DOCUMENT RESUME

ED 417 600 FL 025 122

TITLE	New Horizons in Education, No. 38.
INSTITUTION	Hong Kong Teachers Association.
PUB DATE	1997-11-00
NOTE	120p.
PUB TYPE	Collected Works - Serials (022)
LANGUAGE	English, Chinese
JOURNAL CIT	New Horizons in Education; n38 Nov 1997
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	Biological Sciences; Chinese; Civics; Classroom Techniques; *Computer Assisted Instruction; Cooperative Learning; Cultural Awareness; *Curriculum Design; Discipline Problems; *Elementary Secondary Education; Environmental Education; *Ethical Instruction; Ethics; Experiential Learning; Foreign Countries; Gifted; Handwriting; Ideography; Language Teachers; Physical Education; Physics; Reading Comprehension; Reading Instruction; Reflective Teaching; School Administration; *Science Education; Simulation; *Social Studies; Writing Instruction
IDENTIFIERS	Content Area Teaching; *Hong Kong

ABSTRACT

The articles in this journal, in either Chinese or English (all with English abstracts), on elementary and secondary education in Hong Kong include: "Environmental Education: A Head, Heart, and Hand Approach to Learning About Environmental Problems" (Daniella Tilbury); "Social Subjects and Civic Education in Secondary Schools" (Kwan Choi Tse); "Disciplinary Problems of Primary School Students in Ma On Shan" (Chui Fa Lam, Kwok Keung Ho); "Education for the Gifted and Talented: What Programs Are Best Suited for Hong Kong?" (David W. Chan); "Using Top-Level Structures To Enhance Reader Comprehension of Content Area Texts" (Peter Bodycott); "Physically Fit Is Better Than Cognitively Fit: Why Not Set Up a Physical Fitness Unit in Hong Kong Primary School Curriculum?" (Shu Sing Wong); "Language Teacher and the Teaching of Language Sensitivity" (Hon Kwong Chow); "Rethinking of the Teaching of Chinese Writing in Lower Primary Forms" (Che Ying Kwan); "A Preliminary Study on HKIED Students' Bioethics Attitudes" (Sing Lai Chan, Kevin Chung Wai Lui, Joseph C. Tsang); "Enhancing Teaching Through Action Learning: Helping Innovation in Hong Kong" (John Biggs, Raymond Lam); "Computer Simulation Programs for Hong Kong School Physics Curriculum: An Attempt To Provide an Exploratory, Collaborative, and Student-Centered Learning Environment" (P. K. Tao); "Role of Peer Support Scheme in Developing Teacher Reflection: A Case Study" (Edmond H. F. Law, Pui Wah Cheng, Po Wah Chan, Heung Ling Ip); and "A Case Study on the Running Fashion of Wanli International School" (Pik Yu Cheng, Lin Xiang Jin, Jun Li, Har Fun Dung). (MSE)

NEW HORIZONS
In Education

No. 38 November 1997

教育曙光

JOURNAL OF EDUCATION
HONG KONG TEACHERS ASSOCIATION

香 港 教 師 會

香港教師會於一九三四年成立，以促進教育同工之間的密切合作、提高教育專業人員的地位、維護會員的權益、增進會員的福利、加強國際間的了解為宗旨。香港教師會除了是本港一個教育團體外，同時亦是多個國際性組織的會員，如世界教師專業組織聯合會及國際閱讀協會會員。

香港教師會的週年學術活動有：(一)教育研究大會，如一九九六年舉辦的「高效能教學與實踐」研究大會、一九九七年舉辦的「優質教育新挑戰：愉快的教與學」研究大會等、(二)本港教育專題研討會，如一九九〇年至一九九七年間舉辦的「幼稚園、小學與中學的銜接研討會」、「特殊學校音樂教育研討會」、「如何為成績稍遜的學生提供有效學習研討會」、「教室管理的科學與藝術」及「母語教學問題及解決方法研討會」等；(三)定期出版教育曙光。近年舉辦的國際學術活動，則有一九九〇年與國際自由教師工會聯合會合辦的第六屆及第七屆香港地區教育團體研討會、一九九二年主辦的「我們的下一代大陸、台灣、香港、澳門基礎教育研討會」、一九九四年協辦在台北舉行的「世界經濟發展中，海峽兩岸暨港澳地區全民教育發展之展望」學術研討會、一九九五年在上海第三屆海峽兩岸暨港澳地區教育學術研討會，及一九九七年第四屆海峽兩岸暨港澳地區由澳門舉辦《跨世紀教師隊伍的建設》的教育學術研討會。

教 育 曙 光

*教育曙光*是一份香港教師會出版的教育學報，每期均請專家評審；每年十一月出版，分發全港幼稚園、小學、中學及大專院校。

*教育曙光*以促進專業發展與教學實踐為宗旨，每期均刊登具實踐和研究價值的文章。文章的範疇包括專題探討本港當前教育問題的剖析，教學、輔導及學校行政的研究，教育新趨勢和新意念的介紹等。

歡迎教師、學校行政人員、輔導工作者、教育學者及研究人員投稿。詳情請參閱每期刊登的徵稿啟示。

*教育曙光*歡迎各教育機構免費訂閱。請將訂閱表格及郵費寄來香港教師會。

HONG KONG TEACHERS' ASSOCIATION

The Hong Kong Teachers' Association (HKTA), founded in 1934, aims at developing close cooperation among educational workers, promoting the professional status of teachers, protecting the rights and improving the welfare of its members and strengthening international understanding of teacher organizations. Apart from being a Hong Kong-based educational body, HKTA is also a member of international organizations such as Education International and the International Reading Association.

The academic activities of HKTA include: (1) the annual education conference, such as the 1996 Conference on Effective Teaching and Practice, and the 1997 Conference on New Challenge of Quality Education: Pleasurable and Effective Teaching and Learning; (2) Seminars on local educational issues such as: "Continuity in Preschool, Primary and Secondary Education", "Music Education in Special Schools", "Effective Learning for the Less Able Students", "The Science and Arts of Classroom Management" and "Seminars on the Problems and Solutions of Mother-Tongue Teaching", which took place in 1990-1997; and (3) the publication of New Horizons in Education. In 1992, HKTA is proud to be the chief organizer and the host for The First Educational Conference of China, Taiwan, Hong Kong & Macau, with the theme "Education for our Children: Basic Education". Since then, HKTA has actively participated in the Second, Third and Fourth Educational Conference of China, Taiwan, Hong Kong & Macau which took place in Taipei (1994), Shanghai (1995), and Macau (1997), with the themes on "The Prospects of the Development of Public Education", "Education in the Context of Global Economic Development", and "The Development of Teacher Team Across the Century" respectively.

NEW HORIZONS IN EDUCATION

New Horizons is a refereed journal of education published annually in November by HKTA. It is distributed to kindergartens, primary and secondary schools and teriary institutions in Hong Kong.

New Horizons is intended as a forum to stimulate and enhance professional development and practice in education. We publish papers that speak directly to practical school and classroom concerns as well as papers that are based on systematic inquiries into educational issues and practices, including those related to the announced theme(s). We also publish presentations of new developments and innovative ideas tried out in schools, in Hong Kong or elsewhere.

Submissions are invited from teachers, school administrators, persons with pastoral duties, educationists and researchers. General information about submissions can be found in the Call for Papers in each issue of the journal.

Free subscription to New Horizons is on an institutional basis. Institions are required to send in a request from and pay the postage.

編者語

由一九九五年開始，讀者已能在「美國教育研究資源中心」(ERIC)的光碟系統裏，查閱本刊九二年後各期文章的摘要，現更可在互聯網中，閱讀由一九六七年開始各期文章的摘要，網址如下：

http://www1.fed.cuhk.edu.hk/en/nh/nhindex.htm

本刊亦可算是鄰近區域各教育期刊中，評審來稿最有效率期刊之一，以今期為例，來稿的評審期平均約為五星期，最長的需時五個月，最快的一個星期便可知道結果，主要視乎個別評審者的效率及合作程度，編者能作的只是多和評審者溝通及催促。本刊期望在評審方面的效率及質素，能吸引更多本地及外地學者投稿，從而進一步提高本刊的學術及專業水平。

From the Editor

Since 1995, readers can get access to the abstracts of New Horizons in Education through the ERIC data base (starting from the 1992 issue) or the internet (starting from the 1967 issue). The web address is:

http://www1.fed.cuhk.edu.hk/en/nh/nhindex.htm

Our journal can be considered as one of the most efficient journals in reviewing authors' manuscripts in the region. The average reviewing period was about 5 weeks in this issue, actual time ranging from 1 to 20 weeks, mainly depends on individual reviewer's co-operation. We hope that our efficiency will stimulate and attract more contributions locally and internationally, hence, upgrading the standard of our journal in a long run.

教　育　曙　光

第三十八期，一九九七年十一月

目錄

學術論文與問題評論

教育問題

課程與教學

實踐與經驗

*用英文撰寫

本期的特約評審員

張妙清博士、蔡寶瓊博士、[illegible]女士、侯　傑博士、[illegible]先生、
洪友廉博士、霍秉坤博士、鄺偉良先生、林智中博士、黎歐陽汝穎博士、
李子健博士、李芳樂博士、文思慧博士、施敏文先生、黃顯華博士、
蕭鳳英女士、黃　全博士、楊鐵民先生、葉殷恩先生
（香港中文大學）
趙明濤女士、鄭微先校長　（浸信會呂明才小學）
羅旭華教授　（美國伊利諾大學）
黃偉文先生、黃根鈴博士　（迦密柏雨中學）
陳新霖校長　（青年會中學）
方顯聲女士、何國華博士、黃君武先生、莊曉東博士　（香港城市大學）
陳我本博士、鍾宜光博士　（香港浸會大學）
李樹榕先生　（香港考試局）
胡少偉先生　（香港教育學院）
謝錫金博士　（香港大學）
陳尚華博士　（加拿大安大略省環保及能源局）
麥長高校長　（保良局梁銀[illegible]幼稚園）
陳紹銘博士　（區民局[illegible]）
梅玉霖博士　（寶血小學）
周浩昌先生、蘇桂芳女士　（基督教教育研究院）
黃潤福校長　（靈糧會彭學高中學）
黃麗娟博士　（聖公會吳[illegible]中學）
劉潤文校長　（立人特殊學校）
鄭國光博士　（澳門大學）

New Horizons In Education

No.38, November 1997

CONTENTS

Articles and Issues

*In Chinese

Environmental Education: A Head, Heart and Hand Approach to Learning About Environmental Problems

Daniella Tilbury

The University of Hong Kong

Environmental education is an area of learning which tries to interest and involve students in the major environmental issues of our day. It primarily promotes a head, heart and hand response to environmental problems. These goals are achieved through combining three approaches to environmental education involving education ABOUT, IN and FOR the environment.

Each approach has its own educational objectives and pedagogical style. What these distinctive characteristics are, or what the relationship of such approaches is to the environmental education process is not always clear. Most importantly, the significance of developing a three-pronged response to environmental concerns within the school curriculum is rarely stated. This paper is an attempt to address these implicit concepts and assumptions which form the foundation of official policy documents and the basis of many environmental education materials. Finally, the paper examines the three-pronged response in practice and the need for teacher education in this area.

環境教育：通過智力、態度和實踐三個方法學習環境問題

環境教育是一門期望能引發學生興趣及使學生關注現今主要環境問題的學科，它提倡通過智力、態度和實踐幾方面去瞭解環境問題，這主要強調認識環境、處身其中及關心環境三種取向去達成學習目標。

每種取向有其本身的教育目的及教材形式，其本身的特色或與環境教育過程的關係有時並不太清楚，最重要的是現今學校課程中很少會突出主應三種達成環境教育學習目標的取向。這篇文章試圖將這些形成環境教育政策及基本教材底下所隱藏的觀念及假設指出來。最後，本文會探究這三種形式的實踐及在培訓教師方面的需要。

1. Environmental Education-Way?

Only twenty-five years ago the term 'environmental education' was relatively unknown, now it has gained world-wide recognition, forming the basis of national education policies and global environmental strategies. No other single education movement has evolved at such an explosive pace.

It was the increasing awareness of the global nature and complexity of problems such as climate change, desertification, deforestation, the depletion of natural resources, land use management, pollution, mass extinction of species, population growth, famine and poverty, which gave rise to a new concept in education. An analysis of the international literature suggests that the eminent environmental threat and anxiety over issues of survival (and not an admiration of or fascination with nature) led directly to the development of environmental education.

This context has had great implications for the nature and purpose of environmental education in schools. A review reveals that from the beginning when the term 'environmental education' was first coined in 1971, there has been a consistent theoretical interpretation of its purpose and goals (Tilbury 1993). Environmental education evolved not as an academic discipline concerned with the study of nature but as an area of learning which tries to interest and involve students in the major environmental issues of our day. It primarily seeks to nurture a sense of personal responsibility towards the environment, as well as attempt to equip pupils with the skills and knowledge to give effect to this responsibility.

Environmental education is essentially an education involving the head, heart and hand.

2. A Three-Pronged Approach

The key to the effective development of environmental education lies in its three-pronged response to environmental concerns, as recognised by the CDC's 'Guidelines for Environmental Education' in Hong Kong (1992). Through the environmental education process students engage in education ABOUT, IN and FOR the environment. These three distinct environmental education approaches, first identified by Lucas (1972) are entrenched within the key and authoritative literature e.g. .

> "The adopted working definition of environmental education isoften described as education for the environment, in theenvironment backed up by education about the environment." (UNESCO 1992 p.13)
>
> "...it is generally believed that environmental education consists of, in various degrees, three inter-related components: acquiringknowledge about the environment, providing opportunities for learning in the environment, and developing an informed concern for the environment." (CDC 1992 p.7)

Each environmental education approach has its own educational objectives and pedagogical style. What these distinctive characteristics are, or what the relationship of such approaches is to the environmental education process is not always clear. Most importantly, the significance of developing the three-pronged response to environmental concerns in the school curriculum is rarely stated. This paper is an attempt to address these implicit concepts and assumptions which form the foundation of official policy documents and the basis of many environmental education materials. Finally, the paper examines the three-pronged response in practice and the need for teacher education in this area.

3. The Approaches

Education ABOUT the environment is concerned with developing awareness, knowledge and understanding about human/environment interactions (see Figure 1). It adopts a predominantly cognitive focus (CDC 1992). This informative approach frequents the science and geography curricula, where the environment becomes a topic or theme of study. Through it, pupils primarily develop ecological or environmental understanding although environmental concern may also result. This approach which is also commonly referred to as environmental science or studies, is the prevalent form of environmental education in schools (Fien 1992).

It has been argued that schools' emphasis on education ABOUT the environment has focused classroom practices on ecological concepts and technical solutions to problems and neglected consideration of the socio-political aspects of environmental decision-making (Huckle 1985; Fien 1992; Robottom 1987). Critics maintain that this dominant approach has served to promote a technocentric perspective and conservative view of the environmental crisis. Underlying Education ABOUT the environment is the assumption that increasing the environmental knowledge in the curriculum can lead to new forms of understanding and managing the environmental problem. However, research indicates that there is little correlation between acquired knowledge and environmental action (UNESCO 1986). It appears that the decision to participate in environmental improvement is not stimulated by the cognitive realm. No study has yet been able to establish a concrete link between environmental knowledge and action. This suggests that education ABOUT the environment, by itself, cannot realise the action-oriented or participatory goals of environmental education identified in the CDC's guidelines for environmental education (1992).

Other commentators argue that the focus on knowledge leads to a stress on the development of lower order skills (observation, identification and description) at the expense of the more sophisticated, critical thinking and values analysis skills (Neal 1984; Parry 1987; Dorion 1990) associated with

an environmentally educated individual. Teachers who focus exclusively on education ABOUT the environment teach environmental studies/science and not environmental education. Nevertheless, as part of a three-fold response to the environment problem, education ABOUT the environment is an important contributor to environmental literacy. It adds a vital dimension to the environmental education process - environmental understanding. Without knowledge and understanding pupils could develop a distorted picture of the environmental situation. As the Curriculum Development Council highlighted, this approach

> "...is crucial to perception and judgement and is a necessary facet of environmental education." (CDC 1992 p.7)

Education IN the environment favours pupil-centred and inquiry-based learning facilitated by more open-ended and flexible teaching styles. Work within this approach often takes the form of outdoor education and has a strong experiential orientation - developing environmental awareness and concern by encouraging personal growth through contact with nature (see Figure 1). Education ABOUT the environment requires the development of the 'head', whilst education IN the environment, which focuses on personal values and concern, is linked to the involvement of the 'heart'. The latter adds relevance and a practical context to environmental learning. Its central aim is to provide opportunities for pupils to experience the magic of landscapes and fragility of ecosystems (Fien 1993).

Although education IN the environment does much in a moral and ethical values dimension, it does not address socio-economic and political influences on the environment (Tilbury 1993). This approach is embedded within a Gaianist or deep green ideology which many regard as naive and escapist, since it does not question environmental values, explore environmental conflict or consider options for change (Fensham 1978; Huckle 1983; Pepper 1986; Maher 1986. Instead, the approach focuses on personal values and commitment. Huckle (1983) is especially critical accusing it of legitimising romantic 'ideas of natural or ecological determinism'(Huckle 1986 p.13).

A teacher who focuses exclusively on this approach may motivate and commit students to the environmental cause but can also frustrate pupils who feel unable to influence the processes which affect the environment. At its worst, the exclusive delivery of this approach could create a sense of guilt or even fear amongst pupils over humans' inability to address the environmental crisis (Coward 1990; Storm 1991).

By its own, Education IN the environment risks alarming rather than enlightening or empowering students - it contributes little to environmental improvement. However, when combined with Education ABOUT and FOR the environment, this approach plays a vital role in the development of environmental commitment necessary for promoting environmental change. It has an important methodological contribution to make to environmental learning. Education IN the environment is an essential element of a process such as environmental education in which 'learning should be experiential rather than instructional'(CDC 1992 p.34).

Education FOR the environment, regards environmental improvement as an actual goal of education. It adopts a more 'hands-on' teaching and learning style. The role of the teacher is redefined within this approach as s/hebecomes more a facilitator than an instructor in the learning process.Whilst the ABOUT and IN approaches limit themselves to promotingunderstanding, appreciation and concern, education FOR the environment goesbeyond this to develop a sense of responsibility and active pupilparticipation in the resolution of environmental problems (see Figure 1). The latter adopts a more holistic outlook to the study of environmentalproblems which is reflected in its interdisciplinary and globalperspective. Education FOR the environment aeknowledges the politicalelements which underpin studies of the environmental situation and thusincorporates critical education goals with an issue-based pedagogy.

Only education FOR the environment can promote lifestyles which are compatible with sustainable living. Through engaging students in social and political education, education FOR the environment not only empowers them to take responsibility for their own actions but also enables them

to reflect upon how these actions influence the environment. This approach must be part of the learning process if environmental education is to realise its aim of developing 'environmentally responsible citizens'(CDC 1992 p.8). However, its socially critical orientation, participatory element and transformative nature make it difficult to introduce into traditional and conformist curricula. Thus successful attempts at incorporating this approach into schools have arisen primarily from action-research or curriculum development projects.

Education FOR the environment has always received least coverage and support in the classroom as a result of its focus on controversy and action (Greenall 1981; Volk et al 1987; Gayford 1987; Huckle 1987; Dorion 1990). Many teachers feel unconfident with handling controversial issues. Others avoid this approach for fear of been accused of bias or indoctrination. Some teachers see no place in the curriculum for this more critical form of education.

Practitioners who do support education FOR the environment find it a real challenge to incorporate this approach into existing school structures. Education FOR the environment is rooted in an ideology which seeks to develop political and social awareness amongst students. This together with its emphasis on participation can conflict with the more traditional and passive role of schooling (Stevenson 1987).

Nevertheless, education FOR the environment forms part of an effective environmental education curriculum. Only this approach establishes links between the "I" and the wider, distant and more abstract environmental problems. It is an essential element of environmental education since it challenges the 'taken-for-granted' ways of relating to and exploiting the environment. However, education FOR the environment is dependant upon education ABOUT and IN the environment to provide the skills, rationale and knowledge to support its transformative intentions (Fien 1993). A teacher who teaches solely from an education FOR the environment approach would be considered to be an environmentalist and not an (environmental) educationist.

Some authors have referred to education 'of', 'from' or 'through', the environment as other approaches (Maher 1986; Pepper 1986; Stevenson 1987), yet rather than being approaches they refer to a particular pedagogy which uses the environment as a resource for the development of one or more of the above approaches. Education 'of', 'from' or 'through' the environment usually take the form of nature studies.

Whilst education ABOUT the environment could be interpreted as being concerned with the head, and education IN the environment with the heart, education FOR the environment can be seen as involving the hand. Realising the goals of environmental education requires the integration of education ABOUT, IN and FOR the environment to form a holistic head, heart, hand approach to learning about environmental problems. This strategy covers the complete cycle of environmental education objectives and successfully addresses the key goal of developing an environmentally-literate and committed individual (see Figure 1).

Despite their differing underlying value-orientations the three approaches are complementary and essential ingredients of an effective environmental education curriculum. Environmental education is a multi-faceted and interdisciplinary process which requires a holistic educational response to environmental concerns. However, few academic or practical texts explicitly state the importance of a three-pronged response through environmental education. Instead, the approaches are mascaraded within a list of objectives and tasks which many practitioners find difficult to decipher. As a result only some teachers are able to extract the essence of environmental education from such documents.

In practice, planning the three-pronged process would entail ensuring that learning programmes include developing environmental awareness andknowledge, values and concern, responsibility and action within each curriculum theme, although not necessarily in this linear order (Tilbury 1995). The teaching of environmental education needs to reflect this cycle. Examples may include fieldwork which could be initiated by data collection or observation and lead to the investigation of an issue and the seeking of solutions to an environmental problem. Alternatively students could be initially involved in practical conservation, like the cleaning of a stream which is action-based, but which provokes

questions about waste and pollution, leading to the development of environmental knowledge and understanding.

4. Practices In Eevironmental Education

Studies into environmental education practices in schools from around the world have indicated that the three-fold response to environmental concerns is practically non-existent. Instead, they reveal, the environmental education process is fragmented with a bias towards education ABOUT the environment. Practices seem to focus on the acquisition of environmental knowledge and neglect environmental education values and critical education objectives. This has been widely documented and appears to be a global problem (Maher 1986; WWF 1986; Gayford 1987; Parry 1987; Robottom 1987; Stevenson 1987; Volk et al 1987; Greenall 1988; Simpson et al 1988; Dorion 1990; Flogaitis and Alexopoulou 1991; Spork 1992; Bachiori 1994; UNESCO 1993).

Attempts at introducing environmental education into schools has often consisted solely of incorporating environmental content and knowledge into existing curricula (Mishra et al. 1985; Wilke 1985; Simpson et al 1988). The lack of values or issue-based learning is also a problem at primary and secondary level (Pepper 1986; Parry 1987; Robottom 1987; Stevenson 1987; Spork 1992). Studies suggest that environmental education practices rarely promote a critical understanding of the environmental problem. Instead of providing a basis for the development of critical thinking and action goals, practices serve as a vehicle for pupils to learn basic numeracy and language skills (Maher 1986; Pepper 1986; WWF 1986; Dorion 1990).

Research indicates that the 'natural' environment is favoured as the focus of environmental work (Parry 1987; WWF 1987; Dorion 1990; Spork 1992; Yoshida 1993). There is often confusion over the real identity and goals of this area of learning with purely ecological and naturalist work often mistaken for environmental education (Goffin 1991). Environmental problems arose not as a result of natural problems but because of human mismanagement. Unfortunately, environmental education learning in schools avoids issues about how and why humans exploit the environment. Instead, common activities labelled as environmental education include exploring nature through the senses, keeping plants and animals in the classrooms, planting trees, undertaking nature walks and creating nature trails, learning ecology.

Studies carried out in Hong Kong reveal a similar pattern of practices within the territory. In a study into geography teachers perceptions, Lee (1995) found that educational objectives relating to education ABOUT and IN the environment were favoured to those relating to education FOR the environment. These results are consistent with findings by Gerber (1990) who found that the citizenship components of education FOR the environment receives little coverage by Hong Kong teachers, as well by Wong (1994) who points to how the political elements of environmental education are almost absent from the curriculum. Instead the 'safer' and more traditional education ABOUT the environment approach is given higher preference (Lee 1995).

Findings from Wong and Simpson's (1994) study into classroom teaching styles also reinforce this evidence. Their research revealed that although the majority of teachers adopt open approaches at the beginning of lessons that their teaching style becomes more restrictive as lessons proceed. This, together with the low priority given to inquiry approaches (Wong and Simpson 1994) and active learning strategies such as role-playing simulations and games (Lee 1993), suggests that pupils are given few opportunities to experience the education IN and FOR the environment approaches. Similarly, teaching strategies which involve pupils in exploring personal values and responses are infrequently used in Hong Kong classrooms (Man 1993). Instead, traditional and resource-based learning is perceived by teachers as most effective (Lee 1995).

5. A Lack Of Understanding Of The Goals Of EE

"A growing awareness of environmental education is

recognised but there is a diverse and sometimes incomplete understanding of environmental philosophies and pedagogy." (Parry 1987 p.12)

The variety of interpretations of the term environmental education offered by teachers (WWF 1986: Ham and Sewing 1987: Dorion 1990: Tilbury 1993) suggest that few understand the purpose of environmental education. Hawkins (1987) argues that the problem is rooted in teachers conception of environmental education as a body of knowledge rather than a learning process. Others, like Fien (1993), point to teachers lack of appreciation and understanding of the full range of environmental education objectives. Such misinterpretations are perhaps not surprising considering that few teachers experience initial teacher education or professional development in environmental education (Stapp and Stapp 1983: Flogaitis and Alexopoulou 1991: Spork 1992: Tilbury 1993: Yoshida 1993). However, teacher training in the field is critical to the success of environmental education in schools, since

"The key to successful environmental education is the classroom teacher. If teachers do not have the knowledge, skills and commitment to environmentalize the curriculum, it is unlikely that environmentally literate students will be produced." (Wilke 1985 p.1)

6. A Head, Heart, Hand Response

After reflecting upon the differing approaches and their links with the environmental education process, it can be argued, that if environmental education is to achieve its goals and involve the head, heart and hand, practices need to adopt a three-pronged approach. This area of learning must be perceived as a continuing process, where objectives spiral through the different learning years in school. Planning environmental education in this way would move current practices away from a fragmented and inappropriate model towards a more holistic and effective head, heart and hand approach to environmental education in schools.

However, it is unlikely that such a goal will be achieved without intensive teacher education in the field. Professional development is needed to provide opportunities for teachers:

(i) to learn about the purpose and goals of environmental education;

(ii) to find out how the different approaches contribute towards the achievement of environmental education goals;

(iii) to explore how the three-pronged response can be integrated into the curriculum in practice.

Similarly curriculum development initiatives are required to support teachers' experience with more innovative and participatory learning styles. The future of the environment may depend upon our teachers' ability to educate the head, heart and hand.

Reference

Bachiorri, A. (1994). Environmental education in Italy. *Proceedings of the Colloquium Trends in Environmental Education in Europe*. Bradford, England, 25-27th Feb.

Curriculum Development Council (CDC) (1992). *Guidelines on Environmental Education in Schools*. Hong Kong: Education Department.

Coward, R. (1990). Greening the child. *New Statesman and Society*, 25, May.

Dorion, C. (1990). *Environmental Education in the Primary School Curriculum: An Investigation into Teachers' Perceptions and Practice*. Doctoral Thesis, University of Reading.

Fensham, P. (1978). Stockholm to Tbilisi - the evolution of environmental education. *Prospects*, UNESCO, Vol. VIII No.4.

Fien, J. (1992). Education for sustainable living: A new agenda for teacher education: Background Paper. *Proceedings from the UNESCO International Meeting of Experts*, Brisbane, Australia, 5-9th July 1993.

Fien, J. (1993). *Education For the Environment: Critical Curriculum Theorising and Environmental Education.* Geelong: Deakin University Press.

Flogaitis, E. and Alexopoulou, I (1991). Environmental education in Greece. *European Journal of Education,* 26 (4), 339-344.

Gayford, C. (1987). Environmental Education: *Experiences and Attitudes.* Reading: Council for Environmental Education.

Gerber, R. (1990). Asian geographical educators' perceptions and practice In. Stimpson, P. and T.Y.L. Kwan (Eds.) Teaching Geography in and about Asian Pacific Countries. Hong Kong: IGU Commission on Geographical Education/ University of Hong Kong.

Goffin, L. (1991). Current trends in environmental education in the French speaking areas of Belgium. *European Journal of Education,* 26 (4), 291-300.

Greenall, A. (1981). Environmental Education: A Case Study in National Curriculum Action. *Environmental Education and Information, 1 (4),* 285-294.

Greenall, A. (1988). A political history of environmental education. In Robottom, I. (1988)(Ed). *Environmental Education: Practice and Possibility.* Geelong: Deakin University Press.

Ham, S. & Sewing, D (1987). Barriers to environmental education. *Journal of Environmental Education, 19 (2),* 17-24.

Hawkins, G. (1987). From awareness to participation: New directions in outdoor experience. *Geography , GA, 72. (3)* 217-222.

Huckle, J. (1983). *Geographical Education: Reflection and Action.* Oxford: Oxford University Press.

Huckle, J. (1987). Reflections on a trip down under. *Annual Review of Environmental Education,* National Association for Environmental Education 1, 44-46.

Lee, C.K.J. (1993). Geography teaching in England and Hong Kong: Contributions towards environmental education. *International Research In Geographical and Environmental Education, 2 (1),* 25-40.

Lee, C.K.J. (1995). Environmental education in Hong Kong secondary schools: State of the art. *New Horizons 36,* 63-70.

Lucas, A. (1972). *Environment and Environmental Education: Conceptual issues and Curriculum Implications.* PhD Dissertation Ohio State University.

Maher, M. (1986). What are we fighting for? *Geographical Education,* 5 (2), 21-25.

Man, S.W. (1993). *Impacts of Recent Approaches to Value Education on Environment - A Critical Appraisal.* Paper presented at Annual Conference of the Educational Research Association, Singapore 23-25 Sept.

Mishra, A. (1985) (Ed). *Environmental Education: Pre-Service Teacher Training Curriculum Development.* Document presented to UNESCO unpublished.

Neal, P. (1984). HMI primary reports on environmental education *Environmental Education.* NAEE. 20. 20-21.

Parry, M. (1987). *Planning and Implementing Environmental Curriculum Initiatives in Primary and Secondary Schools in England and Wales.* Birmingham: NAEE.

Pepper, D. (1986). *The Roots of Modern Environmentalism.* London: Routledge.

Robottom, I. (1987) (E) *Environmental Education: Practice and Possibility.* Victoria: Deakin University Press.

Simpson, P. Hungerford, H and Volk, T. (Ed) (1988). *Environmental Education: A Process for Pre-Service*

Teacher Training Curriculum Development. IEEP EE Series 26. Paris: UNESCO.

Spork, H. (1992). Environmental education: A mismatch between theory and practice. *Australian Journal of Environmental Education, 8*, 147-166.

Stapp, W. & Stapp, G. (1983). A summary of environmental education in Australia. *Australian Association for Environmental Education*, Newsletter, 12, 4-6.

Stevenson, R. (1987). Schooling and environmental education: contradictions in purpose and practice. In Robottom, I. (Ed) *Environmental Education: Practice and Possibility*. Geelong: Deakin University Press.

Storm, M.(1991) The evangelical approach to environmental education. *Annual Review of Environmental Education, 4*, 31-32.

Tilbury, D. (1993). Environmental Education: *A Model for Initial Teacher Education*. Doctoral Thesis University of Cambridge.

Tilbury, D. (1995). Environmental education for sustainability: defining the new focus of environmental education in the 1990's'. *Environmental Education Research, 1 (2)*, 195-212.

UNESCO (1986) Educating in environmental values. Connect, XI (3) Paris: UNESCO.

UNESCO (1992). *New Frontiers for Designing and Implementing Environmental Education Programmes*. Bangkok: UNESCO Principal Regional Office for Asia and Pacific.

UNESCO (1993). *Final report UNESCO Asia-Pacific Experts Meeting on Overcoming Barriers to Environmental Education Through Teacher Education*. Griffith University, Australia 5th-9th 1993.

Volk, T., Hungerford, H. & Tomera, A. (1987). A national survey of curriculum needs as perceived by professional environmental educationists. *Journal of Environmental Education, 16 (1)*, 10-19.

Wilke, R. (1985). Mandating pre-service environmental education teacher training: the Wisconsin experience. *Journal of Environmental Education, 17 (1)*, 1-18.

Wong, E. & Stimpson, P. (1994). Teaching styles of Hong Kong in environmental education in secondary schools. *Research in Education 52*, 1-12.

Wong, F. (1994). The political dimensions of environmental education in Hong Kong. *International Research in Geographical and Environmental Education, 3 (1)*, 4-18.

World Wide Fund for Nature (WWF) (1986). *Children's Attitudes to the Environment*. York: Centre for Global Education.

Yoshida, M. (1993). The Present Status of Environmental Education in Japan. In Hale, M (Ed) *Ecology in education. Cambridge*: Cambridge University Press.

Author

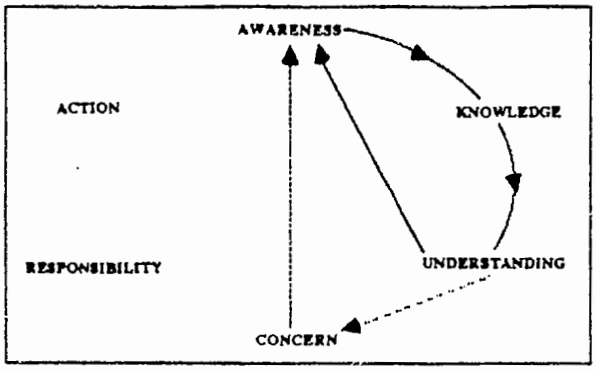
Daniella Tilbury, Lecturer, Department of Curriculum Studies, The University Of Hong Kong

(Received: August 1, 1996; Revised & accepted: October 7, 1996)

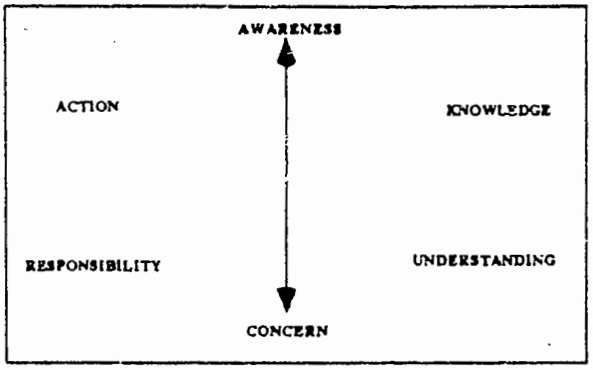
Figure 1

DIFFERING ENVIRONMENTAL EDUCATION APPROACHES

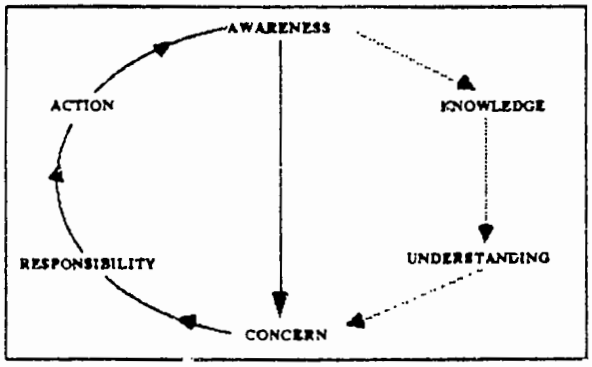
(i) Educaton About the Environment



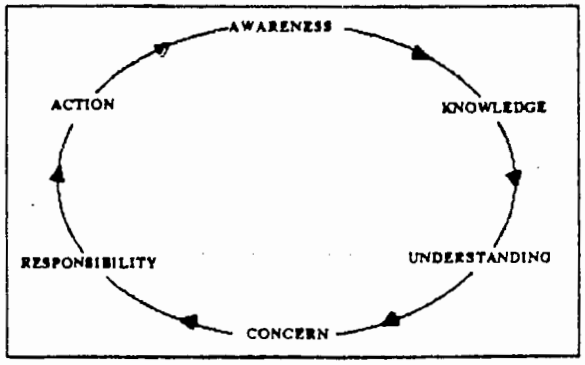
(ii) Educaton In the Environment



(iii) Educaton For the Environment



(iv) A Threefold Approach



中學社會科目和公民教育

謝均才

香港中文大學社會學系

本文集中檢討目前本港中學舊社會科目來推行公民教育的情況，並針對正規課程的提供、課程目標和範圍方面來評價《指引》對推行措施及策略的建議。總括而言，從正規課程的適切性來看，我們並未能寄望現有社會科目能有效地進行國家民族教育和民主教育。最後，本文並對今後學校公民教育的推行作出建議。

Social Subjects and Civic Education in Secondary Schools

This paper reviews the implementation of civic education through social subjects in Hong Kong secondary schools and assesses the suggestions on the ways of implementation and measures made by the Guidelines on Civic Education in Schools in terms of the provision of formal curriculum, and objectives and coverage of the official syllabuses. Given the problem of relevance of the formal curriculum, this paper argues that it is ineffective to promote nationalistic and democratic education through the current social subjects. Finally, suggestions are made on the implementation of future civic education programmes.

