REVIEW

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Beyond Books: Educating Citizens of Tomorrow

ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT (SINGAPORE)

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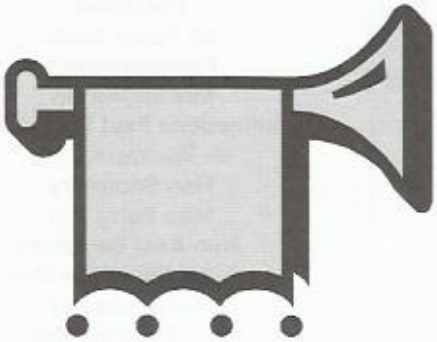


A Call for Articles...

The ASCD (Singapore) REVIEW Committee seeks original articles on teaching and learning...

Manuscripts should be between 2000-2500 words, typewritten (Microsoft Word document) and submitted in the form of a hard copy together with a 3½ inch diskette. Submissions may also be done via e-mail. Photographs would be appreciated. These visuals may also be e-mailed as jpg files. Contributions by regular mail may be addressed to:

Mrs Soo Kim Bee
Editor, *ASCD REVIEW* (Singapore)
c/o ASCD Secretariat Office
Tele-Temps Pte Ltd.
1002 Toa Payoh Industrial Park #06-1475
Singapore 319074 Tel: 6250-7700
Or Email: kbee@gmt.com.sg

The themes for the forthcoming issues are:

Vol 11 No.2: **Helping the Underachievers**
Deadline for articles: 30th Sept 2002
Vol 11 No.3: **Nurturing the Young Entrepreneur**
Deadline for articles: 30th Oct 2002
Vol 12 No.1: **Life Sciences in Singapore Schools**
Deadline for articles: 30th Nov 2002

The theme of this issue evolved out of concern voiced by some educators and parents that schools have been placing too much emphasis on preparing children to pass examinations. Others felt that schools should really be preparing children for the world of work. Yes, schools should and do play a role in preparing and guiding children in their choice of vocations. However, in our pursuit of the economic purpose, we must not lose sight of the fundamentals – we need to nurture and develop engaged, informed and reflective individuals, the citizens of tomorrow, who care about their family, friends, their fellow citizens, their country and the world they live in. In essence, people who do their bit to make a difference. We do not want our schools to simply churn out students who can pass examinations with flying colours. We want future leaders, risk takers as well as team players, we want independent, well adjusted adults who are life long learners and we want future citizens who have an appreciation of the Arts and aesthetics.

Some educational initiatives in the primary schools have also had a backwash effect into the preschools. Parents have been known to make their choice of a preschool based on whether the school offered computer lessons. What goes on in such classes and are the preschool teachers trained to make informed choices about software? Do they know enough to integrate the skills and the learning that should take place? How involved are parents in the education of their children? Should they leave all matters pertaining to literacy and numeracy to the schools or do parents have a role to play, complementing what is done in schools?

*The forthcoming issues of the **ASCD REVIEW** will explore the following themes: the underachieving student – those who can learn, but **learn differently, nurturing the young entrepreneur** and the **push towards the life sciences** in our schools. We encourage all educators, school leaders and teachers to share their projects, initiatives or research on the above themes with our REVIEW readership. We look forward to hearing from you soon.*

Soo Kim Bee
Editor

Beyond Books: Educating Citizens of Tomorrow

Vol. 11 No. 1

CONTENTS

Scholar-Leader Programme in River Valley High

Desmond Lim

This programme was **conceptualised** by the Vice-Principal of the school then, Ms Ek Soo Ben, who considering all these years of achievements, felt that it was time River Valley High started its own leadership programme. The **purpose** was, and still is, to provide our student-leaders with opportunities to hone their leadership and communication skills, and for the school to groom a group of pupils who can act as role models for the student population.

The 49 Scholar-Leaders were **selected** based on a dual-criteria basis – their positions in their CCA and academic performance. Their aggregate of 6 relevant subjects [L1R5] plus a first language must not exceed 15 in order to gain admission into the programme. Due to their busy schedules, especially with CCA activities or competitions, what we look for in the academic aspect is consistency of good performance. Leaders who gain automatic admission are members of the executive committee of the Student Council [equivalent to Prefectorial Board].

This programme allows these leaders to **organise** school events, like Lunar New Year Celebrations, Heritage Day and SMArT Day and to **chair** dialogue sessions during school assembly on important issues, like the relevance of SAP schools. After each event or activity, there will be a post-mortem whereby feedback will be given to the leaders, and from there they will learn which good practices to keep and which errors to avoid.

The teachers who act as **mentors** strongly believe in the necessity and importance of this programme and they look-out for the leaders' welfare and academic results. The mentors work with the leaders on the organisation and planning of events and as advisers for the assembly presentations.

Pupils' comments:

"I feel that this programme gives me more opportunity to use my leadership skills, opportunities which I may not be offered even from my own CCA. For example, I have learned to face a bigger crowd during the assembly discussion between the leaders and the student population. To be successful leaders, good grades alone

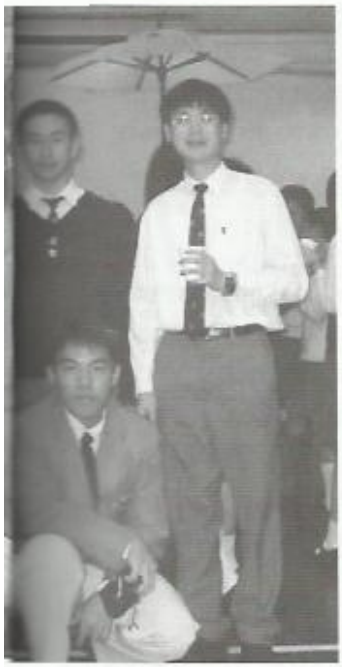
are not sufficient, we need exposure and practice, which means at times we may need to sacrifice our revision time for other curriculum activities."

Loo Ser Yue, President of St John's Ambulance Brigade

"This programme provides the Student Councillors with a platform to work with other student-leaders of the school whom we may not have the chance to cooperate with. This is a rare and valuable experience as we can all learn from one another, like the different approaches they would use to deal with the same problem. I have matured as a leader in my service in the Student Council, and being part of the Scholar-Leader Programme has added another facet to my growth."

Wan Paul Weng, Vice-Principal of the Student Council

Mentor-Teachers' reflections:



"There are many advantages to be reaped from this programme, one of which is the mentoring that the teachers provide the leaders, and the interaction between them. Though informal, the interaction is beneficial to the improvement in the communication skills of the students and the development of their mental process. Another benefit is the opportunity for the students to give back a little to the school for its investment in them."

Mr Clement Yuen, Mentor for Group 2

"Our leaders are all very busy so we are not able to carry out mentoring-discussion sessions with them on a more formal and regular basis. We reckon that this present pioneering batch of 49 is huge. If we are more stringent and admit fewer leaders, each mentor will take care of a smaller group, which will help to give more attention to each leader."

