These similarities suggest that there are universal patterns of development found in young children in different countries despite their cultural and linguistic differences.

The differences that are found between the two groups of children are not large and seldom exceed one year in either direction, ahead or behind. Perhaps the area where Hong Kong children show the greatest delay when compared with elsewhere is social development. For example, Hong Kong children are one year behind in greetings, taking turns, playing cooperatively, and engaging in dramatic play, and two years behind in asking permission to use toys. On the other hand, they are ahead by one year for having a consistent friend. Hong Kong children are also two years ahead of their counterparts from elsewhere for kicking a ball, inserting paper into an envelope, crumpling a tissue and cutting with a knife. Many of these items represent isolated skills and the differences in the age of acquisition could be random or result from methodological discrepancies between the various studies. No clear pattern of a consistent advance or delay in any developmental area or for any particular type of skill or behaviour emerges from the findings, with one single exception. Hong Kong children seem to be consistently in advance of children elsewhere in the area of preacademic learning, particularly for early number and prewriting skills. They are one year ahead for most of the preacademic items studied, such as counting, knowledge of more/less, telling time by hours, ordering, addition, drawing a house and person, and copying various shapes. They are two years ahead of their counterparts from elsewhere in items such as rote counting from 1–3, knowing the concept of less within 10, and knowing the number of fingers on both hands.

These findings should come as no surprise in view of the heavy emphasis that Hong Kong preschools place on the learning of preacademic skills, particularly those of number and writing. The question is whether these substantial advances in preacademic skills of Hong Kong children are appropriate, or whether they are obtained at the expense of skills in other areas and thus jeopardize children's well-rounded development. Inspection of the findings suggests that the emphasis on preacademics in Hong Kong preschools might be to the detriment of social development. The findings suggest that social development is underemphasized and preacademic learning overemphasized in Hong Kong preschools. This imbalance applies more particularly to kindergartens than to day nurseries. Children from day nurseries are more advanced in their interactive skills, more independent in

self-care, and more socially competent in both the preschool and the home, and also less advanced in their preacademic skills. Kindergarten children, on the other hand, especially at 4 and 5 years, perform better at a number of preacademic items. This proficiency at the older ages suggests that, as they get older, kindergarten children spend more time than day nursery children on preacademic tasks and skills, and less time on social interaction. If one of the aims of early childhood education is to promote the healthy, all-round development of young children, then Hong Kong kindergartens are not altogether successful. This issue would need further research specifically designed to examine the question.

Gender

Do the findings on gender differences of the present study support those from elsewhere? This is a difficult question to answer in view of the fact that while the issue of gender differences in development has generated many studies, very few have been conducted at the preschool level. In motor development, Thomas and French (1985) find gender differences for throwing balls, with boys as young as 3 years outperforming girls of the same age. Cratty (1986) finds that boys are better at playing with balls, and running, and girls cut with scissors and copy basic shapes ahead of boys. The motor development findings of the present study support gender differences in throwing balls, but only at 4 and 5 years, and not at 3 years as in the Thomas and French study. However, the Hong Kong findings support Cratty's statement that boys are better at playing with balls, especially for kicking a moving ball, where Hong Kong preschool boys show a slight advance at all three ages. The findings do not, however, support male superiority in running, since at all three ages there are no gender differences in the items used to test running, stopping, and avoiding obstacles. In the area of fine motor skills, on the other hand, Hong Kong findings show no difference between boys and girls in the use of scissors, and only at 3 years for copying basic shapes.

Maccoby and Jacklin (1974), in their extensive review of all major studies of gender differences, present a number of findings relevant to the present study in the areas of social, language, cognitive, and preacademic learning. These authors distinguish between findings where gender differences are fairly well established, and those which still remain open to debate. These are discussed in relation to each separate area of development.

In the area of **social development**, established gender differences include the findings that boys tend to interact more and with a higher number of peers than girls; and both genders are very similar in their interaction with strangers. Questionable beliefs include those that girls are more compliant to demands and directions of adults; tend to show more help-giving behaviours than boys; and are more social than boys. The finding that boys interact more with peers and with a larger number of them than girls suggests

that boys would also be more likely to engage in cooperative play, and to know the names of more peers. These two items were tested in the present study. The Hong Kong findings show that at all three ages girls are ahead of boys for cooperative play, and both genders perform in an almost identical manner for naming peers. Since these two items studied peer interaction indirectly, it is difficult to make exact comparisons. It does seem, however, that Hong Kong preschool boys do not interact more with their peers than preschool girls. The established finding that both genders are similar in their interaction with strangers is directly related to one item of the social competency test (responds to unfamiliar adults). Inspection of the data for this item shows that the Hong Kong findings confirm those of elsewhere. An almost identical pattern of response towards unfamiliar adults is noted for both boys and girls. At all three ages, both genders engage in the same amount of passive movement (responds to overtures by unfamiliar adults but does not initiate contact) and active movement towards strangers (readily moves towards unfamiliar adults).