前言

自從1985年教育署「學校公民教育指引」（以下簡稱《指引》）公佈以來，《指引》於1996年又經修訂，以往各方人士已先後就《指引》的目標、公民教育的取向等各方面加以批評（曾，1984），本文則試圖以政治教育為中心，集中檢討目前本港中學舊社會科目來推行公民教育的情況，並針對正規課程的提供、課程目標和範圍多方面來評價《指引》對推行措施及策略的建議，並希望進而對今後學校公民教育的推行有所啟示[1]。

八五年《指引》對推行公民教育的一項最重要建議，便是強調藉著跨學科的正規課程去推行公民教育，以提高學生的公民意識。同時也是基於此理念以及若干現行課程限制等理由，教署否定了在學校設立獨立和必修的公民科的建議。可是由於教署給予學校很大的自主權去推行公民教育，《指引》內的提議也只是屬於建議性質，再加上公民教育的目標和內容廣泛，故此各學校在推行方法方面也有不同，根據一些大型調查（Education Department 1986, 1987; S.W. Leung 1995），仍有很多學校採取所謂「跨科目」的方式來傳遞公民教育，而只有少數學校是以獨立科目或綜合科目的形式來推行公民教育。

跨學科滲透的困難

若依教署所倡導的「跨學科」方法，在正規課程中推行公民教育，實在多個問題不易解決。首先，學校開設的課程未必能充份發揮跨科滲透的功效，特別是在非文法中學。公民教育既包括對中國的認識，可是目前的職業先修中學，便鮮有開設中國歷史科目（Hong Kong Government Information Service 1995）。同時，即使在文法中學中，也不必然開設有經公科或社會科（曾，1995）。我們更不能忽視本港中學普遍存在高中文理分流的情況，升讀高中理科組別的學生往往自動失去了在正規課程中接受公民教育的機會，而在預科課程開設有諸如政治及公共事務（GPA），通識教育（Liberal Studies）和社會學（Sociology）這類和公民教育較有密切關係的科目的學校便更少了，而修讀的學生也極為有限。例如根據考試局的統計資料（HKEA 1997a, 1997b），在1996年中學會考約72,400名學校考生中，便只有40%應考中國歷史，1.1%應考經公科，1.0%應考政公科，而應考社會科的學生更少於1%！在高級程度會考方面，在全部的24,800名學校考生中，也分別只有19.5%的學生應考中國歷史，3.8%應考通識教育，1.3%應考政公科，而應考社會學的更只有0.2%！由此可見，極大部份的本港高中學生，都缺乏在正規課程接觸公民教育的機會。

其次，寄望跨學科來推行公民教育還有一個不當的假設，就是各學科的目標和內容都能配合公民教育本身的目標和內容。誠然公民教育的目標和內容和現有若干科目是有所吻合的，可是卻不是所有目標和內容都能在其他科目中得到充份教授機會。更重要的是《指引》忽視了各門科目都有其內在邏輯、既定的目標、內容和教授方法。在沒有對現行正規課程各科目進行協調統整的情況下，公民教育便只會被擠至邊緣位置，甚至隱沒不現。雖然《指引》列舉出不少教學重點和各科可配合公民教育的內容，可是卻未必能得到課程的相應配合，教學的效能難免打了折扣。故此，在正規課程中透過跨學科方法來推行公民教育，無論在課程開設和科目設計上均有相當多的問題未獲解決。此外，即使在正規課程中的個別社會科目本身的課程目標和範圍也不無問題。

正規課程的目標、內容和設計

官方課程綱要往往作為知識傳授的來源，亦為教科書編寫和教師講授的憑據，故此在教學過程中至為重要。課程綱要一般被視為合法知識和正確觀念的來源，往往被當成客觀中立和正確無訛的。可是事實上學校課程和其他知識一樣，都是經過一連串的篩選、過濾和重組，以至中間涉及各種的價值衝突和利益矛盾。故此課程內容，不可輕然視為中立無誤，反之我們應當對它隱蔽的意識形態、偏見和不合理的地方加以批判揭露（Whitty 1985; Apple 1990）。所以對課程的內容分析便成為教育研究分析的焦點。

由於涉及公民教育的科目眾多，但高中學生的接觸面卻甚為有限，這裏便只針對和它關係最密切和較多學生修讀的初中中國歷史科、社會科以及經公科（EPA）的課程加以分析。

政治教育是公民教育的核心，而又以國家民族教育和民主人權教育為其主要內容，可是現時這三門科目的目標和課程設計均有不足之處。最突出的問題莫如課程目標中欠缺國家民族的認同。香港多年來作為英國的殖民地，政府一向避開課程中民族主義和國家認同的傾向（瞻，1987；黃，1995；Luk, 1991）。故此不單《指引》避談國家民族教育，在正規科目的課程中也加以忽略。就如現時初中中國歷史科的課程綱要中開列的五大教學目標（p.6），包括「在引導學生認識文化同固有文化傳統及民族生活特色」、「在使學生對中外文化交流有所認識」、「幫助學生了解現今事物之背景與演變」、「培養學生對事物之客觀態度及對事理之分析能力以及「通過學習先賢事跡，以培養學生之優良品格」。由這眾多目標可見，課程都富有很強的文化認同和道德教育色彩，卻不是要去鼓吹民族主義或者對中華人民共和國的認同。這種「非政治化」的特徵和海峽兩岸教育制度下的課程目標相比便更為明顯（劉，1989;戴，1993;徐，1994;陳，1994;黃光雄等，1994;Ferro,1984; Kalupa,1984）。有異於大陸台灣兩地，本港的課程既無標榜主義教化，也沒有鼓吹領袖崇拜；同時也無崇尚獨裁意識，或對其他政治意識形態表示敵意；也沒有宣揚國家政策的訊息或積極鼓吹愛國主義或民族感情。此外，現時中史課程雖然已經採取了詳近略遠的方法，但由於中國歷史源遠流長，上下五千年，故此現代史和當代史的比重也只能有限而已。中三課程，敘述從清初到中英簽署有關香港前途聯合聲明，覆蓋了三百多年的中國歷史，再加上乙組思想史和工商業史的課程，現代中國的介紹便顯得稍為簡略。

同樣道理，現行的初中社會科課程綱要中，教學目標中即使在有關中國方面（p.6），也僅只限於對中國文化背景和中國生活有一基本了解，以及了解中港關係及培養對中國及中國人民的醒覺和關注而已！更甚者，在初中經公科課程中，不獨找不到任何和提升學生國家民族觀念的有關目標，更是全隻字不提中國。

雖然目前初中經公科和社會科也有介紹中國情況，可是它們對介紹中國的篇幅也不多，主要是環繞香港和中國在地理、歷史文化和經濟的關係，政治關係則並不太顯著，這情況在經公科尤甚。相比之下，社會科對中國部份有比較豐富的介紹，譬如有專題討論「我的祖國和人民」。儘管如此，我們仍會發覺其介紹仍然偏重知識的教授，故儘管強調香港和中國的種種密切關係，卻不是著重愛國主義的培養和國家認同，這方面和中史科相若。反之，經公科和社會科在介紹香港作為一個國際城市時（CDC1984:9;1990:90），特別強調本地中西文化交匯的特色，以及作為國際商業貿易中心，強調本地有不同的民族，宗教信仰以及生活方式，並提倡各民族和諧共處。顯然其標榜的是一種包容的「國際主義」，而非狹隘的民族主義和排他的本土觀。

至於民主教育方面，課程目標也是差強人意，中史科的目標固不是論，即使經公科的一般目標也不過是要「幫助學生發展成理性、觸覺性強和負責任的公民

BEST COPY AVAILABLE

(p.6)，以及為他們提供知識和培養經濟學或經公科的學習技能。至於具體目標，雖然不乏加強他們的社會責任感及鼓勵社區參與以及提高分析能力，可是卻不是培養學生的政治和社會技能，而目標中包括培養學生對社會及經濟問題的醒覺以及使他們成為個人、群體及政府解決問題的努力(p.6)，更顯然和「指引」中鼓吹政府和市民建立和諧關係和培養學生對政府的認受和擁護相符。至於社會科方面，課程目標在兼顧民主教育方面比較豐富，它試圖從個人、家庭、社區推展至國家和世界，並培養學生成為有效的決策者，儘管如此，課程目標中對民主觀念、意識和技能的培養仍然著墨不多。

事實上，目前初中經公科和社會科的課程，雖然的題材相當龐雜，而且都是偏向時事和公共事務(特別是經濟方面)的認識。好像現時經公科課程的題目便包括香港的成長、香港人口、公民、食物、水和能源供應、交通和運輸、通訊、香港的管治、法律和秩序、教育、社會福利、房屋、公眾健康、香港工業、香港作為貿易金融中心、污染及環境保護、社會問題的預防和補救、大眾傳媒及消費者教育等。而社會科作為包含地理及歷史科目的綜合學科，包括的題目就更龐雜，諸如學習和閒暇、健康、認識自己、作決定、我的將來、朋友、家庭、身份和社會認同、和異性的關係、婚姻和組織家庭、學校、生活在香港、香港的過去和現在、香港的政治發展及未來、市民的角色、我的祖國和人民、中國的自然地貌、香港在世界的位置、香港和世界的關係、已發展和發展中國家以及國際衝突和合作等。由此可見，兩個課程內的主要題目是和政治教育無關連的，社會科和經公科雖然成為一個大雜燴，政治教育的題目則和其他題目共置其中。事實上，似乎很難想像「如何使用零用錢」、「運用閒暇」、「嗜好」等題目和政治教育有什麼直接關係。反之和政治教育比較密切的題材如民主、人權等政治觀念、以及有關政制、基本法等題目卻得不到較深入的介紹。故此即使借這些社會科目來促進公民教育，其教育效果恐怕也未如理想。

其次，課程對政治題目的教授多被批評為政府制度結構及功能的描述，而具體的政治行為、過程、衝突和非正式的政治層面均未作處理，結果學習政治變成學習「香港政府是由怎樣組成的？」「政府有何職能？」「政府有什麼部門？」「他們向市民提供什麼服務？」「市民和政府的溝通渠道」等等問題。卻鮮有談及政治的實際運作，例如政策的制訂過程和政黨政治等等。

再者，經公科和社會科又特別宣揚政府為市民服務，諮詢民意，並強調政府和市民溝通的重要性，以及市民和政府的合作關係。在介紹本港房屋、醫療、教育、污染、經濟發展和各類社會問題時，基本都遵循以下公式：一在介紹各種社會問題後，便是政府如何努力去解決這些問題，改善我們的生活質素，以及政府部門種種措施和成效。可是卻鮮有對這些問題本身作比較深刻的政治和社會分析。很明顯這是從政府解決問題的角度出發，並美化政府工作的努力和成效。此外，也欠缺一種社會批判的意識，甚至迴避諸如失業、貧困、貧富懸殊等社會問題、社會衝突和緊張。

最後，在民主教育方面的介紹也極嫌不足，儘管課程也簡略包括香港的代議政制，可是卻未有進一步對學生灌輸民主意識。在政治理念方面，除了稍有提及言論和出版自由以及法治精神外(CDC,1984:14-15,22;1990:118)，便沒有對諸如人權、民主、社會公正等重要政治理念和原理作任何介紹。而在公民權責(citizenship)方面，也偏重灌輸公民奉公守法，禮貌待人的意識，卻不是培養批評和監督政府以及進行政治參與的公民意識。

結論和建議

總結而言，從課程的適切性來看，我們並未能寄望現行社會科目能有效地進行國家民族教育和民主教育，特別是現時初中課程綱要中欠缺國家民族認同和民主意識的培養，反之是以文化認同取代國家民族認同，以社會及經濟事務的介紹來取代民主意識的培養和社會政治分析。這種取向反映在教科書的內容便更為明顯(Tse forthcoming)。故此現行本港中學利用社會科目實施公民教育，不論在正規課程的目標和組織上均有很多需要改善的地方。最後，希望教育當局在制訂今後的學校公民教育政策時，能正視「指引」中存在的問題及參照學校的實際運作情況的限制來加以改善。而除了「指引」外，還需要其他措施的配合，例如師資培訓、課程改革、教材編寫等等，以至如何維持教育工作者在課程編整和發展的獨立自主性，擺脫官方的立場和框框。再者，民主意識的培育，並非單靠正規課程的講授，還需要容許學生有實際政治參與的經驗，例如各類學生組織、選舉活動、校內決策等(Entwistle 1971 [2])。不然的話，恐怕仍是徒然無功，而我們的新一代青少年，仍然得不到公民教育的益處。沒有足夠的民族教育和民主教育，我們又如何能安心看一代的青少年能成為一國兩制，高度自治下的「中國國民」和「香港公民」呢？

註釋：

[1]公民教育的範圍既寬且廣，本文不擬深入討論各種定義的分歧和爭論，唯公民身份（citizenship）則是其核心元素。在近代民族國家林立的背景下，公民教育乃以國家民族教育和民主人權教育為其主要綱領（曾 1994，1995）。本文乃以此標準來評鑑本港中學社會科目的適切性。

[2]在傳授國家民族教育和民主教育時，我們還要當心過度鼓吹民族主義意識的危險，下獨有釀成狹隘的愛國和排他主義，且會窒息民主意識的發展，如Torney, J.V. et al.（1975）的研究便顯示學生的民主意識和民族主義意識呈逆向關係。

參考書目：

范國（1995）　教育政策對香港中學中國語文教材的影響：五十至七十年代之考察。蕭炳基等編：*教育質素：不同卓識文滙集*，頁233-245。香港：香港教育研究學會。

賈國強編（1995）　*香港中學概覽*（修訂版）。香港：中大出版社。

龍朗華（1987）　四十年來香港中學的中國歷史科課程。*教育學報*，卷15（2），頁68-78。

曾榮光（1984）　香港政治教育的檢討與展望。*信報*，卷8（5），頁34-40。

曾榮光（1994）　非殖民化的公民教育：九七以後香港學校公民教育的構思。*教育學報*，22（2）:237-248。

曾榮光（1995）　民族教育與公民權責之間：過渡期香港公民教育議論。*教育學報*，23（2）:1-26。

香港課程發展委員會（1992）　*中國歷史科課程綱要*（中一至中三適用）。香港：香港課程發展委員會。

劉走霖（1989）　*政治意識形態與國民中學「公民與道德」教材之研究*。台灣師範大學教育研究所碩士論文。

戴寶村（1993）。歷史教育與國家認同。*國家認同學術研討會論文集*。財團法人現代學術研究基金會，頁115-138。

徐寄霞（1994）　中學歷史教科書的歷史意識分析--以國初中本國史為例。*教育研究資訊*，2卷3期，頁123-137。

陳敏華（1994）。*國中公民課程中政治意識形態傳遞之研究：一個教室的實地觀察*。台灣師範大學公民訓育研究所碩士論文。

黃光雄等（1994）。大陸小學社會科教育內容之研究。*教育研究資訊*，2卷6期，頁57-80。

Apple, M. (1990). *Ideology and the Curriculum*. 2nd. ed. London:Routledge.

Curriculum Development Committee (1984). *Syllabus for Economics and Public Affairs (forms I-III)*. Hong Kong: Government Printer.

Curriculum Development Committee (1985). *Guidelines on Civic Education in Schools*. Hong Kong:Government Printer.

Curriculum Development Committee (1986). *Report on the Evaluation of the Implementation of the Guidelines on Civic Education in Schools*. Hong Kong:Government Printer.

Curriculum Development Committee (1987). *Second Report on the Evaluation of the Implementation of the Guidelines on Civic Education in Schools*. Hong Kong:Government Printer.

Curriculum Development Committee (1990). *Syllabus for Social Studies (Secondary I-III)*. Hong Kong:Government Printer.

Curriculum Development Committee. (1996). *Guidelines on Civic Education in Schools*. Hong Kong:CDC.

Entwistle, H. (1971) *Political Education in a Democracy*.

London:Routledge & Kegan Paul.

Hong Kong Examination Authority (HKEA) (1997a). *Hong Kong Advanced Level Examination Annual Report 1996*. Hong Kong:HKEA.

Hong Kong Examination Authority (HKEA) (1997b). *Hong Kong Certificate of Education Examination Annual Report 1996*. Hong Kong:HKEA.

Hong Kong Government Information Services. (1995). *Prevocational Schools : Introduction*. HK: the Government Printer.

Ferro , M. (1984). *The Use and Abuse of History Or How the Past is Taught*. London:Routledge & Kegan Paul.

Kalupa, Nancy, E.P. (1984). *The Making of a Chinese Citizen, Post Maoz political socialization content in Chinese elementary language textbook*. PhD dissertation, University of Georgia.

Leung, Sai-wing. (1995). Depoliticization and trivialization of civic education in secondary schools:Institutional constraints on promoting civic education in transitional Hong Kong. In P.K.Siu & T.K.Tam (Eds) *Quality in Education:Insights from Different Perspectives*,(pp.283-312). Hong Kong:The Hong Kong Educational Research Association.

Luk, Bernard H.K. (1991). Chinese Culture in the Hong Kong Curriculum:heritage and colonialism. *Comparative Education Review*, 35(4):650-668.

Torney, J.V. et al. (1975). *Civic Education in Ten Countries*. N.Y.:John Wiley & Sons.

Tse, Kwan-choi. (forthcoming). *The Poverty of Political Education in Hong Kong Secondary Schools*. Occasional Paper, Hong Kong Institute of Asia-Pacific Studies, The Chinese University of Hong Kong.

Whitty, G. (1985). *Sociology and School Knowledge*. London:Methuen.

(Received: April 1, 1997; Revised & accepted: May 11, 1997)

馬鞍山區小學生校內違規行為研究

林翠花
沙田官立小學上午校

賀國強
香港教育學院

[illegible]

Disciplinary Problems of Primary School Students in Ma On Shan

This is a survey about behavioral problems of primary school students in the Ma On Shan area. There are ten schools in the area. These schools have been found between 3 to 10 years. Each school has a student population of 400 or more. Questionnaires were distributed to the teachers in these schools, the response rate was just more than half. Results indicated that minor offenses like leaving their own seats in the classroom without prior permission, no homework, etc. fluctuated between 13 to 39% which were about the same as junior secondary school students. The biggest differences between primary and secondary school students was lateness, with very small percentage of late students in the primary schools. Serious offenses like stealing, truancy, etc. were not high, just around 1 to 4%. This showed that the behavioral problems were still under control.

(一) 引言

自一九八七年，恆安村首批居民入伙後（房屋署，1995），馬鞍山便迅速發展成為新市鎮，[illegible]人口有十多萬，且以年青家庭為主，有十六間政府資助小學，共有小學生10,729人。初期的發展但未有配套上的[illegible]，當時[illegible]青少年及學生違規的現象（文青，1982），馬鞍山區會否也有類似情況發展下去呢？

近年有關馬鞍山區內學生的紀律問題，常有在報章上出現（快報，1994；明報，1994），而區內[illegible]學校服，手執香煙在街上遊蕩，[illegible]。[illegible]本研究以問卷調查方式，訪問在馬鞍山區內任職的小學教師，從而了解該區小學生校內違規行為情況及[illegible]，以作日後借鑑。

[illegible]學校根據[illegible]學生應做或不應做的事項，使學生共同奉行遵守（石佳福，1992）。小學生校內違規行為，是指學生在學校內做出校規所不容許的行為，如逃學、欠交功課等。

有關小學生問題的研究，發現家庭背景、學業成就、朋輩影響和大眾傳媒均與學生校內行為有密切的關係（文青，1982）。在一項香港小學教學質素研究中，發現只有百分之[illegible]的小學生對老師態度有[illegible]的表現（鄭燕祥，1994）。另在八十年代教育署開始有系統地搜集中、小學生校內犯規及違規行為的資料，起初幾年是中一學生犯案最多，但在八十年代後期中一學生的犯規比率已漸趨中二（教育署，1989）。最初幾年教育署將中學方面校內犯規及違規行為的統計公佈，小學的統計則沒有，可惜教育署在九十年代已停止這方面的公佈，幸而民間團體在這方面已開始有研究出現（何漢權，1996；蘇[illegible]照，1994），但小學的數字則尚未有將系統[illegible]公佈，故外人難[illegible]知曉實際情況。

[illegible]調查報告的結果，呈現一些令人憂心的現象：第一，小學生違規行為日趨嚴重，而且成因非常[illegible]；第二，老師與學生的關係出現變化，由傳統的[illegible]轉變成互不信任。基於上述資料提示，在設計問卷時，亦把上述問題納入其中，找尋研究結果是否與上述報告有相似的地方。

本研究所希望達到的目標：(1)了解馬鞍山小學生校內違規行為情況；(2)了解老師對違規行為存在及他們面對的困難。

（二）研究方法

本研究主要是向馬鞍山區內六間小學的全體教師，作出有關學生在校內違規行為的問卷調查。問卷主要是參考引言中兩份文件（文青，1982；教育署，1989）及筆者接觸所及而設計出來。

為使研究結果更為客觀及準確，筆者亦訪問了區內其他四間學校任教的四位小學教師，提問了問卷內相同的問題，驗証研究報告的結論。因此，本研究涉及的小學共有十間，這些小學分佈在區內同一屋村或地段內，各小學至少有四百名學生。因馬鞍山區只建成了十年，區內各小學的校齡約在三至十年間。這些小學全是接受政府資助，其校舍建築及班級結構都有一定的規格，老師與班的比例是1.4比1，而每班的人數不超過卅五人（教育委員會，1997）。

（三）結果

在取樣方面，筆者期望在馬鞍山區內某一屋村或地段，選取一間小學的全體老師，作為調查對象，無奈區內學校教務繁忙，且各校在調查期間（九六年初），曾多次受不同教育團體的邀請參與其他的問卷調查，故部分校長不願意或只容許部分老師參與是次調查。在六所小學近二百位的教師中，完成了一百分問卷調查，回收率約是百份之五十多一點。

3.1、小學生校內違規行為情況

在一百名老師意見中，學生最嚴重的違規行為是欠交功課、忘記帶課本或文具回校（39%），其次是對師長無禮（25%）、擅自離開座位（13%）、在堂上嘈吵及搗亂（13%）等；而最不嚴重的違規行為包括逃學（1%）、講黑社會術語（2%）、與不良份子來往（2%）。

3.2、小學生違規行為成因

90%老師同意學生缺乏父母照顧或父母不懂管教子女，是構成學生違規行為的主因；而有70%老師贊同學生無心向學，亦導致問題行為的出現。其餘超過50%老師支持的成因，順序為受其他違規行為的同學影響（67%）、校方不能體罰學生（58%）和受大眾傳媒影響（77%）。接近40%老師不同意老師不了解學生和教學法不適合學生需要，而引致違規行為的產生。

表一、小學生校內違規行為情況

違規行為描述	非常不嚴重	不嚴重	普通	嚴重	非常嚴重
1 行為不誠實，如說謊、作弊	6%	32%	54%	8%	0%
2 擅自離開座位	6	38	43	11	2
3 對師長無禮，如駁咀	1	48	26	25	0
4 在堂上嘈吵、搗亂	7	39	41	11	2
5 欠交功課、忘記帶課本或文具回校	3	21	31	35	1
6 破壞公物或他人財物	27	51	18	1	0
7 粗言穢語	30	45	20	5	0
8 講黑社會術語	54	40	4	2	0
9 與不良份子來往	42	47	9	2	0
10 打架/欺凌弱小	26	47	24	3	0
11 偷竊	35	45	16	4	0
12 遲到	21	39	36	3	1
13 逃學	55	36	8	1	0

表二、小學生違規行為的成因

成因描述	非常不同意	不同意	普通	同意	非常同意
1 學生無心向學	0%	7%	23%	60%	10%
2 課程未能切合學生的需要	0	25	36	37	2
3 教師教學方法未能切合學生的需要	8	30	40	21	1
4 校方不能體罰學生	1	21	20	35	23
5 教師未能瞭解學生	8	34	31	26	1
6 缺乏父母照顧、父母不懂管教子女	0	2	8	49	41
7 受不良校外人仕影響	1	9	42	36	12
8 受其他有違規行為的同學影響	0	4	29	47	20
9 受大眾傳媒影響	0	2	21	53	21

3.3、教師處理違規行為的方法

選擇通知家長，然後共同輔導學生，與及和訓導主任合作處理的老師，各有90%；而同意老師自己、家長、輔導和訓導主任一起處理的老師有86%。此外，也有多於50%老師同意採用罰企和罰抄書來處理學生的違規行為。

表三、教師處理違規行為方法

處理方法	非常不同意	不同意	普通	同意	非常同意
1 罰企	0%	4%	42%	45%	9%
2 罰抄書	0	11	32	50	7
3 通知家長	0	0	10	53	37
4 通知學生輔導主任處理	0	3	25	53	19
5 通知學生訓導主任處理	0	2	23	54	21
6 與家長合作輔導學生	2	0	8	50	40
7 與學生輔導主任合作處理	0	2	13	65	20
8 與學生訓導主任合作處理	0	0	10	65	25
9 自己直接輔導學生	0	3	21	59	17
10 自己、學生家長、輔導主任和訓導主任一起處理	0	4	10	66	20

3.5、違規學生對老師教學的影響

根據調查資料顯示，超過80%老師同意違規學生對老師的教學情緒、心理壓力、工作壓力和照顧其他學生時間四方面，皆有嚴重性的負面影響，其中以減少照顧其他學生的時間這一題，老師的反應為非常同意的佔最高的百分率。

表五、違規學生對老師教學的影響

影響範疇	非常不同意	不同意	普通	同意	非常同意
1 令教學情緒低落	0%	5%	20%	47%	28%
2 心理壓力增加	0	6	10	51	33
3 工作壓力增加	0	3	11	51	35
4 減少照顧其他學生的時間	1	2	14	38	45

3.4、協助解決學生違規行為的方案

超過90%老師認為加強老師和家長聯絡有助於解決學生違規行為，其次是增加訓導主任人手和加強教師與訓導主任聯絡。然而，有50%老師贊成恢復老師對學生的體罰權力，更有60%老師同意對經常違反校規和屢勸不改的學生著令停學。

表四、協助解決學生違規行為的方案

解決方案	非常不同意	不同意	普通	同意	非常同意
1 增加學生輔導主任人手	2%	3%	19%	38%	38%
2 增加學生訓導主任人手	0	3	13	56	28
3 加強教師與家長聯絡	0	2	7	51	40
4 加強教師與學生輔導主任聯絡	0	1	19	61	19
5 加強教師與學生訓導主任聯絡	0	2	15	62	21
6 加強馬鞍山區教師的團結	0	20	31	41	5
7 老師按需要更多有效課室管理的訓練	0	7	25	50	18
8 設立更善的學生獎罰制度	0	1	20	48	31
9 恢復老師對學生的體罰權力	5	12	31	27	24
10 教育署提供建設性支援	0	1	24	38	37
11 對學生規勸不改，可著令其停學	0	14	25	34	27

3.6、老師現時能否有效地管理違規學生

有36%老師認為自己能有效管理違規學生，而有11%教師則表示感到困難，其餘53%老師則認為尚可。

表六、老師現時能否有效管理違規學生

評估程度	百分比
極有效	4%
有效	32%
尚可	53%
有困難	9%
極有困難	2%

3.7、老師評估現時學生違規行為情況

35%[illegible]老師認為[illegible]嚴重，接近60%的老師[illegible]普通[illegible]

[illegible]、老師[illegible]學生違規行為[illegible]

[illegible]	[illegible]
非常嚴重	4%
嚴重	31%
普通	58%
不嚴重	6%
非常不嚴重	1%

3.8、訪問老師摘錄

[illegible]

[illegible]

[illegible]

（四）討論

[illegible]（1989）[illegible]（[illegible]，1996）[illegible]

[illegible]

家庭是[illegible]（socialization agent）[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]50%[illegible]（1991）[illegible]（1990）[illegible]

1996）。論者提出了恢復體罰的[illegible]。本次研究結果，超過半數同意恢復體罰，是否意味著現在的學生十分難教，[illegible]台灣教育部在最近解除禁例，允許在家長的書面同意下，對學生施行體罰（[illegible]）。本港的教育署似應在這方面加以考慮。

是次研究主要是調查了兩方面的問題：引致中學生的違規行為，除了社會因素如家庭、學校之外，還有心理因素如自我形象、價值觀念等，而違規行為有不同的種類，[illegible]設計上的篇幅問題，未能詳細[illegible]。

（五）建議

要預防學生違規行為，需要在以下各方面同時努力，[illegible]教師、家長、輔導主任及訓導主任，輔導有問題的學生。

本港的學校[illegible]的指導不夠，同時雙方缺乏溝通。學校與家長之間的接觸很少，而家長也很少主動聯絡學校，了解一切。雙方都缺乏共識，當學生發生任何事故時，雙方未能即時配合，同時更容易產生誤解和不滿（[illegible]1991）。因此，學校應成立家長教師會，增進教師與家長的溝通，[illegible]有更多的共識和支持。學生亦可感到[illegible]，家長[illegible]教育，協助家長更有效地管教子女（見表[illegible]6）。此外，透過[illegible]，一方面可以了解家長的權利與義務，另一方面亦可藉此提高家長管教子女的效能（何萃權，1996）。現在是考慮推行家長教育的時候了（習國偉，1997）。

教育署現行規定的留班額不得超過5%[illegible]制度使很多不夠能力的學生，[illegible]升上高班，或不能吸收課堂內容，對學習失去興趣，[illegible]違規行為[illegible]。[illegible]，故此難成功[illegible]（[illegible]，1996），[illegible]5%的留班[illegible]的方法，[illegible]機制是[illegible]。此外，教育署亦應[illegible]全日制學校的[illegible]，因半日制[illegible]師生溝通機會（教育[illegible]，1997）。

教育學院應把課室管理列為必修課程（何萃權，1996）。是次調查結果顯示，少於三年教學經驗組別的老師，大部分都認為對學生管理有困難。所以在新老師第一次進入課室之前，教育署或教育學院必須給予他們充足的輔導技巧及兒童心理發展方面的知識訓練。與此同時，教育署亦應考慮減低每班學生人數，提高師生比例，並為在職老師提供「課室管理進階課程」，使他們也能吸收到新的輔導技巧。

現時學生輔導主任由教育署指派，並駐於小學，輔導問題學生。不過，一星期只有兩個半天留駐學校，這實在不足以應付學生的需要。教育署應盡速落實「一校一社工」，學校亦可試行「學校本位輔導」（Ng,1993），透過校長和教師的共同參與，一起認識本校學生整體需要，訂下一些全校性的目標，安排一連串計劃和活動，透過積極的獎勵方式去改善及建立學生的良好行為。

在中國教育法（新華社，1995）第五章第四十三條中，指出學生應遵守法律、法規，尊敬師長，努力學習等義務。香港回歸後，基本法和教育[illegible]有類似的條文，但教育當局[illegible]方面的表現在本港的教育範圍內，未能改善目前存在的學生違規問題。

最後，教育人員和團體提議設立的學校議會組織已成立（何子成，1996），[illegible]在有需要的時候才能知曉[illegible]學生交換意見的組織（何萃權，1996），應盡快落實推廣，而不是停留在原地踏步的階段。

（六）參考書目

石甘福(1992) 國小輔導行政。台北：五南，第十一頁

文青(1982) 屯門區小學生問題[illegible]。香港：基督教[illegible]

香港政府(1995) 馬鞍山發展。香港：香港政府[illegible]

何子成(1996) 教育[illegible]。[illegible]報，[illegible]月[illegible]日

何萃權(1996) 課室學生違規行為問題調查結果。[illegible]報，五月四日

沈雪明等(1994)　家庭與學校合作研究報告書　香港：政府印務局

快報(1994)　教師地獄馬鞍山　十一月六日

明報(1994)　馬鞍山學生被斬死　三月廿五日

鄭燕祥(1994)　香港小學質素的初步剖析　初等教育學報　第五卷，第一期，頁1-18

教育署(1989)　學校內的犯規/違法行為及青少年問題　檔號：ED (GR)3/3176/74

教統會(1990)　第四號報告書　香港：政府印務局

教育委員會(1997)　九年強迫教育檢討報告　香港：政府印務局

教育資料中心(1996)　教育資訊　四月號

黃毅英等(1996)　包括數學科目標為本課程　教育資訊　七月號　頁80－90

賀國強(1997)　強迫教育有出路嗎？大公報　三月一日

新華社(1995)　中華人民共和國教育法　人民日報　三月二十二日

蘇□□(1994)　學生中途輟學與經常缺課　香港：香港青年協會

Ng, Y. (1993). *An Introduction to Schooling*. Hong Kong: HKCWC Fung Yiu King Memorial Secondary School.

附錄

馬鞍山區小學生校內違規行為調查問卷

各位老師：

本問卷旨在了解馬鞍山區小學生在校內違規行為的情況，以及收集各位老師對這問題的看法，希望各位老師能給予寶貴意見，現請依你所任教學校的情況，在下列的程度量表上，圈出適當的數字

(1) 在你主要任教的班級裏，下列學生的違規行為是否嚴重？

	非常不嚴重	不嚴重	普通	嚴重	非常嚴重
1 行為不誠實，如說謊、作弊	1	2	3	4	5
2 擅自離開座位	1	2	3	4	5
3 對師長無禮，如駁嘴	1	2	3	4	5
4 在堂上嘈吵、搗亂	1	2	3	4	5
5 欠交功課、忘記帶課本或文具用品	1	2	3	4	5
6 破壞公物或他人財物	1	2	3	4	5
7 粗言穢語	1	2	3	4	5
8 講黑社會術語	1	2	3	4	5
9 與不良份子來往	1	2	3	4	5
10 打架/欺凌弱小	1	2	3	4	5
11 偷竊	1	2	3	4	5
12 遲到	1	2	3	4	5
13 逃學	1	2	3	4	5
14 其他（請註明）：_______	1	2	3	4	5

作者

林翠花、沙田官立小學上午校教師
賀國強、香港教育學院

(Received: June 4, 1997; Revised & accepted: July 9, 1997)

(2) 你認為小學生的違規行為的成因，主要是：

	非常不同意	不同意	普通	同意	非常同意
1 學生無心的學	1	2	3	4	5
2 課程未能切合學生的需要	1	2	3	4	5
3 教師教學方法未能切合學生的需要	1	2	3	4	5
4 校方不能體諒學生	1	2	3	4	5
5 教師未能瞭解學生	1	2	3	4	5
6 缺乏父母關顧，父母不懂管教子女	1	2	3	4	5
7 受不良校外友伴影響	1	2	3	4	5
8 受其他行違規行為的學生影響	1	2	3	4	5
9 受大眾傳媒影響	1	2	3	4	5
10 其他（請註明）：_____	1	2	3	4	5

(3) 你同意採用以下方法處理學生的違規行為嗎？

	非常不同意	不同意	普通	同意	非常同意
1 罰企	1	2	3	4	5
2 罰抄書	1	2	3	4	5
3 通知家長	1	2	3	4	5
4 通知學生輔導主任處理	1	2	3	4	5
5 通知學生訓導主任處理	1	2	3	4	5
6 與家長合作輔導學生	1	2	3	4	5
7 與學生輔導主任合作處理	1	2	3	4	5
8 與學生訓導主任合作處理	1	2	3	4	5
9 自己直接輔導學生	1	2	3	4	5
10 自己、學生家長、輔導主任和訓導主任一起處理	1	2	3	4	5
11 其他（請說明）：_____	1	2	3	4	5

(4) 你認為以下方法可協助解決學生的違規行為嗎？

	非常不同意	不同意	普通	同意	非常同意
1 增加學生輔導主任人手	1	2	3	4	5
2 增加學生訓導主任人手	1	2	3	4	5
3 加強教師與家長聯絡	1	2	3	4	5
4 加強教師與學生輔導主任聯絡	1	2	3	4	5
5 加強教師與學生訓導主任聯絡	1	2	3	4	5
6 加強馬鞍山區教師的聯繫	1	2	3	4	5
7 老師接受更多有效課堂管理的訓練	1	2	3	4	5
8 設立完善的學生賞罰制度	1	2	3	4	5
9 恢復老師對學生的體罰權力	1	2	3	4	5
10 教育署提供建設性支援	1	2	3	4	5
11 如學生屢勸不改，可著令其停學	1	2	3	4	5
12 其他(請註明)：_____	1	2	3	4	5

(5) 你認為違規學生對你的教學有影響嗎？

	非常不同意	不同意	普通	同意	非常同意
1 令教學情緒低落	1	2	3	4	5
2 心理壓力增加	1	2	3	4	5
3 工作壓力增加	1	2	3	4	5
4 減少照顧其他學生的時間	1	2	3	4	5
5 其他（請註明）：_____	1	2	3	4	5

(6) 你現時能否有效地管理違規的學生？（請選下列一項，並在括弧內加"X"）

1 極有效（ ） 2 有效（ ） 3 尚可（ ） 4 有困難（ ） 5 極有困難（ ）

(7) 你覺得現時小學生的違規行為情況嚴重嗎？（請選下列一項，並在括弧內加"X"）

1 非常嚴重（ ） 2 嚴重（ ） 3 普通（ ） 4 不嚴重（ ） 5 非常不嚴重（ ）

(8) 請填上閣下的背景資料（請在適當的括弧內劃上"X"）：

性別： 男（ ） 女（ ）

年齡： 20歲以下（ ） 20-29歲（ ） 30-39歲（ ） 40-49歲（ ） 50歲或以上（ ）

教學年資： 少於一年（ ） 1-3年（ ） 4-6年（ ） 7-10年（ ） 10年以上（ ）

家庭狀況： 未婚（ ） 已婚有子女（ ） 已婚無子女（ ） 分居或離異（ ）

主要職責： 班主任（ ） 訓導（ ） 課外活動（ ） 學科教師（ ） 學校行政（ ） 其他(請註明)：_____

主要任教班級為： 1-2年級（ ） 3-4年級（ ） 5-6年級（ ）

27

多謝合作！

Education for the Gifted and Talented: What Programs Are Best Suited for Hong Kong?

David W. Chan

The Chinese University of Hong Kong

Against the historical background of a general neglect of gifted education, it is argued that Hong Kong can no longer afford to continue to adopt a laissez-faire attitude toward education of the gifted and talented. Even though our Chinese forefather valued giftedness and talent, systematic efforts or programs aimed at helping gifted children develop their potential and providing society with educated and creative professionals have yet to be planned and designed. The development of gifted programs best suited to Hong Kong is examined in light of issues of narrow-band vs broad-spectrum definition of giftedness and selection process, acceleration vs enrichment program goals, content- vs process-oriented modes of instructions, and different systems of delivery. The paper concludes with a description of the development of the summer gifted program at the Chinese University of Hong Kong (now in its planning stage), which aims at meeting the special education-al needs of gifted and talented students in Hong Kong.

適合香港資優教育的計劃

[illegible]

Historically, concern for the education of gifted and talented children in Hong Kong has been largly neglected (see Chan, in press youths). Gifted youths were accommodated in the sense that attending secondary schools, matriculation classes, post-secondary colleges and universities was based on academic achievement and the ability to pay the fees. With compulsory education extending to secondary education in 1978, schooling up to Secondary Three became available to all, but special services for gifted children remained sparse. There were reasons for this general neglect of gifted education. First, there were no recognized or standardized procedures for identifying gifted and talented children, and even if there were such procedures, it was assumed that the number of gifted children would be very small in the community. It was not until 1981, with the norming and standardization of the Hong Kong Wechsler Intelligence Scale for Children (HK-WISC; Psychological Corporation, 1981), that students could be assessed validly and reliably on their intellectual abilities on the HK-WISC. The number of gifted individuals has since then been estimated at about 2% of the population based on statistical considerations, and on studies conducted with the Torrance Tests of Creative Thinking (TTCT; Spinks, Ku Yu, Shek, & Bacon-Shone, 1995). Second, the system of Hong Kong education system has often been accused of developing an intellectually elite group. The development of gifted education would appear to counter the movement toward the increasing liberalization of education and free education for all children. The concern for equity took precedence over the concern for excellence. Third, many educators and parents of non-gifted children generally believed that gifted children could take care of themselves, and that limited resources should be allocated to the less advantaged groups with special educational needs. Thus, special services for the sensory impaired, the mentally handicapped, and the learning disabled should take priority.

Heading into the 21st century, Hong Kong cannot afford to continue such a laissez-faire attitude toward the education of the gifted and the talented. Students with gifts and talents deserve an education commensurate with their capabilities. From a different perspective, gifted individuals represent an important untapped source of human potential which needs

to be discovered and developed. At this time in history, we cannot risk the possible deprivation of opportunities to enrich the lives of our children, nor risk the loss of their potential contributions to our society. Therefore, it is imperative that educational programs best suited for our gifted children be designed and developed.

Our Chinese Heritage

Although Hong Kong has been slow in developing programs for gifted and talented children, the principles underlying gifted education are not new to the Chinese, and have been discussed often throughout Chinese history (Tsuin-Chen, 1961). One well-known notion, frequently attributed to Confucius in about 500 B.C., is the belief that while education should be made available to children of all social classes, they should be educated differently according to their abilities. A second notion is the importance of support for the development of the gifted. It was recognized that the full development of the abilities of even the most gifted children required special training. For example, in the Tang Dynasty, child prodigies were sent to the imperial court for cultivation. A third notion has to do with the development of talents or giftedness in children. While there were child prodigies whose talents and gifts were evident throughout their lives, it was recognized that gifts might emerge later in seemingly average youths, and that precocious youths might grow up to be average adults. Finally, our Chinese ancestors also embraced the multiple-talent conceptualization of giftedness. Apart from literary ability, they valued leadership, imagination, originality, intellectual and perceptual abilities such as reading speed, memory capacity, reasoning and perceptual sensitivity.

Issues in the Development of Gifted Programs

Although our Chinese ancestors recognized the importance of special training and cultivation for the gifted and talented, there were no recorded systematic efforts, programs or curriculum for the gifted. Turning to education experts in North America, we soon find that they generally agree that gifted programs should be qualitatively differentiated, but they disagree as to the specifics of the programs that are best suited for gifted and talented students. Their disagreements can be summarized as their different positions on a number of issues (Box & Wash[illegible]on, 1985). These issues have implications for planning and designing programs for the gifted and talented in Hong Kong.

The first issue has to do with how giftedness is conceptualized and operationally defined. Definitions of giftedness necessarily determine and influence educators' choice of program models. Thus, students who are selected on the basis of a global score on an intelligence test may require a different program from those selected on the basis of scores on tests of mathematical ability, or evidence of creativity. With the local norming of the HK-WISC completed in 1981 (Psychological Corporation, 1981), and that of the Raven's Standard Progressive Matrices (SPM) completed in 1986 (Education Department, Hong Kong, 1986), gifted and talented students in Hong Kong have been largely identified on the basis of these tests. With the recent local norming of the TTCT completed in 1995 (Spinks, Ku-Yu, Shek, & Bacon-Shone, 1995), and the increased use of other tests of divergent thinking, such as the Wallach-Kogan tests (Chan, Cheung, Lau, Wu, Kwong, & Li, in press), facets of creativity will eventually be added to the identification of gifted and talented youths for educational programs in Hong Kong.

Related to the definition of giftedness is the issue of the goals of gifted programs. Educators differ as to their views on the primary purpose of gifted programs. For some educators, a rational goal is the acceleration of the students' progress through the basic curriculum. To other educators, acceleration is neither necessary nor even desirable. Instead, they focus on enriching students' learning experience by special projects or field trips, supplementary topics to the basic curriculum, time-out for self-exploration, or special topics on creative thinking or problem solving. Another nonacademic goal of enrichment experience is to provide opportunities for gifted children to interact socially and intellectually with gifted peers and gifted adult role models. As Hong Kong has a relatively rigid system of education that does not allow skipping grades, true acceleration within the system is in this manner precluded. The Education Department of the Hong Kong Government has now made provisions for enrichment

experience in 19 primary schools targeted for school-based experimental.enrichment programs starting in 1994.

Partly related to the acceleration issue is the issue of what might constitute an appropriate instructional model or curriculum for gifted programs. Acceleration programs for able students are likely to focus on learning specific bodies of content or are product-oriented, whereas enrichment experience via, for example, independent projects are less likely to focus on systematic acceleration. Compatible with the product orientation, enrichment programs also emphasize general problem-solving strategies and creative thinking, and are thus also process-oriented.

One final issue on developing gifted programs revolves around the issue of altering the learning environment for gifted children. Grouping gifted students into relatively more homogeneous groups for special classes or using special equipment such as computers are likely to arouse charges of elitism. Pull-out classes for enrichment, on the other hand, will incur more resources than allowing students to move to advanced classes with older students. As meationed, Hong Kong has now embarked on school-based enrichment programs outside regular class hours for students in 19 experimental schools. In addition, a resource center, the Fung Hon Chu Gifted Education Centre, has been established in 1995 to provide support services to gifted students, teachers and parents.

Meeting Special Educational Needs of Gifted and Talented Students

While the positions on the above issues, a narrow-band vs a broad-spectrum definition of giftedness and talent, acceleration vs enrichment, content- vs process-oriented modes of instruction, and special-class vs pull-out programs, may result in the design of different gifted programs, the ultimate criterion for planning a sound program has to rest on the extent to which special educational needs of the gifted and talented are met. In this connection, Feldhusen (1991) has listed eight special needs of gifted students. These needs are not typically addressed in regular school programs: (1) Challenging instructional activities; (2) opportunities to learn new material at a faster pace; (3) instruction at higher skill and conceptual levels; (4) clarification and confirmation of students' gifts and talents; (5) talented teachers who evoke high-level expectations; (6) interaction with challenging peers; (7) access to diverse topics, disciplines, and content; and (8) opportunities for in-depth research, exploratory investigations, and creative synthesis of ideas.

The Hong Kong school-based experimental program of enrichment activities, which is intended to extend to schools beyond the 19 pilot schools, typically addresses some of these needs. However, gifted youths have to be in participating schools to profit from the enrichment experience, and most truly gifted youths may have rather limited experience given the generally larger schoolwide talent pool in enrichment programs. On the other hand, while full-time, special classes for the gifted with well-trained teachers and a differentiated curriculum can accomodate most of these needs, such form of service delivery is not likely to be implemented in Hong Kong given the worldwide trend in the pursuit of equity and improved educational attainment for all children with diverse needs. An exception is the founding of a special G. T. School by the Gifted Education Council to admit gifted students in the school year of 1997-1998. Thus, alternative program services after school, on Saturdays, and in the summers are needed to fill in some of the missing educatonal experiences for gifted students in Hong Kong.

A survey of some of the summer programs in North America reveals that many of the best programs available to meet special educational needs of gifted children are those offered by colleges and universities such as Duke, Northwestern, Purdue, and the University of California at Irvine. The results of program evaluation of Saturday and summer programs at Purdue, for example, are particularly encouraging (Feldhusen, 1991; Feldhusen & Koopmans-Dayton, 1987). These programs are very beneficial to gifted youths in providing high-level, challenging experiences to facilitate their growth and development toward creative leadership careers in the arts, sciences, business, humanities, government, and other professions. At the same time, these programs also generate revenues for the host universities and serve as recruitment programs for bringing talented students to the universities as full-time students later, thus helping

universities to fulfil the mission of nuturing and developing human potential for our society and humankind.

The Summer Gifted Program at the Chinese University of Hong Kong

In 1996, the Chinese University of Hong Kong has moved to plan a summer gifted program for our gifted and talented children in Hong Kong starting in 1997. The program is intended to be a supplement to regular school programs and school-based enrichment programs, the assumptions being that gifted and talented youths need a variety of challenging and enriching experiences, and the university has untapped resources and facilities to satisfy the special educational needs of gifted and talented youths in our society. Like all other gifted programs, it aims to help individual gifted and talented students develop their high potential, and to provide society with educated professionals who will become creative leaders and problem solvers. Unlike other gifted programs, it needs to strive for its survival at a time when the educational pendulum is swinging to a strong zeal for equity, and in a place where support and awareness of the need for gifted education is generally lacking. The implementation of the summer program will be in phases. It is anticipated that in the initial phase, the summer gifted program will operate as a one-week intensive residential program for a small number of Secondary 1 and 2 students identified to be gifted and talented. Ideally, the program will be extended to primary and senior secondary students, and to Saturdays beyond summer months. With favorable feedback from students, teachers, and parents, the University will be urged to consider seriously bright students' concurrent enrollment in high school and the University such that gifted students will be able to earn university course credits when enrolled in accelerated courses in the summers, and in evenings and on Saturdays in the regular school years. Nonetheless, at this planning stage, a number of issues need to be addressed. These include the definition of giftedness and the identification-selection process, the curriculum and instructional models, teacher training, and program evaluation.

The selection process

The Hong Kong Education Commission Report No. 4 (Education Commission, Hong Kong, 1990) basically follows the US Federal Definition of gifted and talented (see Davis & Rimm, 1994) in recognizing that demonstrated achievement and potential can be in any one or more of the following areas: (1) General intellectual ability; (2) specific academic aptitude; (3) creative or productive thinking; (4) leadership ability; (5) visual and performing arts; and (6) psychomotor ability. The subsequent US Federal Definitions have excluded psychomotor ability since artistic psychomotor ability talents can be included under performing arts, and athletically gifted students typically are well-provided for in nongifted programs. It is also recognized in Hong Kong that there are provisions for students talented in art, music, and sports, but not for students with high intellectual potential and academic performance (Board of Education, Hong Kong, 1996).

The Research Team conducting the recent local norming of the TTCT has also conducted studies regarding assessment instruments and recommends a battery of assessment tools for identification of gifted students in Hong Kong (Spinks, Ku-Yu, Shek, & Bacon-Shone, 1995). They include: (1) Behavioral rating by parents; (2) behavioral rating by teachers; (3) the Hong Kong Attainment Tests (HKAT) in Chinese, English, and Mathematics; (4) the HK-WISC or equivalent standardized intelligence test; and (5) the TTCT.