Mr Desmond Lim, Mentor for Group 1

Participation in the Hong Kong-Singapore Exchange Programme, March 2002:

Wong Jing Song, Wan Paul Weng, Tan Zheng Wei, Phua Kia Min and Jeremy Ong.

***Desmond Lim** is the teacher-in-charge of the Scholar Leader Programme and Subject Head for Civics and Moral Education in River Valley High School.*

Moving Ahead With A Modular Approach To PCCG in Evergreen Secondary

Tan Chai Hok and Mary Koh

Introduction

Evergreen is a new neighbourhood school with only lower secondary pupils. The Lifeskills Programme forms an integral part of the Pastoral Care and Career Guidance Programme. It is aimed at providing a holistic education to pupils. This Programme is aligned with the school's vision, mission and motto, with an emphasis on providing a nurturing environment which inculcates good values besides imparting pupils with the core skills and knowledge.

During the first year of operation, the school adopted a conventional approach to the teaching of the Lifeskills Programme. Based on the needs of the school and pupils, the PCCG Department identified key domains and competencies which were considered important for our pupils. Topics covering these domains and competencies were selected. Form teachers conducted all the topics to the respective form classes during the weekly PC period. The Programme was monitored through feedback from teachers and pupils. Several issues and suggestions were made:

(1) Although teachers were able to meet their form classes the whole year, there was no opportunity to interact with pupils from the other classes during the

Mrs Theresa Lim involved pupils on "How to handle infatuation.

Mr Joseph Tan leading a session on "Sexuality Education" with his class.

PC period. Since teachers had the weekly home period with their own form classes, it was felt that it would be more beneficial for the teachers to interact with the pupils and, in the process, get to know and understand the pupils' feelings and needs better. This was particularly true for teachers who did not teach pupils from other classes or streams. Similarly, pupils would have opportunities to interact with teachers who otherwise would not have taught them. This helped to promote pupil-teacher interaction and enhance rapport between them.

(2) Teachers were required to teach the topics specified in the Programme. In an attempt to cover all the topics, teachers felt that it was difficult for them to conduct an in-depth study and mastery of the topics.

Method

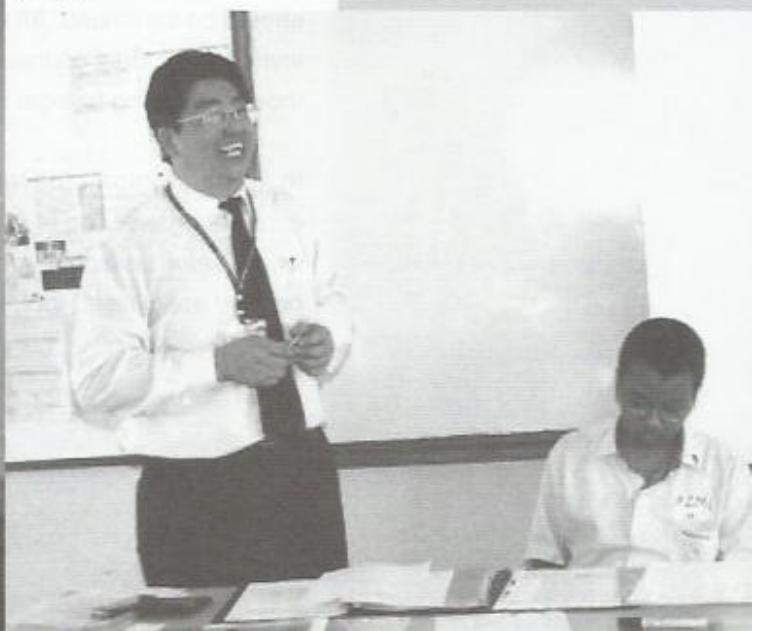
The school's Lifeskills Programme was restructured to take into account the views of the staff and the pupils:

(1) Key modules were retained and significant topics were identified for each module as shown in Table 1.

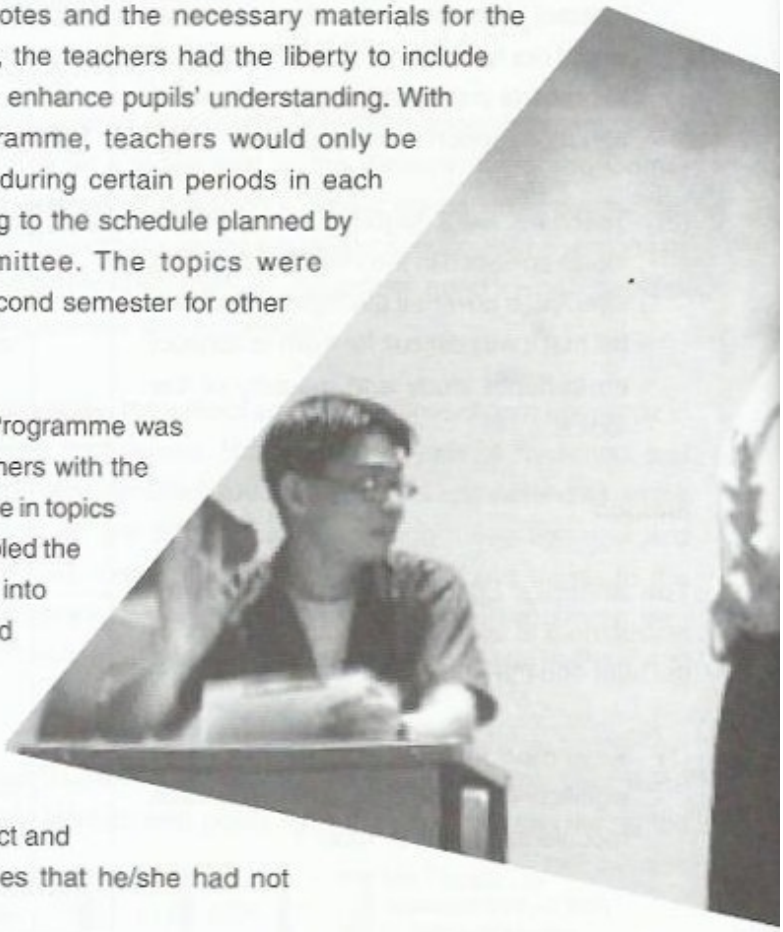
Table 1

S/No	Modules	Sec 1 (Topics)	Sec 2 (Topics)
1	Our School	• Our vision and mission • House names Presentation on school values and goals.	• Our vision and mission • House names • Presentation on school values and goals
2	Visioning	Target Setting	Target Setting
3	Personal Effectiveness	• Discovering our hidden qualities • Understanding the Self • Roses and Thorns • Managing the Physical Self • Managing the Emotional Self • Management of Stress • Character Development – values • Understanding strengths and weaknesses. • Extrinsic and Intrinsic Motivators	• Understanding and Appreciating Learning. • Developing a Personal Attitude towards Learning • Management of Stress • Management of Anger • Managing the Physical Self • Personal Grooming and Social Etiquette
4	Personal Safety	• Under Peer Pressure • Taking Personal Responsibility	• Handling Peer Pressure • Assertiveness Skills
5	Inter-Personal Effectiveness	• Knowing about others • Conflict Resolution • Recognising feelings of others	• Conflict Resolution (Further techniques) • Together we are a Team • Recognising values and feelings of others.
6	Effective Learning	• Time Management • Study skills	• Time Management • Study skills
7	Career Guidance	• Being aware of jobs (Career Awareness)	• Jobs Programme
8	Growing Years series	• Healthy relationships with the Opposite sex • Infatuation • Wait and see • Pornography • IRC	• Pornography • IRC • Masturbation • Wait and see • Healthy Relationships with the Opposite sex
	Visits/Field trips/ Courses/ workshops	• Career Talks by professionals, volunteers and staff members	• Attachment at ITE • Visit to Polytechnics • Talks by ITE and Polytechnic lecturers • Student Immersion Programme

Laughter is one way to help you cope with stress!