The unsupported beliefs that during childhood girls are more compliant to demands and directions of adults, engage in more help-giving behaviours, and are more social than boys, can also be related to a number of items of the social tests. Compliance items of the interactive and social competency tests include returning toys, engaging in group games, acting without reminder, taking turns, asking permission, following directions and rules, and performing tasks upon request. Inspection of the data for these items shows that at all three ages and for all items, girls perform better than boys. The evidence of this study, particularly of the item on helping adults, also supports the belief that girls show more help-giving behaviours than boys. The belief that girls are more social is more difficult to assess since it is not clear what is meant by being more social. However, if being social is taken as interacting positively with others, the present study has four related items (greetings, playing cooperatively, having a consistent friend, and conversation skills). Girls perform better than boys at all three ages for greetings and playing cooperatively, and at 5 years for having a consistent friend and conversation skills. The Hong Kong findings support the belief that girls are more social than boys in a number of ways.

In the case of **language development**, well-established gender differences have been found in verbal ability, with girls showing superiority to boys from the age of 11 years. This can be interpreted to suggest that there are few gender differences in verbal ability in children younger than 11 years. The present findings confirm no systematic gender differences in verbal ability of Hong Kong children during the preschool period.

In the area of **cognitive development**, established findings by Maccoby and Jacklin are that males are superior in spatial ability from adolescence onwards and that preschool boys are better in visual decoding or pointing at named objects where the stimulus is visual, whereas preschool girls are better at productive naming. Items that test spatial ability in the present

study are the use of various prepositions and the recognition of the concepts of nearest and furthest. The Hong Kong findings for both these items are inconclusive. Girls perform better than boys at 3 and 4 years for prepositions, but both genders are at a similar level at 5 years. Girls also perform better than boys at all three ages for the concept of nearest, whereas boys perform slightly better than girls at 4 and 5 years for that of furthest. These Hong Kong findings suggest that, if males are superior in spatial ability at adolescence, this superiority is not yet evident at the preschool level, or at least not in the relevant items of this study.

Visual decoding was tested by two items of the study, embedded figures and pattern prediction; pointing at named objects was tested by various items of the pictorial concepts: and the item of naming animals is a measure of productive naming. The findings show that as far as embedded figures are concerned, girls tend to do better than boys, particularly at 5 years. Both boys and girls perform in a similar fashion for pattern prediction, for the pictorial concepts, and for naming animals. In other words, the Hong Kong evidence provides no support for the superiority of preschool boys at visual decoding nor of preschool girls at productive naming.

In the area of **preacademic learning**, the established finding of no gender differences in the early acquisition of quantitative concepts and the mastery of arithmetic before 11 years is only partially supported by the present findings. Gender differences were found for the overall sample for the number concepts, but not at any of the three ages, nor for the number skills or arithmetic tests. There is, however, a tendency for girls to do better at counting at 5 years.

To summarize, this study supports findings on gender differences in some areas, provides partial support in others, and does not support findings from elsewhere in other areas. Support of findings or beliefs from elsewhere is seen in the areas of male superiority at kicking moving balls, similar reactions of both genders to strangers; female superiority in compliance with adult requests, more helpful behaviours towards others, and in being more social; and no gender differences in verbal and spatial ability and arithmetic during the preschool years. The findings provide partial support for male superiority at throwing balls (only at 4 and 5 years), for female superiority in copying shapes (girls do better at 4 and 5 years), and no differences in the acquisition of number skills (girls do better at 5 years).

The findings do not support those from elsewhere in the area of female superiority for using scissors or productive naming, nor for a male superiority at visual decoding and more male than female interaction with peers.

CONTRIBUTION OF THE STUDY

The findings of this study should prove useful to various groups of persons involved with young children: preschool teachers, early childhood

curriculum developers, early childhood textbook writers, parents, policy makers, and researchers.