In the planned selection process for admission to the summer gifted program at the Chinese University of Hong Kong, these well-researched instruments will be utilized when they are made available. Students who achieve attainment scores at or above 90th percentile and IQ scores of 125 or above are expected to be admitted. In addition, multiple measures as alternative ways of detecting gifts and talents will be involved. These may include the Wallach-Kogan Tests of divergent thinking, and the Raven's SPM. However, in using a variety of identification devices, such as the HKAT, HK-WISC or SPM, teacher/school and parent nominations, it is expected that any one is indicative of talent or ability. Children are not expected to show high ability on all of them in order to be selected for the program. By being relatively generous in assessments, children are given a chance to demonstrate ability in the summer program.

Curriculum and instructional models

The curriculum of the planned program intends to provide opportunities for challenging academic studies in areas that relate the the special talents, abilities, and interests of our gifted students. Recognizing that a student may have high ability or achievement in one area such as mathematics, and talents and interests in other areas such as foreign languages, the program will cater to provide opportunities in accelerated instruction in the major talent domain, and enrichment experiences in other areas. All courses will operate at a challenge level at least two years higher than the age-grade level of the students enrolled.

It is recognized that gifted and talented youth have intellectual and artistic abilities advanced beyond their peers. With higher-level and faster-pace instruction, they can pursue topics in greater depth and deal with abstract and complex ideas. In general, the summer program curriculum development will be guided by Bloom's Taxonomy of Educational Objectives (Bloom, 1974), where high-level thinking skills are usually translated into stages of analysis, synthesis, and evaluation. Specifically, the eight principles enumerated by Fe'dhusen (1991) are instuctive for curriculum development. They are: (1) Focusing on major ideas, issues, themes, concepts, and principles; (2) emphasizing the need for a large knowledge base; (3) using an interdisciplinary approach when possible; (4) emphasizing in-depth research and independent study with original and high-level products or presentations; (5) teaching research skills and thinking skills as metacognitive processes; (6) incorporating higher level thinking skills in content study; (7) increasing the level, complexity, and pace of the curriculum to meet the needs of students; and (8) teaching methods for independence, self-direction, and self-evaluation in learning.

Teacher training

To put the planned curriculum in practice, teachers who have an appropriate repertoire of teaching strategies that are differentiated to fit the characteristics and needs of gifted students need to be recruited. Teachers of gifted students should be highly knowledgeable or skilled in the discipline they teach, verbally articulate and enthusiastic, inspiring gifted youths with their joy and mastery of the field. Sisk (1975), for example, has listed a set of skills or competencies that teachers of the gifted can learn and acquire to become more efffective in their teaching.

Given the paucity of training for teachers of gifted students in Hong Kong, a series of training workshops for teachers recruited for the summer program will be conducted. These workshops will focus on such topics as Bloom's taxonomy of educational objectives, principles for differentiated curriculum in gifted education, cognitive and metacognitive skills for self-directed learners, dynamics of small group work, problem-solving skills, and project activity.

Program evaluation

To monitor and improve the effectiveness of the summer program, program evaluaton should be part of program planning from the beginning (see Chan, in 1996 for more details). Evaluation should include a formative or an ongoing process aimed at modification and improvement of the program, as well as a summative or final assessment of the overall success of the program. Specifically, formatively, the operations of the program will be closely examined, whereas summatively, the long-term effects of the program on gifted students will be assessed. In essence, one needs to ask oneself whether the program is achieving its goals, whether the identification or selection process admits students who cannot benefit from the program or excludes students who should be in the program, whether the curriculum is sound and appropriate for the gifted and talented, whether teachers differentiate for gifted students in their teaching strategies, whether the needs of highly gifted students are met, and whether students make significant gains in their talented or chosen areas in content and process skills.

Once evaluation questions are posed, sources of information that will provide answers to these questions need to be identified. Student achievement may be evaluated by pre- and post-testing in courses, taking into consideration that the goals of the program focusing on thinking skills, problem solving, independent research, and project activity are difficult to assess and evaluate. The strengths and weaknesses of the courses may be assessed with end-of-course ratings by students and teachers. Teacher performance may be evaluated

by peer observation and student feedback. Long-range achievements of students may also be evaluated with follow-up questionnaires sent to parents and students three to six months after the summer program.

In summary, the summer gifted program at the Chinese University of Hong Kong will aim to enhance the educational experience of gifted youths by providing opportunities for accelerated and enriched learning experiences in their areas of special talents and interests. The program is designed to include a reliable identification and selection process, a carefully planned curriculum, properly trained teachers, and built-in comprehensive program evaluation. Good planning and evaluation has a direct bearing on the survival and continuation of the program. The results of sound program evaluation will also guide program developers to make better decisions that lead to further development of the summer program into better programs for gifted and talented students in Hong Kong. It is anticipated that more, diverse, and better programs need to be continuously designed and evaluated so as to provide a variety of challenging and enriching experiences for gifted and talented students, and to nurture and develop their potential for our society.

References

Bloom, B. S. (Ed.). (1974). *Taxonomy of educational objectives*. New York: McKay.

Board of Education, Hong Kong. (1996). *Report of the Sub-Committee on Special Education*. Hong Kong: Hong Kong Government.

Chan, D. W. (1996). Program evaluation: Evaluating gifted programs in Hong Kong. *Educational Research Journal, 11*, 101-105.

Chan, D. W. (in press). Development of gifted education in Hong Kong. *Gifted Education International*.

Chan, D. W., Cheung, P. C., Lau, S., Wu, W. Y. H., Kwong, J. M. L., & Li, W. L. (in press). Assessing ideational fluency in primary students in Hong Kong using the Wallach-Kogan tests. *Creativity Research Journal*.

Davis, G. A., & Rimm, S. B. (1994). *Education of the gifted and talented*. (3rd ed.) Boston: Allyn and Bacon.

Education Commission, Hong Kong (1990). *Education Commission Report No. 4*. Hong Kong: Hong Kong Government.

Education Department, *Hong Kong (1986). Hong Kong supplement to guide to the Standard Progressive Matrices*. Hong Kong: Education Department, Hong Kong Government.

Feldhusen, J. F. (1991). Saturday and summer programs. In N. Colangelo, & G. Davis (Eds.), *Handbook of gifted education* (pp. 197-208). Boston: Allyn & Bacon.

Feldhusen, J. F., & Koopmans-Dayton, J. D. (1987). Meeting special needs of the gifted through Saturday programs: An evaluation study. *Gifted International, 4*, 89-101.

Fox, L. H., & Washington, J. (1985). Programs for the gifted and talented: Past, present, and future. In F. G. Horowitz, & M. O'Brien (Eds.), *The gifted and talented: Developmental perspectives* (pp. 197-221). Washington, DC: American Psychological Association.

Psychological Corporation. (1981). *Hong Kong Wechsler Intelligence Scale for Children Manual*. New York: Author.

Sisk, D. (1975). Teaching the gifted and talented teachers: A training model. *Gifted Child Quarterly, 19*, 81-88.

Spinks, J. A., Ku-Yu, S. Y., Shek, D. T. L., & Bacon-Shone, J. H. (1995). *The Hong Kong Torrance Tests of Creative Thinking: Technical Report*.

Tsuin-Chen, O. (1961). Some facts and ideas about talent and genius in Chinese history. In G. Z. F. Bereday, & J. A. Lauwerys (Eds.), *Concepts of excellence in education: The yearbook of education*. New York: Harcourt, Brace and World

---

Author

David W. Chan, Professor, Department of Educational Psychology, The Chinese University of Hong Kong

(Received: February 5,1997; Revised & accepted: April 4, 1997)

Using Top-Level Structures to Enhance Reader Comprehension of Content Area Texts

Peter Bodycott

The Hong Kong Institute of Education

This paper defines and explains how "top level structures" can be used in the primary classroom to develop readers' ability to comprehend and organise information retrieved from content area texts. A description of the patterns and the words most frequently used to signal top-level structures are tabled, together with an examination of the relationship between them and the three theoretical bases that directly influence readers. A procedure for using top-level structures in the primary classroom is outlined. The paper concludes by stating the benefits of using top- level structures in content area reading for teachers and in turn pupils. The overriding benefits of using top-level structures in content area reading are an increased awareness and control over English language and learning for both students and teachers.

運用高層結構增長讀者掌握閱讀內容範圍

本文闡釋「高層結構」在小學的教室中如何運用，以增強讀者從學習的文體中，發展瞭解和組織有關資訊的能力。表上「高層結構」的描述和詞句以表列方式呈現，並討論其與直接影響讀者的三項理論性基礎。本文更勾劃於小學運用「高層結構」的程序，並以教師運用「高層結構」於內容閱讀的內容範圍，使教師、學生之益作結論。運用「高層結構」的最主要好處在增加教師、學生對英語和學習的認識及掌握

Reading and writing non-fiction, or expository type, texts in content based subject areas, becomes increasingly important to students as they progress through the education system. All learners, however, at one time or another, have trouble with these types of texts. For readers, the reasons for this are varied. It may be that the language or vocabulary being used is too difficult; the reader may have a limited understanding of the topic; or the reader may have had relatively little experience in reading the specific kind of text. Whatever the reason, the challenge for readers, and in turn their teachers, is to devise strategies to deal with these kinds of texts, and any problems that may be experienced in reading or writing them. One obvious solution is for teachers to devote more time inside the classroom to reading and writing a range of expository texts, but this is not always possible. Another solution is for teachers to educate students about how to identify patterns or "top-level" structures that non-fiction writers use to convey their meaning. This paper outlines an approach that one primary school teacher developed to assist students come to grips with top-level structures.

This teacher believed that an understanding of text structure would assist students to comprehend their reading material — a view shared by numerous researchers and teachers (for example, Berkowitz, 1986; Flood, 1986; Slater, Graves & Piche, 1985). The teacher specifically cited the research of Armbruster, Anderson and Ostertag (1989) who found that children of primary school age were capable of being taught text structures such as compare-contrast, problem-solution, sequencing, and cause-effect. These children, as a result of direct teaching and learning of these generalizable schemas (top-level structures), were better able to recall and comprehend content area texts. Drawing from these findings, the teacher in this study set about designing a classroom teaching procedure for implementing "top-level structures."

The paper begins by defining what top-level structures are, examines their place in natural language use and in the language of teaching and learning. A discussion of the relationship between top-level structures and the reading process follows together with an outline of the procedure used for integrating structures in content area reading program.

The paper concludes with a summary of the benefits of using top-level structures for both teachers and students.

What are top-level structures?

Top-level structures are mental constructs or patterns of thinking that we use to help us make sense of, act upon and/or respond to what we see, hear or read. They are referred to as top-level because they are in essence cognitive, organisational frameworks. Developed through everyday experiences, top-level structures "help us to understand what is 'appropriate and effective' use of language" across different contexts and texts (Turner, 1992, p.1). Writers intuitively use "top-level structures" as a means of helping them to create meaning, and/or instruct readers.

Top-level structures or "text structures" (Armbruster, Anderson and Ostertag, 1989, p.130) generally follow the patterns:

compare/contrast;
cause/effect;
sequence/time order;
problem/solution; and
description.

Table 1 provides a summary of the words and phrases commonly associated with individual top-level structures. The lists are based on the work of Turner (1992) and Vacca and Vacca, (1989). It is important to note that the lists are not exhaustive or mutually exclusive. They simply provide readers with a signal or signpost to the what is happening in the text, that is, the type of top-level structure being used. Readers should also note that relationships and ideas within texts also develop through, other forms of vocabulary, such as nouns, adjectives and/or verbs (Turner, 1992), and through non-linguistic cues such as graphs, tables, figures and pictures.

While the focus of this paper is on reading, top-level structures are an integral part of daily life. To illustrate this, consider what needs to be done in planning for New Year celebrations. First, lists are made of the jobs to be done, the person responsible for doing them, and required items. As the planning continues, the lists are expanded, and refined as, questions are raised, specific issues compared, problems identified and solutions sought. Throughout the planning process decisions are made by the planner based on his or her prior experience in organising or participating in similar events. This may involve some form of evaluation or analysis of the causes and effects of specific action. Through this example, top-level structures are being used naturally in the oral and written language being used. They help the planner help to link ideas, and they guide thinking and decision making.

Top-level structures are also a natural part of teaching

Table 1. Signalling language for top-level structures

1. Compare/Contrast	2. Cause/Effect	3. Sequence/Time Order	4. Problem/Solution	5. Description
Commonly associated with Science	Commonly associated with Science, History, Maths	Commonly associated with Science, History, Maths	Commonly associated with Science, Maths	Commonly associated with Science, History, Geography
instead, but also, however, in contrast, on the other hand, not only, similar to..., while, unless, although, even so, different from, similarly, yet, despite, as well as, as large as... compared with, is consistent with	because, so, since, result, as a result, cause, effect, a consequence of, may be due, hence, this leads to..., therefore, if... then, so that	on.(date)... as, before, after, when, not longer after, when, first.... most importantly, then, finally, for example.... next, for instance, on... (time or date)	solved, will prevent, trouble problem, solution, solved, the answer is, question, thus, result, has difficulty...	for example, for instance, i.e., to begin with, some features.... also, first, characteristics, list, next, then, types, has many parts, to begin..., components

and learning. Teachers at all levels of education — primary, secondary and tertiary- frequently ask questions, or provide written or verbal instructions, which explicitly use these patterns of thinking (Turner, 1992). Consider these examples from Hong Kong textbooks and workbooks:

> Discuss the advantages and disadvantages of a Bourdon gauge *compared* to a manometer.
> *List* two conditions under which Hong Kong will gain nothing from trading with Japan.
> *Compare* the licensed bank, restricted license banks and deposit taking companies in terms of...
> Solve this *problem*. Mrs. Ho has forty $5 coins and $2 coins together. The value of the coins is $164. How many coins of each does she have? Be prepared to *describe* your method of calculation.
> Switch on the Van de Graaff generator and observe what happens. What happens to the metal coated sphere? What *causes* this? Why does this happen?

As these examples of top-level structures demonstrate, much of what teachers ask students to do requires the linking of prior knowledge with either new information, processes or procedures. However, there are times when by design, (it is the teacher's intended purpose) or default (the teacher is unaware), the questions being asked, the procedures outlined or the instructions given are implicitly confusing. That is, the 'structure' of the question or instruction is often unclear or ambiguous and students are left to decide, sometimes through guesswork, how to relate the information, or how to respond. The following examples from Hong Kong textbooks and workbooks illustrate an unclear use of "top-level" structures:

> An object is acted upon by two equal and opposite forces. Is the situation equivalent to no forces acting on the object?
>
> State the four functions of money.
> What happens to the leg after tapping?
> Suggest changes that you would make to your diet if you want to lose weight.
> What foods should you reduce or replace? Why?
> What events led to the battle of Waterloo? How could it have been avoided?
> What changes in history would have resulted?

In responding to these types of examples students are at risk of demonstrating a lack of knowledge of the topic, and/or understanding of the task. Problems such as this can be avoided if writers pay closer attention to the message in their text. However, this is not always possible, so teachers need to help students to deal with such unclear writing. Bartlett, Turner and Mathmas (1981) found that the direct teaching of top-level structures helped students to remember, and thus produce clearer responses to questions. However, there are many different ways of responding to questions, and students need to know which structure to apply to which question and this requires deep levels of understanding. Therefore to assist students, the teacher in this study grouped all the possible patterns into four broad categories and set about designing a more comprehensive approach for use in his classroom reading programme.

Top-level structures and the reading process

The use of top-level structures as a teaching strategy, is grounded in the three theoretical bases that directly influence readers, e.g. metacognition, schema theory, and text structure.

Metacognition, as defined by Flavell (1976), is the individual's knowledge about cognition, that is, what readers know about their cognitive resources. Brown (1978) extends this definition to include the regulation of resources, and the ability to control reading behaviours during reading. This knowledge of cognition includes the reader's ability to detect errors, contradictions in the text, knowledge of different strategies to use with different text types, and the ability to organise information. A knowledge of top-level structures therefore assists readers to understand the structure of different texts — how writers' structure ideas at the whole text level. Because writers are overtly or covertly using top-level structures to organise their writing, by raising student awareness, teachers can provide them with a metaphoric key to unlock relationships between ideas in the text. This information, when filtered through prior knowledge of the topic and general text structure -genre- helps facilitate meaning

creation, i.e., comprehension.

The second aspect of metacognition is the reader's ability to control their reading behaviours during reading. That is, a reader's ability to plan, monitor, test, revise and evaluate the strategies they employ when reading and learning from a text (Baker & Brown, 1984). By studying and then applying knowledge of top-level structures in reading and writing lessons students are afforded a means through which to better understand text cohesion and coherence, how meaning is being conveyed, and they way English language can vary across situations and contexts. With this knowledge they are in a better position to control their reading and writing behaviours by adjusting the language, the writing style, and strategies they use to comprehend and construct meaning.

The second theoretical base that influences readers is Schema Theory. It relates specifically to the effect of prior knowledge on new learning situations — what knowledge has been constructed about the specific topic through previous experience. The relationship between top-level structures and reading comprehension is consistent with research that involves relating textual information to the pre-existing knowledge of the individual (Pearson, 1985). Comprehension is viewed as an interactive process between the text and the reader. Top-level structures provide readers with a strategy through which they can remember textual information. That is, top-level structures provides them with a framework for organising and storing information from a text as they read, and as they reconstruct meaning based upon the information they have received from the reading. This knowledge may be specific content, about reading behaviours, and/or about the structure of texts.

The interplay of metacognitive and cognitive acts results in the construction of mental frameworks of understanding. From reading and writing knowledge schemas related to Text Structure are developed.

These are often referred to as genres and are the more general common patterns that exist, or are applied, to the different forms of writing, e.g., letters, reports, essays, etc. Top-level structures are at a meta-level linked to knowledge of text structure. They can assist readers to select relevant information related to their purpose in reading a text, and in turn, help them to make inferences about relationships between the information contained in a particular genre or text type. Similarly, they facilitate a reader's ability to generate hypotheses about gaps in their knowledge, and inconsistencies in the information derived – from texts- through a process of logical association (Nist & Mealey, 1991).

Using top-level structures: one teacher's approach

The teacher in this study primary purpose of using top-levels in the classroom was to help readers, through discussion and reading, become more aware of text organisation and to increase their comprehension. There were two assumptions underlying the teacher's use of top-levels. First, the ability to perceive top-level structure in a text is an advanced reading skill. The second is that a knowledge of top-level structure is a natural component of the reading process. As such, the teacher believed that to teach students about top-level structures would require integration with other reading activities. To isolate the teaching of top-level from the main purpose in reading -comprehension, he felt would oversimplify their function, and restrict the benefit that readers can derive from applying such knowledge.

The teacher having previously used "concept mapping" with the students, to graphically represent their implicit understanding of various topics, decided to apply them in the area of reading. In so doing, the teacher was following on from the work of Baker (1977) and Bodycott (1991). Baker found that they assisted readers to focus on a specific area or topic, and organise known relationships and information prior to, and following reading. Bodycott investigated their use as a means to graphically illustrate the schematic organisation of a text and this was found to lead students to a better understanding of how authors convey meaning. From the student's concept maps, the teacher, was able to identify individual student understanding of reading and knowledge of text structure, etc. Figure 1 illustrates an example of a concept map of the reading process.

Figure 1. A concept map generated by a trainee language teacher to illustrate components of the reading process.

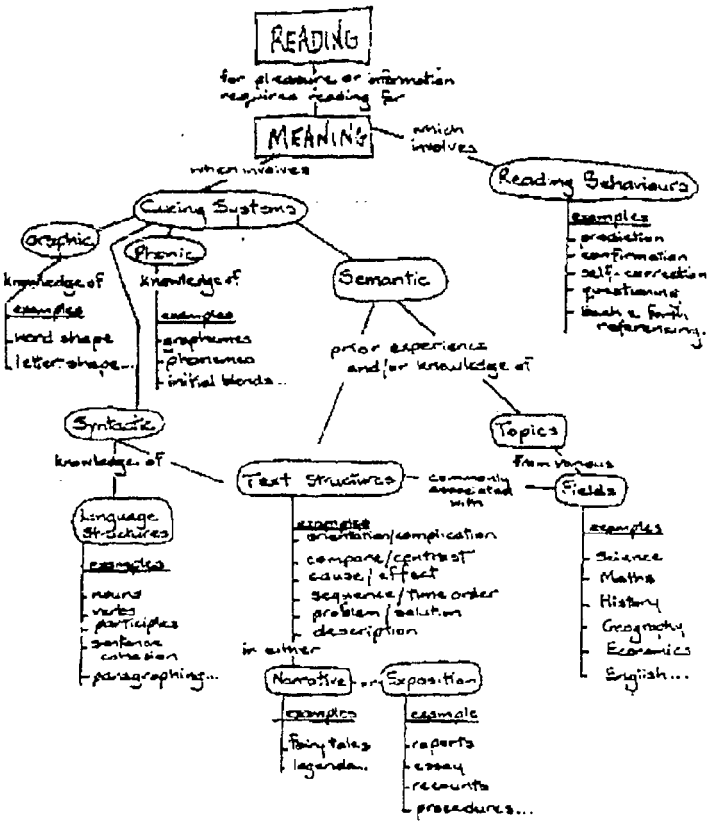


Table 2 outlines the procedures the teacher developed. The selected activities and questions are viewed only as a guide and are provided to demonstrate how the teacher integrated top-level structures into the normal classroom program. Observations of the procedures in action revealed the process to be dynamic, and changeable. However, for general planning the following procedures were implemented:

* Select a top-level text pattern to study;
* Explain to students the function of top-level structures and the value of recognising and using them to understand new reading material;
* Locate and share examples of the selected structure as used in everyday language or texts;
* Alert students to the signal words that are often used to indicate the specific pattern;
* Demonstrate to students how to locate and highlight the information in written text (starting at the paragraph level is advisable, especially with inexperienced readers);
* Provide guided practice with students working in pairs or groups on selected texts of reading to locate and highlight the pattern;
* Allow time for discussion of findings;
* Devise activities for recording and displaying the information; and
* Develop procedures for linking knowledge of top-level patterns into the classroom writing program, i.e., students jointly constructing historical reports containing paragraphs using a cause-effect pattern.

Table 2. A guide to the study of top-level structures

Stage	Questions Readers May Ask	Related Teaching Activities/Considerations
Prereading	Task orientation Why have I been asked to read this text? What does the teacher expect from me after reading? Title: What will this text be about? What am I being asked to do? What words indicate this? What type of text will it be? How will it be structured?	Readers should be encouraged to ask questions of the teacher regarding the required outcomes from a task. Readers should be taught to check the definitions of key words used in any question they are being asked to respond to.
	Tapping prior knowledge and/or experience What do I already know about the topic? relationships? What more do I need to know?	Readers complete a concept map of the topic (see Figure 1)
During reading 1st reading- skim read	Content How does what I'm reading fit with what I already know, or, what I've just read? Structure Is the genre "report, recount, essay..." consistent with others I've read? What patterns (top-level structures) is the author using? Is the author: comparing two or more things? identifying a problem and offering any solution(s)? stating that something has happened because of something else? listing? or explaining how to do something?	Students mark: new information; paragraphs containing relevant information pertaining to purpose; and different patterns Note: As texts vary teachers initially will need to demonstrate and guide readers in this identification
After 1st reading	How was the text organised? What was it all about?	Whole class and/or small group discussion of findings.
During reading 2nd closer reading	Checking Understanding Can I locate specific examples to support my perception of: the text meaning? the pattern of the top-level structures used to convey meaning? What ideas are associated with the different parts of the pattern? Can I link these ideas by words which signal the pattern relationship?	Students encouraged to paraphrase new information; write-up responses to specific questions generated concerning the purpose in reading; and quote specific examples of identified text patterns.
After 2nd reading	How does the information gained relate to my prior knowledge? How does the information relate to my purpose for reading? In what way can I construct my answer or respond to the question/task? Can I use top-level patterns in my response?	Further whole class and/or small group discussion of identified structures and meaning relationships. Revisit and extend initial concept maps. Teacher support for students in the construction of responses.

The benefits of using top-level structure

Using top-level structures as a teaching strategy allowed this teacher to develop a program of reading instruction that enhanced the use and knowledge of the English language. In turn, they provided a scaffold, or framework that helped readers create meaning across a variety of situations and contexts. In addition, Turner (1992) argues that the use of top-level structures in the classroom provides students and their teachers with a "shared language" to:

> Discuss the central message within a text, whether it be spoken, written or visual.
> Justify the view taken by describing how ideas are related in the text, thus developing critical literacy; and
> Describe procedures for learning and remembering. (p. v)

A knowledge of top-level structure reinforces a reader's ability to recognise how writers' structure ideas at the whole text level. This provides a key to unlocking relationships between ideas in the text, and, when filtered through prior knowledge of general text structure and content knowledge, facilitates comprehension. Applying knowledge of top-level structures offers students with yet another strategy for eliciting, recalling and discussing, reviewing knowledge or understandings about a specific topic. This application can also enhance student ability to develop written texts that are more coherent and related to the conventions associated with different subject areas. Through the use of graphic organisers such as concept maps, students are placed in a better position to visualise linguistic relationships in texts, and development in their learning.

Integrating the teaching of top-level structures into the study of content specific subjects, or general reading program facilitates student comprehension of not only course materials, but of required tasks and activities. For teachers, the understandings they develop about teaching and learning in specific content areas, help lay the foundation for the development of future reading strategies that can be employed with students. Teachers, are then empowered with new strategies that can assist their students to better understand the use of English language across a variety of contexts. This, it is hoped, will ultimately lead an increased awareness of what advanced readers and writers do intuitively, and students who are better able to comprehend and compose written texts, for a variety of purposes, across subject areas.

References

Armbruster, B.B., Anderson, T.H., & Ostertag, J. (1987). Does text structure/ summarization instruction facilitate learning from expository text? *Reading Research Quarterly*, 22, 331-346.

Baker, R.L. (1977). The effects of inferential organisers on learning and retention, content knowledge, and term relationships in ninth grade social studies. In H.L. Herber & R.T. Vacca (Eds.), *Research in reading in the content areas: The third report*. Syracuse, NY: Syracuse University Reading and Language Arts Centre.

Baker, L., & Brown, A.L. (1984). Metacognitive skills and reading. In P.D. Pearson (Ed.), *Handbook of reading research*. New York: Longman.

Bartlett, B.J., Turner, A., & Mathmas, P. (1981, April). *Top-level structure: asignificant relation in what fifth graders remember from classroom text*. Paper presented at the annual meeting of the American Educational Research Association, Los Angeles.

Berkowitz, S.J. (1986). Effects of instruction in text organisation on sixth-grade students' memory for expository reading. *Reading Research Quarterly*, 21, 161-178.

Bodycott, P. (1991). Coming to grips with texts: An analytic approach to the study of reading and writing. In: E. McKay (Ed.), Public and private lessons: *The language of teaching and learning* (pp. 92-103). Victoria, Australia: Australian Reading Association.

Brown, A.L. (1978). Knowing when, where and how to remember: A problem of metacognition. In R. Glaser (Ed.), *Advances in instructional psychology* (Vol 1, pp. 77-165). Hillsdale, NJ: Lawrence Erlbaum.

Flavell, J.H. (1976). Metacognitive aspects of problem solving. In, L.B. Resnick (Ed.), *The nature of intelligence*. Hillsdale, NJ: Lawrence Erlbaum.

Flood, J. (1986). The text, the student, and the teacher: Learning from exposition in middle schools. *The Reading Teacher, 39*, 784-791.

Nist, S.L. & Mealey, D.L. (1991). Teacher-directed comprehension strategies. In R.F. Flippo & D.C. Caverly (Eds.), *Teaching reading and study strategies at the college level* (pp. 42-85). Newark, Delaware: International Reading Association.

Pearson, D.P. (1985). Changing the face of comprehension instruction. *The Reading Teacher, 38*, 724-738.

Slater, W.H., Graves, M.F., & Piche, G.L. (1985). Effect of structural organisers on ninth grade students' comprehension and recall of four patterns of expository text. *Reading Research Quarterly, 20*, 189-202.

Turner, A. (1992). *Patterns of thinking: top-level structure in the classroom*. Granville, Australia: Primary English Teachers Association

Vacca, R.T., & Vacca, J.L. (1989). *Content area reading* (3rd ed.). Glenview, IL: Scott Foresman.

Author
Peter Bodycott, Senior Lecturer, Department of English,
The Hong Kong Institute of Education
(Received: May 23,1996; Revised & accepted: June 1, 1997)

New Horizons in Education No 38,1997

Physically Fit is Better Than Cognitively Fit: Why Not Set Up a Physical Fitness Unit in Hong Kong Primary School Curriculum

Paul Shu Sing Wong

The Hong Kong Institute of Education

Great academic pressure has destroyed the ingredients of primary curriculum in Hong Kong. Pupils' attention has been diverted from enjoying childhood learning experiences through discovery and play to learning new knowledge through spoon-feeding and testing. The keen constraints among primary subjects in scheduling lead to the limited provision of Physical Education periods. Thus, the purposes of this paper are to investigate the factors influencing the development of physical fitness programs in Hong Kong and to recommend offering a Physical Fitness Unit with emphasis on health-related fitness components in the primary curriculum. The full details of the unit including aim and objectives, contents, methods and assessment will be discussed. Finally, strategies on implementation are set forth in the paper

身體強健總較認知出眾為佳—為何不在香港小學課程加設「體適能」單元呢？

[illegible]

I. Introduction

Physical Education (P.E.) defined as "the art and science of human movement" (Seidal & Besiek, 1974) is designed as a responsible, educational programme (subject) and yet more than a subject in a school curriculum. Being an important part of school's instructional program, P.E. is the only area of curriculum that presents motor skills and the study of human movement and provides the opportunity to facilitate their development (Nichols, 1994). All areas of the school curriculum, including P.E., strive to enhance the development of positive feelings towards life long learning. Physical Education is that integral part of total education (Seaton et. al. 1969; Daver, 1970) which contributes to the fullest development of the individual in accordance with his or her capacities (Daver, 1970; Wetton, 1988) through the natural medium of directed, carefully planned and conducted motor activities (Nichols, 1994). The movement experiences are designed to develop skilful, fit, and knowledgeable movers so as to enhance and harmonize the physical, intellectual, social and emotional aspects of an individual's personality (Seaton et. al., 1969; Wetton, 1988).

Bookwalter (1962), defines P.E. as "the optimum development of the physically, mentally and socially integrated and adjusted individual through guided instruction and participation in selected total body sports and rhythmic and gymnastic activities conducted according to social and hygienic standards." The overarching aim of Physical

Education is, therefore, to set aside daily a portion of the school day devoted to large muscle activities that encourage and develop learning to move and learning through movement (Gallahue, 1993).

According to Gallahue (1993), the learning-to-move aim of P.E. is based on acquiring movement skills and enhancing fitness. The learning-through-movement aim of P.E. is based on the fact that effective P.E. can positively affect both the cognitive and affective (social-emotional) development of children. The ultimate aims focus on the becoming of a physically educated person (NASPE, 1992). As far as the objectives of P.E. are concerned, many physical educators (Burcher et. al. 1961; Barrow, 1971; Arnheim & Pestolesi,1973; Annarino et al.,1980; Dauer & Pangrazi, 1989; Morris & Stiehl, 1985 and Gallahue, 1987), have expressed similar objectives:

1. Physical Domain (Organic Development)

- the enhancement of children's physical fitness and well-being ; and their own level of physical growth and development.

2. Psychomotor Domain (Neuro-muscular Development)

- the acquisition of fundamental motor skills and sports skills; and the development of effective body management and useful physical skills.

3. Cognitive Domain (Intellectual Development)

- the acquisition of intellectual skills, concepts and knowledge associated with effective, efficient exercise and movement.

4. Affective Domain (Social-Personal-Emotion Development)

- the development of children's positive self-image, personal attitudes and beliefs, social behaviours essential to as well as emotional and successful participation.

The World Health Organization (WHO) defines FITNESS as "the ability to perform muscular work satisfactorily." (Bouchard, Shephard, Stevens, Sutton & McPherson, 1990, P.6). Physical Fitness as one aspect of total fitness which includes psychological and social fitness (Hebbelink, 1984), is "the ability to carry out physical activities satisfactorily" (Gutin, Manos & Strong, 1992). The definition of physical fitness has undergone dramatic change during the last decades. The President's Council on Physical Fitness and Sports (Clark, 1971) defines physical fitness as "the ability to carry out daily tasks with vigour and alertness, without undue fatigue, with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies."

Physical fitness may be viewed as possessing the elements of both health-related-fitness and performance-related fitness. Muscular strength and endurance, cardiovascular endurance, joint flexibility, body composition and stress management are universally considered to be health-related fitness components. Balance, coordination, agility, speed of movement, and power are among the most frequently cited components of performance-related fitness. Being physically fit has also been associated with a positive state of wellness which is highly influenced by participation in regular physical activity, proper diet, stress control, good social relationships with others and high values and ethics, and genetics. The aim of the health-related physical fitness program is to enable an individual to live a contributing, rewarding and self-fulfilling life (Frost, 1975). Wellness has been defined as "a way of life which you design to enjoy the highest level of health and well-being possible during the years you have in this life" (Ardell, 1985). Physical Education plays an important role in wellness through the development of health-related physical fitness in addition to its cognitive, motor, and social objectives in the total development of children in elementary school programs.

In Hong Kong as a part of primary school curriculum, Physical Education has contributed uniquely to foster the overall development of children - cognitive, physical and social. It encompasses a variety of individual and group movement experiences such as fundamental movement at lower primary level and sports activities like athletics, gymnastics, dance, racket games, ball games, swimming and physical fitness at upper primary level. In practice, at least two periods per week (a total of about 80 minutes) have been allocated to P.E. It is recommended that the subject should be taught in units which have been clearly stated and compiled in the syllabus for Physical Education (CDC, 1995). This means that one particular area is taught in a number of periods

before commencing another area.

In 1988, a health-related physical fitness school-based curriculum was introduced to some secondary schools. It has led to teachers' awareness of the importance of physical fitness in regular secondary P.E. programs. A 'Physical Fitness Award Scheme' for primary schools jointly presented by the Education Department and the Hong Kong Childhealth Foundation was successfully launched in 1992. Gradually, more physical educators, particularly at the primary level, have understood the value of physical fitness. However, by analysing the current situation strong evidence shows that there are five major constraints which have hindered the development of physical fitness program in primary schools at present. These constraints consist of : the over-emphasis on children's academic performance; the uneven allocation of periods among subjects in time-table; the lack of sufficient standardized test equipment / apparatus in primary schools; the lack of health-related physical fitness unit in the Primary Physical Education Syllabus; and parents' negligence on the educational values of physical fitness to children's whole development. Actually, what are the factors influencing the development of physical fitness in the exiting primary curriculum? What are the full details of the proposed physical fitness unit? How can the unit be implemented effectively in the primary curriculum? Therefore, the ultimate purpose of this paper is to explore the most appropriate answers to these three questions.

II. Factors Influencing the Development of Physical Fitness Program in Hong Kong Primary Schools

The goal of physical education in primary schools is to assist each child to develop attitudes, skills, and knowledge of human movement that will result in a lifetime of participation in physical activity. Physical activity has important implications for health. Regular and appropriate physical activity including physical education in schools reduces the risk of all-cause mortality by more than 25 % (Paffenbarger, Hyde & Wing, 1983) and to increase life expectancy by more than 2 years over the population average (Pekkanen & Others, 1987) as well as help to prevent and manage diseases such as osteoporosis and diabetes (Siscovick, LaPorte & Newman, 1985) and reduce the rates of stroke (Salonon, Puska & Tuomilento, 1982).

In spite of the evidence, physical activity of Hong Kong school children has shown little if any increase in recent years. Some research studies have shown that children have seldom participated in regular physical activities. According to Hong Kong Council of Early Childhood Education & Services (HKCECES) (1994)'s findings on the Eating Habits of Children Survey only 28% of 1010 primary pupils liked sports and games activities, while 70% (707) of children spent more than two hours watching television. Most primary school children (75.6%) preferred less physical active pastime; only 15% preferred active play. Other research has shown that preschool children played not more than five minutes continuously in three popular outdoor play areas in Hong Kong (Hong Kong Playground Association, 1995).

Physical education classes can be considered an appropriate mode for developing and maintaining physical fitness in terms of intensity (moderate-to-vigorous activities) and duration (20 minutes) during P.E. lessons. Recent studies have indicated that Hong Kong primary school children only spent 17.3% (3.8 minutes per class period) of their P.E. class time within the recommended intensity (60-90% of Heart Rate Reserve) (Wong & Macfarlane, 1996). Obviously, it has demonstrated that Hong Kong primary school children do not obtain enough exercise to achieve recommended physical fitness objectives according to the exercise guidelines of the American College of Sports Medicine (1988).

Regarding the children's eating habits, the basic diet of the children as a whole is good when compared with the rest of Asia and the world. However, primary school children had a diet with more of the high-fat, low-nutrient snacks and less milk (HKCECES, 1994). Recent research among primary school children in Hong Kong shows that the overnutrition problems of obesity and high cholesterol levels was the second highest children's cholesterol levels in the world (Leung, 1993). Strong evidence indicates that obesity in Hong Kong children appears at about the age of six (Leung, 1993). Severe

obesity is associated with a higher incidence of major complications of obesity eg. diabetes, hypertension, heart disease and sleep apnoea (Simopoulos & Van Itallie, 1984; Van Itallie, 1979).

The results of the above-mentioned research programs lead to the conclusion that primary school students' habitually physical inactive life-style, traditionally poor eating habits and the insufficient exercise level duration during P.E. lessons may be contributing to the childrens' physical fitness problems in Hong Kong.

At present, physical education lessons can be allocated only two periods per week in primary schools, about 35 to 40 minutes a period as recommended by the Education Department. There are around 60 periods of P.E. lessons annually for each level from primary one to six. Since the suggested syllabus of the primary P.E. curriculum covers a wide range of physical activities including individual sports and team sports, P.E. teachers have encountered difficulties in the selection of appropriate and various teaching activities for pupils and in fulfilling individual's needs. As far as the syllabus is concerned, being a skill-oriented P.E. curriculum, it is lack of recommended guidelines and syllabus in Physical Fitness at primary level. Therefore, P.E. teachers have not acquired adequate official guidelines on implementing the physical fitness unit in normal curriculum and extra-curricular activities.

Finally, the situation has been exacerbated by the environmental factors such as the lack of outdoor playgrounds and facilities, insufficient P.E. apparatus and equipment particularly for physical fitness measurement; and human factors for examples: most parents discouraging their children's participation on physical activities and extra-curricular activities in sports in this examination-oriented education system with emphasis solely on pupils' cognitive development.

In summary, although many primary P.E. teachers are aware of the value of physical fitness to the development of pupils' wellness, strong evidence from numerous studies have shown that children's health-related physical fitness level are found to be unsatisfactory due to children's habitually sedentary life style, the inadequate intensity and duration for P.E. activities in primary schools; the children's poor eating habits; the physical constraints in P.E. facilities and equipment; the scarcity of Physical Fitness syllabus in primary curriculum; as well as parents' negative attitudes towards physical activities in Hong Kong. Hence, there is a pressing need to incorporate a health-related physical fitness unit in the existing P.E. curriculum and the informal curriculum such as extra-curricular activities in primary schools.

III. Physical Fitness Unit

In order to remedy the current constraints on the development of a physical fitness unit in the existing primary P.E. curriculum in Hong Kong, a recommended Physical Fitness Unit is introduced at primary level. It is a new unit with a close relationship to the subjects of P.E. and general education. It can be incorporated into the P.E. curriculum as a core element to one extent and can be treated as an extra-curricular activity organized on Saturdays alternatively in bisesssional schools and after school weekly for one term in whole-day school. P.E. teachers are responsible to design, teach, implement and to evaluate the unit. Listed below are the full details of the units.

A. ***Aim*** : It aims to enable an individual (pupil) to live in a contributing, rewarding, self-fulfilling, sound and healthy life in a state of wellness.

B. Objectives : After the completion of the unit, pupils should:

1. acquire a basic and well-balanced knowledge on health-related physical fitness;
2. understand their own level of physical fitness level;
3. demonstrate how to perform the physical fitness test items correctly;
4. demonstrate how to perform keep-fit exercises related to resistance training properly;
5. recognize the need for understanding their own level of physical fitness and the values of health-related physical fitness;
6. accept oneself and tolerate others at various level of physical fitness and performance;

7. attain and foster the positive attitudes towards physical fitness; and
8. develop self interest in keep-fit exercises and engage in life-long recreational activities.

C. *Contents* : The content in the unit is characterized by well-organized and good sequential order. First, the sequence of the contents is mainly dictated by the 'Structural Logic' of the subject matter. Secondly, the 'Spiral Sequence' has also been adopted to arrange the contents in the unit. The suggested contents comprise of the theoretical and practical areas as follows:

Theoretical Aspect

Topic Area I : Health-Related Physical Fitness
- Definitions of health-related physical fitness
- Importance and values of health-related physical fitness
- Components of health-related physical fitness
- Measurement of health-related physical fitness

Topic Area II : The Body and their Care
- Functions of the bones, joints and muscles
- Care of the bones, joints and muscles
- Structure of the bones, joints and muscles
- Understanding the respiratory system and its care
- Understanding the circulatory system and its care

Topic Area III : Personal Hygiene and Posture

- Keeping the body clean
- Keeping the sports clothes clean and tidy
- Keeping the sports equipment clean and tidy
- Keeping good posture

Topic Area IV : Diet and Nutrition
- Healthy diet and good eating habit
- Nutritional needs and caloric needs
- Obesity and starvation
- The pre-game and post-game diet
- Effect of diet on sports performance

Topic Area V : Exercises and Rest
- Importance of excises
- Importance of rest and sleep
- Right attitudes towards exercises
- Different types of exercises
- Exercises prescriptions - isotonic, isometric and stretching exercises

Topic Area VI : Sports Injuries and First Aid
- The cause of sports injuries
- The nature of sports injuries
- The treatment of sports injuries
- The prevention of sports injuries
- Simple first aid treatment

Topic Area VII : Stress Management
- The cause of stress
- The nature of stress
- The stress management techniques

Practical Aspect

The adoption of the following physical fitness scheme :

1. The School Physical Fitness Award Scheme for Primary Schools (Hong Kong Childhealth Foundation)
2. The International Council for Health, Physical Education, Recreation, Sports and Dance Physical Fitness Scheme.

Remarks: including anthropometric measurement (physique fitness) measurement of blood pressure and resting heart rate (organic fitness)

The practice of the following muscle toning and aerobic exercises:

1. Muscle toning exercises : Arms and shoulder exercises, trunk and abdominal exercises, upper back and lower back exercises, leg and buttock exercises etc.
2. Aerobic exercises : jogging, running & walking, rope jumping, aerobic dance, obstacle training and circuit training etc.

D. Methods :

The variety of learning activities in the unit is abundant. They may include lecturing, discussing, experimenting, exploring, examining and participating. Understanding the different teaching approaches will affect the learning of different activities in this unit, hence five common approaches of fundamental teaching strategy have been employed : the directive, questioning, discovery, experimental and discussion approach. Therefore, the learning experiences offered throughout the unit have been selected for this influence on the learners' total development in physical fitness both in theoretical and practical aspects leading to the carry-over value in their life.

E. Evaluation :

Evaluation helps to clarify aims and objectives, assess contents and learning experience, refine teaching strategies, and supply information about pupils' abilities and level of attainment; so as to assist pupils to achieve the goals of physical education. Since it is a newly established unit for primary pupils, a formal test or examination on what they have learned in theoretical sessions would discourage their interests in physical fitness. Therefore, no formal cognitive evaluation such as tests, examinations or assignments have been prepared for them. To achieve the ultimate aim in evaluation for different situations, three important methods of evaluation may be adopted in the unit: 'formative' (in course), 'illuminative' (during course) and 'summative' (post course) evaluation. The incorporation of these three methods could fit the criteria of fairness, validity, reliability, subjective and objective judgement, understanding and comprehension.