(2) Under the revised programme, all teachers were given the opportunity to select the topics they preferred. The PCCG Committee then organised the teachers according to topics based on the preferences indicated as far as possible. Specialised topics which required the 'expertise' of external personnel or resource persons, were conducted by these specialists. For example, the topic on "Handing Negative Peer Pressure" was conducted by a counsellor from the Fei Yue Family Service Centre while " Handling life's difficulties" was conducted by a trainer from SOS during school assembly. A schedule was drawn up and teachers were rostered to teach the respective classes according to the topics organised. The Committee assisted in preparing the handouts, basic notes and the necessary materials for the teachers. However, the teachers had the liberty to include additional notes to enhance pupils' understanding. With this revised programme, teachers would only be required to teach during certain periods in each semester according to the schedule planned by the PCCC Committee. The topics were repeated in the second semester for other classes.



The modular Lifeskills Programme was aimed at providing teachers with the opportunities to specialise in topics of their choice. This enabled the teachers to go in-depth into the topics taught and hence add greater value to their lessons. Teachers were also given the opportunity to interact and know pupils from classes that he/she had not taught.

A survey was conducted to assess the effectiveness of the modular programme. There was unanimous agreement among the teachers that the modular system should be continued. All agreed that the external speakers should continue to be invited to conduct courses and/or assembly talks for specialised topics, especially those pertaining to legal issues or where professional expertise was needed.

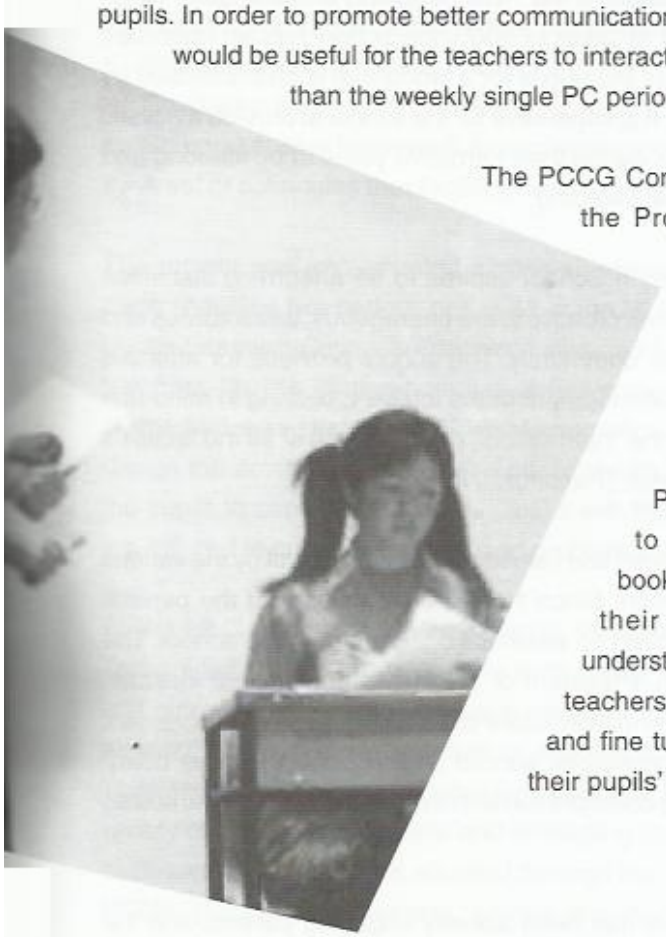
In their opinion, the modular package was structured, informative and comprehensive. The teachers felt that the lesson plans and the materials provided were useful. Lesson preparation time was reduced and teachers could concentrate on their specialised topics.

Pupils' feedback on the Programme was also positive. The lessons were relevant to them and thus it was observed that class discussions were lively and pupils' interest was keen as they gained a clearer insight into the topics taught. Most agreed that they had benefited from the modular programme and the talks organised were able to meet their needs. Pupils felt that the PCCG lessons had promoted communication with their teachers.

Conclusion

For the programme to be implemented successfully, the topics covered should be reviewed periodically to ensure that they remain relevant. The speakers identified should have the knowledge and communication skills to capture the attention of pupils. In order to promote better communication between teachers and pupils, it would be useful for the teachers to interact with the class for a longer period than the weekly single PC period allocated.

The PCCG Committee would review and revise the Programme to find the right mix between the teacher and topics. For specialised topics such as sexuality education, stress management etc, workshops should be conducted for the teachers prior to the lessons. The PCCG Committee would continue to acquire resources (eg tapes, books etc) for the teachers to enhance their professional knowledge and understanding. With more experience, the teachers would be able to hone their skills and fine tune their lessons to add value to their pupils' learning and development.



Hmm... The teacher inspecting the stress level of the students.

Tan Chai Hok *is the Head of Department/ English and Mary Koh is the Principal of Evergreen Secondary School.*

The Maths Learning Centre @Rosyth and I-Care

Kit Gek Wah

Introduction

The year 2001 marks a new era for Rosyth School as it is re-located to the new premises with state-of-the-art facilities in the HDB heartland of Serangoon North Avenue 4. With a pupil enrolment of close to 3000, the school has an important and yet challenging task to prepare the pupils for a world that is characterised by rapid changes and shifting values. It is imperative for the school to provide a holistic education that develops the pupils during their formative years to be life-long and independent learners of high moral standing.

In line with the school vision, Rosyth School aspires to be a learning institution where the pupils are nurtured to think creatively, are courageous, adventurous and have the heart to reach out to the community. The school provides for affective development in tandem with the development of the intellect, bearing in mind that for total education, there must be the "harmonious development of all the facilities (head, heart and hand) of the learner (Pestalozzi, in Encarta 97).

Rosyth School has always encouraged and valued active involvement by the various stakeholders in the pupils' education. Since 1996, partnerships with the parents and the community have always been an essential component of the school. The statement made by Dorothy Rich, President of the Home and School Institute, MegaSkills Education Centre : "Trying to educate children without the involvement of families is like trying to play basketball without all the players on the court" echoes the school's belief in strong collaboration with the stakeholders, in particular, the parents.