Preschool teachers, curriculum developers and **textbook writers** will find the age and batch findings of particular relevance in their work with early childhood curriculum. Age-related findings provide details on the typical competencies, abilities and behaviours at each of the three age levels in the five developmental areas studied. Batch-related findings give information for each age on children's competencies in the five areas at the beginning, middle and end of the school year. Together, these two types of findings paint a picture of the small and large steps that young children take in their developmental progression throughout the period from 3 to 6 years. The profiles of Hong Kong children contained in chapter 8 and the more extensive details contained in the various Appendices, can help all those dealing with curriculum development, either at the macrolevel of curriculum design or at the microlevel of the classroom, to prepare and select interesting, challenging, and developmentally appropriate activities suited to Hong Kong children. Individual preschool teachers can use these developmental details when preparing their daily programme of activities for the children in their class. Curriculum developers can use them when planning, developing and implementing a curriculum for an entire preschool or for a number of preschools. Textbook writers can also use them when designing materials and specific activities suited to the degree of maturity of young children of specific ages.

As skills and competencies emerge and children become more proficient in all aspects of development, the curriculum must change in content and level of demand. These findings provide a rich and extensive data base for designing activities that correspond to the emerging abilities of young children throughout the school year and from age to age in all five areas studied. In particular, the batch data help to specify the zone of proximal development for young children and permit the appropriate scaffolding of learning. At the beginning of the year, skills achieved by batch B children can be used as targets for developmentally appropriate activities. At a later stage in the year, these targets could be changed to fit the competencies achieved by batch C children.

Teachers can use the gender findings to design activities that take into account the similarities in development and more especially the respective strengths and weaknesses of boys and girls at the different ages. When organizing activities, teachers might make allowances for male superiority in ball skills, and female superiority in balance, flexibility, and manual dexterity, or for female advance in social maturity and in certain aspects of preacademic learning. Preschool teachers should also be aware of the effect of type of preschool on developmental outcomes, with kindergarten children showing a better performance in the motor and preacademic areas as they grow older, and day nursery children apparently ahead in aspects of social development. Such awareness might lead them to evaluate the activities

they provide and determine whether these activities effectively promote well-rounded development at all levels of preschooling.

Parents will find the age, batch and gender findings of interest since they provide a framework for understanding and following the progress of their preschool children in the five areas studied. Such knowledge of child development in the local context should help them engage in appropriate child-rearing and early educational practices. The type of preschool findings on the differential effects of day nurseries and kindergartens are also of interest to parents who could use this information when selecting a preschool for their child. Batch findings which show that time spent in preschool contributes to child development and learning should provide some reassurance to parents, many of whom make significant sacrifices to send their child to preschool.

Policy makers will be particularly interested in the batch findings which clearly show that children benefit from their preschool experience in all areas of development, particularly in gross motor, cognition, language development, and preacademic learning. Although these findings do not answer the question of whether preschool is essential, they provide support for the preschool experience and the claim that preschool is both desirable and necessary. This should be helpful to policy makers who sometimes doubt whether expenditure in early education is necessary. This study suggests that such expenditure is justified and worthwhile.

Researchers can benefit from the findings of this study which provide an extensive data-base on the early development and learning of Hong Kong preschool children. Since this was the first large-scale study of its kind, it intentionally included all five developmental areas. Within these areas the items were selected to provide broad coverage rather than an in-depth study of any particular area. Consequently, many skills and competencies were not included. Researchers interested in obtaining more detailed information in a particular area could use these findings as a springboard for future developmental studies. In this way this study will serve as the impetus for further research which could lead to a greater understanding of the early development of Hong Kong preschool children. Although the findings provide some insights into early child development in Hong Kong, many questions remain unanswered. Why are there few developmental differences in social development in the home? What are the processes by which length of time spent in preschool affects specific areas of development? Why is there a reversal effect of type of preschool on motor and preacademic development? Why are Hong Kong children in advance of those from elsewhere in preacademic learning? Does this academic advance contribute to a smooth transition to primary school? These are some of the questions that need further research.

In conclusion, perhaps the persons for whom this study could have the greatest impact are Hong Kong's **preschool children**. The findings provide a developmental framework that allows preschool teachers, curriculum

developers, textbook writers, parents and policy-makers to offer activities, materials and programmes that support and enhance the overall development of young children. If all these persons have children's best interests in mind and can make use of this study as a reference in their endeavours to promote healthy growth and progress, Hong Kong's young children will be the greatest beneficiaries.

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