IV. Implementation

Implementation is the process of putting a change into practice and it is critically important because it refers to the means of accomplishing desired educational objectives (Fullan, 1981). It can be seen that the amount and quality of change which occurs or fails to occur at implementation will significantly affect what outcomes are achieved in any given change effort. In discussing the implementation strategy on health-related physical fitness unit in Hong Kong primary schools, the following matters may be considered:

1. Approaches of Implementation
2. Components of Implementation
3. Factors affecting Implementation
4. Implementation Evaluation

1. Approaches of Implementation

Hong Kong has employed highly centralized and power-coercive strategies of curriculum development at initiation stage, whilst the implementation stage is characterized by a "self-help" or open adaptation strategy. In fact, in dealing with the implementation on health-related physical fitness unit, the 'problem-solving' strategy (system-centred change model) can be adopted rather than 'power-coercive' strategy (product-focused change model).

The problem-solving strategy attempts to make the system better by 'improving' the individuals who collectively comprise it and by teaching the institution as a whole how to improve itself. This model stresses non-hierarchical, personal interaction and maximum communication. Examples include the normative-re-educative approach (Chiu & Benne, 1969), problem solving approach (Havelock, 1971, 1973) and organizational development (Hord, 1987).

An adaptive approach should be adopted as the implementation strategy. The approach assumes that the exact nature of implementation cannot and/or should not be pre-specified, but rather should evolve as different groups of users decide what is best and most appropriate for their situation (Fullan, 1991). It is based on relatively unstructured, more open-ended premises (Fullan, 1981). Adaptive changes have the advantage of allowing for more individual choice, and development suited to a variety of situations. Such approaches may stimulate all implementors and users to participate in the innovation actively with the exchange of opinions. In that case, minor variations might be tolerated, and the emphasis is clearly on ensuring that practice conforms to the developer's intention (Berman, 1981).

2. Components of Implementation

Components of implementation including the

objectives, contents, instructional material, teaching strategies, and the like (Leithwood, 1981) should be clearly stated in the health-related physical fitness unit. It will encourage P.E. teachers to adopt the new change by understanding the goals of the innovation with the full provision of resources and guidelines

3. Factors affecting Implementation

Taken as a whole, implementation is a process over time by which people, events, and resources determine whether or not practice is altered when something new is attempted. According to Berman (1981), Fullan (1982), these factors can be divided into four broad categories :

1. characteristics pertaining to the curriculum change being attempted;
2. local contextual conditions at the school district and school levels;
3. local strategies at the district and school levels used to foster implementation; and
4. external (to local) factors affecting the likelihood of implementation.

CHARACTERISTICS of change consist of the 4 important elements: need and comparability, clarity, complexity, quality and practicability of materials (Emerick & Peterson, 1978; Louis & Rosenblum, 1981). The Curriculum Development Council (CDC) and P.E. Section, Advisory Inspectorate, Education Department (ED) should transmit the values of the health-related physical fitness to principals, teachers and parents through seminars, conferences and workshops. It, therefore, will arouse people's awareness on physical fitness. Actually the recent development of such curriculum unit in other countries; and the great drop on health state of Hong Kong young children have already shown the need and compatibility of the change. Specific goals and objectives of the new curriculum should be stipulated clearly in the P.E. syllabus, whilst specific and concrete means of implementation should be mentioned in the guidelines of the syllabus. Users are clear what they are supposed to do or how they are to do it.

LOCAL CONDITIONS concern the climate and individual characteristics - at district level, at the school levels and at the community level. The following main factors are found to influence change in practice : district leadership, school board and community support, the role of principals, school climate, individual and collective emphasis on, and sense of efficacy about, instructional matters, and unanticipated critical events (Fullan, 1991). It is advised that a health-related P.E. campaign can be launched in Hong Kong once a year as a joint scheme among the Education Department, Hong Kong Sports Development Board, Hong Kong Childhealth Foundation; Central Health Education Unit of the Medical Health Department, Hong Kong Physical Fitness Association; Urban Council and Regional Council in order to arouse people's attention and awareness on this matter. Besides, various seminars, conferences and workshops may be organized for district leaders, central office staff, central administrators, principals, teachers and parents so as to disseminate the messages on health-related physical fitness. Moreover, a good school climate : teacher-teacher and teacher-principal relationships should be created since close and cooperative interaction among users during attempts at change is the key to effective implementation (Rutter et al., 1979).

LOCAL STRATEGIES refer to the planning and policy actions taken in relation to implementing specific curriculum changes. The choices about inservice or development activities, and communication information systems are the three core aspects of implementation strategies. Since implementation involves learning how to do something new, it follows that opportunities for inservice education in relation to specific changes are critical. Therefore, the ED should encourage P.E. teachers to refresh their knowledge and skills by attending courses and workshops related to the physical fitness as organized by the institutions of Professional and Continuing Education. Besides, such kind of courses and workshops should be launched once by ED at the annual summer school for P.E. teachers in summer.

Apart from focusing on providing an explanation of how the syllabus has changed, details of changed assessment procedures or exhortations of the desirability of an officially sanctioned teaching approach, the in-service training courses should also focus on implementation issues. Practice-oriented workshops may be run frequently to polish teachers' practical skills.

In fact, it is necessary that special workshops on curriculum implementation strategy should be organized for staff in P.E. Section, Advisory Inspectorate of ED because they actually need such kind of training to provide adequate and constructive advice and assistance to teachers during implementation process.

Finally, the launch of local and international conferences and seminars will be helpful in updating teachers knowledge and providing chances in sharing teaching experience among teachers, scholars and experts.

It is critical that the CDC and Advisory Inspectorate of ED should establish a strong communication-information systems among all different parties related to the curriculum innovation because the assessment of need, active leadership, principal & teacher-teacher interaction, staff development all serve to increase the communication between administrators and teachers (Fullan, 1982).

EXTERNAL FACTORS can be seen as facilitating or inhibiting curriculum implementation. Three factors illustrating this dilemma are policy change, financial or material resources and technical assistance. It is hoped that the CDC may keep the policy on the innovation as consistent as they can. External funding and financial resources from the Hong Kong Sports Development Board (SDB) and the Hong Kong Childhealth Foundation will help the schools to purchase and replenish sports and fitness equipment for adopting the award schemes. However, the CDC should add such fitness equipment into the List of PE Standard Equipment and provide additional funding for purchasing purpose.

Substantial resources should be provided to support the implementation of curriculum innovation. This support takes a variety of forms which include : the provision of supporting agencies such as adequate regional teachers' centres, the provision of learning resources, and of personnel to advise and assist teachers. Therefore, special funding should be allocated to re-equip the teachers' centres by purchasing references and teaching materials such as video tapes, slides, films and models.

The provision of resources should be strengthened by including curriculum guides, statements of aims and objectives and lists of relevant readings and recommended textbooks. The CDC may invite scholars and experts to write teaching materials for the health-related physical fitness curriculum.

Forms of external assistance can also be more or less helpful. In Hong Kong, external assistance may include the 'expertise' from Universities, Hong Kong Sports Institute, Hong Kong Sports & Medicine and Sports Science Association and Hong Kong Physical Fitness Association. Experts from these parties may play the role on consultancy to give advice and assistance to advisory inspectors and teachers.

4. Implementation Evaluation

Implementation evaluation may assist in making accountability and management decisions as well as serving research and development functions. According to Leithwood (1991), implementation evaluation may be designed :

> to help specify the practices implied by the innovation; identify those conditions under which implementation is likely to succeed, including problems likely to be encountered under those conditions and strategies available for their resolution; determine the feasibility of innovation implementation, including the capabilities required of the implementors, and whether policy changes are warranted in the light of unintended effects, and decide when the innovation had been sufficiently well-implemented to warrant an assessment of its effects on student learning. Implementation evaluation providing information about these issues assist with management decisions. (p.445)

It is suggested that both formative and summative evaluation should be adopted during the process of implementation. A variety of tools including questionnaire, interview, and observation may provide adequate information and opinions to the implementations for evaluation. Therefore, the CDC & Advisory Inspectorate may invite P.E. teachers

and principals to opinion-sharing meetings before, during and after the academic year both for the implementation of the health-related physical fitness curriculum. The test result on the award schemes should be analyzed to draw recommendations.

To summarize, implementation is the most critical process / stage for the curriculum innovation. There needs to be strong cooperation and collaboration among the advisors and associations, as well as inspectors from P.E. section, Advisory Inspectorate, Education Department at the System Level; the experts and scholars from the universities and institutes at the Institute Level; and the principals and P.E. teachers from primary schools at School Level. In practice it is advised that P.E. teachers may allocate at least ONE to TWO period(s) monthly for teaching the health-related physical fitness to pupils. Since the duration for a period is only 35 to 40 minutes, P.E. teachers may emphasize either the theoretical or practical aspect in one lesson. They may follow the sequence of the suggested contents as depicted in the previous chapter. However, if P.E. teachers encounter difficulties in allocating P.E. lessons for the physical fitness unit, they may organize an extra-curricular activity in health-related physical fitness for pupils. In such cases, they should encourage pupils to participate during weekends for bisessional schools, and during weekdays (once per week) for whole-day schools in each term. The duration may last for 1 hour and 1-1/2 hours for lower primary (P.1 - P.3) and upper primary (P.4 - P.6) respectively. Then, teachers can share the knowledge of health-related physical fitness with pupils first and followed by practical work in one session.

V. Conclusion

The curriculum innovation in the health-related physical fitness unit has been viewed as an international issue. Obviously the contribution of this curriculum to the total development of school children have been confirmed. It is important throughout life to develop and maintain a functional capability to meet the demands of living and to promote optimal health (ACSM, 1988). Therefore, physical fitness is recognized as a major objective in primary P.E. (Kirchner, 1992; Pangrazi & Daver, 1992). Physical fitness should be considered as one crucial element (common-core) in the primary P.E. syllabus in order to enhance pupils' HEALTH "a state of complete physical, mental and social well-being and of merely the absence of diseases and infirmity" (World Health Organization, 1947); and WELLNESS "a way of life which you design to enjoy the highest level of health and well-being possible during the years you have in this life" (Ardell, 1985).

The establishment and maintenance of physical fitness is a legitimate and ultimate objective of physical education. It is clear that Hong Kong primary school children do not attain optimal level of physical fitness due to some inevitable human, curriculum, and environment factors. In order to increase the possibility of the successful implementation , the problem-solving strategy in an adaptive approach has been suggested to P.E. teachers. It aims at reducing the severe limitations on the extent of participation in decision-making, and the range of provision of resources and linkages. Considerations should be cautiously made on those factors affecting implementation including the characteristics of changes, local conditions, local strategies and external factors. Finally, implementations evaluation should be carried out through the process to obtain valuable information. If the health-related physical fitness curriculum changes in Hong Kong are attempting to have an effect on classroom processes, according to Morris (1990), a coherent policy must be identified with regard to the three dimensions :

> Resources will have to be provided which aid implementation, linkages will need to be provided which serve to re-educate teachers, and lastly, subordinate groups will need to be meaningfully involved in the decision-making process if they are to be committed to, rather than just compliant with curriculum changes. (p.70-71)

It is hoped that government should take an active role on promoting health-related physical fitness in Hong Kong and should create an atmosphere in the society in attracting people to participate in recreational activities enthusiastically. Should we emphasize a total education in primary education, children will come first, and a well-being in body, mind, spirit should come first too.

References

AAHPERD (1970). Guidelines for secondary school physical education : A position paper. Washington : D.C.

American Academy of Paediatrics Committee on Sports Medicine and School Health (1987). Physical Fitness and the Schools. *Paediatrics, 80*, 449-450.

American College of Sports Medicine (1988). Opinion Statement on Physical Fitness in Children and Youth. *Medicine and Science and Exercise*, 20, 422-433

Anderson, W: (1980). *Analysis of teaching physical education*. St. Louis : Mosby.

Annarino, A, et al. (1980). *Curriculum theory and design in physical education* (2nd edition). St. Louis : Mosby.

Ardell D : *The history and future of wellness*. Dubuque, Ia, 1985, Kendall Hunt.

Berman, P. (1981). Educational change : An implementation paradigm. In R. Lehming & M. Kane (Eds.), *Improving schools: Using what we know* (pp. 253-286). California : Sage.

Bookwalther, K. (1962). *Physical education in the secondary schools*. New York : The Centre for Applied Research in Education, Inc.

Bouchard, C. Shephard, R. J., Stephens, T., Sutton, J.R., & McPherson, B. D. (1990). *Exercise, fitness, and health : The consensus statement*. In C. Bounhard, R.J. Shephard, T. Stephens, J.R. Sutton, & B.D. McPhersoon. (Eds.) *Exercise, fitness and health* (pp. 3-28). Champaign, IL : Human Kinetics.

Bouchard, C., Shephard & R., Stephens, T. (Eds.) (1994). *Physical activity, fitness, and health : International proceedings and consensus statement*. Champaign : Human Kinetics Publishers.

Burcher, C. & Thaxton, N. (1979). *Physical education for children : Movement foundations & experiences*. New York : Macmillion Publishing Co., Inc.

Bucher, C. & Wuest, D. (1987). *Foundations of physical education and sport*. St. Louis : Times Minor / Mosby.

Clarke, H. H. (Ed.) (1971). Basic understanding of physical fitness. *Physical Fitness Research Digest, 1*, 1-2.

Curriculum Development Committee (1980). *Syllabuses for primary schools : Health Education*. Hong Kong : Government Printer.

Curriculum Development Committee (1988). *Syllabuses for secondary schools : Physical Education (Secondary 1 - V)*. Hong Kong : Government Printer.

Curriculum Development Committee (1995). *Syllabuses for physical education (Primary 1-6)*. Hong Kong : Government Printer.

Chiu, R. & Benne, K. (1969). *General strategies for effecting changes in human systems*. In W. Bennis, K. Benne & R. Chiu (Eds.). *The planning of change*. New York : Molt, Rhinehart & Winston.

Dauer, V. P., & Pangrazi, R. P. (1989). *Dynamic Physical Education for Elementary School Children*. (8th ed.). New York : Macmillan Publishing Co.

Daver, V. (1968). *Dynamic physical education for elementary school*. (3rd ed.). Minneapolis : Burgess Publishing Company.

Education Department (1989). *Physical education teachers handbook*. Hong Kong : Government Printer.

Education Department & Hong Kong Childhealth Foundation (1992). *Physical Fitness award scheme for primary schools student's handbook*. Hong Kong : Hong Kong Childhealth Foundation.

Emrick, J. & Peterson, S. (1978). *A synthesis of findings across five recent studies in educational dissemination and change*. San Francisco : Far West Laboratory.

Falls, H. B. (1980). Modern concepts of physical fitness. *JOPHER, 51*, (4), April.

Fullan, M. (1981). The relationship between evaluation and implementation. In A. Lewy & D. Nevo (Eds.). *Evaluation roles in education* (pp.309-340). London : Gordon and Breach.

Fullan, M. (1982) *The meaning of educational change*. New York : Teachers College Press.

Fullan, M. (1991). The nature of curriculum innovation. Curriculum change. In A. Lewy (Ed.). *The international encyclopaedia of curriculum* (pp.279-280). New York : Pergamon Press.

Fullan, M. (1991). Curriculum implementation. In A. Lewy (Ed.). *The international encyclopaedia of curriculum* (pp.378-383). New York : Pergamon Press.

Gallahue, D. L. (1987). *Developmental Physical Education for Today's Elementary School Children*. New York : Macmillan Publishing Co.

Gutin, B., Manos, T. & Strong, W.. (1992). Defining health and fitness : First step toward establishing children's fitness standards. *Research Quarterly for Exercise and Sport, 63*(2), 128-132.

Havelock, R. G. (1971). The utilisation of educational research and development. *British Journal of Educational Technology*, 2(2), 84-98.

Havelock, R. G. (1973). *The Change Agent's Guide to Innovation in Education*. N. J., Englewood Cliffs.

Hebbelink, M. (1984). The concept of health related to physical fitness. *International Journal of Physical Education, 21* (1), 9-17.

Hong Kong Council of Early Childhood Education and Services (1994). *Eating Habits of Children in Hong Kong*. Hong Kong : HKCECES.

Hord, S. (1987) : *Evaluating Educational Innovation*. Croom Helm.

Kirchner, G. (1992). *Physical Education for Elementary School Children*, (8th ed.). Dubuque: Wm. C. Brown Publishers.

Leung, S. (1993). Nutrition of Hong Kong Chinese Children. *The Hong Kong Journal of Paediatrics, 10*, 160-166.

Lenthwood, K. A. (1991). Implementation evaluation. In A. Lewy, (Ed.). *The international encyclopaedia of curriculum* (pp.444-448). New York : Pergamon Press.

Louis, K. & Rosenblum, S. (1981). *Linking R and D with schools : A Program and its implications for dissemination*. Washington: National Institute of Education.

Morris, P. (1986) : Identifying the Strategies of Curriculum Development within a Highly Centralized Educational System. *International Journal of Education Development*, 6(3), 171-182.

Morris, P. (1990). *Curriculum development in Hong Kong*. Hong Kong: Faculty of Education, University of Hong Kong.

Morris, D. & Stiehl, J. (1985). *Physical Education: From Intent to Action*. Columbus: Merrill Publishing Co.

Nichols, B. (1994). *Moving and learning the elementary school physical education experience*, (3rd edition). St. Louis: Mosby.

Paffenbarger, R., Hyde, R. & Wing, A. (1990). Physical activity and physical fitness as determinants of health and longevity. In Bouchard, C. & others (Eds.): *Exercise, fitness, and health*. Champaign, Human Kinetics Books.

Pangrazi, R. & Dauer, V. (1992). *Dynamic Physical Education for School Children*, (10th ed.). New York: Macmillan Publishing

Public Health Service (1990). *Healthy people 2000: national health promotion and disease prevention objectives*. Washington: DC. US Department of Health and Human Services.

Rutter, M., Manaham, B. Mortimer, P., Ouston, J. & Smith, A. (1979). *Fifteen thousand hours: Secondary schools and their effects on children*. Cambridge: Harvard University Press.

Salonon, J. Puska, P. & Tuomilento, J. (1982). Physical activity and rise of myocardial infarction, cerebral stroke and death in eastern Finland. *American Journal Epdemiology*, 115-526.

Siedel, B. et al. (1972). *Physical education: An overview*. Reading: Addison - Wesley Publishing Company.

Siedentop, D. (1972). *Physical education: Introductory analysis*. W. C. Brown Company Publishers.

Simopoulos, A. & Van Itallie, T. (1984). Body weight, health and longevity. *Ann. Intern. Med., 100*, 285-295.

Siscovick, D., LaPorte, R. & Newman, J. (1985). The disease-specific benefits and risks of physical activity and exercise. *Public Health Rep*, 100-180.

Speak, M. (Ed.) (1989). *Health-related fitness in Hong Kong*. Proceedings of a conference organized by the Department of Physical Education of the University of Hong Kong (November 1989). Hong Kong: University of Hong Kong.

Thomas, J., Lee, A. & Thomas, K. (Eds.). (1989). *Physical education for children : Daily lesson plans*. Champaign: Human Kinetics Books.

Updyke, W. & Johnson, B. (1970). *Principles of modern physical education, health and recreation*. Hdt. Rimechart and Winston.

Van Itallie, T. (1979). Obesity: Averse affects on health and longevity. *Am. J. Clin. Nutr., 32*, 2723-2733.

Wetton, P. (1988). *Physical education in the nursery and infant school*. London: Croom Helm.

Wong, S.S.(1992). The somatopsychic effect of physical fitness to primary students. *Modern Educational Bulletin, 23 (September), 11-13*.

Wong, T. K. & Macfarlane, D. (1996). *Do we need to modify our primary P.E. curriculum? An analysis using the heart rate intensity and the level of enjoyment in Hong Kong primary school physical education classes*. A paper presented in the 13th Hong Kong Educational Research Association.

Author

Paul Wong Shu Sing, Lecturer, Departemt of Early Childhood Studies, Hong Kong Institute of Education

(Received: May 28, 1996; Revised & accepted: June 28,1997)

語文教師與語感教學

周漢光
香港中文大學課程與教學學系

語感訓練對學生語文能力的提升有非常密切的關係。本文首先從語文教育學家葉聖陶、夏丏尊、呂叔湘、韋志成等人的言論，總結了語感的含義以及它的重要性。其次分析了構成語感的因素是個人的語文知識、文學修養、生活體驗與思想情趣。而良好的語感能力，是在語言的運用與實踐中逐步建構起來的，因此要靠平日不斷的培養與訓練。最後，討論到語感訓練的次序，以及幾種常用的訓練方法。

Language Teacher and the Teaching of Language Sensitivity

The training of language sensitivity is closely related to the enhancement of language ability of students. This essay first look into the theories of the language educationists such as Yip Sing To (葉聖陶), Ha Min Tsuen (夏丏尊), Lui Suk Sheung (呂叔湘) and Wai Chi Shing (韋志成), from their studies, it sums up the meaning and the importance of language sensitivity. Next, it goes on to analyse the factors of language sensitivity is based on the knowledge of the language, literary development, life experience, thinking and taste. Good ability in language sensitivity is built up gradually from the use and application of the language, therefore, it depends heavily on the continuous development and training.

Lastly, the sequence in training of language sensitivity as well as some training methods frequently used are discussed.

根據近代學者的研究，語感的訓練對學生語文能力的高下有密切的關係。作為一個語文教師，除了對語文的課程與教材有深切認識外，尚宜理解到語感教學的重要，在語文教學時能夠善用教材，對學生進行適切的語感教學。

本文的目的在探討：
1. 語感與語文能力的關係；
2. 學生語感的形成；
3. 語感教學的目的與方向；
4. 語感訓練的方法。

藉著上述的探討，希望能加深本港中文教師對語感教學的重視。

一、語感與語文能力的關係

（一）甚麼是語感

語感是人們對語言文字或語文現象的敏銳感悟和迅速領悟的能力，是語文教育重要的環節。近代語文教育學者對語感有不同解釋，葉聖陶認為語感有兩層意義：

1. 了解字、詞的意義和情味；
2. 對語言文字有靈敏的感覺。

他在《文藝作品的鑒賞》一文中說：「不了解一個字一個辭的意義和情味，單靠翻字辭典是不夠的，必須在日常生活中隨時留意，得到真實的經驗，對於語言文字才會有靈敏的感覺。這種感覺通常叫做語感。」(1)

可見葉聖陶認為語感的來源，必須從日常生活中接觸語言文字的實際經驗中獲得，翻查字典辭書並不足夠。葉氏對語文教師的提示，是要對學生進行多讀多寫的訓練，同時要多進行思考、比較，細心體味語言文字的意義。

夏丏尊認為語感包括語言文字表面意義的了解、深層意義的領會，以及能從這些意義中，品味其中的情趣、體會其中的感受。他指出：

「在語感銳敏的人的心裏，『赤』不但解作紅色，『夜』不但解作晝的反對吧。『田園』不但解作種菜的地方，『春

雨　不但解作春天的雨吧。見了「新綠」二字就會感到希望、自然的化工、少年的氣概等說不盡的旨趣；見了「落葉」二字，就會感到無常、寂寞等等說不盡的意味吧　真的生活在此，真的文學亦在此」②

夏氏這一番說話，給語感及語感教學提出了一些深思的現象：第一、語言文字有多種的意義：有本義和引申義、有表面意義和深層意義，要了解它們的不同意義，可從它們的使用境況入手　第二、在接觸與理解語言文字的過程中，我們是運用了不少的聯想與想像，才能夠了解其中所蘊含的象徵意義與情味　第三、上述意義與情味的獲得，是和我們的生活與體驗息息相關的；而語感的形成，絕非一朝一夕可以速成，它是經過長時期的學習與生活的體驗的結果

呂叔湘認為語感是人們對於語言文字的直覺能力　這種直覺能力，是來自經已養成的語文習慣。他在分析寫作文章時的斟酌用字造句時，認為「所謂「斟酌」，也很少是有意識地進行字義、句法的分析，多半是直覺地感覺到這個字不合適，換那個字才合適；直覺地感覺到這個說法不合適，換另一種說法才適合。這裏所謂「直覺地」不是出於甚麼本能，而是已經養成的語文習慣在那裏起作用」③

呂氏的理論重點，在指出語感的「直覺性」，以及分析到語感的來源，是源自我們的語文習慣　這兩點，對於語感教學都有啟發作用

韋志成則集中討論語感的特性，認為語感包括了人們對語言文字的：

1. 感知的敏感性；
2. 快速領悟性；
3. 思維的敏捷直覺性；
4. 明顯的綜合性：包括語感成份的綜合性及人們進行語文活動時心理活動的綜合性④

韋氏更且進一步加以分析，認為語感包括了文感、象感、意感與情感四項成分：

文感 ---- 感知文章的思路、結構、寫作特點、表達方式、風格神韻等

象感 ---- 感知文章的質料，即組成文章基本內容的人、事、景、物、情、理等六個方面的具體材料

意感 ---- 理解語言文字的意義，包括意蘊感、道德感、理智感等。

情感 ---- 指作者流露在語言文字中的思想感情、理想抱負、情操氣質、人格品德等④

從以上語文教學學者的意見，一個語感強的人表現出：

1. 對語言文字的意義、情味有靈敏的感知；
2. 對語言文字的表面意義、深層意義能正確了解，並能引起相關的聯想與感受；
3. 對語言文字有綜合感知與理解的能力，包括文感、象感、意感和情感。
4. 對語言文字有一種直覺感知與理解的能力　這種能力，是源自個人經已養成的語文習慣
5. 語感的獲得，與我們的生活與體驗息息相關，是長時期接觸語言文字的體會。

（二）語感訓練的重要

所謂語文能力，通常指的是聽、說、讀、寫四種能力　而這四種能力，又與我們的思維能力有著密切的關係。事實上，語文能力對思維能力有著直接的影響。語文能力差的人，他們獲取知識的能力會因語文程度差而受到阻礙，反過來會影響思維能力的發展

聽、說、讀、寫的能力，又常表現在我們對語言文字或語文現象的敏感度與迅速領悟的能力　眾所周知，語言文字的含義有時頗為複雜。除了有它起碼的基本意義外，尚有因在不同使用條件下的引申意義　不同時代，語文的意義可能不同；不同的使用境況，語文的意義也有差別　要真正了解語言文字的意義，必須對它們運用的種類情況，有廣泛的認識，才能對個別的情況掌握到它們的正確意義。在實際的語文運用情況中，聆聽時須善於領會話外之音、言外之意；閱讀時腦海裏須能產生具體的形象，能披文入情，品味文章中的情感與趣味　學生若對於語文的表面意義，都不能有正確的認識，又怎能希望他們了解語言文字的深層意義、領略其中的情味呢？更遑論能引起相關的聯想與推論了！

從認識語言文字的「表面意義」到「深層意義」、「領略情味」、「引起聯想」與「推論」，中間有很多的歷程，需要學生共掌握與學習　這些歷程中，如有任何阻礙，都會影響他們對語言文字的學習、理解、吸收及表達的能力　所以語感訓練對於學生是很重要的，語

文教學也必須重視語感教學

經過語感訓練的人，能夠迅速掌握語文現象，領悟語文的能力。語感能力強的人，往往在聆聽或閱讀的過程中，能正確的迅速地理解到語言文字的表層意義與深層意義，辨別到語言文字的正確或錯誤。有了這種語感的能力，他們在運用語言文字的時候，能從整體着眼，講究用字用詞與篇章段落的妥貼性，力求達到恰如其分的表現。所以語感能力的強弱，應視為語文能力的一種標準。提高語感能力，其實就是提高語文能力。因此，語文教育學者都注重學生語感能力的培養，有認為「語感是語文教學的支點」（上海《語文學習》1993，4），有認為「訓練語感是中學語文教學的首要任務」（見《四川教育學院學報》，1992，2）甚至有認為「文字語言的訓練，最重要的是訓練語感」（陳金明〈試論語感的本質及形成條件〉，《語文教學面面觀》香港中文教育學會，1994，10，頁416。）

語感是語文能力的具體表現，它與個人的語文知識、文學修養、生活體驗和思想情趣都有著非常密切的關係。若個人的語文知識、文學修養、生活體驗和思想情趣都具備相當高的水平，則表現在他的語感能力也必定很強的。因此訓練學生的語感能力，也就是訓練他們的語文能力，是相當重要的。

二、學生語感的形成

面對接觸到的語言文字，學生是進行著各種綜合性的心理活動的。這些活動，包括了對語言文字的感覺、表象、聯想、想像、用情等一系列的心理活動。在腦海中則進行了編碼、組合、分析、綜合、抽象、概括、判斷、推理等活動，另一方面就自己的生活進行感受與驗證，從而獲得語言文字的了解力。

學生語感的形成，是在語言的運用與實踐中逐步建構起來的。在平日的語言文字的接觸中，無論是聽、說、讀、寫的學習與實踐，對於詞語的含義和用法、語法句式的構造和功能、說話與寫作技巧的選擇和運用、文章內容所包含的深層意蘊，以及作者所傳達的思想感情等等，都會在他們的腦海中留下了痕跡。理解與感受得到了，則記憶得更牢固。

另一方面，我們從生活中所得到的經驗，包括了事件、人情與物理，以及因此而引起的情感波瀾、所引發出來的種種思考，也會保持在我們的記憶之中。所以，當類似問題的反覆出現，或是解決問題所用的方法相類似，都會加強我們認識與應變的能力。我們運用已有的相關的知識去解釋和說明所接觸到的「語言信息」，覺察出語音和語調節奏的正誤，得到語音感；判斷出語境中用詞的分寸是否貼切，得到語義感；體察出詞語的感情色彩是否得體，得到語體感。句與句、段與段的銜接是否緊密、貫通，得到語脈感。領略作者的語言風格與寫法的獨特性，得到敏銳、精細的語味感。

學生對語感的認知是否正確無誤、能否具有敏捷性，都要靠平日的不斷培養和訓練。它包括了：

（1）豐富的語言知識的積聚，包括字詞、句法、修辭、結構等語文知識；（2）豐富的生活經驗，文化知識、社會科學知識與自然科學知識；（3）嫻熟的語言技巧，及（4）敏銳的直覺思維。

三．語感訓練的目的與方向

先訓練學生對語感能有所感受，然後使其能領悟，並能借鑒與學，最後能加以運用。

訓練的次序，在先令學生了解字面的意義，領略其中的蘊藉，進一步能夠欣賞，最後能夠靈活運用。通過種種的指導與啟發，令學生能領會語言、體會語脈、品味語詞和感受語情。

四．語感訓練的方法

語感素養的養成，與正確的知識結構、豐富的生活經驗、良好的語文技能、高質素的思維能力等，有著密切的關係。這一切都必須在日常聽、說、讀、寫的行為和實踐中，不斷經歷，且要不斷提高，才可以養成敏銳的語感習慣和能力。訓練語感的方法，可有下列幾種：

1. 加強閱讀指導

須引導學生適量地閱讀一些文學作品，並要求學生做一些與閱讀相配合的習作如（1）列出內容提綱，（2）做讀書筆記，（3）寫讀書心得，（4）做簡習，（5）討論評點課文的內容與寫法的特點等。加強學生了解字詞

的意義和情味，或從字面上去推敲，或從聲音上去吟味。並引導學生從選詞鍊句的角度進行推敲。如
(i) 對語言材料進行加、減、改、換的優劣比較；
(ii) 對於用語精彩處加以圈、批、評、點
(iii) 利用反覆的吟誦和朗讀，咀嚼出語言的韻味

2. 分析課文時滲透鑑賞成分

可以利用下列的方法：

(1) *指導學生潛心體味誦讀*

要培養語感，必須讓學生熟讀精思、潛心體味，深入誦讀吟詠，才能有所得。朱熹教人「讀書切戒在慌忙」，他認為利用涵泳才可以得到讀書的興味，是極有意思的。如教樂府詩〈出東門〉開端「出東門，不顧歸；來入門，悵欲悲。」十二字寫主人公從東門走險至轉身回來的行動，由猶豫至悵惘無奈的心理變化，刻畫得入木三分。若再細心涵泳，更能體會到主角的動作、剛健中帶有哀怨的節奏感。又如朱自清〈春〉，文中所描寫春天的美好景象，反複誦讀，領略春天的氣息與動感，便可以把讀者帶入情境，如值得深味的樂趣。

(2) *運用語言文字的形象美去感動學生*

通過語言文字的品味，使學生再現作品中的形象，最後獲得作品內容的理解。用這種方法持之以恆，學生的語感能力會相應地提高。如中二課文〈山陰道上〉描寫太陽下山前，四周的景色隨著陽光由強而轉弱產生的變化：「太陽下山時，發出分外紅的強光，將白雲和青山裝成血色。太陽漸漸向山後落下，陽光不再耀眼，這時的山、雲、樹也都變得暗淡了。」又如〈曇花的啟示〉中寫曇花盛開的情形：「花瓣在飛動前輕轉，像白睡蓮；雪白的花瓣如夜空中的一朵雲彩，如女明星的翅膀……」〈口技〉中描述口技藝人表演火警中各種聲音，在座者各當時的反應是「變色離席，奮袖出臂，兩股戰戰，幾欲先走」，都是由形、色、音及人的動作組合，發揮了語言文字的形象感，教師引導學生去品味，對提高學生的語感能力自然會有幫助的。

(3) *指導學生對語言文字進行揣摩比較*

凡是精心結撰的文章，它有其可觀可學之處，它的遣詞造句，揣摩布局，才能了解其中的內涵。語文教學除了必要的進行解釋字義、記誦文句、研究文法與修辭法，最重要的還在於引導學生去比較、歸納、揣摩，從而得到深刻的體會。從詞句背後去理解話中的話，把儲存在話裡的意思和情趣都體會出來。魯迅〈風箏〉的「我」認識到自己當年折毀弟弟的風箏的錯誤，深切自責，提出「躲到肅殺的嚴冬中去」，藉此希望逃避不愉快的回憶和自責。當我們細心揣摩文末作者所說的「四面又明明是嚴冬，正給我非常的寒威和冷氣」，我們可以意味到作者始終逃不過內疚和自責，他的內心依舊像嚴冬一樣的冷。當我們比較〈風箏〉中兩位主角當時的感受：「我」發現弟弟偷造風箏並把它折毀，由憤怒而感到滿足、完全勝利；弟弟則由驚惶失色而至絕望。作者這樣極力寫弟弟的可憐、無助，以及「我」的專橫、冷漠，這樣可令讀者產生同情小弟弟而痛恨「我」，從而痛恨「我」所代表的傳統思想，突出了文章的主旨。

讓學生細心品味徐蔚南在〈山陰道上〉所見的兩則景物：「一片斜陽，映照河面，有如將河水鍍了一層黃金。」以及「一群白鴨聚成三角形，最魁梧的是一頭做嚮導，最後的是一排瘦弱的，在那黃金的水波上向前游去，向前游去。」並要求學生將兩種描寫作出比較（前者屬靜態景物描寫，後者則是動態景物描寫）。學生學會了這兩種描寫，教師可要求他們從學習過的教材，或是自行找尋用相類似手法寫作的作品，最後是要求他們用靜態描寫與動態描寫的手法寫作，此時須特別留意他們寫作所用的詞語與語境是否妥貼恰當。揣摩比較在語感訓練方面，可用(1)圈出重點詞語，使學生留意、欣賞與學習；(2)利用重點的詞語，進行仿作、運用；以及(3)記下精警的詞句，借鑑吸收，加強記憶。

(4) *發揮學生的聯想力與想像力*

聯想與想像，不獨閱讀時應具有這兩種能力，在寫作時更是不容缺少的。對語言文字進行鑑賞，除須具有較高的感受力，而聯想與想像，更是鑑賞的重要條件。中二課文〈兒時的記趣〉，作者以「夏蚊成雷，私擬作群鶴舞空」、「留蚊於素帳中，徐噴以煙，使其沖煙飛鳴，作青雲白鶴觀」，又把花臺小草叢、蟲蟻、泥土，想像為樹林、野獸、山丘、溝壑，都是作者發揮聯想與想像力的典型例子，值得向學生推介。作者之能夠「時有物外之趣」，豈非他的聯想力與想像力豐富所致嗎？

事實上，要欣賞文章內容的要點，以及寫作技巧的作用處，缺乏了聯想與想像力，是萬萬不能的。但由

「八陣圖」中「江流石不轉」，表面上是寫長年不變的八陣圖石堆，實際上是寫諸葛亮不能助劉備完成統一大業的千古遺恨，有如江上石堆般，永遠不能消失。李商隱〈樂遊原〉末二句「夕陽無限好，只是近黃昏」，寫的除了是眼前夕陽西下的景色外，尚隱含「時近黃昏，好景不能久」，甚或「年華老去，好景不常」的感慨。要欣賞這兩首詩的深層含義，若不具備應有的聯想與想像，是無法辦得到的。

培養想像力，多閱讀童話故事、科幻小說，固然有所幫助；而對日常生活的人事物理，多作細緻的觀察，正如沈復童稚時「見藐小微物，必細察其紋理」，也是很好的辦法。閱讀與寫作時多運用觀察、想像與聯想，也是不容錯過的好機會。

3. 培養學生切己體察，印證作者筆下的生活情景

把生活經驗聯繫到語言文字上去，作出揣摩比較，會提高感受語文的能力。方法是把閱讀的文字、耳聽到的語言，用聯想與想像生活的情景，去印證作者及自己的生活。如讀王維的〈渭城曲〉的「勸君更進一杯酒，西出陽關無故人」，不獨在抒發對朋友依依惜別的情誼，而且包含對朋友前路處境、心情的體會（唐代人出使西域，是令人嚮往的壯舉，但陽關以西是荒涼絕域，朋友出陽關自要跋涉備嘗艱辛的旅途），也包含了對朋友的祝福。

胡繩（胡進）在「想和做」一文中指出「想和做有密切的關係：做，要靠想來指導；想，要靠做來證明」，讓學生在自己的生活體驗中去證明這個道理的正確，並從自己的生活經驗中舉出例子，說明想和做的這種關係。

4. 訓練學生意會神攝、快速感悟的能力

要培養學生的語感能力，必須增強他們對語言文字的直覺理解能力、精確領悟能力，以及整體把握的能力。而訓練學生對文章的意會神攝、快速感悟是一個很好的辦法。如教陳之藩的〈寂寞的畫廊〉，讓學生默讀一、兩遍原文後，要他們指出本文的主旨，其中間的論說脈絡，以及是否同意作者的觀點等，從而了解他們的領悟是否精確，能否整體把握主旨與作法的特點。

又或著學生聆聽〈生命中一生物的睡眠〉一課的錄音後，要他們講出文中所提及的生物的休眠現象（1. 蝙蝠的冬眠 .2. 海參的夏眠 .3. 蝸牛的冬眠和夏眠 .4. 沉睡一百萬年的癩蛤蟆.5.沉睡二百萬年的青蛙.6. 種子的睡眠.7. 沉睡一兩千年的蓮子）

這些都是訓練學生意會神攝、快速感悟的方法。

5. 通過朗誦、吟誦、背誦與默寫，加強學生的語感能力

不論朗誦、吟誦、背誦，都是對語言文字的音、形方面，經過視覺、聽覺的刺激，配合思維的心理活動，產生感知，形成表象，對培養學生的語音感、語義感和語法感都有促進的作用。適當的朗誦、吟誦與背誦，對文章的整體感知、了解文章的思路和結構，以及行文的語體感、暢達感、分寸感，都有幫助，所以是不容忽略的練習。

朗誦可以強化我們的感知，所以歷來都受到重視。

吟誦是根據對文章的感受和理解，使用高低、強弱、緩急的語調來讀，從而讀出作者的感情，品味詩文措辭用字的妙處。吟誦是一種講究詩文節奏韻律的一種讀法。葉聖陶（1980.a）認為「讀文言文時對聲調鏗鏘，是以傳出原文的情趣；讀語體文時就同話劇的演員在舞台上念誦劇詞一般，貼合於語言的自然，表情說理，都能使聽者不但了解而且深深地印在心坎裏」。所以吟誦可以把文章中的神情理趣，通過聲調的抑揚頓錯、節奏的緩急快慢表達出來，令聽者與讀者都能領略到文章的語感。

至於背誦和默寫，也有積累知識、增強記憶、豐富想像的作用。優美的詩文、精彩的小說與戲曲片段、膾炙人口的名句，都是值得背誦和默寫的材料。通過背誦和默寫，可以儲存語言文字的信息，而語言文字的信息儲存得愈多，我們具有衡量和評價語言文字的參照能力就愈明顯，語感能力也就愈敏銳。因此平日著學生多背誦名篇佳作與警闢的語句，對增強語感，都有很大的幫助。

6. 利用語文學習的專題講座，增強學生的語感理論與實踐方法

基於語感的培養是多方面的，教師可就學生的需要，配合精讀教材，舉行專題講座，指導學生（1）從作

品的構思、立意、選材方面去欣賞；（2）從作品的表現手法、語言特色去欣賞。

通過這些講座，教師可以從理論上加以指導，再用舉例、示範，加以分析說明。

7. 通過學生對文章的評論，發揮並增強他們對語感的認識

評論文章是考查及訓練學生鑑賞語文能力的一個途徑。評論的內容，可以由小至大，由易到難，也可以由課內到課外。評論的方向可以由（1）教師提供角度，學生去評；（2）學生自由選擇評論角度，自由發揮。評論的方式可以有：（1）小組討論（好處是多向交流，多方啟發）；（2）口頭演講（好處是快速訓練，掌握意念）；（3）辯論比賽（比賽有競爭、有氣氛，能引起興趣）。

8. 從仿寫到創作，建立學生的語感風格

模仿是創作的第一步，適當的模仿，可令學生掌握語感的能力。利用現有教材，讓學生從模仿開始，慢慢讓他們內化，進而創作。

五、結語

由於語感本身的綜合性，以及構成語感能力的複雜性，所以希望學生從文字上去感受它所代表的全部內容，是非常困難的。夏丏尊先生在二十年代已發出了「言語道斷」之歎，深深感到要學生都能感受文字上的內容是至難之事，除了學生自己成經驗及能力以外，講解、說明、查字典的用處都不大（夏丏尊，1972）。夏先生所指出的困難，的確是語文傳意上的普遍現象，不易解決。但是若能提升學生的經驗及能力，嘗試用上述培養學生語感能力的方法，相信一定有所幫助。最後，夏先生指出國文教師的任務在於：「自己努力修養，對於文字，在知的方面，情的方面，各具有強烈敏銳的語感，便學生傳染了，也感得相當的印象，為理解一切文字底基礎。」這種意見，仍然值得我們去思考和實踐的。

六、附錄：利用教材進行語感訓練的實例

利用教材可創設教學情境，進行下列的語感訓練：

（1）選詞鍊句

朱自清的《春》寫春雨綿綿的景色：「像牛毛，像花針，像細絲，密密地斜織著，人家屋頂上全籠著一層薄煙。樹葉子卻綠得發亮，小草也青得逼你的眼。傍晚的時候，上燈了，一點點黃暈的光，烘托出一片安靜而和平的夜。……把春雨的柔和、濕潤都渲染出來了。

寫傍晚時的雨景和雨中人物的活動：「鄉下去，小路上，石橋邊，撐起傘慢慢走著的人；還有地裏工作的農夫，披著蓑，戴著笠的。他們的草屋，稀稀疏疏的在雨裏靜默著。」烘托出美麗動人的畫面。

朱自清這篇文章，除了選材方面值得學習之外，在選詞鍊句方面（如文句中有閃點的地方），也給我們很多啟發，值得向學生指出。

易家鉞《可愛的詩境》以「多謝西風」作為開端，既顯得突出，又簡潔有力地點出作者對秋天的喜愛，並由此引起下文對秋色的描寫，充滿生機和詩意，與一般作者描寫秋天的淒涼蕭殺的情景不同。