For the past five years, the school has been actively engaging parents and the community in various school programmes and projects, tapping on their talents and expertise and concurrently sharing the school's vision and policies with them. This is particularly evident in two of our programmes for the year 2001, Maths Learning Centre @Rosyth and I-Care.

Maths Learning Centre @Rosyth

The Maths Learning Centre @Rosyth (MLC) underlines the school's effort to innovate and make improvements in the teaching and learning environment that help the pupils discover their abilities and stretch their potential. The MLC focuses

on creating a learner-centred environment that embraces multiple intelligences and diverse learning style, and encourages understanding of the interconnectedness of the ever-changing world.

The MLC is set up with the end in mind – to be a centre that is saturated with interests, desires and courage. The programme at the MLC aims to prepare pupils to work and learn collaboratively in groups as the school recognises that innovative and creative teams of people are better equipped to meet the complex challenges created by an increasingly interdependent world compared to individuals who work alone. The teachers are coaches in personal mastery of the pupils, providing opportunities for them to explore and learn from their mistakes.

The key infrastructure elements that are evident at the MLC are

- Well-conceived room organisation
- Conducive learning environment
- Comprehensive framework for organising pupils' work
- A set of schedules that facilitate learning and pupil management

The project was implemented across all eleven Primary Two classes with each class spending two periods per week at the MLC. A workshop entitled "Use of the Maths Learning Centre in Teaching" was conducted to prepare the Primary Two teachers for the implementation of the project. The Head of Department for Mathematics and the Primary Two Mathematics Teachers work closely to plan and design the activities at the MLC. Activity sheets with instructions are prepared for the pupils to carry out the various tasks with little guidance. These activity sheets are tailored to cultivate thinking and problem solving skills in the pupils.

At the MLC, there are seven stations, including one on the use of Information Technology. Pupils are grouped in such a way that there is a good blend of boys and girls with mixed abilities. Each group is put through all the eight stations by rotation. The pupils are exposed to a range of activities in the various stations. They are required to work in groups to explore Mathematical concepts through a variety of materials and media and leveraging on Multiple Intelligence strategies. A multi-sensory approach is adopted through the use of learning tools such as CD-ROMs, puzzles, brainteasers, games and manipulatives to practise, learn and discover mathematical concepts, measure, form patterns and design.

The MLC provides an excellent platform for the pupils to participate actively in group activities and to be less dependent on the teacher as they now take on different roles to support their peers in the various activities. The pupils feel involved in their common learning endeavour not just simply individual learning. Stronger bonding is developed between the teacher and the pupils as the setting allows better interaction between them, with the teacher playing the role as a facilitator.

The teacher is able to observe the individual ways of learning and processing information at the MLC. The teacher would follow up by tailoring the mathematics

lessons in the normal classroom to improve the pupils' weaker skills and to further exercise their "stronger" intelligences.

The session at the MLC could not be effective with only one teacher to handle about forty pupils. Hence, parents are roped in as teacher helpers at the MLC to assist the teacher in facilitating the session. The home-school partnership at the MLC has been effective, further strengthening parents' ties with the school.

Evaluation has been very encouraging. Some of the pupils' feedback are as follows:

- *The MLC activities were interesting and enjoyable*
- *Learn how to co-operate with classmates in group work*
- *Understood more about the topics*
- *Had fun measuring and exploring*

The Maths Learning Centre@ Rosyth will evolve to be an effective and dynamic instructional approach that will be implemented in other lower primary levels next year.

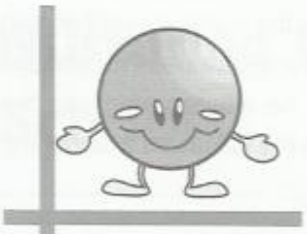
I-Care Project

The I-Care Project is the brainchild of a committee that was formed in June 2000. This committee comprises of teachers, parents and members of the Rosyth School Alumni Association. Its composition signifies the strong collaboration between the school and the stakeholders and it also reflects the importance of home and school working in tandem to develop the affective domain of the pupils.

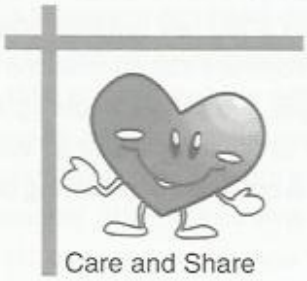
Although affective education together with civics and moral education, national education programmes and community involvement programmes have been part and parcel of the school curriculum, the committee agreed that development of a set of core values would provide the focus and set the pace for Rosyth School to achieve excellence in character education. These core values would serve as a personal moral compass to guide the pupils through life and help them embrace future challenges in the new millennium. With these values, the pupils would be able to judge what is right, care deeply about what is right, and then do what they believe is right, even in the face of pressure from without and temptation from within.

The committee understands that today's education must promote character based on values appropriate for the knowledge age. The members discussed the qualities and attributes that pupils should possess and the challenges they are expected to face in the future. After putting in many hours of deliberation, the committee decided on five core values called I-Care.

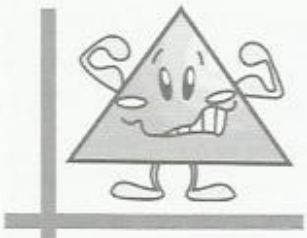
I-Care represents the five core values namely **I**ntegrity First, **C**are and Share, **A**dventurous Spirit, **R**espect and Responsibility, **E**xcellence in all we do. Five shapes were selected to represent each I-Care value to help the pupils to remember them:



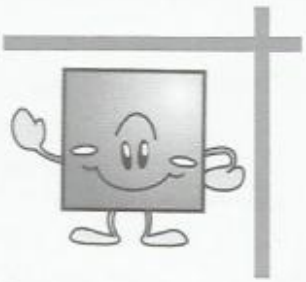
Integrity First



Care and Share



Adventurous Sprit



Respect and Responsibility

Excellence in all we do

The birth of the five core values was followed by the adoption of a whole-school approach to inculcate these values in our pupils through making a conscious effort to embody them. The school provides ample opportunities for the pupils to form caring attachments to the teachers and to each other. These attachments would then nurture the pupils' desire to learn the five core values and translate them into positive actions. This is accomplished through weekly pastoral care lessons conducted by the teachers. The teachers define the core values in terms of observable behaviour and use academic subjects as a vehicle for teaching these values. Simultaneously it is promoted in the general life of Rosyth School through a series of fun activities: Power Phrase Competition, Board Competition, Art Competition, and Creative Writing Competition. In particular during the power phrase competition, parents, staff, Parent-Teacher Association and the Rosyth School Alumni Association were invited to pen their power phrases. Response from the various stakeholders was overwhelming.