作者在城樓遠眺郭外的山光與郭外的村莊一段，用了大量疊字，如：幾荷點點、落花片片、樹葉青青、雁陣陣、蒼煙渺渺等，能令文章有一種舒徐的音樂美，又能加強語意與形象，使讀者的意象更為鮮明。

（2）從詞、句、段、篇作整體語感訓練

（A）構思巧---對於構思完整和諧、聯綴貫通及曲折變化者予以指出，讓學生欣賞及學習。

如范仲淹《岳陽樓記》先從形勢及景物變化兩方面概述洞庭湖的景色，繼而寫洞庭湖在不同天氣下的景色，及人們在不同景色下的心情，再次寫一般人的心情會受外物影響，而「古仁人」不易受外物影響，因為他們所關注的不是個人的得喪得失，而是人民的幸福、與政治是否上軌道，最後揭出「先天下之憂，後天下之樂而樂」的旨趣與抱負。作者是巧妙地運用收束與開展的技巧，步步推出主題，結構嚴密，層次井然。

（B）選材精----選材具典型、真實與新穎[illegible]

朱自清〈春〉一文中描寫春天的景色有遠景（園子裏、田野裏，瞧去，一大片、一大片滿是的草地）、近景（腳下：小草偷偷地從土裏鑽出來，嫩嫩的，綠綠的……）、動景（花下成千成百的蜜蜂嗡嗡地鬧著，大小的蝴蝶飛來飛去……）、靜景（雨中的草屋「稀稀疏疏的在雨裏靜默著」）。除了春天的自然景物外，又描寫了人們的活動（如描寫春草的時候，又寫人們在草地上坐著、躺著、打滾、踢球、賽跑、捉迷藏；描寫春雨的時候，又寫到人們在雨中撐著傘慢慢地走、披著蓑戴著笠的農夫在田裏工作）。全文選材真實、具典型而新穎，並從眾多角度描寫出春天的特點，將春天的生機與活力表現無遺。

（C）表達方法靈活----選有一些能綜合運用敘述、描寫、抒情、議論、說明等方法去寫，或從不同角度去表達的詩文，是訓練學生分析的好機會。例如歐陽修〈醉翁亭記〉一文，寫作方法靈活，能將敘事、寫景、抒情融為一體，是一個很好的例子。

敘事方面：

1. 寫滁州人民在醉翁亭遊玩的情形（「至於負者歌於塗，行者休於樹；前者呼，後者應，傴僂提攜，往來而不絕者，滁人遊也。」）2. 寫太守與賓客的宴遊情況（「臨溪而漁，溪深而魚肥；釀泉為酒，泉香而酒洌；山肴野蔌，雜然而前陳者，太守宴也。宴酣之樂，非絲非竹；射者中，弈者勝，觥籌交錯，起坐而喧嘩者，眾賓歡也。蒼顏白髮，頹然乎其間者，太守醉也。」）

寫景方面：

1. 用特寫去寫醉翁亭的位置：（「環滁皆山也。其西南諸峰，林壑尤美，望之蔚然而深秀者，瑯琊也。山行六七里，漸聞水聲潺潺，而瀉出於兩峰之間者，釀泉也。峰回路轉，有亭翼然臨於泉上者，醉翁亭也。」）

2. 寫醉翁亭四時與朝暮的景色：（「若夫日出而林霏開，雲歸而巖穴暝，晦明變化者，山間之朝暮也。野芳發而幽香，佳木秀而繁陰，風霜高潔，水落而石出者，山間之四時也。朝而往，暮而歸，四時之景不同，而樂亦無窮也。」）

抒情方面：

抒發「與民同樂」之情：既能享受山水禽鳥之樂，又能以滁人之樂，作為一己快樂的源泉。

又如老舍〈駱駝祥子〉第十八章的節錄，列為中三課程而選用，在〈烈日和暴雨下〉的課文，作者從視覺、聽覺、味覺、觸覺，各方面描述烈日下街上的情況，以見祥子在烈日下的感受：寫猛烈的陽光是：「只覺得到處都閃眼，空中、屋頂上、牆壁上、地上，都白亮亮的，白裏透著點紅，由上至下整個地像一面極大的火鏡，每一條光都像火鏡的焦點，曬得東西要發火……」（視覺描寫）

寫街上的聲響是：「在這個白光裏……每一個聲響都難聽……」（聽覺描寫）

寫街上的氣味是：「有一種氣味混合著地上蒸發出來的腥臭……」寫汗臭是：「身上掛著一層熱汗，發出餿臭的味兒……」（嗅覺描寫）

寫烈日下的感覺：「腳心和鞋襪粘在一塊，好像踩著塊熱鐵，非常的難過……」（觸覺描寫）

作者這樣從不同的角度去描寫，令讀者產生身歷其境的感覺，感受著祥子在烈日下拉車的苦況，對主題（反映人力車夫生活的苦況，控訴社會的黑暗），有更深刻的認識。

注釋

1 葉聖陶（1980）：〈文藝作品的鑒賞〉，《葉聖陶語文教育論集（上）》，北京：教育科學出版社，267。

2 夏丏尊（1972）：〈我在國文科教授上最近的一信念——傳染語感於學生〉，《文章作法》，夏丏尊、劉薰宇合編，香港：匯通書局，173-177。

3 〈[illegible]論語文教學〉，5 見陳志明（1994.10）：〈試論語感的本質及形成條件（摘引）〉，《語文教學面面觀》，香港中文教育學會田小琳等編，香港文化教育出版社，416-423。

④ 韋志成（1994.1）：〈論語感及其訓練〉（上），《中學語文》，1994年第1期。鄭定存主編，湖北大學中文系出版。7-8

參考文獻

1. 何格民等編（1995）：《中國語文》第3冊，教師用書。香港：啟思出版社。資料17.1-17.1

2. 何格民等編（1995）：《中國語文》第四冊，教師用書。香港：啟思出版社。資料8.3-8.4，6.3，11.1-11.4，13.1-13.3

3. 何格民等編（1995）：《中國語文》第五冊。香港：啟思出版社。127-140，209-221

4. 何格民等編（1995）：《中國語文》第五冊，教師用書。香港：啟思出版社。資料6.5

5. 何格民等編（1995）：《中國語文》第六冊，教師用書。香港：啟思出版社。資料6.2-6.3

6. 林運來（1993.8）：〈語感建構與語感教學——兼介紹葉聖陶的「語感訓練」〉，《語文教學通訊》，1993年第8期。山西師範學院。4-6

7. 倪福澤（1994.11）：〈加強語感訓練，提高語文能力〉，《中學語文》，1994年第11期。湖北大學中文系出版。4-6

8. 香港教育圖書公司編（1993）：《中國文學》第一冊。144-145

9. 香港教育圖書公司編（1993）：《中國文學教師手冊》第一冊。81

10. 韋志成（1994.1）：〈論語感及其訓練〉（上），《中學語文》，1994年第1期。湖北大學中文系。7-8

11. 韋志成（1994.3）：〈論語感及其訓練〉（下），《中學語文》，1994年第3期。湖北大學中文系。8-9

12. 陳希明（1994.10）：〈試論語感的本質及形成條件〉，《語文教學面面觀》。香港中文教育學會田小琳等編。香港：文化教育出版社有限公司。416-423

13. 張運輔（1994.4）：〈語感訓練芻議〉，《中學語文》，1994年第4期。湖北大學中文系。7-8

14. 葉聖陶（1980，a）：〈精讀指導舉隅前言〉，《葉聖陶語文教育論集》（上）。北京：教育科學出版社。5-18

15. 蕭建（1994.8）：〈語感能力是語文教學機智的核心要素〉，《中學語文》，1994年第7.8合期。湖北大學中文系。17-18

作者

[illegible]，香港中文大學教育學院副教授

(Received: June 20, 1996; Revised & accepted: December 9, 1996)

BEST COPY AVAILABLE

小學低年級中文寫作教學的反思

關之英

香港教育學院

香港小學的作文教學，一般都是三年級才開始作文，低年級只學習寫句和段。1995年，香港有一所小學推行了一項寫作教學的新模式，就是讓小一和小二的學生也開始篇章寫作，不過該校仍保留傳統寫句和段的形式，二者各佔一半寫作教學的時間。本文試從這兩種寫作模式——篇章寫作和句段寫作——探討小學低年級學生在語言表達方面有何異同。

Rethinking of the Teaching of Chinese Writing in Lower Primary Forms

In Hong Kong most primary school pupils start composing a full essay during their third grade, while first and second graders only write sentences and paragraphs. In 1995 one primary school introduced a new element into its writing curriculum. It allows its first and second graders to compose full essays, while keeping the traditional sentences and paragraphs training models. The old and new writing models take up half of the time allocated for the writing lessons each. This paper aims at analyzing the differences of the language used by the lower primary forms pupils with regards to these two writing models.

一、前言

香港小學的作文教學，一般都是小一寫句，小二寫段，小三才開始寫一篇文章。一九九五年一月，沙田第一城浸信會呂明才小學下午校(以下簡稱呂小下午校)開始一項新嘗試，那就是讓小一下學期便開始作文，不過該校仍保留原來寫句寫段的形式。本研究便是試從兩種不同的寫作模式看小學一及二年級學生的寫作情況。

二、研究意義

許多學者(靳洪剛1994、朱曼殊1992等)都指出，一般六歲的小孩子，他們的語言能力已有一定的基礎。根據許多家長的觀察，一個小一的學生，他們的口頭語言十分豐富，可以說一個完整的故事，可以介紹一些物品的特點和好處，甚至時常和家長議論事情(註一)。事實上，他們的語言是可以通過一個整體的情境而表現出來。不過當他們進入小一學習書面寫作時，卻要由單句學起，跟着學複句，然後學寫段落，到小三才能開始篇章寫作。究竟小一小二學生的書面表達能力是否需要分割地學習呢？本研究便是試從呂小下午校這種新的寫作模式看看小學低年級真正的書面表達能力。

◆ [illegible] SPSS [illegible]

現代的教育講求成本效益，究竟目前所用的教材，教學法和課程的編排是否與兒童的能力配合呢？會否高估或低估他們的能力而影響學習的效果呢？以上的問題也是本研究要探討的方向。

三、背景和具體情況

呂小下午校試行這個寫作的新嘗試，源自一九九四年四月，當時該校的鄧薇先校長接受香港大學課程學系的謝錫金博士介紹英國的「國家寫作計劃」後，便把這計劃的精神引入該校，試行了幾個月，覺得成效不錯，於是在同年九月，該校把這項計劃列為一九九四至九五年要推行的一項方針，他們名之為「全語文寫作」或稱(篇章寫作)，不過他們仍保留傳統的寫作形式，各佔一半的寫作分量。換言之，傳統與全語文的寫作模式並行。

「全語文寫作」在低年級進行的時候是這樣的：

1. 小一下學期便開始篇章的寫作；
2. 老師不會給寫作提綱；
3. 學生可以自行決定用什麼形式寫作，例如：詩歌、對話也可以；
4. 要盡量表達自己所想的東西，不會寫的字，可以用圖畫和符號暫時代替，然後老師再在上面寫上正確的字；

5. 老師在評改時只作重點批改；
6. 老師發還作品時，會分批把作文張貼在教室內，讓同學互相欣賞；
7. 老師會在學生的作文上寫回應。另外，也請家長寫回應。

至於傳統的寫作，在低年級是這樣的：
1. 小一作句，小二作段
2. 老師會提供許多詞語。
3. 要按老師指示的形式寫，例如：看圖寫作或串句成段或篇。

四、文獻參考

「國家寫作計劃」（National Writing Project）是一九七五至七六年在英國試行的，當時有二十四個團體和約二千名老師參加，由於效果良好，國家課程委員會（National Curriculum Council）也採納這個計劃，並總結多年的經驗，出版了十一本主題小冊（Theme Packs）和兩本在職資料（In-service materials），這個寫作計劃的目的是：「發展和延展青少年寫作的能力和信心」（註一）當時有一位記者報導說：「國家寫作計劃的目的是鼓勵創意和發展意念，而不只是集中在表達和串字方面」（註二）

韋葵（Weaver 1990）在她的「了解全語文」（Understanding Whole Language）一書也提到英國的「國家寫作計劃」，她是得這個計劃與全語文有許多相通的地方，大家的著重點都是：以兒童為中心，重視學習的過程，從整體和有意義的情境中學習，以及要培養兒童有獨立的思考能力，而不是製造一隻要只會複述老師所預設的正確答案的鸚鵡。

在國內，近年來，逐漸重視寫作教學的研究，並發展為幾個不同的訓練序列，可以概括為下列六種基本類型：

1、知識技能型

這是傳統的寫作教學訓練序列，按文章的結構單位和文章體裁的種類，來排列訓練內容的先後次序，例如：小學按字、詞、句、段、篇的體系來安排訓練的內容——低年級聯詞成句，中年級聯句成段，高年級才開始篇章寫作。

2、心理能力型

這種寫作類型，是既要發展學生的語言能力，又要兼顧兒童的心理能力，這派學者認為一般的心理能力(如智力情感和意志活動的能力)是發展語言能力的前提，又可分為兩派：

(1) 智力型

這派強調以發展智力為訓練的主線，前蘇聯教育家蘇霍姆林斯基認為：傳統的作文教學存在著語言與思維脫節的重大弊病，學生只是日復一日，年復一年地重複著別人的思想，沒有機會表達自己的思想，寫出來的東西只是一些硬擠的、筆描的、背誦下來的詞組和句子，內容不是兒童本人的思想，因此，他主張開始時不讓學生寫記憶性的命題作文，而是寫觀察作文，先寫自己眼睛觀察過的東西，由於每人的觀察都不同，因此每個學生所寫的都不同。

(2) 個性型

這一系列強調以發展個性作為訓練的主線，前蘇聯心理學家贊可夫認為作文教學的目的是要使學生的個人特點及完整的個性得以充分發展，因此，他反對以複述和列提綱的傳統方法進行寫作指導，教師出了題目後，就要放手讓學生去寫，他們要寫甚麼就寫甚麼，能寫多少字也沒關係，學生沒有框框，可以自由寫作，這樣他們就能充分表達自己的真實情感。有人認為贊可夫的主張是放任自流，不能提高學生的寫作水平，但贊可夫認為：按照傳統方法教作文，學生寫的東西看起來可能是很嚴謹和有條理，但這種嚴謹和條理卻是教師預設的，不是學生自己想寫的東西；這樣的寫作反而窒礙了學生思想的發展。贊可夫的見解與英國的「國家寫作計劃」及「全語文」的精神也有相通的地方。

3、寫作能力型

這是根據作文的全過程把寫作能力逐一分解出來，例如包括選詞、造句、說明、記敘等能力，然後分階段地、有重點地、逐一地培養學生各種能力。

4、語言交際功能型

有些學者認為決定作文能力結構不應只是寫作的過程(如審題、立意、選材、謀篇和布局等)，而應是語言交際功能。學習語文的目的是要達到社會交際功能。前蘇聯教育心理學家達維多夫和語言心理學家瑪爾柯娃主張把閱讀、作文和語法的內容有機地組合在一起，而不是各科割裂地學，從而建立一門綜合性的語文課程－－「語言表達理論」課。

5、科際聯合型

作文是中小學生表達自己所見、所聞、所思和所感，這些材料來自學生在各科所學過的知識，所以這派學者認為應加強各科的聯系，例如：利用美術課上學到的知識來分析圖畫，然後看圖作文，或在音樂課時也可以聽音樂作文，在自然常識課時也可以寫寫讀書筆記等。

6、訓練途徑型

上述五種序列類型，都是從作文訓練的目標作為訓練的主線，而訓練途徑型則從達到目標的途徑來安排訓練的內容，又有以下幾種序列：

(1) 從說到寫

即先看圖說話到看圖寫話，然後才命題作文，或者是在作文時先說話才動筆。

(2) 從述到作

先復述讀過的材料，然後再作文。

(3) 從仿到作

先根據範文仿作，然後才自己寫。

(4) 從放到收

放就是寫「放膽文」，這與賀可夫的意見相近，就是讓學生放膽寫自己想寫的東西，先寫順了筆，然後才講究寫作的技巧。老師要注意學生的興趣，最重要是學生有學習動機，否則，老師教得天花亂墜也沒用。

(5) 從部分到整體

張田若把小學作文訓練概括為三步走：第一步，口語訓練(一年級)；第二步，寫話訓練(二年級)；第三步，作文訓練(三至六年級)。李昌斌等改為四步，那就是：第二步之後加上段的訓練。吳立崗又發展為五步訓練：一年級，口語訓練；二年級，寫話訓練；三年級，片斷訓練；四年級，半獨立篇章訓練；五、六年級，獨立的命題作文訓練。

常青提倡小學作文分格訓練。所謂格，即單一的基本訓練單位。從說話、寫話、片斷訓練到篇章，從寫景狀物到寫人記事等，把各個作文的難點分解成一個一個具體訓練的「格」，然後按部分到整體的原則循序漸進地進行訓練。

除了以上的作文教學研究外，國內在識字教學的研究也影響學生的寫作能力的發展，例如：「注音識字、提前讀寫」的教學實驗研究，讓學生先學注音，然後寫作，不會寫的字可以用注音暫時代替。學生在注音的幫助下，小一學生已能寫一整篇文章，而不只是寫單句。香港沙田第一城呂明才小學下午校的寫作新模式，與「注音識字、提前讀寫」的實驗研究也有類似的地方。

五、研究目的

本文是一個對比研究，目的是探討小學低年級的學生在進行兩種寫作教學模式時，他們的寫作能力有沒有分別。這兩種寫作的模式是：傳統寫作(寫句或段)和新的寫作模式。

六、研究問題

本研究探討的問題是：

1. 學生在兩種寫作模式時的文章字數有沒有分別？
2. 學生在兩種寫作模式時的文章句數有沒有分別？
3. 學生在兩種寫作模式時能寫的複句有沒有分別？
4. 學生在兩種寫作模式時的文章內容有沒有分別？
5. 學生在兩種寫作模式時的課堂氣氛有沒有分別？

七、研究方法

1、研究樣本

本研究主要以呂小下午校的學生作為研究樣本，由於該校沒有按能力分班，所以便採隨機抽樣的形式，在每級四班之中，各抽小一小二一班的兩種形式的作文一篇，作為研究樣本，簡述如下：

表一：研究樣本一（呂小下午校小一及小二）

寫作類型 / 年級	篇章寫作（全語文寫作）			句段寫作（傳統寫作）		
	題目	日期	人數	題目	日期	人數
1B	星期日	21/2/95	31	[illegible]	28/3/95	28
2C	生病	[illegible]	35	[illegible]	30/3/95	30

另外，研究員曾指導參加香港教育學院般含分校小學中國語文科復修的學員，在95年5月(cp951期)進行了全語文寫作（篇章寫作）的實驗教學研究，實驗學校是上環東華三院李西蹈小學。該校與香港一般的小學一樣：小學低年級只進行句段寫作。研究員與學員在該校小二級的一班進行了兩次「全語文寫作（篇章寫作）」研究員抽取了十個篇章寫作的樣本與原校老師提供的十個句段寫作的樣本作比較，如下表所示：

表二：研究樣本二（實驗教學小二班）

寫作類型 / 寫作日期	11/5/95	12/5/95	18/5/95
看圖寫段（傳統寫作）（原校老師進行）	—	題目：看圖寫段	—
篇章寫作（全語文寫作）（實驗教學進行）	題目：[illegible]	—	題目：[illegible]

此外，研究員的另一位學員(cp942期)在復修完畢後，回到原校（東華三院鄺啟明小學）復職時，也帶領他的小一學生進行了「全語文寫作（篇章寫作）」，以上這兩種樣本也會作為本研究的參考資料。

2、研究工具

研究員設計兩張記錄表，一是記錄學生文章字數、句數和平均句長等的表格；另一張是用作分析文章內容、寫作手法和用何種複句的表格。此外，研究員也在呂小下午校進行了兩次小一(1B班)的課堂錄影，分別為篇章寫作與句段寫作，然後研究員分析錄像帶，所以攝錄機及錄像帶也是研究工具之一。

3、統計方法

在統計字數、平均句長等時，本研究取平均值的方法；另外也有借助SPSS程序來分析，以t-檢驗這種統計的方法，用以測定兩種寫作模式在字數、句數等方面兩組分數的平均數（mean）在統計顯著性（statistical significance）上是否有差異。

八、研究結果與討論

主要以呂小下午校的樣本作為討論基礎，由於兩種寫作模式的樣本數目不同，在字和句的統計時以較少的那一次寫作的樣本數目為主，在分析內容和表達方法，則會同時兩方面樣本的表現。

1、字的情況

1 字數

以SPSS程序來分析，發覺篇章寫作與句段寫作在各篇文章字數相加後，平均字數是這樣的：

表三：小一及小二字數的差別

學生人數 / 寫作類型 / 班別		篇章寫作	句段寫作	相差
1B	28	121.75	55.85	65.90
2C	30	101.40	52.97	51.43
1、2	58	112.78	54.36	58.42

＊表示各人的平均字數（mean），以下各表同

在篇章寫作中，小一及小二學生的平均字數是112.78字，而句段寫作只有54.36字，兩者相差達58.42字，雖然有些學生的差異較小，如小一的第3號學生，只相差5個字；但也有些很大，如小一的第35號，相差180字；以t－驗檢來分析，由於p＝0.000及(<0.001)，整體沒有差異的可能性為0。換言之，同一學生，在兩種不同形式的寫作策略下，字數有非常明顯的差異。原來小一及小二的學生在篇章寫作時，可以比在句段寫作中寫更多的字。

除了個體本身有差異外，同一班學生，彼此的差異也很大，試以下表來表示：

BEST COPY AVAILABLE

表四：兩種寫作模式字數的相差度

寫作類型 / 字數 / 班別	篇章寫作			句段寫作		
	最多	最少	相差	最多	最少	相差
1B	240	53	187	90	43	47
2C	220	49	171	61	45	16

由此可見，篇章寫作可明顯看到學生彼此在字數方面的差異，而句段寫作卻不易發現問題。在篇章寫作中，遇上經常寫得太少字數的學生，便可以及早輔導。反過來說，一般的學校在三年級才開始篇章寫作，如果到了三年級才發現學生的問題，那時才開始輔導，是否太遲？

2、*相異字 (the total number of different words)*

把每句有一個相同的字歸併成一個只算一個字，那麼所餘下的字彼此不相同，這些不相同的字就叫做「相異字」，或稱「不同字」。例如：「公公帶我到沙田公園去」，這一句有10個字，但「公」字出現了三次，而相同字只作一個，所以這句的相異字有8個。研究員用了32個樣本，選取的標準是這樣的：選擇字數最多及最少的兩男及兩女，研究員以16篇的篇章寫作，小一及小二各八篇，和16篇句段寫作，同前，計算相異字，換言之，即有32個樣本，然後再以另一個SPSS的程式的t-檢驗來統計，結果如下：

表五：相異字的分別

班別	人數	篇章寫作	句段寫作	相差
1B	8	73.25	25.38	47.87
2C	8	82.38	24.0	58.38
合計	16	77.81	21.69	53.12

在篇章寫作中，學生的相異字有77.81個，在句段寫作中，只有21.69個，二者相差竟達53.12個。由於p=0.000(<0.001)，在統計學上是有非常明顯的分別，即相異字越多，表示語言的變化越大。此外，研究員把各樣本的相異字加起來，情況如下：

表六：相異字總和的分別

年級	小一		小二	
樣本	8	8	8	8
寫作類型	篇章寫作	句段寫作	篇章寫作	句段寫作
總字數 (8人之和)	903	447	922	438
相異字 (8人之和)	586	203	659	192
相異字 (除去8人中相同的)	256	53	281	71
相差	203		210	

篇章寫作中，單是小一的八個樣本，彼此的相異字就有256個，而句段寫作只有53個。事實上，在句段寫作中，學生所用的字很相近，來來回回，都是那幾個字，不單是這8個寫作樣本，甚至全班，彼此所用的相異字也甚少。小二在句段寫作所用的字更集中，有許多人幾乎全篇相同。小一和小二的學生，在篇章寫作和句段寫作所表現的相異字相差都有超過200字的分別，為甚麼同一些學生，在不同類型的寫作中，他們所用的相異字竟有如此強烈的分別？這是否意味著句段寫作的形式限制了學生表達他們本來可以變化很大的相異字？

3、*生字率 (Type-token ratio，簡稱TTR)*

與相異字有密切相關的便是相異字與總字數的比率，這種比率叫生字率。生字率可用來表示語言的變化性和可變性(variability and flexibility)。W. Johnson(1944) 及林占田(1966) 曾應用過此法研究兒童的語言。生字率的計算方法是：

$$\text{生字率(TTR)} = \frac{\text{相異字}}{\text{總字數}}$$

在統計後，結果如下：

表七：生字率的分別

學生人數 / 寫作類型 / 班別		篇章寫作	句段寫作	相差
1B	8	0.68	0.45	0.23
2C	8	0.76	0.44	0.32
合共	16	0.72	0.44	0.28

篇章寫作的生字率(TTR)是0.72，句段寫作是0.44，兩者相差是0.28，由於p=0.000(<0.001)，所以在兩種不同類型的寫作中，生字率有明顯分別。生字率愈大，表示字彙的重複愈小，即語言愈豐富。另外，在篇章寫作中，小二的生字率(0.76)比小一的生字率(0.68)為高，但在句段寫作中，小二的生字率(0.44)竟比小一(0.45)為低。在篇章寫作所得的結果是合理的，因為年紀愈長，所學的生字愈多，所以生字率應愈大，重複的機會便會少。但在句段寫作所得的情況就非常不合理：如果年紀愈長、生字率愈低，那受教育有何用？小二的一整年學習豈不是白費以上的數字表示：原來在篇章寫作中，小一及小二的學生可以有很豐富的生字率，但在句段寫作這種形式下，本來可以很豐富的生字率無法表現出來，語言顯得比篇章寫作時貧乏得多。

此外，在16個樣本裏，雖然有些生字率差異不大，但有些卻相差很明顯，如小一的30號與種寫作相差達0.55。同時，在句段寫作中，同一班彼此的生字率的分別都不大，都在0.3與0.5之間，但篇章寫作，都由0.4至1.1之間，個別差異很大。句段寫作把寫來明明有很大的個別差異隱藏起來，因此在句段寫作中，教師看不到個別學生的特點，也無從因應學生的情況作輔導。

c 字彙(vocabulary)的使用

字彙是指一個人或某一團體在其語文行為上所使用的全部字量，可分為主動字彙(active vocabulary)與被動字彙(passive vocabulary)兩種。主動字彙即個人或團體表言語或文字方式表達時所實際使用單字的數量；被動字彙指一個人或團體經由視或聽覺對語文符號所能認知單字的數量。

小一小二的學生在篇章寫作時，相異字比在句段寫作時相異達200字，為甚麼同一個學生，在篇章寫作時字彙會較為豐富？大概有以下的原因：

第一：由於內容是與學童的生活息息相關，不似句段寫作要寫老師限定或圖畫所限的內容，所以他們可以自我發揮，自然寫得較多。

第二：他們不會寫的字，可以用圖畫或符號來表示，例如在小一中，有以 表示教會，以 表示果，以  表示飯，以  表示早餐；在小二的篇章寫作中，有以  表示禮物，以  表示星球大戰，以  表示壁掛，以 和  表示把下和機戶，以  表示小天使等。由於去除了文字的障礙，所以學生能寫很多的內容，這些字是他們在口語中常用的，只是不會這樣寫出來。由此可知，在篇章寫作中所表現的字彙正是學生的主動字彙。

研究員嘗試把篇章寫作與句段寫作的字彙作一比較，在小一和小二篇章寫作出現最多的一百個字彙中，無論小一或小二都是「我」字出現得最多，除題目的字外，其他出現得較多的字可列表顯示：

表八：篇章寫作出現次數較多的字彙

年級	字	次數
小一	我	90
	媽	30
	一	27
	和	21
	爸	22
	我	18
	家	15
	天	13
	看	13
小二	我	41
	一	25
	媽	20
	了	16
	爸	15
	家	11
	有	11
	可	11
	個	10
	的	10

這種情況確實很符合皮亞傑的研究，在這階段年齡的孩子，是以自我為中心的，因此除了「我」字出現得最多外，便是環繞「我」周圍的人，例如爸爸、媽媽、哥哥、妹妹等，其次便是我的活動，例如玩耍、看到甚麼東西等等。不過在句段寫作卻看不到相同的情況，出現最多的字彙為：

表七：句段寫作出現次數較多的字彙

[illegible]	字	次數
	有	39
	史	36
	[illegible]	36
	出	15
	[illegible]	15
	[illegible]	14
	室	14
	[illegible]	10
	[illegible]	8
	[illegible]	5
	[illegible]	40
	[illegible]	26
	[illegible]	22
		20
	[illegible]	19
	[illegible]	11
	名	10
	[illegible]	10
	[illegible]	10
	[illegible]	10

在十一份的句段寫作中，「我」字只出現了5次，而[illegible]一次也沒有，這種情況與皮亞傑的研究似乎不相符，為甚麼同一群學生，他們會有不同的表現呢？這是因為句段寫作限定了範圍，學生所表現的並不是自我表達的真正情況，而是要滿足老師或測試的要求，所寫出來的東西並不是他們字彙真正的表現。相反，在篇章寫作所出現的字彙看來，那些字彙所顯示的文章內容[illegible]學生真正的[illegible]

另外研究員又嘗試把這篇章寫作的字彙與《課程綱要》附錄的小學常用字表和該校所用的教科書（新亞洲文化事業有限公司）所附[illegible]字表作一比較，發覺在篇章寫作有許多出現過的字，是後二者沒有提供的，例如：

表八：篇章寫作出現的字彙與課程綱要及教科書比較

	字	次數	課程綱要	教科書
	帶	11	✗	✓
	這	11	✗	✓
	[illegible]	5	✗	✓
	[illegible]	5	✗	✓
	誰	6	✗	✓
	[illegible]	6	✗	✗
	[illegible]	3	✗	✓
	[illegible]	3	✗	✓
	管	4	✗	✗
	貓	3	✗	✗
	[illegible]	40	✗	✓
	[illegible]	39	✗	✓
	根	8	✗	✓
	跑	5	✗	✗
	[illegible]	3	✗	✓
	[illegible]	2	✗	✗
	[illegible]	2	✗	✗
	[illegible]	2	✗	✓
	皆	2	✗	✗
	[illegible]	2	✗	✗
	[illegible]	2	✗	✗

說明：✓表示有出現，✗表示沒有出現

原來在篇章寫作中，學生可以寫他們沒有學過的字，這些是他們的真正字彙。主動字彙是使用者平日所說所想所學的語言，也可以說是學習者的真正字彙；被動字彙是教師要學生學的或課本所提供的字詞，多是書面語。最理想的學習是主動字彙與被動字彙配合，否則，學習者想學的是一套，而教的卻是另一套，那就很浪費時間了。篇章寫作借用「論語文」的精神，容許學生用圖畫和符號表示不會寫的字，於是在學生的文章中，出現了他們的主動字彙，但這些字彙卻與教科書和《課程綱要》所提供的字彙不相同，這表示甚麼呢？就是教與學脫節，這個情況是值得教育界深思的。

2、*句的情況*

1 *句數*

兩種寫作模式學生所寫的句數如下表所示：

表十一：兩種寫作模式句數的相差

寫作類型句數 / 班別	篇章寫作			句段寫作		
	最多	最少	相差	最多	最少	相差
1B	11	1	10	5	5	/
2C	11	2	9	4	1	/

在篇章寫作中，有些學生全篇只有一句或兩句，由此可知這些學生一定不會掌握標點符號的運用。教師可以針對問題而輔助他們，而句段寫作卻不能發現問題，所以根本不知道有哪些學生不明白和不清楚。

2. 平均句長

平均句長(mean length of sentence 簡稱MLS)，即語句的平均長度，指兒童所使用的語言平均每句有多少個字。字數愈多，句的平均長度愈長。它的計算方法如下：

$$\text{MLS} = \frac{\text{總字數}}{\text{總句數}}$$

統計的結果如下：

表十二：平均句長的分別

班別	學生人數	篇章寫作	句段寫作	相差
1B	28	24.45	11.17	13.28
2C	30	25.41	13.24	12.17
合共	58	24.95	12.24	12.17

在58個樣本中，篇章寫作的平均句長為24.95字，而句段寫作只得12.24字，換言之，篇章寫作的平均句長比句段寫作多了12.71字，由於 $p=0.000(<0.001)$，這也是表示兩種寫作方式使平均句長有非常明顯的分別。即使小一在句段寫作時，題目是：「較長句子的寫作」，但與篇章寫作在平均句長上仍有13.28字的相差。這表示學生在篇章寫作上，每一句的平均句長都明顯比寫句、段為長。反過來說，句和段的寫作，縮短了學生本來可以較長的平均句長。

3. 複句的使用

複句是兩個或兩個以上在意義上有聯繫，在結構上互不作句子成份的單句組合在一起的句子(莊文中，1984)。香港小學的《課程綱要》在讀文教學的總表中，建議小一和小二學習結構簡單的句子，小三和小四才學習結構複雜的句子。究竟低年級的學生是否不能寫複句呢？

在句段寫作中，小一只見到一個複句，但在篇章寫作31篇作文中，有22篇曾使用過複句，佔全班的71%，最多出現的複句是並列和承接，其次是遞進和因果，有一個小朋友甚至出現多重複句。承接的複句如：

首先，我們坐吊車上山頂，跟著我們去看海豚表演，又到兒童遊樂場玩耍……(1B篇章寫作 作文編號17)

小二在句段寫作中，只出過1次使用並列複句，但在篇章寫作中，35篇中卻有26篇使用過複句，佔全班人數74%，其中最多的是並列、承接和因果，但也出現假設和轉折。

假設複句如：
爸爸媽媽說：「如果我(你：老師改)們乖的話，聖誕老人會送給我(你)們每人一份禮物。」(2C篇章寫作 作文編號4)

轉折及多重複句如：
這時聖誕老人出現了，他給我一些糖果，但我不喜歡那些糖果味，便送給別的小朋友。(2C篇章寫作 作文編號34)

在篇章寫作中，原來有許多小朋友可以運用複句，其實這些複句都是他們口頭的語言，這種寫作形式把口頭語言和書面語言拉近了。然而，在句段寫作中，由於要按照一定的句式寫作，小朋友原有豐富的複句都沒法表現出來。

3. 內容方面

在內容方面，篇章寫作與句段寫作有很大的分別。小一在句段寫作是較長句子寫作，句式是：

(1)　　　(2)　　　(3)
………要，有………的………

其實要填的有三項，在28篇5句仿作中，全班學生在第①項中總共用了有30詞語，第②項用了26個詞語，第③項用了59個詞語，這些詞語用在A學生或B學生中都沒有分別，完全看不到有個別的特色。小二在句段寫作的寫作更集中，這是一次看圖串句成段的練習，研究員曾利用列表的方式分析，發覺每一篇的成分都一模一樣，都是有人、玩具、描寫、活動、一起的活動和關係六項，最多只有給予人名，只有一個寫他和洋娃娃玩時的動態，全班的寫作竟然相似得像默書一樣。

但反觀小一小二的篇章寫作，內容就變化多端了。筆者也曾用列表的方式分析每一篇小一的篇章寫作，這是小一第一次進行的篇章寫作，題目是「星期日」，以表列來分析，發覺每篇的內容都有特色，有的寫一個星期日的活動，也有寫幾個星期日的活動，而活動的形式更多樣化，有到海洋公園、到教會、到澳門、到大澳旅行、到公園打球等，也有是一天的計劃和感想，例如：

星期日，我不用上課，我留在家裏，看電視，看完了電視，我用心地溫習，溫完了，我拿起一個蘋果，唔，蘋果真好吃。（1B篇章寫作 作文編號6）

也有一個同學寫：不用上課，便感覺很悶。（1B篇章寫作 作文編號11）

另外有一個小朋友寫參觀婚禮的感受：
那天很熱鬧，我好緊張，為什麼媽媽不緊張？……我回想昨天的事，多麼奇妙。（1B篇章寫作 作文編號30）

小二的「聖誕」，內容更豐富了，有寫聖誕的活動，例如佈置聖誕樹、到尖沙咀或到沙田中央公園看燈飾，參加聖誕遊藝會等，也有討論聖誕的意義和介紹耶穌誕生，評論聖誕禮物的來源、描述聖誕老人及聖誕歌等等，可以說是35篇作文中，35篇都不同。例如有一個學生寫聖誕的願望：

我許了一個願望，就是家人身體健康，我的（老師加）學業進步和世界和平。（2C篇章寫作 作文編號11）

另一個小朋友寫聖誕老人分派禮物後：
聖誕老人回到了北極的家，真是寒冷。
那個聖誕老人是不是真正的（耶穌誕生的）？（2C篇章寫作 作文編號15）

這些豐富的內容顯示甚麼東西？顯示了學生充分利用他們的先前知識(schema)以及發揮他們的想像力，在寫作中盡量表達自己的經驗和思想。在句段寫作便完全看不到這樣的情況，學生的先前知識沒有被充分利用，而學生也無法發揮他們想像力，他們所用的語言也不能表達自己想的東西。

除了呂小的學生外，其他的學生也有相同的情況。研究員與教育學院般含分校復修課程的學員（CP951期），在95年5月實驗教學時，原校老師提供了十篇她認為寫得比較好的小二學生看圖寫段的作文。研究員在分析後，發覺十篇文章幾乎完全相同。由於老師提供的圖畫是一些小朋友圍著一個生日蛋糕，所以學生都寫媽媽買了一個生日蛋糕，小朋友來慶祝我的生日，這方面倒無可厚非，但十篇作文的日期都相同（全是星期日），而生日願望及其次序又完全相同（一是學業進步，二是身體健康，三是生活快樂）；活動也相同（先是吹蠟燭，然切蛋糕分給小朋友吃），至於所寫的食物竟然也大部分相同（薯片、香腸、雞翼有10人次，薯條9人次，朱古力和汽水8人次，果汁糖和棉花糖有7人次），這10篇作文，可以說是一個機器模型製造出來的，與呂小下午校的二年級看圖串句成段不相伯仲。

不過，同一時期研究員引領學員在該班進行篇章寫作，第一次的所寫的題目是玩具，第二次是故事，這十個學生的自己所寫題目是這樣的：

表十三 實驗教學（CP951期）小二篇章寫作的題目

	玩具	故事
1	我最喜愛的玩具	三隻小豬
2	我的小熊貓	叮噹和大雄
3	變形機械人	龍珠二世
4	我最喜愛的恐龍	沒有牙齒的大老虎
5	我最喜愛的玩具(恐龍、龍貓)	超級龍珠二世
6	我最喜愛的玩具(米奇老鼠)	白雪公主和七個小矮人
7	大熊貓	大雄和叮噹
8	我最喜愛的玩具(芭比女)	大笨雞和小鴨子
9	我最喜愛的大熊貓	三隻小豬
10	我最喜愛的玩具(LEGO)	叮噹和大雄

即使某些題目相同，但要找內容完全相同的文章卻是不可能的。從以上的資料可見，如果擔心小一小二學生沒有足夠的材料，所以不能進行篇章寫作，這樣的想法是沒有認識學生的真正情況。

另外，研究員又有一位學員（CP942期），在完成小學語文復修課程後，回到原校（東華三院關啟明小學）復職時，也推動全校進行「全語文寫作」模式的寫作計劃：那就是讓小一的學生開始篇章寫作。研究員在九五年五月卅日曾到該校探訪，並進行小一的課堂觀課，發覺該班小一學生正進行第二次書信寫作，這一次的寫作的對象是給老師的。至於他們第一次的篇章寫作——給爸爸或媽媽的信——他們的作品後來刊發在該校九五年七月第二期的校訊上。由此可見小一的學生也可以進行篇章寫作。

4、課堂氣氛

兩種寫作的模式都由任教該班的同一位老師指導。句段寫作用的是學校早已印好的直行工作紙，篇章寫作則用橫行的單行紙。研究員在九五年五月的時候，曾到呂明才小學觀察兩種寫作模式的上課情況，並即時錄影。該兩次寫作的題目分別是：✗✗正在✗✗地（句段寫作）及夏天到了（篇章寫作）。在學生寫作前，教師介紹題目兩次所用的時間差不多，見下表說明：

表十四：1B班兩次作文課堂寫作前的活動

日期	2/5/1995	9/5/1995
寫作類型	句段寫作	篇章寫作
題目	✗✗在✗✗地	夏天到了
時間	4:40pm—5:30pm	
活動	1. 老師談上次作文(3分鐘) 2. 老師介紹題目(7分鐘) 3. 派工作紙(1分鐘) 4. 同學開始舉手問字(4:53開始)	1. 老師派作文簿(2分鐘) 2. 老師介紹題目(10分鐘) 3. 準備寫作(2分鐘) 4. 同學舉手問字(4:55開始)

不過，在寫作開始後，兩次課堂的氣氛就有不同，現以下表說明：

表十五：1B班兩次作文課堂寫作時的情況

寫作類型 課堂情況	句段 寫作	篇章 寫作
1. 舉手問字的同學	較多	較少
2. 舉手問字要等老師回答的時間	較長	較短
3. 投入寫作的同學	較少	較多
4. 在書本上找不會寫的字的同學	較少	較多
5. 構思下一步要寫甚麼東西的同學	沒有	有
6. 在教室走動的同學	較多	較少
7. 教室安靜的時間	較短	較長
8. 完成的時間	較早	較遲
9. 作品的形式	一樣	有其他形式(如詩)
10. 字數	較少	較多
11. 內容	相近	有變化
12. 同學交換看彼此的作文	沒有	有
13. 進行寫作以外的活動(閱讀班會書籍)	有	沒有
14. 擔心不夠時間寫的同學	沒有	有
15. 請老師讀自己完成的文章	沒有	有

從上表可見，有許多地方是互為因果的結果。例如在篇章寫作中，由於題目是與生活有關，因此課本可能有類似的內容，有些同學便會在書本裏找學過的字，而不需要太依賴老師，所以舉手問字的同學較少。另一方面，真正需要老師幫忙等候的時間相應減少。這樣，同學便有較多的時間進行寫作，教室也比較安靜，同學也較專注。在句段寫作中，同學好像做填充的練習，一遇到不會寫的字，便舉手問老師，因為實在想不起那些單獨的詞語在哪裏見過。於是許多同學舉手問字，因而等候老師的時間也長，有時要等五至七分鐘，老師才能幫他解決問題。影響所及，小朋友便開始說話，教室便很嘈吵，其他的人也沒辦法專心寫作。

此外，研究員在篇章寫作的課堂時，看到一個小女孩托著頭在構思寫作的內容；在句段寫作時，就沒有這個發現。還有，在篇章寫作時，同學都很緊張自己不能完成作文，聽到老師說只剩下三分鐘時，更埋頭苦幹地寫，可見他們有很多的東西要寫。不過，在句段寫作中，第一節課還未完的時候，已有同學作好了，老師便安排他們看班會的圖書，後來班會的書都看完了，老師唯有安排他們看圖書櫃的書。於是，許多同學在教室裏走來走去，老師要多次警告同學要安靜，教室是亂烘烘的。

從這兩次的課堂觀察，學生對篇章寫作的興趣比句段寫作為大。興趣是學習的主要動力，能提高學生對寫作的興趣，那他們就不會討厭寫作，便會肯用心去寫，自然寫作能力也會相應地提高。

九、結論

雖然本研究以呂明才小學下午校的低年級學生為主要的研究樣本，但也比較上環（李西點）和何文田（關啟明）兩所學校低年級學生的情況。從學生的表現中，發覺小一和小二學生可以進行篇章寫作。他們在篇章寫作時，無論在字數、句數、相異字、生字率、平均句長、內容和課堂氣氛等方面都比句段寫作為佳。因此，硬要小一和小二學生由句段學起，到三年級才能寫篇章寫作，豈不是拖慢了孩童語言的發展？

此外，研究員在這次研究中，發現原來成人喜以成人的角度，以「想當然」的觀念來安排處理小學教學的各種情況，因為所提供的教學材料，並非是學生所想學和要學的東西。其實這樣的安排與事實並不一定相符，這樣便可能會造成高估或低估學生的能力，或有不符合學生的興趣的現象出現，於是便引致教學事倍功半。因此，如果要提高教學的素質，一定要知己知彼，先了解學童的真正情況，然後才安排各種的教學措施，這樣的教學才會有果效。

十、建議

在分析呂小下午校小一及小二學生的篇章寫作和句段寫作的文章後，筆者有以下看法：

1. 可以提早篇章寫作的年齡；
2. 注意學生有興趣寫和討論的題材；
3. 教科書應和學生的主動字彙配合；
4. 加強聽說讀寫結合；
5. 強調跨學科學習，其他的學科都盡量提供寫作的機會，讓學生多練習；
6. 處理學生不會寫但又想寫的字；
7. 留意學生在口頭語言和常用的句式...等
8. 在篇章寫作中，發現學生的問題，然後及早輔導

十一、研究限制

由於本研究只用了一所學校的一班作品寫作文進行分析，所以並不能代表香港所有低年級學生的寫作情況。如果能有其他學校都進行這樣的寫作嘗試，有較多的樣本進行研究，那就可以對香港小學低年級學生的寫作能力有全面的認識。

註：

(1) 關之英(1996)〈教師和家長對香港小學生寫作情況的看法〉，《初等教育學報》1996年第6卷第1及2期，頁129-136。香港：香港中文大學香港教育研究所。

(2) National Writing Project. *Ways of Looking*, p.7

(3) 摩根 (Felicity Morgan) "Writing in Perspective", *Curriculum*, 1989,p.30. (publisher unknown).