Pupils' entries from these competitions and the power phrases contributed by the various stakeholders were then compiled into the I-Care Book that was successfully launched on Children's Day Celebration, 28 September 2001. Each pupil was given the I-Care Book as a Children's Day gift.

The school would further reinforce the five core values to the pupils by applying an intentional and comprehensive approach which promotes these values in all phases of the school. The five core values would continue to be incorporated into the weekly pastoral care lessons and the teachers would use the values as a launching pad for discussion and interactions with the pupils.

Conclusion

With the implementation of the Maths Learning Centre @Rosyth, I-Care and other programmes, Rosyth School has embarked on a journey towards ability-driven education. By providing a richly stimulating environment that nurtures the cognitive as well as the affective development of the pupils, the school would light the light for the pupils to guide them on this journey of life-long learning. With strong collaboration from the stakeholders, the school is confident of achieving our shared vision:

The Candle and the Book

Light the light
Ignite the passion for learning
To go beyond the limit
And be the best that is to be

Light the light
Set our Olympian torch ablaze
To compete with courage and fortitude
And excel with distinction

Light the light
Fire the imagination
To innovate and to create
And of great minds will we make

Light the light
Spark the enthusiasm
To forge a better life
And lend a helping hand to those in need

Light the light
Kindle our clarion call
To be ever READY TO SERVE
And proudly will we serve for school and for country

Light the light

Kit Gek Wah *is the Vice-Principal of Rosyth School.*

Nurturing the Arts in Haig Girls' School

Angela Tan

Our nation's increasing emphasis on the Arts has accented our school's negligence in the Arts in its pursuit for academic excellence. A review of the school calendar of 1997 and 1998 showed that few Arts-related activities and events were organised by the school as compared to the number of activities organised by the examinable subject departments. The school's total expenditure on the aesthetics also showed that the National Arts Council Arts grant was under-utilised. The percentage of school funds assigned to the Arts is far less than those assigned to academic subjects. A further probe revealed an acute shortage of qualified aesthetics teachers to organise Arts-related activities or to sustain an Arts Programme and no proper physical and technical facilities to support the Arts. Since the Arts is not readily accessible to the pupils, our team decided to maximise pupil participation in the Arts by bringing the Arts to them.

Under the annual HGS Arts Programme, Performing, Literary and Visual Arts performances and demonstrations are organised to coincide with school and national events, festive celebrations and post-examination enrichment activities. With effect from 2000, a biennial Festival of Arts (named *HGS Arts Fest*) will be organised. It is a month-long event that is to be held during the second term of the school calendar and is broadly divided into three segments:

EXPOSURE *where external professional Performing Arts groups are invited to stage assembly performances and friends and families of HGSians conduct Arts-related demonstrations. 60% of the Assembly Performance fees are subsidised using the National Arts Council and Singapore Totalisator Board Grant. The school pays the remaining 40%. The other performances by parents, the Alumni and friends are free-of-charge.*

EXPEDITION *where pupils go for Arts-related educational trips subsidised using Edusave grants. In 2000, the pupils viewed the IMAX movie FANTASIA and attended a complementary workshop.*

EXPRESSION *where upper primary pupils are given an opportunity to creatively and expressively respond to the Arts. They participate in busking during their respective recesses and lower primary pupils transform the school into an Arts Hub via Visual Arts.*

Between two consecutive *HGS Arts Fest* is the **Interim Year**, Arts groups are invited to put up assembly performances once per term under the HGS Arts Programme. The Interim Year also serves as a time for students to respond critically and expressively to what they have assimilated in the previous year.

Creative and Innovative Ideas

The uniqueness of our innovation lies with the way we adopted and adapted the NAC Arts Education Programme (NAC AEP) and the concept of our biennial Singapore Arts Festival to suit our school's context. Each year, the National Arts Council provides schools with a list of local Arts groups, which put up performances for school children. The nature of each performance is categorised under Exposure (i.e. assembly performances), Excursion (i.e. outdoor trips to view local exhibition and sculptures) and Experience (i.e. workshop-based sessions for a small group of students).

We adopted the NAC AEP Exposure category. For the annual HGS Arts Programme, the school selects several local Arts groups listed under the NAC AEP Exposure for assembly performances at least once a term or whenever there is a special event (e.g. festive celebration, national commemorative event).

We adapted NAC's idea of categorising the nature of the performances and used it as the basis for the structure of the HGS Arts Festival. Our definition of the categories differs from that of NAC's. Our programme is largely pupil-centred in that we provide them with the basic exposure to the Arts in our *Exposure and Expedition* segments. We want to give our students an opportunity to display and nurture their talents and creativity. This is done through the *Expression* segment.

Like the biennial Singapore Arts Festival, the biennial HGS Arts Festival runs for a month with both core and fringe events. The core events include all assembly performances held during curriculum time while the fringe events include all demonstrations and Busking during recesses as well as after school hours. The HGS Arts Festival is a microcosm of the Singapore Arts Festival in a local primary school context and is a milestone in our school's aim to establish a lively Arts Culture, nurture a school of young ladies who are able to appreciate the Arts and provide the breeding ground for budding talents in the Arts.

Cost Savings

There was a huge increase in the use of the Arts Grant in 2000 and full utilisation of the Arts Grant in 2001. The HGS Arts Programme and the Arts Festival is an excellent example of how to maximise the use of the Singapore Totalisator Board Arts Grant of $10 000 per year. With reference to the table below, a cost savings of $ 66 000 was also achieved.

PERFORMING ARTS *11 performances put up in HGS @ $1000 EACH*	
1000 tickets @ $4 per child x 11 performances	$ 44 000
Transportation of 12 buses @ $100 each x 11 performances	$ 13 200
COST SAVINGS	$ 57 200
VISUAL ARTS *Free demonstrations by 14 guest artists*	
COST SAVINGS: $200 x 14	$ 2 800
BUSKING *All busking put up by upper primary pupils: 2 performances per recess for one month*	
COST SAVINGS: $50 x 120	$ 6 000
TOTAL COST SAVINGS: $ 66 000	

Maximizing Pupils' Talents and Potential, Development of Staff and Parental Involvement

The leadership of the school has been able to make this contribution and innovation a success through mobilising the creativity and enterprise of the stakeholders – pupils, parents, teachers and the community. 100% pupil participation in Arts-related activities was achieved in H G S Arts Fest, inspiring the pupils to be Arts-inclined. Pupils went on to participate in inter-school and National competitions and community performances e.g.

- Haig Girls' Chorale won Gold Award in SYF Central Judging for Primary School Choirs 2000
- Haig Girls' Chorale performed at the UNICEF Fund raising Carnival at Fort Canning Park
- Haig Girls' Chorale performed at Joo Chiat Community Centre's 40th Anniversary
- HGS Cultural Dance Group won Silver Award at SYF Central Judging 2000
- Pupils won prizes at Tamil Singing Competition (National and Zone 1st Prize)

The wealth of experience and exposure at the Arts Programme and the Arts Festival has equipped pupils with basic foundational knowledge of the palette of the Arts. It has in turn encouraged pupils to actively participate in the specially commissioned musical that the school staged in August 2001, in conjunction with her 50th Golden Anniversary and Official Opening. In addition, the HGS Arts Programme has surfaced and developed talent and potential through mass participation, raised the standards of pupils' participation in the Arts and promoted the Arts as a healthy recreational activity for pupils.