參考書目：

National Curriculum Council (1989 - 1990). *The National Writing Project Series*. U.K.: Thomas Nelson and Sons Ltd.

Weaver, Constance (1990). *Understanding Whole Language*. Portsmouth. Heinemann Educational Books Inc.

謝錫金編(1995)《閱讀與寫作：理論與實踐》。香港：青田出版社。

謝錫金、張嘉光、關之英、薛鳳鳴(1994)〈小學中文寫作新教學法---全語文寫作教學〉，《教育曙光》第35期香港教師會頁48-58

編寫組(1994)《作文教學研究》（小學教師繼續教育叢書）上海：上海教育出版社

佟樂泉、張一清(1992)《"注音識字，提前讀寫"研究》。北京：語文出版社

曾昭瑕(1992)《小學作文教學改革新探》。廣西：廣西民族出版社

香港課程發展議會(1990)《中國語文科小一至小六課程綱要》。香港：香港政府印務局

楊再隋、雷實(1988)《當代中國小學作文教學風格》。廣西：廣西人民出版社

吳立崗(1988)〈中小學作文訓練序列方法淺析〉，《教育研究》1988年7月，頁73-77。北京：中央教育科學研究所

郭皆珍（1986）《小學作文以寫放膽文開始為好》。《小學語文教師》1986年3月，頁13-69。上海：上海教育出版社。

莊文中（1984）《中學教學語法新編》。江蘇：江蘇教育出版社。

張春興、邱維城（1972）《國小中高年級兒童作文常用字彙研究》。《台灣省立師範大學教育研究所集刊》第十四輯，頁1-29。台北：台灣省立師範大學教育研究所。

林清山（1966）《兒童語言發展研究》。《台灣省立師範大學教育研究所集刊》第九輯，頁1-158。台北：台灣省立師範大學教育研究所。

作者

關之英，香港教育學院中文系講師

(Received: February 12, 1997; Revised & accepted: June 8, 1997)

初步探究師資訓練學員之生物倫理態度

陳城禮、呂宗偉、曾昭亮

香港教育學院科學系

香港教育學院的使命之一是培養高尚品質的學員，具備成功教師的個人品格；況且香港教育署所制定的教育目標之一就是栽培有倫理觀和有責任感的公民。因此究竟我們的學員在強大的現代科技和經濟物質的衝擊下對生物倫理學的爭論問題能否作出有良知的判斷，是非常重要的。本研究旨在初步探討香港教育學院學員對下列之生物倫理課題之態度以及此等態度與學員本身背景之關係。

A Preliminary Study on HKIED Students' Bioethics Attitudes

One of the missions of HKIEd is to produce quality students with the personal qualities necessary to become successful teachers, and one of the aims of education is to cultivate ethical and responsible citizens. It is therefore of great importance to see whether our teacher trainees have conscientious judgment in these bioethical issues. This pilot study intends to investigate the attitudes of HKIEd students towards various bioethical issues and whether such attitudes are affected by their backgrounds.

近代科技發展神速，人類社會受到科技史無前例的衝擊，以前無法成功的夢想也因科技的發達而付諸實現了。例如沒有兒女的夫婦現在可以透過試管嬰兒傳宗接代；而由這些高科技生育也產生了不少後遺症，例如借助代孕母或借精（卵）者等以求單方製造血緣後裔，這便會帶出社會的道德倫理問題。其他由於醫學或衛生保健的科技發展而引起倫理問題的尚有：遺傳的操縱、控制生育、同性戀、愛滋病與性病、胎兒性別選擇、墮胎、安樂死、器官移植、對囚犯的醫學實驗、生物武器、環境保護等，都引起中外各界人士廣泛的討論。

在社會形態而言，香港是個大都會，重視商業經濟。青少年人可能會過份崇尚金錢物質而忽視道德倫理。西方文化固然有其可取之處，但其中的個人主義令到部分青少年曲解了自由的意義，以為「想做就去做」，不必理會他人的觀感，對中國固有的道德文化如「禮義廉恥」等認為是老套過時。另一方面，由於學校採用的教科書（如科學、生物、歷史、社會等）多說人類是由低等動物進化而來，令到他們較難接受超自然宗教的信仰。在忽略了固有道德和宗教倫理的規範下，香港青少年在需要作出道德倫理的抉擇時可能會失去標準和方向。

我國素重道德教育，根據尚書舜典，三皇五帝是以德化民；而根據論語先進篇，孔子亦極重視道德教育(王, 1986)。時至今日，德育仍是教育的目標之一。例如香港教育學院的使命之一便是培養高尚品質的學員，具備成功教師的個人品格(HKIEd, 1996)；而香港政府所制定的教育目標之一就是栽培有倫理觀和有責任感的公民(Hong Kong Government, 1993)；況且香港教育人員專業操守議會(1995)所制定的守則亦認為一個專業教育工作者應以學生的德育為己任。因此究竟我們的學員在巨大的現代科技和經濟物質的衝擊下對生物倫理學的爭論問題能否作出有良知的判斷，是非常重要的。

本文擬先以香港教育學院的學員作為一試驗性質的先驅研究，然後再擴大至全港區域。以下，我們會分三方面(倫理、科技、宗教)去討論「生物倫理學問卷」(見附錄)上的命題。

生物倫理學與倫理

根據《生物倫理學百科全書》(Reich, 1978)的定義：生物倫理學是「按照道德價值和原則，於生物科學及健康護理範疇對人類行為的系統研究」。生物倫理學又稱生物醫學倫理學，是應用倫理學的一支(羅, 1992)；而倫理學則與美學同屬價值學的分支(Crook, 1990)；而價值學、知識學及形而上學則是哲學內容的三大部門之一(Collier's Encyclopedia, vol. 18)。倫理是「良知的決定，負

74

責的行為 (Hefner, 1987)。牛津字典將Ethics(倫理學)解為「道德的科學，行為的準繩」。由於人是道德生物，他們作出決定時會諮詢良知，會問「這是善嗎？這是對嗎？」。身為「學生靈魂工程師」的教師，在道德行為的表現上更是學生的模範。

基於上述理由，問卷上1至5題(見附錄)由是設定，以評估師範學員對倫理學及生物倫理學的認識。

生物倫理學與科技

現代人類包括教師和學生都受到科技巨大的衝擊，而現代科技的發展亦不免與社會人類的行為有所關連，其中尤以生物倫理學的問題更易引起爭論。科技對改變社會文化有很大影響，這已經是不爭之論(Weil, 1965; Dubos, 1965)；但科技對人類的影響是否有利無害呢，這便有學者提出異議(Hall 1956; Oppenheimer, 1955)。最近香港生殖科技臨時管理局為了應否管制選擇胎兒性別進行為期兩個月的公眾諮詢(香港大公報，1996年7月18日)；當天香港蘋果日報的時評標題為「性別可選擇，天意不能違」。究竟為胎兒選男擇女有否違反自然規律與天意呢？而異星宇宙是否真有自然規律與天意呢？下文科學家相信大自然是有常規可循的。Houston (1984)認為萬物都井井有條，服從於簡單的大自然規律下。

基於上述討論，問卷上6至8題由是設定，以評估師範學員對科技與社會關係之態度。

生物倫理學與宗教

由於倫理學涉及價值的取向，而人的價值觀會受宗教的影響。例如以動物作實驗會違反佛教的禁殺生；試管嬰兒、為胎兒性別選擇、一子政策等會違反天主教的自然生育；同性戀者無法自行生兒育女而需借助捐精捐卵，就算他(她)們真誠相愛地結合，也是違反了聖經的教導；操縱遺傳基因是會干預造物主的創世程序；墮胎則是以人的意思去結束神聖的生命。香港醫學會認為安樂死的第一個反對論據就是它貶低了人類生命的價值，羅秉祥(1994)認為這是指貶低了生命的神聖。

由於生物倫理學與科學和宗教都有關係，而科學與宗教的關係究竟是敵是友呢？這問題雖然已經討論過很多年，但仍引起不少近代學者的興趣，包括研究化學的Fischer (1981 & 1989)，生物學的Sears (1969)，教育學的Renner et al. (1972)，哲學的Moreland (1987 & 1989)和神學的Boice (1986)等。有些學者認為二者是水火不容的(Russell, 1957; Raven, 1959; Ostovich, 1986)；但另外有學者認為二者是相輔相承的好友(Jeeves, 1969; Shrader, 1964; Clifford, 1988)。其中爭論的焦點之一就是生命起源究是進化的還是創造的(Bozarth, 1978; Buswell, 1975; Newsweek, 1980; Ross, 1994; 潘，1984; 莫，1985; 池，1993等)。

基於上述討論，問卷上9至16題由是設定，以評估師範學員對宗教及對生物倫理問題之態度。

研究目標

(1)性別

有關學生之性別如何影響科學教學的研究已有很多(例如Husen et al., 1974; Humrich, 1988; Jegede 1990; Welborn 1990)。但是有關性別如何影響生物倫理學態度的研究卻是甚少。

(2)社會背景

有關學生之社會背景如何影響其對科學態度的研究也有不少，例如研究朋輩之影響(Gogolin, 1985)，父母之影響(Schlegal, 1990)，老師之影響(Cross & Price, 1996)等。但是有關社會背景如何影響生物倫理學態度的研究卻是不多。

(3)生物學知識

Kelly (1990)認為生物學與倫理學是有關聯的，因為生物學是研究生命的學問而倫理學是研究生命正確行為的學問；而且他認為進化論對學生的倫理發展有影響。其他學者(例如Downie & Alexander, 1989; Downie, 1993; Dreyfus, 1995; Kormondy, 1990)也認為倫理學與生物學有關。

(4)宗教傾向

已有不少研究論及老師之宗教傾向如何影響其教學(例如Affannato, 1986; Reelts, 1987)，但是有關宗教如何影響學生對生物倫理態度的研究卻極少。

基於上述討論，問卷上有關學生的背景由是設定，以評估師範學員對生物倫理學之認識和態度如何受其1)性別，2)社會背景，3)生物學知識，和4)宗教傾向等因素的影響。

研究方法

本文主要是採用數量分析的研究方法，量度工具是問卷(見附錄)，問卷上共有16條問題以評估師範學生對倫理學、生物倫理學、科技、及宗教之態度。其選取原因已見於上文。採用Likert度量制，將學生之態度由極反對至極同意共分為5度，所得之數據成為倚賴變項(dependent variables)；而學生之1)性別、2)社會背景、3)生物學知識、和4)宗教師的等因素則作為獨立變項(independent variables)。本文擬先以香港教育學院的學生作為一試驗性質的先驅研究，然後再擴大至全港區域。除了選用一班夜間班以比較不同之社會背景外，其餘六班學生皆是隨意抽取。共收回有效問卷160餘份，並由電腦統計軟件SPSS分析之。

結果與討論

(1) 學生背景

所抽取之七班同學(2PC1, 2SE1, 3PC1, 2IP2, 3PC2, 3Y3及3SC1)*，樣本百分比為11.5, 9.1, 20.3, 22.4, 18.9, 4.2, 及13.6。數據顯示：大部分(79%)為女同學；只有40%的同學曾在高中(中五)時修讀生物科；宗教傾向方面：59%無宗教信仰，信基督教和天主教合佔36%，信佛教3.2%，信自己0.7%，信道教和信其他宗教各佔0.4%。大部分同學(73%)認為道德倫理是沒有絕對標準的；但當要求選取道德倫理的絕對標準時，有28%選自己，27%選聖經，4%選道德經，2%選論語，2%選佛經，5%選其他，32%選「無一項對」。當要求選取最影響其生物倫理觀念的人時，選師長和選自己的各佔36%，選父母的佔20%，選朋友的只佔8%。

(2) 學生對倫理學及生物倫理學的認識

有64%同學正確地指出倫理學是屬於哲學內容中的價值學；有70%同學正確地指出倫理學是探討「甚麼是善」、「美」。然而，有13%的同學認為倫理學與科學無關，20%則認為與經濟無關；只有45%指出倫理學與各項都有關。當問及生物倫理學是研究甚麼時，只有39%正確地指出它是研究人類(而非其他哺乳類或脊椎動物)於生物科學的行為。此外，有12%和52%的學生認為安樂死及環保是不屬於生物倫理學的課題。

(3) 學生對科技、宗教、和生物倫理學的態度

1)<u>性別的影響</u>

表格1 <u>性別對科技、宗教、和生物倫理學態度的影響</u>

	所有同學	男同學	女同學	One-Way Anova(性別)
變項	平均數	平均數	平均數	p=
中性	3.17	3.32	3.12	.138
影響	4.3	4.57	4.31	.009
[illegible]	2.09	2.03	2.1[illegible]	.655
敵人	2.23	2.25	2.22	.817
進化	2.56	2.53	2.57	.873
分子	[illegible]	3.10	2.9[illegible]	.218
創造	3.3[illegible]	3.50	3.30	.329
墮胎	2.28	2.03	2.71	.230
同性	2.67	2.7[illegible]	2.65	.729
一子	2.2[illegible]	2.49	2.17	.011
選性	1.9[illegible]	1.88	1.9[illegible]	.815

平均值 1=極不同意 2=不同意 3=無意見 4=同意 5=極同意

中性 = 對道德倫理而言科技是中性的.
影響 = 科技對改變社會和文化有很大影響.
[illegible] = 大自然的運作是沒有意見可循的.
敵人 = 科學與宗教是敵人而非朋友.
進化 = 人類是由低等動物進化而來.
分子 = 科技知識能幫助建立宗教倫理.
創造 = 大自然的定律是由神所創造的.
墮胎 = 我贊成墮胎合法化.
同性 = 我贊成同性戀合法化.
一子 = 我贊成一子政策.
選性 = 我贊成父母能選擇性別.

由表格1可見男女同學對變項「影響」及「一子」所代表之兩句陳述有顯著不同之態度。雖然大家都同意科技對改變社會和文化有很大影響，但男大專生對此影響之同意程度(4.57)比女大專生(4.31)為高。在另一方面，雖然大家都不贊成一子政策，但女大專生對此不贊成之程度(2.17)比男大專生(2.49)為高。

*2PC1及2SE1為二年制全日制課程，學生在中七畢業；3PC1, 3PC2, 3Y3及3SC1為三年制全日制課程，學生入學程度為中五；2IP2為二年制夜校課程，入學要求為大專程度。學生年齡：日校平均為20歲，夜校約30歲。

2)社會背景的影響

表格 2 社會背景對科技、宗教、和生物倫理學態度的影響

	所有學生	在職進修夜校學生	職前進修日校學生	One-Way Anova
變項	平均數	平均數	平均數	p =
科技	3.17	3.15	3.17	.8307
影響	4.37	4.11	4.44	.0015
常規	2.09	2.11	2.09	.8685
敵對	2.23	2.08	2.28	.1764
進化	2.56	2.68	2.53	.3296
尊重	2.95	3.03	2.92	.3650
[illegible]	3.53	3.10	3.50	.021
墮胎	2.78	2.80	2.74	[illegible]
同性	2.67	2.35	2.79	.0296
[illegible]	2.2[illegible]	2.37	2.19	.0713
選性	1.91	2.15	1.82	.0391*

*P<.05 1=極不同意 2=不同意 3=中立/無意見 4=同意 5=極同意

由表格 2 可見夜校在職進修和日校職前進修的學生對「影響」、「同性」和「選性」所代表之三句陳述有顯著不同之態度。雖然大家都同意科技對改變社會和文化有很大影響，但年紀較大、人世較深的夜校學生對此影響之同意程度(4.11)比平均年齡小十歲的日校學生(4.44)為低。在另一方面，雖然大家都不贊成同性戀合法化，但年紀較大的夜校學生比較年紀較輕的日校學生更為傳統保守(2.35對2.79)。然而，當問及是否贊成為胎兒選擇性別時，雖然大家都不贊成，但這次夜校學生卻比日校學生持更時髦開放的態度(2.15 vs. 1.82)。也許他們已屆適婚之齡並且考慮生兒育女吧。

3)生物學知識的影響

表格 3 生物學知識對科技、宗教、和生物倫理學態度的影響

	所有學生	在高中曾修讀生物學的學生	在高中未曾修讀生物學的學生	One-Way Anova (p值)
變項	平均數	平均數	平均數	p =
科技	3.17	3.22	3.14	.363
影響	4.37	4.42	4.35	.357
常規	2.09	1.88	2.22	[illegible]
敵對	2.23	2.12	2.2[illegible]	[illegible]
進化	2.56	2.35	2.72	[illegible]
尊重	2.95	3.02	2.93	.533
[illegible]	3.53	3.56	[illegible]	.52[illegible]
墮胎	2.78	2.76	[illegible]	[illegible]
同性	2.6[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	2.27	2.38	2.17	[illegible]
選性	[illegible]	[illegible]	[illegible]	.802

*P<.05 1=極不同意 2=不同意 3=中立/無意見 4=同意 5=極同意

由表格 3 可見在高中曾修讀生物學和未曾修讀生物學的學生只對「常規」和「進化」所代表之兩句陳述有顯著不同之態度。雖然大家都反對「大自然的運作是沒有常規可循」，和「人類是由低等動物進化而來」，但曾修讀生物學者反對程度較高(前句為1.88對2.22，後句為2.35對2.72)。這也許表示透過更多科學的訓練，學員會更了解到大自然的運作是需要遵循科學定律的；而且亦了解到由低等動物進化成人的理論只是一套不能被科學實驗証實的學說。

4)宗教傾向的影響

表格 4 宗教傾向對科技、宗教、和生物倫理學態度的影響

	所有學生	有宗教信仰的學生	無宗教信仰的學生	One-Way Anova (宗教)
變項	平均數	平均數	平均數	p =
科技	[illegible]	[illegible]	[illegible]	[illegible]
影響	4.37	4.41	4.33	.393
常規	2.09	1.96	2.17	.122
敵對	2.23	2.00	2.39	.032
進化	2.56	1.96	3.00	.000*
尊重	2.95	3.21	2.75	.000
[illegible]	3.53	4.39	2.75	.000
墮胎	2.78	2.27	3.10	.000
同性	2.67	2.36	2.86	.003*
[illegible]	2.27	2.38	2.20	.390
選性	1.92	1.71	2.04	.022*

*P<.05 1=極不同意 2=不同意 3=中立/無意見 4=同意 5=極同意

由表格 4 可見有宗教信仰的學生對墮胎(2.27 比 3.10)、同性戀(2.36比2.86)和為胎兒選擇性別(1.71比2.04)三者比無宗教信仰的學生持更傳統保守的態度。由於現時香港已有一間私家醫療機構提供胎兒性別選擇服務，香港生殖科技臨時管理局已於1996年7月17日起作為期兩月向市民諮詢對此項服務的態度。根據本文數據顯示，不論有否宗教信仰，香港教育學院的學生都傾向於反對為胎兒選擇性別，而有宗教信仰者反對尤甚。

表格 4 同時顯示，雖然有否宗教信仰並不太影響個人對科技與社會關係之看法，但對科學與宗教的關係，卻有顯著不同之態度。有趣的是，雖然有信仰者比較反對科學與宗教是敵對的(2.00)，無信仰者對此也不表贊同(2.39)。人當然是有道德倫理的生物，但有信仰者反對人是由低等動物進化而來(1.96)，無信仰者則對此保持中立(3.00)。此外，有信仰者較支持科技的操作應尊重宗教倫理(3.21)，而且大自然的定律是由神所創造的(4.39)，但無信仰者則對此兩點都較為反對(2.75)。

BEST COPY AVAILABLE

結論

要振興中華，培養人民的道德和科技水平都是很重要的。但當科技發展至試管嬰兒、代孕母、胎兒性別選擇、操縱遺傳、控制生育、墮胎和安樂死等會影響人類生命的時候，便會引起社會關注道德倫理的問題。我國素來重視道德教育，但香港是一個資本主義的現代化都市，青少年人可能會崇尚物質和科技而忽視道德。由於香港之大專學生將會是未來特區之棟樑，而師範學生更對下一代的思想影響尤深，所以究竟我們的學員在科技和物質的沖擊下對生物倫理問題能否作出有良知的判斷，是非常重要的。

在研究結果顯示：

(1) 對倫理學及生物倫理學的認識

有64%學員正確地指出倫理學是關於哲學內容中的價值學；然而，只有45%指出倫理學與道德、宗教、科學、經濟等各項都有關。當問及生物倫理學是研究甚麼時，只有39%正確地指出它是研究人類(而非其他哺乳類或群居動物)於生物科學的行為。大部分同學(73%)認為道德倫理是沒有絕對標準的。當要求選取最影響其生物倫理觀念的人時，選師長和選自己的各佔36%，選父母的佔20%，選朋友的只佔8%。

從以上數據可知：學員對倫理學與哲學的關係，以及對生物倫理學的定義和範疇都是有所不足的。大部分同學對面臨道德倫理的抉擇時是欠缺明確的標準；而在生物倫理觀念上，老師比較父母和朋友的影響更為重要。

(2) 對科技、宗教、和生物倫理學的態度

在性別因素方面，雖然男女學生都不贊成一子政策，但女大專生反對之程度明顯地較男大專生為高。在社會背景因素方面，雖然學生平均傾向於反對同性戀合法化，但年紀較大、入世較深的夜校學生比較日校學生更為保守；另外雖然都傾向於反對選擇胎兒性別，但這次夜校學生卻比日校學生更為開放。在生物學知識因素方面，雖然學生平均傾向反對「大自然的運作是沒有蓄見可循」，但「人類是由低等動物進化而來」，但曾修讀生物學的則持反對程度較高。在宗教因素方面，有宗教信仰的學生對墮胎、同性戀和為胎兒選擇性別三者比無宗教信仰的學生持更傳統保守的態度。

References

Affannato, F. E. (1986). *A Survey of Biology Teachers' Opinions about the Teaching of Evolutionary Theory and/or the Creation Model in the United States in Public and Private Schools*. Ph.D. dissertation. The University of Iowa.

Boice, J. M. (1986). *Foundations of the Christian Faith*. IL: InterVarsity Press, p.71.

Bozarth, G. R. (1978, Feburary). The meaning of evolution. *The American Atheist, 19*.

Buswell J. O. (1975, August). Creationust view on human origin. *Christianity Today, 4*.

Clifford, A. (1988). *The Relation of Science and Religion/ Theology in the Thought of Langdon Gilkey*. Ph.D. dissertation. The Catholic University of America.

Crook, R. H. (1990). *An Introduction To Christian Ethics. Introduction: To the student*, (P. ix).

Cross, R. T. & Price, R. F. (1996). Science teachers' social conscience and the role of controversial issues in the teaching of science. *Journal of Research in Science Teaching 33* (3), 319-333.

Downie, J. R. and Alexander, L. (1989). The use of animals in biology teaching in higher education. *Journal of Biological Education, 23* (2), 103-111.

Downie, R. (1993). The teaching of bioethics in the higher education of biologists. *Journal of Biological Education 27* (1), 34-38.

Dreyfus A. (1995). Biological knowledge as a prerequisite for the development of values and attitudes. *Journal of Biological Education 29* (3), 215-219.

Dubos, R. (Ed.). (1965) Science and Man's Nature. In *Science and Culture*. Gerald Holton. e.d. pp. 251-272. Boston: Beacon, p. 252.

Fischer, R. B. (1981). *God Did it, But How?* Michigan: Zondervan.

Fischer, R. B. (1989). Scientific truth: a case study within the biblical christian world view. *Perspectives on Science and Christian Faith, 41* (3):130-136.

Gogolin, L. (1988). *A Quantitative and Qualitative Inquiry into the Attitudes toward Science of College Students.* Ph.D. dissertation. Micigan State University.

Hall, E. (1956). *Modern Science and Human Values.* New York: D. Van Nostrand, p.3.

Hefner, P. (1987). Sociobiology and Ethics. in *Religion, Science, and Public Policy.* Frank T. Birtel (Ed.). pp. 116-137. NY: Crossroad, p.134.

Hong Kong Government (1993). *School Education in Hong Kong: A Statement of Aims.* Hong Kong: Government Secretariat, pp. 19-20.

HKIEd (1996). *Prospectus for Full-time Certificate in Education Courses 1996-97.* Hong Kong Institute of Education.

Houston, J. (1984). *Is It Reasonable to Believe in God?* Great Britian: The Handsel Press, p.57.

Jeeves, M. A. (1969). *The Scientific Enterprise & Christian Faith.* IL: Inter-Varsity Press.

Humrich, L. E. (1988). *Sex Differences in Science Attitude and Achievement.* Ed.D. disseration. Columbia University Teachers College.

Husen, T., et al.(1974). Sex differences in science achievement and attitudes: a swedish analysis by grade level. *Comparative Education Review, 18,* June, 292-304.

Jegede, O. & Inyand, N. (1990). Gender differences and achievement in integrated science among junior secondary science students: a nigerian study. *International Review of Education, 36* (3): 364-368.

Kelly, P. (1990). Biology and ethics: a theme and variations. *Journal of Biological Education, 24* (1), 18-22.

Kormondy, E. J. (1990). Ethics & values in the biology classroom. *The American Biology Teacher, 52* (7), 403-407.

Moreland, J. P. (1987). *Scaling the Secular City,* pp. 185-223. Michigan: Baker.

Moreland, J. P. (1989). *Christianity and the Nature of Science.* Michigan: Baker, p. 56.

Newsweek (1980, November 3). *Is Man a Subtle Accident?* Newsweek, 95.

Oppenheimer J. (1955). *The Open Mind.* NY: Simon and Schuster, p.5.

Ostovich, S. T. (1986). *History, Theology, and the Philosophy of Science.* Ph.D. dissertation. Marquette University.

Raven, C. E. (1959). *Science, Medicine and Morals.* New York: Harper & Brothers.

Reich, W. (Ed.). (1980). *The Encyclopedia of Bioethics (Vol. 1).* Macmillan, p. xix.

Renner J. W. & D. G. Stafford (1972). *Teaching Science in the Secondary School.* New York: Harper & Row.

Roelfs, F. C. (1987). *Academic Factors Affecting the Status of the Teaching of Evolution in Arkansas and Missouri.* Ed.D. disseration. University of Missouri-Columbia.

Ross, H. (1994). *Creation and Time.* CO:Navpress.

Russell, B. (1957). *Why I Am Not a Christian.* New York: Simon and Schuster.

Schlegal, R. A. (1990). *Identifying the Elements of Attitude Formation by Middle School Students toward High School Science.* Ed.D. disseration. Temple University.

Sears, J. W. (1969). *Conflict and Harmony in Science and the Bible*. MI: Baker.

Simpson, M. (1996). Teaching controversial issues. *Social Education, 60* (1), 5.

Shrader, J. H. (1964). *Science and Religion Faith in Mutual Support. In Religion Ponders Science*. Edwin P. Booth (Ed.). pp. 19-218. NY: Appleton-Century, p.219.

Weil, E. (1965). (Ed.). Science in Modern Culture. In *Science and Culture*. Gerald Holton. (pp. 199-217). Boston: Beacon, p.199-200.

Welborn, T. (1990). *Gender Differences in Science Education: A Case Study*. Dissertation Abstracts International, 51/05, 1569A. (University Microfilms No.9029224)

沈六(1986) 道德發展與教育之研究 台北：水牛出版社 頁1

[illegible]著、曾文瑞譯(1993) [illegible] 香港：天道書樓

香港教育人員專業操守議會(1995) 香港教育專業守則 香港政府印務局

莫瑞士著、彭國良譯(1985) 創造論：神話抑科學 台北：校園書房

[illegible](1984) 「進化論：科學與學術[illegible]？」 台北：更新傳道會

羅秉祥(1992) 黑白分明——基督教倫理縱橫談 香港：宣道出版社(頁205-213)

羅秉祥(1994) 「生死男女——選擇你的價值取向」 香港：突破出版社(頁91)

作者

陳城禮，講師
呂宗偉，高級講師
曾昭亮，首席講師
香港教育學院科學系

(Received: July 8, 1997; Revised & accepted: September 18, 1997)

80

附錄

生物倫理學問卷

請將你的意見勾於最左方　　班別:_____　　日期:_____

_____ 1. 倫理學是屬於哲學內容中那一部份?
　　A. 知識學　B. 形而上學　C. 價值學

_____ 2. 倫理學是探討: 甚麼是.....A. 真　B. 善　C. 美　等

_____ 3. 倫理學與下列何者無關?
　　A. 道德　B. 美學　C. 宗教　D. 教育
　　E. 科學　F. 政治　G. 經濟　I. 無一項對(None of the above)

_____ 4. 生物倫理學是研究:
　　A. 生物(特別是哺乳類動物)的生理現象.
　　B. 人類對生物科學的行為(是否合倫理道德).
　　C. 群居動物的社會關係

_____ 5. 下列那課題不屬於生物倫理學?
　　A. 狗之忠思　B. 安樂死　C. 環保

極同意 1　2　3　4　5　極同意
非常　無意見

_____ 6. 對道德倫理而言, 科技是中性的.
_____ 7. 科技對我們社會文化有很大影響.
_____ 8. 大自然的運作是沒有需要可循的.
_____ 9. 科學與宗教是敵人而非朋友.
_____ 10. 人類是由低等動物進化而來.
_____ 11. 科技的操作應遵守宗教倫理.
_____ 12. 大自然的定律是由神所創造的.
_____ 13. 我贊成墮胎合化決.
_____ 14. 我贊成同性戀合化法.
_____ 15. 我贊成一子政策.
_____ 16. 我贊成為胎兒選擇性別.

背景:
1. 性別 男　女　　2. 年齡(F.5時曾否修讀生物科(Biol)?
3. 宗教_____
4. 最影響你對　生物倫理學　的人是
　　A. 父母　B. 師長　C. 朋友　D. 自己
5. 道德倫理是有絕對標準的. 對　否
6. 我認為道德倫理的絕對標準是:
　　A. 佛經　B. 自己　C. 聖經　D. 道德經　E. 論語
　　F. 名人語錄　G. 其他_____　H. 無一項對(None of the above)

New Horizons in Education No 38,1997

Enhancing Teaching Through Action Learning: Helping Innovation in Hong Kong

John Biggs
University of NSW

Raymond Lam
University of Hong Kong

Action learning (AL) is an increasingly commonly used strategy for improving the quality of teaching and learning. The focus in AL is not a particular technique or teaching aid, but the process of teaching itself, where the teacher monitors and reflects on the ongoing process in reflect-plan-act-monitor cycles. The outcomes of the cycles progressively become part of the teacher's ongoing repertoire, so teaching is intended to continue to improve. Previous work suggests that AL is particularly useful in helping teachers cope with innovation. AL has been used with great success in the tertiary sector in Hong Kong, but it does not appear to have been used in the school sector. The aim in the present paper is to describe some of this tertiary work, and to suggest that AL seems particularly well suited to addressing the problems experienced in the implementation of TOC.

透過行動學習去提高本港教學質素

行動學習是一種越來越普及被採用來提高教和學質素的方法。「行動學習」本是一種特殊的教學技巧或輔助，它本身就是教學的過程，教師通過一個反思、計劃、行動、監察的循環過程來自我監察和反思這個循環過程的結果繼續成為教師工作的一部份，使教學能不斷改進。過往的研究指出「行動學習」最能鼓勵教師更新的教學方法。行動學習在香港的專上教育曾有很大的成果，但是在中學教育中好像還未被採用。本文的目的是要介紹一些專上教育在這方面推行的工作，及對「行動學習」能特別適合及解決一些在推行「目標為本課程」所遇到的困難作出一些建議。

Introduction

In all educational sectors in Hong Kong, there is much current concern about the quality of teaching and learning. In the university sector, the proportion of students seeking university level qualifications has increased from under five per cent of the 17-20 age group ten years ago, to nearer 20 per cent at the present time (Census & Statistics Department, 1997). The new clientele of students is different from the academic elite we have been used to, and they require more effective teaching methods than lecturing (Biggs, 1993). The University Grants Committee has recognized this and in recent years has offered considerable support for enhanced teaching through the Teaching Learning Process Quality Reviews of its institutions, and by making large sums of money available specifically for the improvement of teaching: $33 million in the 1992-5 triennium, $150 million in the following triennium. Hong Kong can now boast a centre or unit responsible for enhancing the quality of teaching in every university in the system; in this it is further ahead than any Western country.

Much of the money dedicated to the enhancement of teaching in particular institutions was used to fund staff-initiated projects, in many of which a particular product, frequently a software package or some ed tech device, was adapted and evaluated for use with a particular course or semester-length teaching unit. Product-oriented development of this kind is intended to help the teacher teach more effectively, but in much the same way as before. It may possibly lead to better learning outcomes, probably to more comfortable teaching, but it does not necessarily lead one to reflect on the process of teaching itself. There is little question of the teacher rethinking their position about why and how they are teaching, as they are specifically required to do in action learning.

In 1994, $13 million was awarded by the UGC to the to the Action Learning Project (ALP), now completed, and $9.7 million for a second ALP for 1997-9. Action learning is a method of staff development that produces changes in teaching that result from personal reflection on the part of the teacher. The main aim is not to produce an end product of some kind, although it might, but to become *reflective* about

one's teaching. The target is the teacher himself or herself, so that they become ready to change in productive ways. The particular changes then follow as a result of a changed philosophy of teaching and how one now sees change as necessary in one's own context. As will be discussed below, an external evaluation of the first round of the ALP was positive (Biggs & Lam, 1997).

In the school sector in Hong Kong, two major recent innovations are the School Management Initiative (SMI), and Target Oriented Curriculum (TOC). SMI is concerned with improving home-school cooperation, and in that it was unsuccessful (Wong, 1995); furthermore, it is not concerned with teaching and learning as such. TOC is so concerned, and again there are very mixed messages as to the success of TOC (Morris *et al.*, 1996). Part of the problem is that TOC requires teachers not only to change the way they assess students, but in the way they *conceive* the nature of assessment and its place in the whole teaching/learning process itself. In implementing TOC, it is not simply a matter of using progressive assessment and keeping records of cumulative progress. If TOC is to work properly, teachers need to *think about teaching and assessment differently*. For example, giving a test in the TOC framework is not to see who is the best child in the class, or who is to go into a Band 1 school, but to see if the child can meet the curriculum targets, and if so how well. Comparisons between children, once so central to assessment practice in Hong Kong schools, are irrelevant (Biggs, 1996).

Implementing an innovation such as TOC, then, requires not only that teachers learn new skills, but that they develop a different conception of the nature of teaching, so that everyday classroom tasks and routines take on a different significance that is appropriate to the innovation. It seems to be this feature of TOC that is causing the difficulties (Morris *et al.*, 1996), and it is also this feature, of changing teachers' perspectives on teaching and learning so that they can cope with innovations, that action learning is particularly designed to effect (Elliott, 1991).

The purpose of the present paper, then, is to describe action learning, and how it has worked in the Hong Kong tertiary context. We then address its relevance and potential for helping to deal with some of the problems encountered in implementing TOC.

Action learning and enhancing teaching

The basics of action learning

Action learning is process-oriented, the main process in question being one's own teaching, not product-oriented, where a teaching innovation is tried out to see if it works. If product-oriented research is to provide the fish for today's meal, action learning might be seen as the net that provides a continuing supply of educational fish.

There are several different schools of action research, of which action learning is one aspect (see below), each emphasising a different theoretical or ideological aspect (e.g. Elliott, 1991; Kemmis & McTaggart, 1988; Lewin, 1946; Stenhouse, 1975). Some writers stress that action research must be social and collaborative. Kemmis and McTaggart (1988), for instance, take a "critical-emancipatory" view, which sees action research as a process for collaboratively bringing about political change. Lewin (1946), regarded as the originator of action research, was on the other hand entirely pragmatic, using action research simply as a tool for improving practice, frequently in groups, but not necessarily. We take Lewin's pragmatic line here; our interest is only in the practical use of action learning as a means of improving teaching, and so we use the less formal term "action learning" (AL), rather than "action research". The difference is that action research is a *research* tradition extending back 50 years or more; like all respectable research its results are intended for publication. Action *learning* is less formal: it is not necessarily intended for publication, and so does not have to be generalisable enough to contribute to the research literature (although it is highly desirable that it should), but it uses the same cycles of reflection, planning, implementation, and monitoring in order to improve the target of the research, in this case the teaching of an individual teacher (Kember & Kelly, 1994).

The following are the essential ingredients of AL:

1. the aim is to *improve current practice*
2. the researchers are the *participants*, not outsiders brought

in to propose expert solutions, and the topic is decided by the participants.

3. the driving conceptual process is *reflection* on the part of the participants in terms of a *theory* that provides the pivot for change. AL is *systematic*, involving the cycle: reflect, plan, act, observe, reflect on the results, and so on into cycle two.
4. (2) above notwithstanding, it is sometimes necessary to facilitate the reflective and other processes necessary for AL by using a resource person, or "critical friend" (Stenhouse, 1975), who may adopt various roles including adviser, theorist, critic, source of technical information, and so on.

The basic nature of AL may be summed up as "reflective practice" (Schon, 1983). Reflection is the observation and evaluation of one's own actions through a conceptual framework, which leads to changed decision-making. It is reflection that turns the novice teacher into the expert. "Reflection" is actually not a good word: literally, it means an accurate reproduction of a state of affairs, when actually we want to *change* the existing state of affairs. We change by looking at what-is, and seeing what-might-be, a transformation brought about with the help of *theory*. Lewin (1946) put theory at the centre of AL with the marvellous words: "There's nothing so practical as a good theory".

Having a good theory and wisely putting it into practice is how teachers may begin to cope with implementing change; they will not change if they cannot understand, and they cannot understand if they are theoretically barren. A theory is that network of assumptions, implicit or explicit, that causes the light to glow. The initial jolt that says "There's a problem here" comes about because one is reflecting on what is happening.

But what is it precisely that we want to change? That depends on the aim of the particular project, but three sets of targets can be distinguished:

Table 1: Targets in action learning projects

To do with Students	*To do with Teachers*	*To do with the Institution*
approaches to learning	teaching skills	curriculum, workload
learning outcomes -	attitudes	logistics of delivery
attitudes	perspective transformation	assessment, grading,
coping strategies	inter-collegial skills	course design

One outcome, *perspective transformation* is vital, whatever the specific targets of an action learning project (Mezirow, 1981). That is, as the subject (and object) of reflective enquiry, the action researcher should undergo a *personal change* in his or her theory of teaching, including one's views of the nature of the teaching and assessment processes, and of oneself as a teacher, such as strengths, weaknesses, areas needing improvement, and so on. Reflection if it is effective helps one to become consciously aware of one's theory of teaching, and of its relation to changed practice.

Action learning in practice

Action learning has been used in schools, particularly in the UK, for thirty odd years, beginning essentially with the work of Stenhouse (1975). Projects may be teacher-initiated, school-initiated, or system-initiated, which is useful in helping school managements and teachers cope with a major innovation. The last is particularly relevant to the problems of TOC here in Hong Kong. Teachers may engage in "first order" or teacher-based action research, and the critical friends and management in "second order" action research. The latter is action learning applied to improving *project management* rather than to improving teaching. It is concerned with what can be learned and generalised from the first order action learning in a particular project, which can inform both how to continue with the given project, and to add to our general knowledge of useful action learning strategies.

Elliott (1991) and McNiff (1988) give several examples of successful action learning projects at school level. Most projects are focused on staff development with individual teachers, but some refer to systems based projects. For example, the Ford Teaching Project (Elliott, 1991) investigated the problems of implementing inquiry/discovery methods in both primary and secondary schools. The "official"

assumption at the system level-not unlike official assumptions with respect to TOC- was that "all the teachers required were appropriate curriculum materials. This... proved to be unfounded." (*op. cit.*, p. 29). 40 teachers in 12 schools were involved. An initial and major problem was a second-order one for the researchers to consider: how to get the teachers to reflect in the first place, to even see that there was a problem. After negotiating an "ethical framework", which for example laid down rules on what the researchers could or could not do (all data confidential, observe classes only with permission, etc.), the researchers found a few teachers who did appear ready to reflect and who admitted the critical friends to their classrooms. They then recorded teaching episodes, and interviewed teachers and students, which led the researchers to formulate hypotheses which they circulated amongst the other teachers, who then responded with a great deal of interest, and were happy to discuss with the initial reflective teachers. What followed thereafter is complex, but in the end teachers were led to examine and compare their own theories of teaching, producing conceptual change through reflection. There were also some important second order outcomes concerning the problems of personal change. The main premise is:

> *Once teachers begin to clarify and test their practical theories, the new theories tend to be reflected in changes in practice. The main problem is getting teachers to self-monitor their practice. Elliott (1991, p. 38)*

The parallels between Elliott's use of AL in the Ford Project and the problems in TOC are fairly clear. In both cases, management at systems level thought that the introduction of the materials and procedures would be sufficient for teachers to adapt successfully to the innovation. Likewise, many teachers in both cases were unaware that there was a problem, while there were a reflective few with whom the innovation was beginning to work as it should.

Before prescribing AL as a panacea, however, one might ask, as one reasonably should of all exotic remedies: What evidence is there that action learning might work in Hong Kong?

Action learning in Hong Kong

In Hong Kong, virtually the only action learning has been at the tertiary level, the previously mentioned UGC funded *Action Learning Project* (ALP) (Kember, Ha, Lam, Lee, Ng, Yan, & Yum, 1997). This project comprised a Project Coordinator, an Administrative Assistant, and five Associate Project Coordinators, who were allocated as critical friends to groups of projects. Proposals from 51 teachers from all of the then UGC tertiary institutions were selected for funding; areas such as multimedia, English language, teaching methods including problem-based learning, assessment, and so on, were included.

It would be inappropriate here to describe these projects in detail. Our present purpose is (a) to give some assessment of the success of the project as a whole, and of how the individual the project directors saw their teaching as being affected by participating in AL, and (b) to outline the factors that seem to make for a successful project.