The HGS Arts Programme and Arts Festival was created with the school's mission and MOE's mission in mind. The mission of our school is to commit ourselves to developing every pupil's potential for lifelong learning, critical and creative-thinking, self-discipline and social responsibility. The Arts programme also complements the MOE mission that seeks to mould the future of our nation by providing a quality and well-balanced education. In addition, we also recognise the urgency in taking steps to raise a generation of thinkers and life-long learners.

Therefore, we have

- provided a holistic education for our pupils
- inculcated the appreciation of the Arts
- raised a school culture that focuses on the Arts
- identified potential talents and have featured their artistic talents in the school musical in 2001
- increased pupils' exposure to Arts activities
- provided opportunities for pupils to showcase their talents
- created a conducive Arts environment to maximise and harness pupils' talents in the Performing, Visual and Literary Arts
- supported MOE's strategic shift to an Ability Driven Education
- encouraged parental involvement and support for the Arts

HGS Partners-in-Education committee (i.e. parent volunteers) and HGS Alumni helped to source for various artists to showcase their works and skills free-of-charge. Thus, teachers' professional time was not taxed. Parents also put up demonstrations and encouraged pupils to participate in hands-on sessions. The HGS Arts Programme and Arts Festival has also provided opportunities for the school to showcase and share her unique experiences at both cluster and zonal WITS sharing sessions. Furthermore, pupils, parents and teachers alike are now better able to appreciate and support local performing Arts groups, hence helping Singapore to realise its vision as a Renaissance City.

OUTSTANDING CONTRIBUTION AWARD
2001

A.	General Information			
Name of School: Haig Girls' School			Cluster:	E7
Level: Primary ☑	Secondary ☐	JC/CI ☐	(Please tick one)	

B.	Composition of Panel	
Position	**Name**	**Designation**
Chairperson	Mr Fong Whay Chong	Superintendent
Member	Miss Dolly Tan Chin Geok	Vice President
Member	Mrs Lim Mei Lian	Head of Department
Member	Mrs Yong Siaw Choo	Subject Head

C.	Award Criteria
1. Creative and Innovative Ideas	
2. Maximising pupils' Talents and Potential	
3. Development of Staff	

D.	Awardee(s)								
Type of Award: **Team**									
S/No	**CPO/NRIC No**								**Name**
1.	7	4	2	2	1	6	9	F	Sharon Cheong Hwee Ling
2.	1	7	1	5	9	1	9	D	Norah Bte Nordin
3.	0	0	9	3	2	1	6	G	Roselind Lee
4.	0	1	7	4	6	4	5	F	Leong Lai Kum
5.	7	4	3	9	2	6	5	B	Helimmi Ahmad Ibrahim
6.	0	0	3	8	9	0	7	B	Angela Tan

Mrs. Angela Tan *is the Principal of Haig Girls' School*

The Thinking CIP: The RGPS Experience

Choong Pek Lan

As we moved towards "Thinking Schools and Learning Nation", there is a need for us to adopt a more "thinking" approach in the programmes that we have in school. The Community Involvement Programme in our school is basically very structured and our objectives are defined. Our aim is to nurture our pupils to become individuals who have initiative to help those who are in need in the society and apply what they have learnt to help them. With this objective in mind, our CIP programme for the primary six pupils is planned systematically to realise it. The primary six pupils started their CIP last year after their PSLE. They had to identify the needs of the needy organisations and raise funds to meet this need. They had to design a website for these organisations as well.

First of all, the primary six pupils were divided into groups and each group will have one leader. The leader has to organise and assign jobs to the team members. Four to five pupils from each class were chosen to visit the needy organisations during the primary six PSLE marking days. They were taught how to use digital cameras and video cameras before the visit. They also need to prepare questions that the class would like to ask to identify the needs. Below is a short write-up by the pupil who visited the organisation.

Our Tour

We went on a tour of the Society for the Phŷsically Disabled, viewing the various facilities and rooms. At the same time, we managed to interact with the people there. The building has 3 levels (with a 4th one being under construction) and the patients there are grouped together according to their abilities. They can be "promoted" from the first level to a higher one (i.e. 2nd Level) when ready.

Our guide, Ms Koh explaining the programmes

When this group of pupils came back to school, they presented the pictures and video and told the class what to raise funds for. They were taught how to make decisions on what to raise funds for after going through the decision matrix. For example, for the old folks' home, the pupils might want to raise funds to paint the place or install a new computer for the home. The pupils will need to go through the following matrix to make a decision:

(What can I do?)
Option 1:_____

Consequences:_____
(What will happen if I take this option)

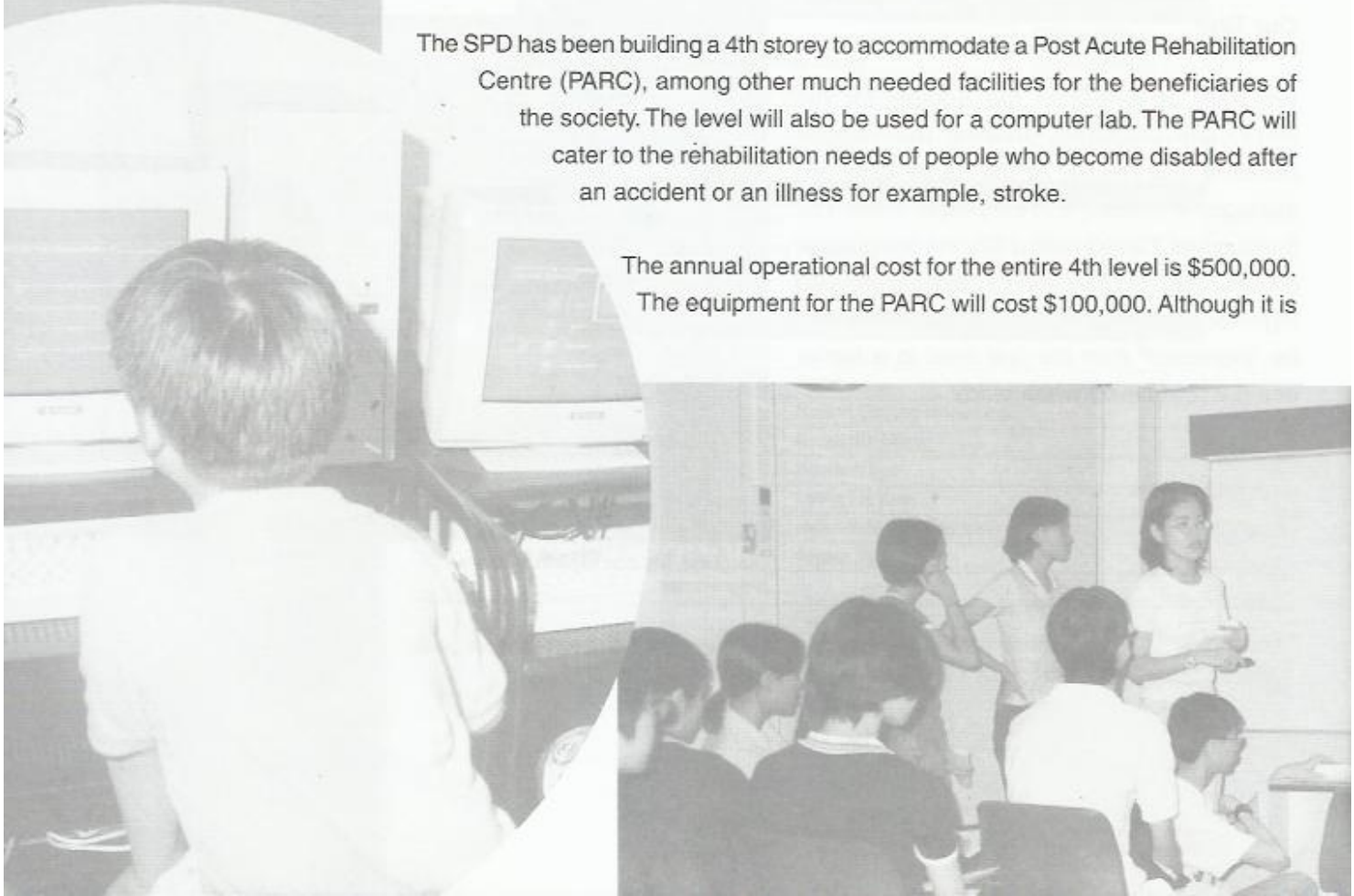
Support:_____
(Why do you think each consequence will occur?)