At the conclusion of each project, project directors were invited to completed a 73-item closed questionnaire, and a short open-ended questionnaire, on various aspects of the running of their project. Full details of the rationale of the questionnaires and their administration can be found in Kember *et al.* (1997).

In response to the open-ended question: "Do you think your project was successful?" replies were Yes: 44, Partially: 10, No: 2. Defining "success" fell into different categories: student learning, improved collegiality within the project team, changes in one's own teaching, and most importantly, perspective transformation:

- "awareness of the students' perspective on my teaching"
- "I'm not afraid to innovate any more"
- "more impact on the quality of learning than any top-down quality initiatives I've encouraged!"

The closed questionnaire addressed the question of outcomes in more detail (Table 2: "agree" and "strongly agree" combined):

Table 2: Some views of ALP Project Directors

Was your project successful?	
lasting effect on my teaching	87%
greater awareness of factors affecting the quality of my teaching	92%
have become more reflective about my teaching	89%
strengthened my belief in the value of research into teaching	90%
deeper understanding of educational research in general	82%
has improved my research ability	59%
similar work will continue after the end of this academic year	72%
The project led to an improvement in:	
students' performance	61%
students' learning approaches	69%
students' attitude	62%
teacher-student relationships	69%
my teaching	82%
others' teaching in my department	38%

These data are encouraging: 87% thought that their involvement in the ALP would have a lasting effect on their teaching; 90% that they were more aware of what affected the quality of their teaching; 82% felt that their teaching had improved; 61% that students' performance and their attitudes had improved.

A content analysis of the items of the questionnaire used in the evaluation survey suggested that the items of the questionnaire could be grouped into a number of subscales, each measuring a different aspect of the project. There were three types of subscale:

Determining factors

1. *Motivation*. This subscale represented enthusiasm of the participating.
2. *Appropriate framework*. The reflective and cyclical paradigm for reflective teaching was used as a framework for projects. This subscale assessed the appropriateness of the framework as seen by participating teachers.
3. *Process*. The subscale assessed how well the project had been implemented: whether the project completed on schedule, whether there were any changes to the plan or procedural hitches
4. *Teamwork*. A presumably essential aspect of the action learning model is the teamwork between the teachers and the support staff that helped the teachers in collecting data on their teaching and in evaluating the teaching methods they adopted; this subscale assessed whether good teamwork was obtained in the particular project.
5. *Departmental support*. Extent to which the project director's department head and colleagues supported the project.

Intermediate outcomes

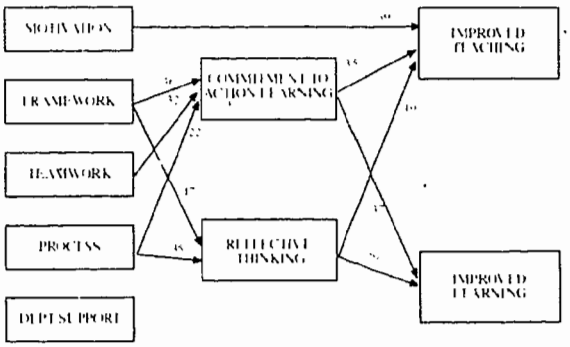
1. *Commitment to AL*. Belief that the project was successful and had a lasting effect on one's teaching. "I would do action learning in future" was a key item .
2. *Reflective thinking*. Belief that one now was more reflective and had a better understanding of the role of research in teaching.

Ultimate outcomes

1. *Improved teaching*. The teacher's perceptions that teaching and teacher-student relations had improved.
2. *Improved learning*. The teacher's perception that students' performance, learning approaches, and attitudes had improved.

Using the computer package LISREL, a causal model was used to examine the factors leading to what the project directors saw as a successful outcome (details in Biggs & Lam, 1997).

Figure 1. Path analysis: factors influencing teaching and learning



(received 18.6.97, accepted 12.7.97, revised 11.8.97)

Motivation was the only factor that had a direct effect on improved teaching, and with a calculated total effect of .39 was the largest effect, direct or indirect, on *improved teaching*. All other effects were indirect. The next most important effect on *improved teaching* and *improved learning*, was *appropriate framework* (0.22 and 0.27 respectively). The path coefficients with the intermediate outcome variables, *commitment to action learning* and *reflective thinking* however suggest that seeing AL as an appropriate framework is not enough: one needs (a) to be committed to it, e.g. sufficiently so to use it again in the future, and (b) to use it as a framework for reflective thinking about teaching.

The three process factors - *process*, *teamwork* and *departmental support* - had less effect on the outcomes of the project. *Departmental support* had no significant effect on the success of the project, which suggests that if the project director was committed, had a good team, and things ran well, departmental head and colleagues were irrelevant, and institutional lack of support did not prevent a good outcome.

The causal model provided a satisfactory description of the data in that 50% of the variation in *improved teaching* and 30% of the variation in *improved learning* were accounted for. Most of the effects could be explained by initial motivation, by commitment to the framework of AL, and by reflective thinking.

These data tell us that motivation to carry out an effective project and, independently of that, the effective use of the AL framework will bring about the desired outcomes. The corollary to that of course is that not all the teachers who were involved in AL projects were successful in engaging in reflective practice and thereby a changed perspective on their teaching. A further analysis and interviews with a sample of project directors confirmed that a proportion who thought their projects were successful were making this judgment from the point of view of their original intentions, not necessarily from that of the AL framework. In other words, their projects were successful in that a successful product, commonly a software development, was used to make the current teaching more effective, rather than to bring about changes in the teaching process itself (Biggs & Lam, 1997). Others were partially successful in changing their outlook on teaching, others again very successful, the latter group comprising perhaps one third of all participants.

That result, whereby over one half of participating teachers were at least beginning to engage the process of critical reflection on their teaching and on their assumptions about what constitutes good teaching, is impressive, and should lay to rest doubts about the effectiveness of AL in the Hong Kong context. The next point, then, is to look in more detail at the relevance of AL to the more successful implementation of TOC.

Applying action learning in the Hong Kong school sector: The problem of TOC

The above analysis shows that the action learning concept is alive and well in Hong Kong. However, it has not been applied to any great extent at all, to our knowledge, in the school sector. This is perhaps surprising, because the major teacher education institution, the Hong Kong Institute of Education, lists "reflective teaching" as one of the main attributes to be achieved by its diplomates and graduates. Teachers who are genuinely reflective practitioners should be continuing action researchers in their own classrooms. Although Pang (1991) and Richards and Lockhart (1994) examined the use of AL in Hong Kong schools, their discussion was mainly concerned with using AL to train students to learn the skills of the teaching profession, not with AL as a method of improving the quality of teaching of practising teachers. At all events, given the mission statement of the HKIEd on reflective practice, we might begin to see the primary sector particularly responding more reflectively in future.

This is, as well, for one of the current problems in the implementation of TOC is that teachers may be going through the motions of following TOC, but have no real understanding of the principles driving TOC, a classic case where reflective practice is needed. In a recent interview, an evaluator of TOC commented:

One of the problems with TOC is that it is very much

> promoting a style of teaching and learning that has its roots in the West. This is a mistake. We came across many examples of very impressive teaching using whole class and teacher-centred approach. The assumption that you have to move away from that is a bit simplistic. TOC should be talking about a greater variety of teaching, not demonising what is going on now.
>
> P. Morris, TOC evaluator, quoted in *South China Morning Post*, 16th November, 1996

This is not only a cross-cultural point. Simply, teachers have taken on the innovation unreflectively, with little thought apparently given to how the *principles* of TOC may be adapted to the existing context. This is no particular criticism of them, as it seems that TOC was imposed just as unreflectively, fingers crossed, without any of the trials, monitoring, and reflection that first order action learning would have required, and without adequate staff development. TOC was introduced to Primary 1 in 1995 in 76 schools, and to 80% of the schools in the Territory within two years:

> The Education Department has been pushing this curriculum too fast. It has not given us enough time. That is why many teachers attending the TOC courses are at a loss and don't know what to do. We need intensive courses of at least two years, not three days.
> Tong Ping-keung, English teacher, quoted in *South China Morning Post*, 16th November, 1996

And hopefully those intensive courses would involve AL. The problem is that teachers are not only required to adopt different procedures in assessing and recording the assessment results of students, they have to think in a different way about the purposes of assessment, and of the newly established close link between curriculum targets and assessment procedures, a link that is not explicit in the familiar norm-referenced assessment procedures previously used and currently still believed in by the majority of teachers. For example, when TOC is established throughout all primary years, as is intended, there will be no need for special secondary procedures for allocating students to different bands of secondary school. In fact, the whole banding structure will become redundant (Biggs, 1996), because you cannot reasonably have a "vertically" structured performance stream (TOC) operating simultaneously with a "horizontally" structured stream (banding). Yet TOC was implemented without addressing any of these question.

Nevertheless, there are a few schools in which TOC is working well (e.g. St. Stephen's Girls' Primary, SCMP, 16 November, 1996). It would seem that we have a situation here that closely parallels Elliott's Ford Project (1991; see above), with an excellent opportunity to initiate action learning projects involving these successful teachers, in much the same way as did Elliott. Close observation of these teachers, their reflections, and those of informed critical friends, could provide the means of constructing a locally viable and consensual working or grounded theory of TOC, that could then become both the stimulus and the eventually the framework of reflection for other teachers.

The outcomes of such a project could be immensely rich. In the first place, at the first order level of action research, it would provide the theory needed for making TOC work in Hong Kong, under local conditions, and using local beliefs and practices about teaching. This is not to say there would not be conceptual change on the part of local teachers; there would be, hopefully, but in a negotiated and bottom-up way. This framework would be the template through which teachers could view and reflect upon their own individual practices. Secondly, those conducting the research could, as did Elliott, carry out second-order action research that would provide some insight into the conditions under which implementing innovations, and TOC in particular, works in Hong Kong.

Conclusions

In this paper, we have described action learning, one strategy for enhancing teaching through reflective practice. It has been applied at primary and secondary school level in other countries, with particular benefit for helping teachers cope with innovations. TOC is a very promising and important strategy for improving teaching and learning at school level, but its extremely rapid, and it must be said unreflective, implementation in Hong Kong has created many problems for teachers in putting it to effective use. In particular, TOC

embodies a different *theory* of teaching and assessment than that underlying traditional practice, and it is unlikely that it will be used wisely and effectively until teachers fully understand the *thinking* behind it as much as what they need to do that is different from the old days.

We have given an example of the application of action learning in the Hong Kong tertiary sector. This example is meant to show (a) that AL is a viable strategy here, and (b) what some of the important conditions of use are. It seems that in AL we have a strategy that is particularly well suited to addressing the problems of implementing TOC that have already been identified (e.g. Morris *et al.*, 1996). More generally, Education Commission Report No.7 (Education Commission, 1996) called for a reform of schools to improve their teaching quality. TOC is part of this reform. However, it is important to stress that improvement to teaching quality depends on *teachers*, not on procedures or even paradigms. Action learning provides a framework and a method of allowing teachers to reflect on their teaching so that they become more flexible and adaptive in their teaching, so that they can cope not only with TOC, but with other demands on their professionalism that the future will undoubtedly bring.

Note

The writers are indebted to the Director of the Action Learning Project, Dr David Kember, and his team for collecting the data that was used in the path analysis.

References

Biggs, J.B. (1993). The quality of teaching and learning in an expanding tertiary system. *New Horizons*, 34, November, 102-104.

Biggs, J.B. (1996). Review and recommendations. In J. B. Biggs (Ed.) Testing: To educate or to select? Education in Hong Kong at the Crossroads (pp. 298-325). Hong Kong: Hong Kong Educational Publishing Co.

Biggs, J.B., & Lam, R. (1997). Report of the Evaluation Panel Hong Kong: Action Learning Project.Census & Statistics, Department of (1997). Education. In Hong Kong 1997 (pp. 137-160). Hong Kong: Government Printer.

Education Commission (1996). Consultation document of the Education Commission report No.7: Quality school education. Hong Kong: Education Commission.

Elliott, J. (1991). Action research for educational change. Milton Keynes: Open University Press.

Kember, D., Ha, T.S., Lam, B.H., Lee, A., Ng, S., Yan, L., & Yum, C.K.Y. (1997). The Action Learning Project: Final Evaluation Report. Hong Kong: Action Learning Project.

Kember, D., & Kelly, M. (1993). Improving teaching through action research. Green Guide No. 14. Campbelltown, NSW: Higher Education Research and Development Society of Australasia.

Kemmis, S. (1994). Action research. In T. Husen and N. Postlethwaite. International Encyclopedia of Education: Research and Studies. London: Pergamon Press

Kemmis, S., & McTaggart, R. (Eds). (1988). The action research planner. Geelong: Deakin University Press.

Lewin, K. (1946). Action research and minority problems. Journal of Social Issues, 2, 34-46.

McNiff, J. (1988). Action research: principles and practice. London: Routledge.

Mezirow, J. (1981). A critical theory of adult learning and education. AdultEducation,32, 3-24

Morris, P., et al. (1996). An Evaluation of Target Oriented Curriculum: A preliminary Report. Hong Kong University: Department of Curriculum Studies.

Pang, K.C. (1991). Developing reflective practice in the preparation of teachers. New Horizon, 32, 42-48.

Richards, J. & Lockhart, C. (1994). Reflective teaching in second language classrooms. Cambridge: Cambridge University Press.

Schon, D.A. (1983). The reflective practitioner: How professionals think in action. London: Temple Smith.

Stenhouse, L. (1975). Introduction to curriculum research and development. London: Heinemann Educational.

Wong, K.C. (1995). Educationa accountability in Hong Kong: lessons from the school management initiative. International Journal of Educational Research, 23(6),519-529.

Author

John Biggs, Honorary Visiting Professor, Professional Development Centre, University of New South Wales
Raymond Lam, Lecturer, Department of Education, University of Hong Kong
(Received: June 19, 1997; Accepted: July 12, 1997; Revised: August 11, 1997)

Computer Simulation Programs for the Hong Kong School Physics Curriculum: An Attempt to Provide An Exploratory, Collaborative and Student-centred Learning Environment

P.K. Tao

The University of Hong Kong

This paper reports an initiative to develop computer simulation programs for the Secondary 4/5 physics curriculum in Hong Kong. It first discusses the advantages of using computer simulations in the teaching and learning of science (and physics) and considers, in particular, the exploratory, collaborative and student-centred learning environment that computer simulations support. It then describe two of the programs developed to illustrate how they support such a learning environment.

開發香港中學物理課程適用的電腦模擬程式
一個提供探索式、協作式和學生為本的學習環境的嘗試

本文報道一個開發適用於香港中學物理課程的電腦模擬程式的計劃。文中討論模擬程式對科學（和物理）的教學與學習的好處，特別是它對探索式、協作式和學生為本的學習環境的支援。本文最後簡述其中兩個程式，用以說明有關論點。

Introduction

Computer-assisted learning (CAL) programs have much to offer to the teaching and learning of science, mathematics and other school subjects (Tamir, 1985). However, their use in Hong Kong schools has been limited to Computer Studies and Computer Literacy courses, with minimal use in other subjects. Prior to 1993, government and aided secondary schools offering computer courses had to make do with very limited and outdated equipment: a mere 11 sets of microcomputers per school, with about two-thirds of schools using Apple IIes and BBCs and one-third using XTs or 286s of IBM-compatibles. With such limited resources, it was perhaps understandable that the use of the computers had to be restricted to the computer courses.

In 1991, it was widely known that the Education Department would upgrade the computers in all government and aided schools in stages, but the time frame was uncertain and depended on the availability of funds. With impending improvement in computer equipment in schools, I considered it opportune to introduce CAL programs to schools. With the support of a publisher, I collaborated with two physics teachers on a project to develop CAL programs for the Secondary 4/5 physics curriculum. Several teachers were also recruited to trial the programs in their schools. Support was not sought from the government since there was (and still is) no official policy to develop and promote CAL across the curriculum. This initiative is the first of its kind in Hong Kong that caters for a non-computer subject.

The upgrading of computer equipment in schools materialized in late 1993 (Education Department, 1994). Over 400 government and aided secondary schools not only had their computers upgraded to 486 PC's, but they were provided with twice as many computers, i.e. 22 sets. In addition, schools were given a host of accessories including laser printer, colour

inkjet printer, table-top scanner, CD-ROM drive with sound card, colour LCD projection panel, etc. Such a boost of computer equipment in schools, which far exceeds the government's original plan and schools' expectation, makes it possible for non-computer courses to gain access to computers more easily. It also shows that the initiative to develop the physics simulation programs was timely and a foresight.

Two packs of programs were subsequently published and distributed free of charge to nearly all secondary schools (Tao, Tse & Yu, 1993a). The two packs consist of a total of 15 simulation programs and cover a wide range of topics in the physics curriculum (Table 1). The aim is to provide a teaching/learning resource that can be used regularly, in the hope that CAL will become a common feature in physics teaching. Details of the development, dissemination and implementation of the programs have already been reported (Tao, Tse & Yu, 1993b). This article focuses on the use of simulation programs as an aid in the teaching and learning of science (and physics). In particular, it discusses the exploratory, collaborative and student-centred learning environment that computer simulations support, by drawing on the literature and some previous studies. Features of such a learning environment have guided and informed the development of the programs. The article ends with describing some of the programs to illustrate how they have been designed to support the learning environment.

Table 1 Physics At Work CAL Programs

Pack 1 (for Secondary 4)	Pack 2 (for Secondary 5)
1. Mirror image	9. Transverse waves
2. Curved mirrors	10. Longitudinal waves
3. Lenses	11. Harmonics
4. Kinetic theory	12. Electric circuits
5. Gas laws	13. Cathode ray oscilloscope
6. Motion graphs	14. Alpha scattering
7. Force and motion	15. Radioactive decay
8. Collisions	

Computer-assisted learning (CAL) programs

CAL programs are a computer-based teaching and learning resource designed to assist students in their learning tasks. They are an important resource since the computer, with its graphics and processing capabilities, can offer interesting and unique learning experiences that other media cannot provide.

Broadly speaking, there are four different types of CAL programs: drill and practice (tutorials), simulations, modelling and tools. An excellent description of the different types of programs can be found in Wellington (1985). Of the four types, drill and practice has many limitations and is not particularly useful in science education (Sumthers, 1987). Tools refer to the labour-saving programs that help students do calculations, analyse results, plot graphs, etc. Many spreadsheet programs can be used for such purposes (Goodfellow, 1990).

Simulations and modelling, then, are the types that offer new, exciting learning possibilities and have been the major growth areas, especially in science education, in recent years (Cox, 1992). Simulations are based on a model of a situation to be explored by students. The model is created by the designer/programmer based on the underlying scientific theory. Simulations used in science education may be of an experiment, a phenomenon or a process. They simulate situations that would otherwise be very difficult or impossible to explore in the classroom or laboratory.

In a simulation, students can vary the conditions and variables of the situation but cannot change the underlying model created by the designer/programmer. Modelling, however, is more open and allow students to create, use and test their own models. As such, it has great educational value. The Dynamic Modelling System (Ogborn 1984) and Stella (Steed 1992) are two of the better known modelling systems that have been developed in recent years. In addition, spreadsheet programs can also be used for modelling (Elliott

1988). However, modelling generally places great demands on students and only those who already have some understanding of the concepts can readily master it. Modelling has not been use in the CAL development. Two factors influenced the decision: the programs need to cater for students of a wide range of abilities and they need to be seen as directly related to the physics curriculum.

Computer simulations as a learning aid

As a teaching/learning aid, simulation programs can have many advantages:

- They provide individualised, self-paced learning with immediate feedback on learner's actions.
- Compared with laboratory work, they save time and money (particularly if the experiment has to be repeated under different conditions), require less effort to set up and reduce the demand on students by providing automatic measuring facilities and instant feedback. However, it should be noted that simulations cannot replace laboratory experience; rather they should be used to supplement and extend laboratory work.
- They can simulate invisible or theoretical processes and provide pictorial dynamic representation of abstract models (e.g. kinetic theory of gases).
- They can simulate dangerous experiments and catastrophes (e.g. the melt-down of nuclear power reactor) and situations which would otherwise be very difficult or impossible to explore.

However, it is argued that by far the most important advantage is that simulations can support an exploratory, collaborative and student-centred learning environment. These advantages are discussed below together with some of the associated issues.

Exploratory learning

Papert (1980) was one of the first to promote exploratory learning using the microcomputer and to use the term 'microworlds' as computer representations of domains of knowledge. Using LOGO turtle graphics, he describes how children can experience, manipulate and explore the behaviours of the Newtonian world. In this way, young children can acquire an understanding of Newton's laws of motion without having to go into the laws' formalism. To Papert, microworlds are "incubators for powerful ideas" because they provide a "discovery rich" learning environment for children. Bliss and Ogborn (1989) concur that microworlds provide "a well-defined and yet open-ended environment in which children can experiment with and investigate rules and relationships." Papert's work has been replicated and extended by others in the 1980s but all such studies were based on the LOGO language and programming (e.g., diSessa, 1982; Brna, 1987; White & Horwitz, 1988). During the same period of time, simulations have become a prevalent type of CAL programs in science education, yet it seems that their potential for exploratory learning has not been specifically discussed and explored.

What does exploratory learning entail? In exploring a microworld, students interact with the underlying model by freely changing the parameters and variables of the model and visualizing immediately the consequences of such manipulations. In this way, students can

- interpret and reflect on the model and relate it to reality
- investigate how the variables in the model are interrelated
- formulate hypotheses about the model and test them in the microworld

To facilitate students' exploration of the microworld, predict-observe-explain (POE) tasks (White & Gunstone, 1992) can be set. A POE task presents a situation to students and require them to

- make a prediction about the situation when certain conditions are changed
- give reasons for the prediction
- run the simulation program to test the prediction
- reconcile any discrepancy between students' prediction and the result presented by the microworld

In carrying out a POE task, students' predictions often

differ from the observation in the microworld. This forces them to re-evaluate their understanding, make further predictions and test them again on the program. This is a powerful process that enhances students' understanding of the concepts and principles under study. Many successful uses of POE tasks have been reported, but most of them are based on experiments or practical activities and very few use computer programs.

de Jong and Njoo (1992) also contend that computer simulations are well suited for exploratory learning. By observing students working with computer simulations and analysing their think-aloud protocols they develop an inventory of exploratory learning process. The main categories of the inventory include the transformative processes of analysis, hypothesis generation, testing and evaluation and the regulative processes of planning, verifying and monitoring. It is argued that the transformative processes in the inventory demand cognitive skills of the students whereas the regulative processes demand metacognitive skills. Metacognitive skills are involved in exploratory learning since students have to regulate and control their actions and knowledge in order to construct new knowledge (Teodoro, 1991).

The feedback provided by the microworld does not give the 'right answer' - it gives information which helps students to get close to the answer without telling them how. The feedback forces students to reason about the relationships involved and to explore further. Laurillà (1988) calls this intrinsic feedback as opposed to the extrinsic feedback commonly found in drill and practice programs which gives the 'right answer'.

Collaborative learning

Computer programs offer individualised learning. However, increasingly it is recognised that there is more to be gained from students working collaboratively in small groups at the computer. Support for collaborative learning can be drawn theoretically from the Piagetian and the Vygotskian perspectives. According to the Piagetian position, when students with different or inadequate views interact with each other disequilibration is activated. In the course of interaction, their views are made explicit and are mutually challenged and this results in their joint construction of new ideas. The Vygotskian position views learning as a social phenomenon in which dialogue plays a central role (Draper and Anderson, 1991). In this perspective, learning is concerned with shared meaning in a social context and is facilitated by 'scaffolding' and 'apprenticeship' by a more expert peer (Hennessy, 1993).

There is a sizable body of research on computer-supported collaborative learning. For example, Howe et al. (1991) found that learning in mechanics was facilitated by computer-based tasks which encouraged joint decision by students in a group. Blaye et al. (1990) found that children working in pairs on a game-like task performed better in subsequent individual tasks than children who previously worked individually. Light et al. (1987) obtained similar results when they constrained children to collaborate by a 'dual-key entry' requirement (both children in the dyad had to key in their responses separately before the program provided feeback). Goldman (1992) analysed students' conversation while they worked in small groups on a simulation program in geometric optics. She identified many collaborative sequences of conceptual learning conversation between students. Roschelle (1992) conducted a case study of two students working collaboratively on a computer simulation. He found that the conversational interaction had provided students with a means to "construct increasingly sophisticated approximations to scientific concepts collaboratively, through gradual refinement of ambiguous, figurative, partial meanings" (p.237).

Student-centred learning

Another advantage of computer programs is that they provide students with a learner-centred environment. Working at their own pace, students can set their own goals, experiment with their own ideas, explore alternative solutions to problems, etc. From classroom observations of many different settings, Chatterton (1988) found that computer-based lessons differed from the conventional lessons in that they put students in control of the knowledge base. He observed that in such lessons students

- became more independent in their approach and more willing to explore alternative solutions to problems;
- were less reticent about discussing their own views and far more open in their approach in interpreting the information generated.

Citing three New Zealand examples in the use of computers in primary schools, Lai (1993) contends that it is not the technology itself but rather the learner-centred approach to the use of computers that contributes to learning.

Laurillard (1988) distinguishes between three aspects of student control over learning: (1) learning strategies, (2) manipulation of learning content and (3) description of content. Different types of CAL programs give different degree of control to students. Tutorial programs allow students to control their learning strategies, i.e. they can decide on the sequencing of content and learning activities. Simulation allows students to manipulate the learning contents by formulating hypotheses and testing them with 'experiments' in the microworld. Modelling program gives students control over the description of content by turning them into program authors. Laurillard has provided an interesting analysis of the different types of CAL programs in terms of student control over learning. Of the different types, simulation and modelling provide students with a high level of control over their learning.

While there are many ways to organise student-centred learning in the normal classroom setting, computer programs lend themselves naturally, and perhaps better, to such a learning environment.

Program design features

The programs developed have been informed by ideas and findings in the literature on exploratory, collaborative and student-centred learning. These have been manifested in the following design features of the programs:

1. The programs are written in C++ and make use of a pseudo-windows environment with point-and-click pull-down menus. The menus provide the full range of options for changing the conditions and variables. The programs are run by operating the mouse and no keyboard presses are required. Simple help messages are also available whenever necessary. As such, the programs allows students to freely explore the underlying models.

2. The programs all adopt a similar interface which has been designed based on the Direct Manipulation (DM) approach (Schneiderman, 1983). A DM interface allows for the creation and manipulation of on-screen objects which may be referred to as both concrete and abstract. The objects are concrete because they respond to the user's mouse and keyboard actions, but they are also abstract in the sense that they can represent physical constructs such as light rays, force, velocity, etc. The advantage of the DM interface is that the microworld's representation can become so realistic and intuitive that students develop a feeling of directly operating in the simulated world.

3. The programs are accompanied by a set of worksheets and teacher's notes which form an integral part of the package. The worksheets guide students through the program in a structured way and provide them with POE tasks to work on. They require students, working in small groups, to discuss the tasks and jointly make predictions before running the programs to test their prediction. The worksheets are to be completed by the group and not by individual students. The teacher's notes provide guidance on the use of the programs and suggest ways and means to organise students' learning, arranging students to work in pairs or small groups, encouraging discussion among students, requiring students to make joint predictions, etc. Admittedly, the collaborative mode of learning has not been incorporated in the simulation design since there appears to be no easy and satisfactory approach for doing this. Rather, it is corporated in the design of the worksheets accompanying the programs and in the classroom organization (arranging students to work in pairs).

Sample programs

To illustrate some of the points made earlier, two of the programs are briefly described below.

Force and motion. This program aims to facilitate students' understanding of the effect of force on motion. On booting up, it shows a remote-control model car on a level track, a control panel, an information window displaying the values of force, speed, distance and time, and a (blank) distance-time graph (Figure 1). The interface design uses the metaphor of a remote-control car and turns the construct of force into manipulable buttons on the control panel. Initially, the model car may be set to be stationary or move along the track with a constant speed. By clicking on an appropriate button (arrow) on the control panel, a force may be applied to the model car at any time, for any duration, in the forward or backward direction. Subsequently, the model car moves along the track in accordance to the force applied and a distance-time graph is plotted 'real-time'. On completing the motion, a speed-time graph is displayed alongside the distance-time graph.

The program allows students to freely explore the Newtonian world of motion. Many POE tasks can be set to test students' intuitive ideas about force and motion. For example, students can be asked to predict what would happen if a forward force is applied to the model car initially at rest or moving with a constant speed; if a backward force is applied to the moving car; etc. Students' intuitive ideas are usually based on the Aristotelian rather than the Newtonian view (Gunstone & Watts, 1985). The discrepancy between their predictions and the results presented in the microworld force students to re-assess their ideas. Hopefully, this will bring about conceptual change.

Cathode ray oscilloscope. This program aims to show the workings of a cathode-ray oscilloscope (CRO). On booting up, it shows a schematic diagram of a cathode-ray tube (Figure 2). Different voltages can be applied across the X- and Y-plates and the electron beam will be deflected accordingly to trace a waveform on the screen. For the X-plates, students can apply a time base with different sweep times, d.c. voltages or 'off'; for the Y-plates, students can choose a.c. voltages (different magnitudes and frequencies), d.c. voltages, or 'off'. The variations of the voltages are shown by time-varying (X-t and Y-t) graphs as well as the movement of the pointers on two analogue voltmeters. The orientation of the CRO can be changed to two other positions to show different perspectives of the view.

Students can acquire a good understanding of the tracing of waveforms on the CRO by (i) applying only a time base to the X-plates to observe the horizontal 'sweep' of the electron beam, (ii) applying only an a.c. to the Y-plates to show the vertical oscillation of the electron beam, and then (iii) combining the horizontal sweep with the vertical oscillation to show the tracing of the waveform on the screen. POE tasks can be set to require students to predict the resultant waveform on the screen for different voltages being applied across the X- and Y-plates.

As can be seen, these and other programs in the two packs support exploratory and collaborative learning and give students a large degree of freedom to control their learning. Students can freely change the conditions and variables of the situation under study and can follow whatever sequence they prefer in going through the program.

Concluding remarks

The CAL development is the first attempt of its kind in Hong Kong. The design of the programs has been based on ideas from the literature and findings from earlier, similar development/studies. Arguably, some of the claims in the literature, discussed earlier, in regard to the efficacy of computer simulations are not unequivocal. Research is currently carried out to systematically test such claims as well as to monitor the use of CAL programs in the teaching of physics in Hong Kong schools.

Although the computer equipment in schools has been considerably upgraded in 1993/94 from the previous provision, the 22 sets of PCs remains a scarce resource for the 30 plus classes in the school. Teachers who wish to use CAL in their teaching have to compete with others for access to the computer laboratory, for the few periods not taken up by Computer Studies and Computer Literacy. They have to go out of their way to make special arrangement for it and this is often a very frustrating exercise. There is an urgent need to further upgrade the computer equipment in schools and the adoption of a 'computer across the curriculum' policy by the Education Department. Unless and until this is actualized, the use of CAL in the teaching of physics (and other subjects) will only be limited to the few enthusiastic teachers.

References

Blaye, A., Light, P., Joiner, R. & Sheldon, S. (1991). Collaboration as a facilitator of planning and problem solving on a computer-based task. *British Journal of Developmental Psychology, 9*, 471-483.

Bliss, J. & Ogborn, J. (1989). Tools for exploratory learning. *Journal of Computer Assisted Learning*, 5, 37-50.

Brna, P. (1987). Confronting dynamics misconceptions. *Instructional Science, 16*, 351-379.

Chatterton, J.L. (1988). Knowledge control: the effect of CAL in the classroom. *Computers & Education, 12* (1), 185-190.

Cox, M.J. (1992). The computer in the science curriculum. *International Journal of Educational Research, 17* (1), 19-35.

deJong, T. & Njoo, M. (1992). Learning and instruction with computer simulations: learning processes involved. In E. de Corte, M.C. Linn, H. Mandl & L. Verschaffel (eds.) *Computer-based learning environments and problem solving* (pp.411-427). Berlin: Springer-Verlag.

diSessa, A. (1982). Unlearning Aristotelian physics: a study of knowledge based learning. *Cognitive Science, 6* (2), 37-75.

Draper, S.W. & Anderson, A. (1991). The significance of dialogue in learning and observing learning. *Computers & Education, 17* (1), 93-107.

Education Department (1994). *Situation report on computer education in Hong Kong*. Hong Kong: Computer Education Section, Advisory Inspectorate, Education Department.

Elliott, C. (1988). Spreadsheet in science teaching. *School Science Review, 70* (251), 87-93.

Goldman, S.V. (1992). Computer resources for supporting student conversations about science concepts. *SIGCUE Outlook*, 21 (3), 4-7.

Goodfellow, T. (1990). Spreadsheets: powerful tools in science education. *School Science Review, 71* (257), 47-57.

Gunstone, R. and Watts, M. (1985). Force and motion. In Driver, R., Guesne, E. and Tiberghien, A. (eds.) *Children's idea in science* (pp.85-104). Milton Keynes: Open University Press.

Hennessy, S. (1993). Situated cognition and cognitive apprenticeship: implications for classroom learning. *Studies in Science Education*, 22, 1-41.

Howe, C., Tolmie, A. & Anderson, A. (1991). Information technology and group work in physics. *Journal of Computer Assisted Learning*, 7, 133-143.

Lai, K.W. (1993). Minimal computer technologies and learner-centred environments: some New Zealand experience. *Computers & Education*, 20 (4), 291-197.

Laurillard, D. (1988). Computers and the emancipation of students: giving control to the learner. In P. Ramsden (ed.) *Improving learning: new perspectives* (pp.215-233) . London: Kogan Page.

Light, P., Foot, T. Colbourn, C. & McClelland, I. (1987). Collaborative interactions at the microcomputer keyboard. *Education Psychology*, 7 (1), 13-21.

Ogborn, J. (1984). *The dynamic modelling system*. Harlow: Longman.

Papert, S. (1980). *Mindstorms: children, computers, powerful ideas*. Harvester Press.

Roschelle J. (1992). What should collaborative technology be? A perspective from Dewey and situated learning. *SIGCUE Outlook, 21* (3), 39-42.

Schneiderman, B. (1983). Direct manipulation: a step beyond programming languages. *IEEE Computer, 16* (8), 57-69.

Stead, M. (1992). Stella, a simulation construction kit: cognitive process and educational implications. *Journal of Computers in Mathematics and Science Teaching, 11*, 39-52.

Summers, M.K. (1987). Guest Editorial: Eight years on!. *Physics Education*, 22, 193-194.

Tamir, P. (1985). Current and potential uses of microcomputers in science education. *Journal of Computers in Mathematics and Science Teaching*, 5 (2), 18-28.

Tao, P.K., Tse, M.W. & Yu, C.K. (1993a). *Physics at work computer-assisted learning programs Packs 1 & 2*. Hong Kong: Oxford University Press.

Tao, P.K., Tse, M.W. & Yu, C.K. (1993b). Developing CAL programs for school physics. *Physics Education*, 28 (3), 178-184.

Teodoro, V.D. (1991). Direct manipulation of physical concepts in a computerized exploratory laboratory. In E. de Corte, M.C. Linn, H. Mandl & L. Verschaffel (eds.) *Computer-based learning environments and problem solving* (pp.445-464). Berlin: Springer-Verlag.

Wellington, J.J. (1985). *Children, computers and the curriculum*. London: Harper & Row.

White, B. & Horwitz, P. (1988). Computer microworlds and conceptual change: a new approach to science education. In Ramsden, P. (ed.) *Improving learning: new perspectives* (pp.69-80). London: Kogan Page.

White, R. & Gunstone, R. (1992). *Probing understanding*. London: Falmer Press.

Author

P.K. TAO, Associate Professor, Department of Curriculum Studies, The University of Hong Kong

(Received: June12,1996; Revised & accepted: Sept. 21, 1996)

「同儕視學」在發展幼兒教師「反思」能力的角式

羅厚輝　陳鄭佩華　謝陳寶華　黃葉香玲

香港教育學院

本文首先探討教師反思模式在師範教育的重要性，並介紹反思模式大綱及其三個主要組成部份，包括專業程度、綜合層次及反思範疇等；然後再介紹研究內容、設計及結果。研究探討「同儕視學」在幼兒教師課程所扮演的角式，特別著重它在發展教師的反思能力的功能上。

研究抽象調查幾對參與同儕視學的老師，記錄他們在觀課後互相對話的內容，並加以分析。研究發現同儕視學及討論有利於培養教師的自我反思技巧和態度，但在專業內容及程度上的反思效果則未明顯。研究建議同儕視學應受教師重視，互相觀課有助發展專業精神；而教育理論的不足可由教育學院導師及其他教育工作者協助推廣及改善。

Role of Peer Support Scheme in Developing Teacher Reflection: A Case Study

This paper first examined the importance of models of teacher reflection in teacher education programme and outlined the three dimensions of a reflection model, namely levels of professionalism, scopes of reflection and levels of integration. Then the paper reported a study on the effectiveness of a peer support scheme in a Kindergarten teacher education programme and in particular its claim to promote teacher reflection. It was found that the scheme had encouraged informal and non threatening professional conversations among teachers with a strong emphasis on collegiality. But the role of peers in providing higher level of professional input was restrictive. It was suggested that professional knowledge from lecturers in education in the Institute of Education should complement this aspect of teacher development work in peer support scheme.