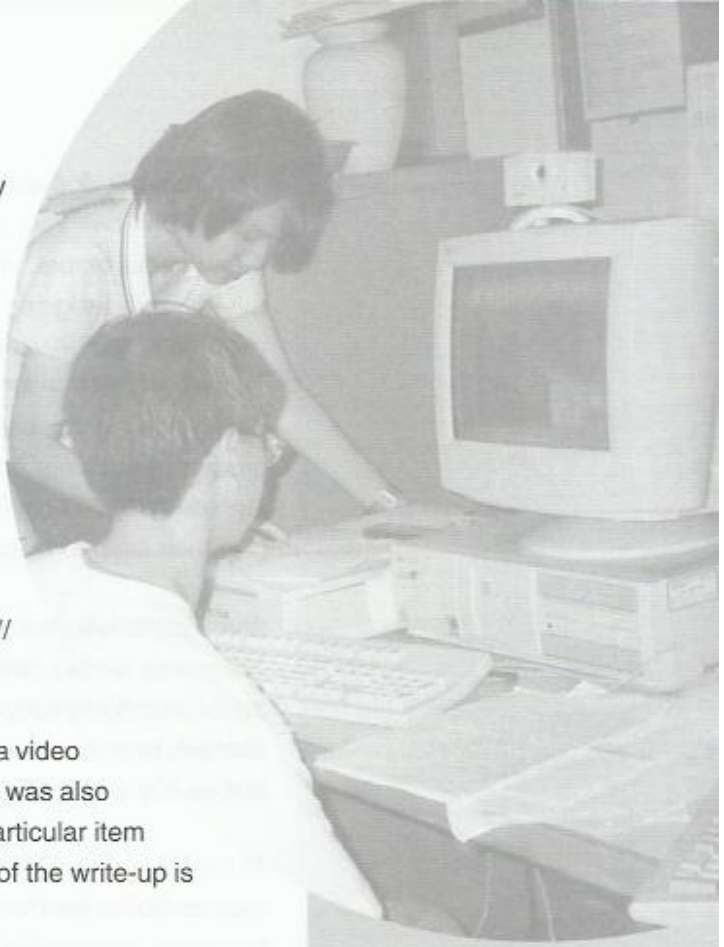
Value:_____
(How important is the consequence? Why?)

By going through this matrix, pupils will compare the options that were raised and go through a systematic thinking process for them to eventually come up with a good decision. The following is the write-up of the pupils in their website on what they want to raise funds for.

The SPD has been building a 4th storey to accommodate a Post Acute Rehabilitation Centre (PARC), among other much needed facilities for the beneficiaries of the society. The level will also be used for a computer lab. The PARC will cater to the rehabilitation needs of people who become disabled after an accident or an illness for example, stroke.

The annual operational cost for the entire 4th level is $500,000. The equipment for the PARC will cost $100,000. Although it is





way beyond our means to raise such a vast sum, we will try our best to raise a reasonable donation for the Society. Although our contribution is but a tiny fraction of the sum the SPD needs, every little bit counts.

The primary six pupils also learnt how to design webpages using Frontpage (a parent volunteer taught every primary six class) pupils in their after-exam activities. The pupils were divided into groups to design a website "To meet their needs" and the best website designed would be given to the CIP co-ordinator. The best work among all the classes would be uploaded to our school website. (see http://www.moe.edu.sg/schools/RGPS/CIP Website)

The website has included photos taken during the visit and a video clip of interviews with the people at the organisation. There was also a write up on the reasons they had to raise funds for the particular item they intend to get for the charity organisation. An example of the write-up is shown below:

The Art Auction @ the Hall

As preparation for the auction, pupils created replicas of famous artists' masterpieces. These paintings/drawings were then put up for the auction. Parents, teachers and students filled up slips indicating their choices and bidding prices, which were later collected by the auctioneers. The latter informed bidders if they were outbid. At the scheduled closing time, the highest bidder received the art piece and was issued an official receipt. Although all the pictures fetched relatively small amounts, it was still an experience for the girls who were running the auction, which altogether collected a reasonable amount of money for charity.

The Fun-fair @ the Canteen

A few weeks before, the Primary Six students busied themselves with plans for the fun-fair and designing posters for their stalls. The posters, which were pasted all over the school in various places were attractive and eye-catching.

Finally, the big day came. The RGPS canteen was even more busy than usual as crowds of students from Primary 1 to 6 swarmed in. The Primary Six students' stalls were open from 9am to about 2pm. Some teachers and parents also came to give their support by patronizing the stalls.

Some stalls were selling food and drinks such as chicken wings and bubble tea. There was a stall selling live fishes, others selling handmade friendship bands, corners for doing body art, and many other game stalls too. The music jukebox, for students to dedicate their favourite songs to friends, was a hit. Business was terrific and money was rolling in!

All the students enjoyed themselves immensely at the fun fair . It was a very enriching experience for the Primary 6 students as they learnt many things from it (e.g. how to run mini-businesses). They did their part for society, by raising funds to help the needy. In spite of the imminent recession, all patrons were generous and gave charitably. The CIP fun-fair was declared a success and 6I collected a total of $550.10 . We had raised more than our target of $500 set beforehand.