I. 前言

當一九九二年六月香港教育統籌委員會發佈第五號報告書提出成立香港教育學院來提高香港教師的水平時，香港的師訓課程便進入了一個新紀元。一九九四年，香港教育學院正式成立。成立之後，學院也立即進行一系列的課程改革，藉以提高課程質素，以乎合現代師範教育之原則及要求。這種改革及更新主要在重新檢訂教師培訓課程的目標、改善課程的內容、上課的學習活動和培訓方式的多樣化、訂立學員的培訓學習結果和表現，繼而進行評估等等。

教師培訓經歷著不同的變化及歷史。早期教師培訓課程側重於教學技能的基本訓練，學科教學方法的傳授及一般教育學理論的講解。講授地點多以大學教育學院或師範學院為學習及練訓地點，配合學員在學校實習所得到的實際教學經驗，希望能將理論、實踐結合起來。

這種師訓模式受到教育界的質疑及批評 (Solomon 1987:267-274)。一方面，學校課堂教學的要求遠較一兩節教育學的理論來得複雜，而學院式的教授方法對課堂教學的改善影響甚少，新入職的教師主要還是受自己所熟悉的，所經驗過的教學模式所影響；另一方面，大學及學院傳授方法多以單向教學的講授模式進行，缺乏培育老師的專業主動性及專業的反思能力。「當現代教育目標取向於培育學生的獨立思考，訓練學生掌握高層思維技巧的時候，我們從事教師教育及培訓的教育工作者就有重新考慮現有的培訓課程的有效性及合適性，以及老師的思維和應變能力」(EMB, 1993:11)

II. 「反思」在教師培訓中的地位

「反思」的定義

研究「反思」(reflection; to reflect) 的學者很多，理論

❖ 本研究有賴香港教育學院[illegible]，謹此致謝

有所不同。一般地說，「反思」就是指人對以往生活、經驗、事與物、快樂與痛苦等等進行思考的一個思維過程。其實每個人或多或少也有這種能力或習慣，例如，在看某部電影時的感覺可影響你對某導演或演員的觀感，從而不再或常看有關的作品。古語說：「是乃是而作非」，也包涵了反思之意。這個思考過程也包括對比分析及其後的判斷，但在思考過後又是否能對自己的行為或看法有所更改或再重新調整呢？這一點留待下面再討論。

在教育層面看，如何運用「反思」這個思維技巧呢？學者看法有所不同。一些認為「反思」是指在教學過程當中能邊做邊想，而能對教育環境或課堂教學的要求作專業的判斷及回應；還有一些認為「反思」的內容可分三類，一是教學技能，二是教學環境，三是有關教學的道德原則等 (Adler, 1990)。這些想法其實都只是「反思」的內容的一部份，因為教師在教學環境裏進行的各種思維活動，不論是在教學效果、環境或其他相關的問題上，即時作出分析及改善，抑或作事後的探討，也是教育反思活動的一環。

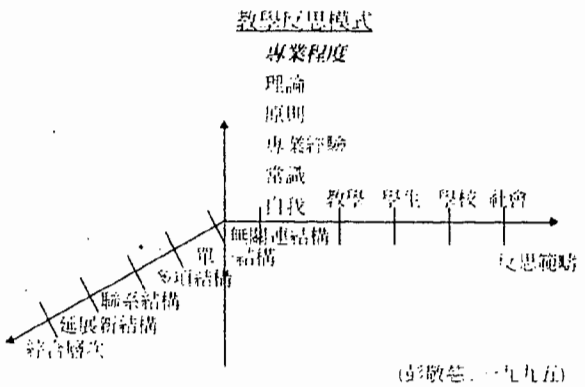
另外香港教育學院彭敬慈曾提出他的看法，他認為「教學反思」可分三個方面來分析：

(i) 專業程度 - 這是以教師或學員能否利用教育理論及教育語言來進行思考及分析。低層次的專業思維，是指只靠識指經驗作為部份反思素材的思考過程，欠缺對基本教育理論的了解。專業程度高的就能體現教育理論和教學實踐的結合。

(ii) 反思範疇 - 這方面指學員在反思過程中是否有考慮個人教學以外相關的人與事。例如，教學上所遇到的困難只是個人問題？學生質素？抑或是受著學校的行政或社會這些更大的因素是否有所影響呢？學校教育工作跟社會中的倫理道德、價值觀等又有何關係？

(iii) 結合層次 - 這方面是指思維資料之間的內在的關聯關係，也即是思維的複雜程度。這可說是任何思維或更高思維的心智操作。這一層次的想法源於John Biggs的結構主義理論。

下面圖表簡單地顯示了他的想法的各個方面：



(彭敬慈，一九九五)

這個反思模式無疑是較為新的一個想法或構思，仍需要大量的驗証工作來確定這個模式的有效性。現階段來說，這方面的深入研究是欠缺的。但我們也可嘗試利用這個表去分析一下每一個「教育反思」的層次，看看問題可能出在那裏。

教育反思的功能

學者認為師訓課程如果只著重課堂教學技巧的傳授或講授一兩套兒童發展理論，並不能有效改善及改進教師的教學思維 (Schon, 1983)。他們認為教師要掌握的不單是教學的基本技巧，而更重要的是如何通過對自己教學實踐及經驗進行反思、評估，並提出新的教學方案去改善教學的成效。這種具反思能力及改進態度的新一代教師才是我們師訓課程的主要培育目標。教師要能獨立地、不時地對教學環境、教學策略及其效能進行思考及改善，這個專業模式才是師訓教育的新方向。

有效培訓新一代教師的反思技能及態度的方法

學者認為每一位教師的思維活動及教學行為均受自身的教育及家庭因素影響。這些社會因素的互動作用影響著教師對學習理論、知識學、兒童發展有一些初步看法，這些「看法」指引著教師行為取向。這些已「內化」了、或「深入化」的知識及經驗也影響著教師如何看待從學院導師講授而來的教育理論。觀點模式相近的會以著合的形式發展起來，互相疏距大的便會受教師排擠，教師會以自己的習慣方法進行教學及教育活動 (Polanyi, 1964)。

學者認為要使教師能自動自發地進行反思，採取改善教學的活動，師訓課程的設計就必須考慮學員的思維取向及演化的不同階段及過程。以下各點是課程設計的考慮點及原則：

第一：每個人要從一個思考模式轉變到另一個思維模式是一個極慢的改變過程，這個過程是以螺旋形式進行，而不是直線形式發生的

第二：改變的初段要學員必須大量地及經常地對自己教學的行為模式進行反覆的思考及描繪。在這個過程中首先要掌握把自己「內化」的知識觀、行為觀進行「自覺」的反思。這種把「內化」的知識「外化」出來是了解自己行為及其意義的重要階段。要進行這種「外化」過程最好是在一個沒有太大壓力，沒有太大權威性的對話或環境中進行。「內化」知識及思維是一個人從社會生活及社化過程中吸收的外界價值觀及生活方式。這種「外化」過程也跟一些學者倡議，教學活動應從私人的、私有的觀念轉化為公開的群體的、經驗相近，他們更認為這是把教師專業化必要的條件 (Shulman, 1995)

第三：這種「外化」過程在與同儕對話中產生是最有效及徹底的

第四：這種「外化」的思維活動最好是針對課堂教學的問題進行，以提高思維的深度性、專業性

第五：以上只是發展學員專業反思的初段，下一步必須讓學員的「內化」知識觀受到充份的挑戰，受到教育研究結果的挑戰才有效地使學員掌握「反思」的技巧及具備批判態度 (Kuhn, 1986)

III.「同儕視學」的理念及實踐

何謂「同儕視學」

「同儕視學」(Peer Support Scheme) 在其他國家及地區也被視作有效地達到上述「反思」目標的師訓課程部份。何謂「同儕視學」呢？簡單地說，在學員進行教學實習或導師進行評估教學實習之前，給學員配對起來，互相進行觀課，並作課後評論及自我評論等反思活動。這種「同儕視學」活動有下列優點：

(一)同輩學員沒有「上下」之分，不像學院導師跟學員的社會關係，因職能關係而角式分明，這種同輩關係鼓勵相方能充份說出自己的想法及對互相的教學方法的優點及缺點充份表達出來；

(二)種討論更能提高自我形象，使學員表達自己經驗的信心增強；

(三)學員能加深了解自己及相互支持，在積極對話時，從對方的觀察作分析評論，使學員更能了解自己的教學想法；

(四)因同輩關係，學員也能適當運用溝通技巧，溝通模式也跟同輩的其他對話模式分別不大，氣氛比較融洽；

(五)因同輩關係，互相的語言也較接近，提高溝通的效果 (Williams, H & Mcbride, N., 1989)

幼師教育課程活動中的「同儕視學」

「同儕視學」是師訓課程中實習活動內其中的一環，其他活動包括：

(I) 反思研討會

針對教學的情景，進行討論及思考，目的是鼓勵學員進行反思，研討會由學院導師帶領

(II) 實習工作坊

實習課作出種種的預備工作，包括介紹實習課程概念和準備各種學習經驗，由實習課導師引領學員對教學作出反思

(III) 教學實習與視導

透過教學視導，導師能幫助學員有組織地分析教學實況，設計改善教學的方法，達到提升教學的最終目標

(IV) 學校參觀

由學院安排學員參觀任教以外的其他幼稚園，學員

透過認識不同的教學環境和教學行為，可得更多的反思素材。

(V) *教學週記：*

寫作教學週記的目的是幫助學員對教學進行自發性的探索和批判性的分析，導師會利用週記內的資料引導學員多加反思

(香港教育學院，合格幼稚園教師轉讀課程，學生手冊，1995-96)

「同儕視學」的詳細內容及安排

(i) 學員可與任何一個修讀同一課程的同學結成「同儕視學」的伙伴，作互相視學觀課；

(ii) 視學觀課分兩星期完成，第一星期互相視學，並以觀課評核表互相評核及自我評核；觀課表的作用是提供基本教學的要素給與學員，讓他們在思考過程裏具有基本的思維素材；每次視學均會進行討論優缺點，討論過程均被錄下來；學員互相討論，有助於把內化的資料外化出來，提供運用思維改變的條件；觀課　　也會是開放平等的；

(iii) 第二星期重複第一星期的所有活動，以強化「反思」模式的活動為主；

(iv) 在這兩星期當中，每一位學員必須對自己教學進行反思及評核活動，並寫下評語，讓他們對自己的教學進行一些反思工作；

(v)「視學」完成後，導師往觀課一次，在實習工作坊時段，請他們分享對「同儕視學」的看法及意見，再由實習課導師引領學員作各種的分析，從而提高其反思能力

IV. 研究方法

「同儕視學」在學院的各個幼兒教育課程皆擔當著主要教育目的，作為一個初步的研究，我們只選取「合格幼稚園教師轉讀課程」作為研究，修讀該課程的學員都是在職幼稚園的教師，擁有一定的教學經驗；之內容源關係，這計劃只隨機地選了五對同儕伙伴作為研究及跟進的對象，而參與這研究的學員的教學經驗更在十三年以上(其背景資料見附件一)，這研究是採用個案形式，嘗試就個別實例進行較詳細的探究

以下是在「同儕視學」安排的每一個階段所作的資料收集及方法：

第一：每一次視學均要求學員利用觀課評核表互相評核及自我評估，並寫下評語；

第二：每一次觀課後，學員均進行討論，討論內容利用錄音機記錄下來；

第三：在計劃進行的兩星期內，學員均作自我評估並寫下評語；

第四：兩星期計劃完成後，導師跟每位學員作一次討論，記錄他們對計劃的觀感、意見等

V. 資料搜集與分析

根據上列資料，我們集中討論下列各點：

(1) 溝通模式

平輩關係

「同儕視學」的第一個優點：同輩關係創造有利互信、討論的氣氛與環境，打破學員跟學院導師那種嚴的社會關係，學員可自由地、沒有戒心地說出自己想法，可辯解，可評說，可討論交談，形式可因學員性格等自由發揮

例一：　... 不過因為教學目的角度，配唔配合唔的發展，有時我自己都唔敢肯定，係咪 ...（*觀課學* C/C2）

這顯示學員互訪時並不以一個評核者自居，也並以一個優秀教師自居，這種非「從屬」的關係讓學員更大的空間去作教學的交流及研討，因為學員間是以平輩身份交談，有一些學員的對話更顯示相互平等對話特性

102

例二：學員一：「...咁就最好用學生的作品，不過會唔會呢班有D困難呢？」
學員二：「會呀！因為剛剛開課，但地...」
（觀課學員E1E2）

例三：「但係點解呢你尋日剛剛教完檢文咁但地帶檢返來，又教...咁點解...」（觀課學員E1E2）

婉轉語

這種平輩的關係也影響學員在提出批評時往往較為婉轉：

例四：「少少意見」
例五：「大部份都唔錯，但是...」（觀課學員C1C2）

稱讚

也因同輩關係，讚美之詞也是常見：

例六：「咁值用得幾好囉」（觀課學員C1C2）

處理批評技巧

讚美跟批評往往夾雜在話語之間：

例七：「咁樣我覺得都幾好囉，係有一樣就係覺得你越講越快囉...」（觀課學員C1C2）

這種夾雜方式對雙方有很大心理好處，不贊同的也可以提出來，反對之聲也在學員的對話之中顯示出來

稱讚與批評模式

在這幾對學員之間，稱讚與批評之次序也不同：

模式一：稱讚；批評；稱讚；批評；批評；稱讚

模式二：稱讚；批評；批評；批評；批評；稱讚

模式三：批評，對方瞭解；批評，對方瞭解

從上述幾種溝通模式，特別是處理稱讚、批評之間的關係時，這不同模式會否影響「反思」的過程是有效性呢？特別第三種模式比較直接而相互間也有瞭解，這會否更能令互相更了解自己的看法呢？

(2)反思意識提升

自我批評

「同儕視學」另一個特點是提升學員對自己教學缺點的意識，學員互相觀課後，再作討論，也鼓勵學員作自我批評：

例八：「...即係有時自己上堂時都講得唔係咁清楚...」（觀課學員C2C1）
例九：「是否我帶得唔夠活？」（觀課學員A1A2）

例十：「咁有一樣我自己做得唔好，我覺得教具我唔係運用得好純熟，好似諗起上來，唔係做得咁好，咁呢一樣我都覺得幾難...（觀課學員C1C2）

在第一次跟第二次視學間，學員也有嘗試改善教學：

例十一：「上次覺得他們坐得較遠，故今次叫他們坐近啲」（觀課學員B1B2）

自我改善意向

例十二：「係呀，我提自，咁今次好多...（觀課學員E1E2）
例十三：「係呀，呢一樣下次我會改」（觀課學員E1E2）

從對兩次同儕討論及批評看，教師都以積極的行動去處理，學員都反映到了對自我完善的

VI. 討論

現試從專業程度、綜合層次及反思範疇三方面來討論分析結果。從上述資料看來，當學員作自我評語時，反思範圍明顯狹窄，內容貧乏，但當作同儕視學後的討論則較客觀，而反思的範圍亦較廣，專業層面也相對提高了。相信這是因為在日常的教學中，教師多處在「當局者迷」的環境中，無暇亦無從入手作自我的反思；在

觀課的過程中，教師以第三者的身份來看伙伴的教學，就像一面鏡子反映著自己日常的教學情況，正是「旁觀者清」，因此他們的反思範圍較廣，專業層面的思考亦更高。由此可見「同儕」計劃可以達到鼓勵學員把「內化」教學模式外表出來，有利進一步作思維重組，從而提高學員的反思能力，但在專業層面方面，理論的深入是明顯比較薄弱，這是直接受「同儕」的教育理論水平影響，這可在輔導學員期間留意學員的能力及知識水平，作適當的調配便可。

從學員的反思範疇來看，討論題目和內容主要還是環繞教學成效、課堂分組及學生秩序，明顯的說明了他們所考慮到的只是一些「前線」的問題，未能延伸到教育體系中的不同架構，例如：學校行政上的協助與支持等。思維層次也多是單一的，最高也只能到達多項結構而已。這也顯示了「同儕視學」有其專業局限性，有來自同儕的批評及討論不能代替學院導師在理論及專業的水平，這也是我們需要細心設計實習課及研討課的原因之一。

綜合目前所能收集的資料來看，「同儕」計劃鼓勵學員互相提問及給與意見，也鼓勵學員互相提出改善的方案，能增強他們把自己思想上的想法及行為，向其他同儕開放，使相互間的關係不再單是同學或同事，而進一步成為互相借鑑的對象。相互間的評批可以較公開的態度去處理，有利提高反思進程及鼓勵專業態度的發展。這種客觀的態度、包容的想法是建立及提升專業化的必要條件。「同儕視學」看來是提升學員「反思」的有效途徑，但對深化或強化學員反思能力，甚而達到教學行為模式的改變還需各方理論的掌握及研討。

VII. 結語

培訓教師的「反思」技巧及知識，在教師教育課程發展來說是較為新的嘗試。就本研究來看，「同儕視學」確實可以提供反思活動一個有利環境，並鼓勵教師相互觀課討論，把老師傳統教學的禁區開放出來，這是「同儕視學」的貢獻。但它不能替代教育學院講師的職能，「同儕視學」欠缺專業的廣度及深入化，在教育理論的研究方面也顯示不足地方。本文只是這理念在香港教師教育課程發展的研究之開始，更深入的研究及分析探討是必須的，例如更具體的証明「同儕視學」可提高反思的能力、如何可培訓出具高反思能力的教師、文化背景和學習經驗會否影響反思能力等，需要面對和解決的問題仍多著。但在師資培訓方面來說，它是新的一個新方向，值得我們重視及發展。

References

Adler, S.A. (1990). *The Reflective Practitioner and the Curriculum of Teacher Education*. Paper presented at the Annual Meeting of the Association of Teacher Educators, Feb. 5-8, 1990.

Calderhead, J. & Robson, N. (1991). Images of Teaching : Student Teachers' Early Conceptions of Classroom Practice. *Teaching & Teacher Education*, Vol. 7(1), pp. 1-8.

Education & Manpower Branch (1993). *A Statement of Aims*. Hong Kong: Government Printer.

Harris, J. C. & Wear, S.B. (1993). *Creating the Reflective Practitioner: Sources and Causes of Student Teacher Deviation from Planned Lessons*. Paper presented at the Annual Meeting of the Mid-South Education Research Association, November 10-12, 1992.

Kuhn, D. (1986). Education for Thinking. *Teacher College Record*, Vol. 87(4)..

Mclean, S.V. (1992). *Developing Personal Practical Knowledge in Early Childhood Teacher Education: The Use of Personal Narratives*. Paper presented at the World Conference of the Organization for Early Childhood Education, August 2-7, 1992.

Polanyi, M. (1958). *Personal knowledge*. London: Routledge & Kegan Paul.

Schon, D. (1983). *The Reflective Practitioner: how professionals think in action?* London: Temple Smith.

Selinger, S. (1991). *Share and Take: Apath to Critical Reflection for Entry-Level Teachers*. Paper presented at the Annual Conference of the National Council of

States on Inservice Education, November 21-26, 1991.

Shulman, L. (1995). *On Evaluating Teaching in the Universities*. Lecture at Northcote Campus on November 8,1995, Hong Kong Institute of Education.

Solomon, J. (1987). New Thoughts on Teacher Education. *Oxford Review of Education*. Vol. 13(3)., pp. 267-274.

Sparks-Langer, G. M., Simmons, J. M. Pasch, M. Colton, A. & Starko, A. (1993). Reflective Pedagogical Thinking: How can we promote it and measure it? *Journal of Teacher Education*. Vol. 41(4)., pp. 23-32.

Williams, H. & McBride, N. (1989). *Alternative Practicum Support Services: Developmentally Appropriate Practice for Early Childhood Teacher Education Students*. Paper presented at the International Conference on Early Education and Development, July 31- August 4, 1989

作者

羅厚輝，課程及教學系高級講師兼系主任
陳鄭佩華，課程及教學系講師
謝陳寶華，課程及教學系講師
黃葉香玲，特殊教育系講師
香港教育學院
(Received: March 4,1997; Revised & accepted May 21,1997)

〔附件一〕

「同儕視學」觀課時間表

觀課學員	授課學員	第一次觀課日期	第二次觀課日期
A1	A2	12/10	20/10
A2	A1	10/10	23/10
B1	B2	11/10	18/10
B2	B1	12/10	19/10
C1	C2	9/10	18/10
C2	C1	11/10	16/10
D1	D	216/10	23/10
D2	D1	18/10	25/10
E1	E2	11/10	18/10
E2	E1	10/10	17/10

參與研究學員的個人資料

[illegible]	班別	學員	年齡	[illegible]	[illegible]	學歷	[illegible]
QKT (CON) 95-96	C5D	A1	47	20	QAKT (90)	[illegible]	[illegible]
	C5D	A2	36	16	QAKT (82)	[illegible]	[illegible]
	C5B	B1	44	20	QAKT (84)	[illegible]	[illegible]
	C5B	B2	40	18	QAKT (85)	[illegible]	[illegible]
	C5E	C1	38	19	QAKT (83)	[illegible]	[illegible]
	C5C	C2	45	24	QAKT (83)	[illegible]	[illegible]
	C5D	D1	37	20	QAKT (82)	[illegible]	[illegible]
	C5D	D2	48	15	QAKT (91)	[illegible]	[illegible]
	C5F	E1	40	20	QAKT (86)	[illegible]	[illegible]
	C5C	E2	36	19	QAKT (89)	[illegible]	[illegible]

寧波萬里國際學校辦學模式研究報告

鄭璧如　　金林祥、李軍、董霞芬
寧波萬里國際學校　華東師范大學教育科學與技術學院

九十年代以來，中國大陸已出現部分以市場經濟為主導的經濟區域，對傳統的辦學模式構成新的挑戰。本文以寧波萬里國際學校的辦學實踐為研究個案，從實踐和理論上總結在我國目前經濟相對發達的地區建立教育與經濟良性互動的教育運行機製，探索市場經濟背景下民辦教育新模式的若干經驗。

A Case Study on the Running Fashion of Wanli International School

Some market economic regions have been formed in the Mainland of China since 1990. There is a special need for schools to change its traditional running fashion in facing challenges arising from the market economic development in the area. The purpose of this report is through an ethnographic case study, to explore the interactive relationship of education to the various socio-economic developments in the above districts, and analyze its implications for school-running by the local people both theoretically and practically.

一、引言

九十年代以來，中國大陸出現了若干自身活力強、較強、以市場經濟為主導運行模式的經濟區域，如華東、華南的沿海地區或相關省市。這些經濟區域及其附近經濟特點既有別於傳統計劃經濟體製下運行的教育構成了強烈的衝擊和挑戰，也為目前我國內地各級各類教育的進一步發展提供了難得的機遇。如何充分利用經濟發展的良好社會條件大力發展教育事業，尤其是如何在經濟已經相對發達的地區加大教育改革的力度，建設與經濟發展相適應的教育運行機製，解決當前國家基礎教育經費的嚴重短缺和辦學模式的整齊劃一，是當前貫徹《中國教育改革與發展綱要》和《中華人民共和國教育法》，全面實施素質教育，積極探索面向21世紀有中國特色教育模式的緊迫任務。

中國第一家教育集團——萬里教育集團於1995年獨資八千萬元創辦了寧波萬里國際學校。該校在建校以來的兩年多實踐中，探索出一條在經濟相對發達、市場經濟程度較高的地域，以經濟促進教育，以教育促動經濟的民辦教育的新模式，為在我國目前經濟已經相對發達的地區建立教育與經濟良性互動的教育運行機製、積極探索市場經濟背景下民辦教育的新模式和建設面向21世紀有中國特色教育體製提供了一定的經驗。

二、探索教育經濟一體化的民辦道路及其管理模式

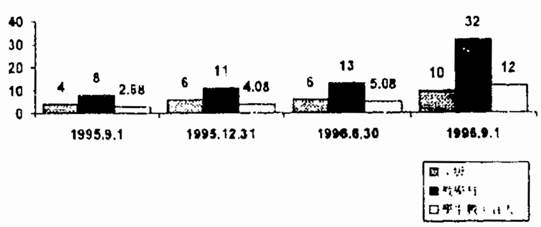
眾所周知，製約我國教育改革和發展尤其是九年製義務教育普及的一個重要因素，是教育經費的嚴重短缺。但是，在不同的地區蘊含著解決這一問題的不同方式。萬里國際學校的創辦與發展，是浙江省尤其是浙東地區經濟高速發展的社會產物。它立足於教育經濟一體化的模式，堅持自收自支、以教養教，以規模化和集約化求發展，為在我國市場經濟程度較高的沿海地區進行辦學體製的改革提供了新的探索和經驗。

1994年8月，浙江省機械廳一所瀕臨倒閉的職校教師徐亞芬、應雄等人，經主管部門批準，根據浙東地區市場經濟迅猛發展的社會需要，以培訓各級各類應用人才為目的，在資不抵債的情況下自收自支、自我積累，成立了中國第一家教育集團——寧波萬里教育集團（國家全民事業單位）。萬里教育集團遵循市場經濟的運行規律，抓住市場機遇，面向市場選擇集團式辦學的道路，創建寧波萬里國際學校。這是萬里教育集團走教育經濟一體化道路的新嘗試。萬里教育集團是國家事業單位，本身並無經濟實體。但是集團選擇目前國家教育負擔最重的九年製義務教育為探索對象，以先富起來的經濟區域為教育市場，首先依靠國家對民辦學校的優惠支

持政策和自身的資金積累解決教育投資的關鍵問題。在籌建過程中，萬里國際學校依靠集團的經濟力量，拋卻向國家或地方政府部門等、靠、要教育經費的傳統思想，投一、二期工程總投資八千萬元，在具備學校先進教育設施和面向全國選擇優質師資的基礎上，以高標準的辦學條件、高水平的學校管理和高起點的培養目標博得社會的肯定，以初步形成辦學的規模效益在市場經濟中站穩了腳跟，在近兩年的運作中取得了社會效益、經濟效益雙豐收。

在創辦過程中，萬里國際學校明確只有規模效益才能帶來良好社會效益和經濟效益的指導思想，強調走辦學規模化、集約化的發展道路。萬里教育集團原計劃用三年時間達到具備規模效益的目標，提前兩年就已經完成，形成了規模大、資金回籠快、學校發展迅速的良性循環。自1995年9月正式創辦和招生以來，萬裡國際學校迅速形成規模化辦學的良好態勢，發展速度出人意料，目前已形成擁有小學、中學共10個年級、32個教學班級、1200名學生和200多名教職工的規模，成為了由中學、小學組成的總校。以下是一組有關萬里國際學校規模效益的數據分析：

[illegible]



在教育管理架構上，萬里國際學校采取教育集團董事會領導下的校長負責制，學校的辦學者和管理者相互獨立、相互製約，校長參加教育集團的董事會和常委會。校長是學校行政的最高管理者，對外作為學校的法人代表，對內是學校各項工作的組織者和領導者，擁有辦學自主權、行政決策權、人事任免權和財務支配權等多種權力。校長接受董事會的聘用和監督，學校接受市教委的督導。學校下設辦公室、教育部、生活部等機構具體負責相應的部門事務，並以一部（黨支部）、四會（校委會、教代會、工會和家長代會）、一組（專家顧問組）確保學校教育管理的政治性、民主性和科學性。此外，學校每年接受市審計部門的審計，每學期公布經費使用的財務報告，向社會公開教育經費的收支狀況。這一管理模式使學校之長從紛繁複雜和有關於搞創收等事務中擺脫開來，將精力放在校長應該干的事情，對於解決大陸中小學校長普遍感到的「三大困惑」（辦學自主權、學校經營者和教育經費緊缺），有重要的啟發意義和現實意義。此外，學校管理者明確意識到，教育的滯后性決定了教育管理的超前性。因此，萬里國際學校特別注重以現代化的管理手段，來保証超前性、整體性管理的實施。

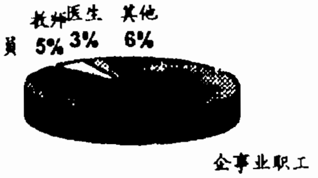
三、堅持正確的教育宗旨和辦學方向，堅決反對教育的貴族化和盈利化

所謂教育的貴族化和盈利化傾向，是指辦學者及管理者在辦學指導思想和培養目標上偏離或背離黨和國家相關的教育方針和培養目標，明確或隱性地以「人上人」的封建教育目標來滿足某些特殊的社會要求，借為個人和小集體謀利。目前一些學校之所以被社會戲為「貴族學校」，是因為某些辦學者為迎合極少數人腦中殘留的封建心理，把學校導向貴族式的生活目標方式。究其實質，貴族化只是表面現象，其實質是利。有些學校的招生廣告，公然以「種瓜得瓜，種豆得豆」為誘餌，明確宣稱要成全父母們望子成龍、望女成鳳，高過上代的夙愿，以社會極少數人才能承受得起的入學費甚至動輒數十萬元的贊助費（或儲備金）作招生條件，使之教育權成為極少數人才能享用的專品。這既違背我國現行的教育方針、政策，也與當前要求教育機會均等的世界潮流不相吻合。

萬里國際學校從創建伊始，就以全面貫徹國家教育方針、全面實施素質教育為明確的辦學指導思想，堅決反對教育的貴族化、盈利化等不良的教育傾向。學校以全面貫徹黨和國家的教育方針，全面實施素質教育，全面提高教育品質，一體化的新路子，全面構建國際化型教育新模式為教育目標。其培養目標是面向21世紀，為塑造高質量的萬里學子打好堅實的基礎。其具體培養目標是四會：學會做人、學會學習、學會生活、學會健體。其人才規格目標是高尚的品德、精博的知識、創新的意識、廣泛的情趣、和諧的個性、強健的體魄、具有國際視野、善於國際交往的堂堂正正的中國人和認識中國的國際人，充分體現了國際學校的辦學特點。

教育宗旨和培養目標不僅明確地體現於萬里國際學校的招生廣告，而且也實實在在地貫徹在萬里國際學校的教育實踐中。籌建之初，學校就針對一些同類學校的貴族化、盈利化傾向，提出"要享受、不要來「萬里」；要發財，不要搞教育"的口號，把艱苦奮斗作為辦學之魂，而不是把盈利作為辦學目的。鄭曙如校長在受聘前堅定地說：「辦教育是很苦的，拿九年製義務教育來賺錢，就不要來叫我。」萬里教育集團董事長徐亞芬多次表示：「創辦萬里國際學校，為的是社會效益，如果要賺錢，也絕對不會花錢禮請大學教授們來幫我們搞教育科研，聘請他們擔任客座教授和成立專家顧問組。」萬里國際學校的創建，不是依靠國家或地方的教育撥款，也不是以收取高額學費或贊助費為啟動資金，而是以萬里教育集團事業發展中的資金積余為經費來源，首先搞學校基建和配套設施的投資。學校的招生收費標準以當地中上等經濟收入家庭的承受能力為依據，接受市物價和審計部門的監督。1995年寧波市區和萬裡國際學校所在地的鎮海區年人均收入分別達0.68萬元和0.75萬元，萬里國際學校收取的年人均總費用為1.4萬元（包括一學年全寄宿的學費、膳食費、著裝費、護理費、醫療費等，學費0.6萬元），基本適合寧波地區的市場經濟發展水平。學校收取的學費全部用於學校運轉的經常性開支，不作為學校盈利手段。此外，萬里國際學校的所有生源都必須接受嚴格而均等的入學測試，杜絕「分不夠，錢來湊」的不良做法。1995年2月的統計表明，來萬里國際學校報名的學生家長以企事業單位職工和機關干部為主體（分別占總數的77.05%、8.78%），個體工商戶占極少數（占總數的3.1%）。以下是1995年12月萬里國際學校學生家長職業分布的統計分析：

萬里國際學校學生家長職業分布圖（統計日期：1995.12）



從以上的餅形圖可以看出，萬里國際學校的正式生來自社會各階層家庭。可見，萬里國際學校既不追求服務於少數的貴族化傾向，也不以盈利為辦學目的。

正因為堅決排斥貴族化和盈利化，萬里國際學校也避免了相應的短期行為，使教育走向正規，使社會真正受益。如正式招生時，已經擁有正規的學校設施，沒有采用先招生收費，再搞基建辦學的運作方式。又如重視師資隊伍的正規化建設，以相對優越的條件，全部面向全國招聘，沒有為節約學校經費的投入而臨時反聘離、退休老齡教師，從而保証高層次、年輕化師資隊伍的穩定和學校教學活動的常規運作。再如注重學校現代化硬件及其配套設施的大力投入，但並不追求豪華的生活設施生活方式，教室與學生宿舍均不允許安裝空調，學校采取明確的措施（如規定學生統一著校服和睡硬板床，不準吃零食，一律吃正規营養餐，不準帶零花錢，學生必須逐漸學會整理和清潔自己的生活用具等等），不給學生創造浪費、自私、任性、驕氣、排斧等不正當生活方式的校園氛圍。

四、若干經驗總結

萬里國際學校在短短的時間裡迅速以規模效益，贏得社會的一致肯定，並在實踐中探索出一條具有中國特色、適應市場經濟發展的辦學模式——萬里模式，為我們提供了一個值得思考的答案。

第一，萬里國際學校在市場經濟的大背景下，積極探索，銳意創新，走出了一條在經濟相對發達、市場經濟程度較高的地域以經濟促進教育，以教育促動經濟的教育經濟一體化民辦教育的新模式。「萬里模式」的形成，取決於內地改革開放、市場經濟逐漸成熟的社會進步。沒有改革開放和市場經濟的大背景，沒有類似浙江尤其是寧波地區相對發達與成熟的市場經濟土壤，就難以孕育、產生「萬裡模式」。這說明在我國各地域經濟、文化發展不均衡的現狀下，各地應當勇於打破整齊劃一的辦學舊模式，針對各自經濟、文化的相應特點，深化教育改革。「萬裡模式」也表明，在我國市場化程度較高、經濟相對發達的地區，走自收自支、自我開拓、以教養教、以教促教、以規模化和集約化求發展的辦學模式，對於更新傳統辦學體製、釋放教育多向功能、彌補國家教育經費短缺、正確引導社會教育消費和普及九年製義務教育，都有積極的現實意義。

第二，萬里國際學校在市場經濟背景下，以全面貫徹國家教育方針、全面實施素質教育為明確的辦學指導思想，敢於面對經濟市場的挑戰，依靠自身的體製改

和教學改革贏得了廣闊的教育市場。「萬里模式」說明，在市場經濟背景下，教育必須敢於面對市場提出的挑戰和給予的機遇，依靠自身的深化改革來拓展生存與發展的社會空間，而不是依靠貴族化和盈利化來獲取短期效益。「萬裡模式」還說明，辦學者應當順應教育機會均等化的國際潮流，在尋求教育市場和深化教育體制改革上苦下功夫，闖出一條適合當地社會需要的辦學模式。

第三，萬里國際學校圍繞素質教育和課程革新，以高校教育科研的優勢為依托，注重以教學促動科研、以科研提高教學，全面深化教育、教學改革，走出了具有萬裡特色的教改新模式。「萬里模式」強調吸收教育歷史上優秀的文明遺產，特別注重借鑒我國近代教育史上教育、教學改革的經驗教訓，把人民教育家陶行知、兒童教育家陳鶴琴等人對教育理論中國化的有益探索，化為學校提高教育教學質量的理論依據。「萬里模式」圍繞建設高素質的教師隊伍和全面實施素質教育，注重加大教學和課程改革的力度和深度，探索出依靠高校科研優勢、以教學促動科研、以科研提高教學、教學與科研結合的教改新路，對於強化高等教育與基礎教育的縱向聯系、加強教育理論工作者與實際工作者的橫向結合、杜絕教育科學理論嚴重脫離實際的弊端、在實踐中培訓師資和提高教師素質均具一定的實踐意義。

第四，萬里國際學校辦學模式的探索，來源於艱苦奮斗、大膽創新和真誠奉獻的萬里辦學精神和萬裡速度。萬里教育集團是在一所瀕臨倒閉的職工學校基礎上發展壯大的，經歷了從無到有、由小到大的艱苦創業歷程，萬里國際學校也經歷了創業步履的艱難坎坷。因此，萬里國際學校把艱苦奮斗作為「萬里之魂」。萬里國際學校敢於面對市場、敢於挑戰市場、敢於突破傳統、敢於推陳出新，勇於在實踐中探索具有自己特色的辦學模式，都是大膽創新精神結出的碩果。萬里國際學校以「要享受，不要來萬里；要發財，不要搞教育」為口號，以「只要有百分之一的希望，就要做百分之百的努力」為信條，使全校加盟者都有為教育而真誠奉獻的精神。萬里國際學校之所以能在短短的一年時間裡，就能上規模、高效益地完成原定三年才完成的計劃，也來自於可貴的萬里速度。艱苦奮斗、大膽創新、真誠奉獻的萬里辦學精神，既是對陶行知「捧著一顆心來，不帶半根草去」偉大精神的時代弘揚，也是符合當今內地教育實際情形和改革的時代需要。

萬里國際學校對市場背景下有中國特色民辦教育的有益探索及其經驗，得到了各級教育主管部門和社會的多重肯定與支持。國家教委游銘鈞督學在視察萬里國際學校時，對學校的辦學方向、教育教學改革給予高度評價，鼓勵學校「面向未來，迎接挑戰，堅持改革，開拓前進」。浙江省人大教科文衛委員會副主任鄔宗傑研究員在視察萬里國際學校時，對學校不以盈利為目的的辦學思想和新穎的培養目標給予充分肯定，勉勵學校堅持正確的辦學方向，培養新穎的人才。浙江省機械工業廳在對萬里國際學校進行的教學督導檢查時，高度贊賞學校「在辦學僅僅三個月時間內能迅速走上正規，並在教學管理、教學改革等方面取得可喜成績」。

萬里國際學校的辦學模式是不斷實踐、不斷完善、不斷革新的結果，目前需要探索的實踐問題還很多。通過近兩年的實際運作，全國優秀校長、全國優秀教師、萬里國際學校鄭鑒如校長深有感慨：「依靠教育集團的領導是辦好民辦學校的前提，接受當地教育主管部門的指導是辦好民辦學校的保証，爭取社會的理解和家長的支持是辦好民辦學校的支柱，提高教育質量是民辦學校生存和發展的生命線，組建一支素質精良的教師隊伍是提高教育質量的關鍵。」總之，「萬里模式」及其經驗，是在市場經濟背景下對建設面向21世紀的有中國特色民辦教育模式的有益探索，具有重要而廣泛的現實意義。

注解：

（其實，我國已沒有貴族製度，本文也不認為我國現在辦有「貴族學校」，因此本文使用的概念是「教育的貴族化」而不是「貴族學校」。）

本課題是寧波萬里國際學校和華東師范大學教育科學與技術學院的合作科研項目，課題主持人為鄭鑒如、金林祥，執筆人為李軍。
鄭鑒如系寧波萬里國際學校總校校長、全國優秀校長、全國優秀教師；
金林祥系華東師範大學教育科學與技術學院院長、教授、博士生導師、全國優秀教師；
李軍系華東師範大學教育系副教授、教育學博士、碩士生導師；
董霞芬系華東師範大學教育科學與技術學院助理研究員。

本課題的完成提供了第一手資料和大力幫助，特此鳴謝

參考文獻：

鄭璧如、金林祥、李軍、董霄芬(1997)　「市場經濟背景下有中國特色社會主義民辦教育的新探索　——本波萬里國際學校辦學模式的實踐與理論」　《民辦教育動態》第6期。

李軍(1997)　香港現行學校三民教育政策之重進及其九七之後的轉向　《華東師範大學學報(教育科學版)》第2期

錢曼倩、金林祥(1996)　中國近代學製比較研究　廣州：廣東教育出版社第一版。

香港教育署課程發展議會(1996)　《學校公民教育指引》　香港：香港政府印務局。

記者(1996)　「萬里學校與丹迪大學建立合作關係」　《本波日報》10月10日。

李軍(1996)　試談我國私立學校的名稱界定問題　《民辦教育動態》第10期。

王鴻清、王鴻仁(1996)　民辦學校的組織管理和教育質量　《民辦教育動態》第9期

呂聖偉(1996)　建立全面走廊的民辦學校評估標準　《民辦教育動態》第8期

胡陽文(1996)　發展民辦教育必須符合我國國情　《民辦教育動態》　第8期

陳玉明(1996)　日本興辦私學經驗值得我國借鑒　《民辦教育動態》　第7期

作者

鄭璧如，本波萬里國際學校校長
金林祥教授、李軍博士、董霄芬，華東師範大學教育科學與技術學院

(Received: April 1,1997; Revised & accepted: June 20,1997)

With the Compliments

of

Everyman's Book Co., Ltd.

Good Earth Publishing Co., Ltd.

香港人人書局有限公司

大地出版社有限公司

致 意

地址：九龍新蒲崗太子道七一四號捷景工業大厦十一樓A座
電話：2338 6103-5　2338 1921
傳眞：2338 3610

徵 稿

教育曙光整年徵稿，歡迎教師、學校行政人員、輔導工作者、教育學者及研究人員投稿，發表他們從研究和實踐所得的新思維和新啟示。每年六月前投稿，如經採用，將於同年十一月刊登。

來稿請寄：九龍彌敦道２１２號立信大廈八樓
香港教師會教育曙光主編收

稿例：

1. 稿件請以電腦軟件(例如中文Word)製作，並以原檔及文字檔格式貯存於無病毒之磁碟內。文件(包括中、英文題目及中英文提要)須打印三份，以示粗體、斜體及表格等之樣式。磁碟外須註明作者姓名及軟件名稱。
2. 請用中、英文在另頁列明作者、所屬機構、職銜、地址、聯絡電話、傳真、電子郵件號碼等。並附回郵信封(連郵資)三個。
3. 稿件字數須在4000-6000字以內。如附圖表，以相等字數計算(8公分 x 16公分圖等於400字)。提要則以150字為限。
4. 來稿格式，請參照美國心理學協會編印的出版手冊(1983/1994年版)。
5. 附圖請自行繪妥，以便製版
6. 已於其他學報發表的文章或同時另投其他學報的稿件，本刊概不接受。
7. 所有稿件須經不記名方式評審，作者在原稿內請勿引用多於兩項其本人的作品在參考文獻內。
8. 文章內容如需作較大修訂，本刊將與作者磋商，由作者修改。
9. 獲刊登文章的版權屬本刊所有。
10. 文責作者自負，有關觀點並不代表本刊立場

Papers Are Invited

New Horizons receives papers and has them reviewed throughout the year. Teachers, school administrators, student counsellors, educators and researchers are invited to submit papers about discoveries and new insights from their systematic inquiries and professional practices. Submissions received before June will normally be published (if accepted) in November of the same year.

Please send papers to: The Editor, New Horizons, Hong Kong Teachers' Association,
242 Nathan Road, National Court, 7/F, Kowloon, Hong Kong

Notes for Contributors:

1. Paper submitted should be on a virus-free floppy disk in the MS-Word and standard ASCII (text) formats, accompanied by three hard copies showing printing styles such as boldface, italics and tables (if any). The disk should be labelled with the name of author and the kind of software used.
2. The author's name, position, affiliation, address, contact number(s) of telephone, Fax and Email, should be given in both English and Chinese. Please also enclose 3 self-addressed envelopes with enough stamps.
3. Paper should be 4000-6000 words in length and should include an abstract of no more than 150 words. Those written in English should also include a Chinese version of the abstract together with a Chinese title. Tables and illustrations are counted as word-equivalents (as a general guide, a 8 cm x16 cm table is counted as 400 words).
4. Submissions should be presented in accordance with APA style. Please consult The Publication Manual of the American Psychological Association (1983/1994).
5. All tables and illustrations should be camera-ready
6. Papers previously published or under consideration for publication elsewhere will not be accepted.
7. All submissions will be reviewed anonymously. Authors are advised to include not more than two of their own publications in the reference section of the manuscript.
8. Contributors will be contacted if substantial revision is recommended.
9. The Journal reserves the copyright of all published papers.
10. The views expressed in the publication are those of the authors and do not necessarily reflect the position of the Journal.

印刷：香港聯興打字印刷公司
Printed by Hong Kong Luen Hing Chinese Typing & Printing Co.

香 港 教 師 會

贊助人：余黎青萍太平紳士(教育署署長)

1996-98 名譽會長

鄺廣傑會督　胡振中樞機主教　釋覺光法師　湯國華主席　謝志偉博士　鄭耀宗教授　李國章教授
潘宗光教授　張 信 剛 教 授　陳佐舜博士　鍾期榮博士　陳坤耀教授　許美德教授

1996-98 名譽顧問

李海洲先生　李思義先生　古茂建先生　古兆鈞先生　吳源興先生　周廣智先生　高家裕先生　鄧宗泰先生

1996-98 年度理事會

會　　長：譚錦銘 (香港教師會李興貴中學)
副 會 長：陳永昌 (官立夜中學)
副 會 長：梁紹川 (教世軍劉伍英小學)
總 秘 書：李仕浣 (香港培正小學)
副總秘書：歐陽枝 (香港浸會大學持續進修院(SCE))
總 司 庫：李定東 (增城同鄉會兆霖學校)
副總司庫：鄧祖鵬 (香港道教聯合會學校)
福利主任：李永鏗 (民生書院(小學部))
學術主任：譚添鉅 (香港大學教育學院)
康樂主任：陳錦棠 (閩僑第二小學)
聯絡主任：郭楚翹 (基督教宣道會太和幼稚園)
服務主任：司徒策 (番色園主辦可信學校)
大專組主席：郭康健 (嶺南學院政治學及社會學系)
大專組秘書：陳城禮 (香港教育學院)
津中組主席：黃志坤 (樂善堂梁植偉中學)
津中組秘書：梁伯聰 (荃灣胡漢輝職業先修中學)
津小組主席：李鑒權 (青衣商會學校上午校)
津小組秘書：陳世豪 (香港神託會培基學校)
理　　事：馮光漢 (寶安商會上午校)
私立組主席：馮秋明 (聖貞幼稚園)
私立組秘書：陳慶祥 (珠海中學)
官立組主席：何國能 (北角官立上午小學)
官立組秘書：黎錦棠 (教育署特殊教育視學及學位安排組)
幼稚組主席：盧劉湘文 (宜美幼稚園)
幼稚組秘書：朱麗明 (便以利學校暨幼稚園)

HONG KONG TEACHERS' ASSOCIATION

Patron: Mrs. C.P.Lai Yu, J.P.(Director of Education)

1996-98 Honorary Presidents

Rt. Rev. Bishop Kwong	Rev. Woo Chun Chung	Rev. Kwok Kwong	Chairman K. W. Tong	Rev. Luk Fai
Dr. Daniel C. W. Tse	Prof. Cheng Yiu Chung	Prof. Arthur K. C. Li	Prof. Poon Chung Kwong	Prof. H. K. Chang
Dr. Chen Tso Shun	Dr. Chung Chi Yung	Prof. Chen Kwan Yiu	Prof. Ruth E. Hayhoe	

1996-98 Honorary Advisers

Mr. Lee Hoi Chow	Mr. Li Shi Yi	Mr. Ku Mou Kin	Mr. Ku Shiu Kwun
Mr. Ng Yuen Hing	Mr. CHow Kwong Che	Mr. Ko Gar Yee	Mr. Teng Chong Tai

The Council 1996-98

President:
Mr. Tam Kam Ming (H.K. Teachers Assoication Secondary School)
Vice-presidents:
Dr. Jimmy Chan (Hong Kong Government Evening Sec. Sch.)
Mr. Leung Shiu Chun (Sa Sam Shing Chuen Lau Ng Ying Sch.)
Secretary General:
Mr. Lee See Yuen (Pui Ching Primary School)
Deputy Secretary General:
Mr. Au Yeung Chi (H.K. Baptist University S.C E.)
Treasurer General:
Mr. Lee Ting Tung (TSDCA Siu Luen School)
Deputy Treasurer General:
Mr. Tang Cho Pang (Hong Kong Taoist Assn. School)
Welfare Officer:
Mr. Li Wing Hing (Munsang College (Primary School))
Co-ordinator, Professional & Academic Activities:
Dr. Peter T. K.Tam (University of Hong Kong)
Co-ordinator, Social & Recreational Activities:
Mr. Chan Kam Tong (Man Kiu Association Primary School No.2)
Liaison Officer:
Ms. Kwok Chor Kiu (C.& M.A.C. Tai Wo Kindergarten)
Service Officer:
Mr. Seto Chak (Ho Shun Primary School)
Post-secondary & U. Group:
Chairman: Mr. Kwok Hong Kin (Lingnan College)
Secretary: Dr. Chan Sing Lai (The Hong Kong Institute of Education)
Subsidized Secondary Schools Group:
Chairman: Mr. Wong Chi Kwan (Lok Sin Tong Leung Chik Wai Mem. School)
Secretary: Mr. Leung Pak Chung (TIACC Woo Hon Fai Prevocational School)
Subsidized Primary Schools Group:
Chairman: Mr. Lee Yuk Kuen (Tsing Yi Trade Association Primary School)
Secretary: Mr. Chan Sai Ho (Stewards Pooi Kei Primary School)
Council Members: Mr. Fung Kwong Hon (Po On Commercial Association School)
Private Schools Group:
Chairman: Ms. Fung Chou Ming (Sing Jean Kindergarten)
Secretary: Mr. Chan Hing Cheung (Chu Hai Secondary School)
Government Schools Group:
Chairman: Mr. Ho Kwok Suen (North Point Government Primary AM School)
Secretary: Mr. Lai Kam Tong (Sp. Ed. Inspectorate & Placement Section)
Kindergarten Schools Group:
Chairman: Ms. Lau Seung Man (Suen Mei Kindergarten)
Secretary: Ms. Chu Lai Ming (Peniel School And Kindergarten)

香港教師會
會址：九龍彌敦道 242 號立信大廈八樓
電話：852 2367 3420, 852 2368 2145　　圖文傳真：852 2722 4813

Hong Kong Teachers' Association
Address: 242, Nathan Road, National Court, 7/F.
Kowloon, Hong Kong.
Tel: 852 2367 3420, 852 2368 2145 Fax: 852 2722 4813