They also had to let others who visit the website know what kind of help they can render to the organisation (a) and the related links(b) that they can find in the internet as shown below:

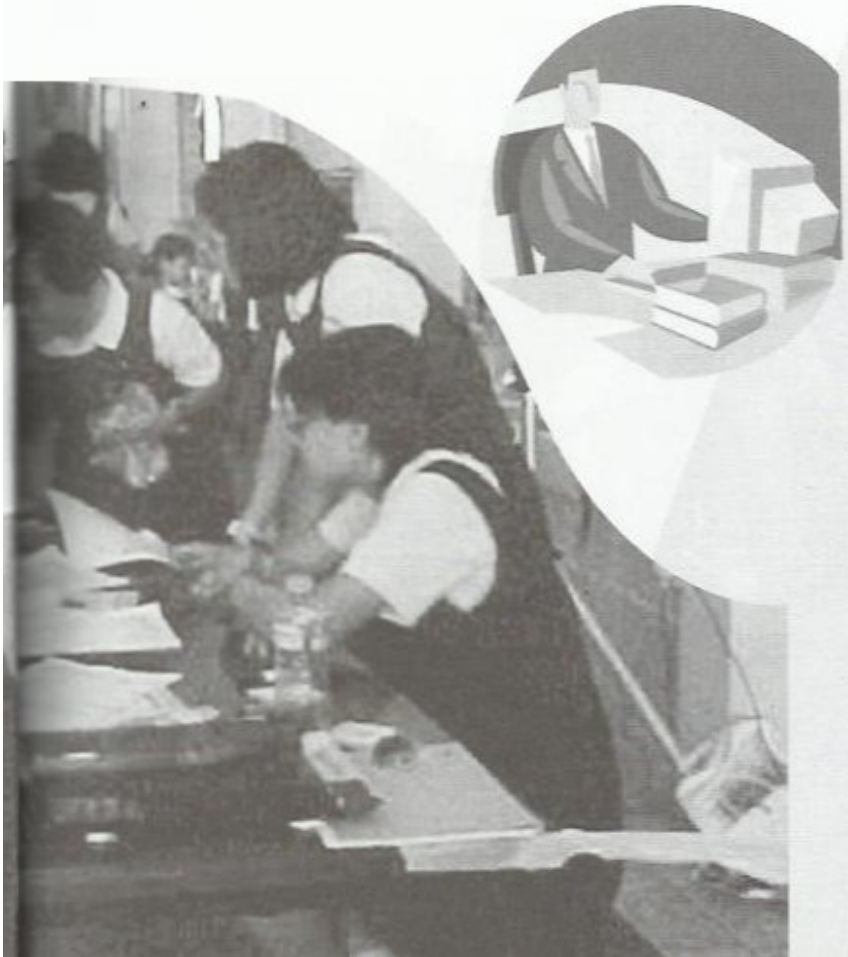
(a) You could volunteer at the Society to help out. Examples of posts available include therapist aides for the Post Acute Rehabilitation Centre and befrienders to the disabled beneficiaries. Call 323 2303 for enquiries.

- Alternatively, make a simple donation to the SPD to help it run its programmes and enable disabled people to integrate into society.

- If you have any friends who are disabled, don't dwell on their disability, insult them, or avoid them as if they were different. Instead, offer to help them with certain tasks. More importantly, remember to let them become more independent and allow them to do things that are within their capability – they cannot depend on you all their lives. Treat them with the respect and dignity you would award any other person.

- Visit the Sheltered Workshop of the SPD to buy handicrafts for your friends and relatives.

(b) After viewing the rest of the website, you may be interested in looking at what other charitable organizations are doing. We have selected a few websites and created links to them for you to conveniently access them. If you have other sites you wish for us to add, please send them to the webmasters.



To find out more about how to help/to volunteer, visit the Society for the Physically Disabled (SPD)'s website:

www.spd.org.sg Here you can find out more about the activities of the SPD and how you can help the SPD specifically.

Local associations related to disabilities:

www.ncss.org.sg – Homepage of the National Council of Social Service. NCSS helps to fund part of the activities of the SPD.

www.dpa.org.sg – Find out more about the Disabled People's Association (Singapore) and the Rainbow Centre here. There's an interesting e-pal page for people to meet other disabled friends of the same age.

www.spastic.org.sg – The Spastic Children's Association of Singapore was established in 1957 to provide treatment and assistance to people with cerebral palsy. Surf through to find out how you can help.

On the 8th and 9th of November last year, the pupils had to set up stalls to raise funds for the needy organisations. They designed posters to attract customers to patronise the stalls, a week before the actual day of sales. The pupils sold bubble tea, fish balls, cakes, hotdogs, soft drinks and biscuits (they learnt how to prepare these from the after exam activities conducted by parent volunteers). Some classes even had their parents come and help out in the stalls. All the classes also had games stalls where the pupils came up with different games they had invented. They also gave prizes for the winners of the games. Some of the classes also came up with stalls like hair binding and auction of their art pieces. The pupils also pasted the photos of the fun-fair fundraising activities in their websites.

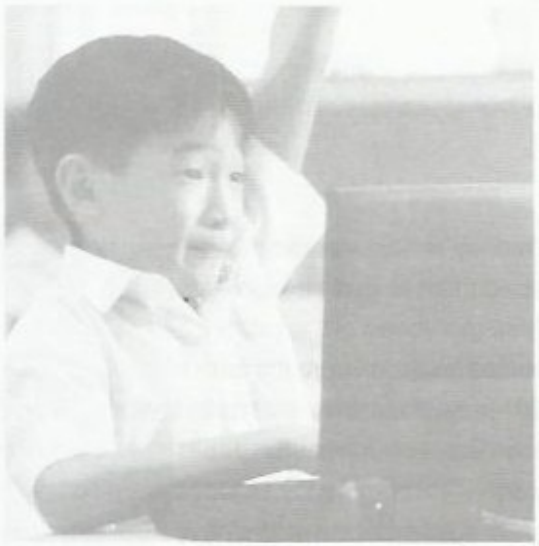
The pupils were excited about the whole project. In the survey for pupils, the feedback on this programme was very positive. The pupils had found this event as a fruitful learning experience and it was very meaningful. The website designed by our pupils was amazing and the teachers were all proud of the pupils' work as we could see that they had put in a lot of effort.

The sum of money raised was sent to the specific organisations and we hope that we have helped them to meet their needs.

We also collected feedback from the form teachers involved in this project. Teachers found this CIP project massive and quite tedious. However, they also agreed that this was a good way to put what the pupils have learnt in school to a test and used their skills to serve the community. Besides learning how to make decisions, design webpages and raise funds, the pupils have also learnt how to be more responsible, task-oriented and to be more co-operative. They learnt how to be effective as leaders of a team and how to do problem solving on their own as well. Above all, teachers saw the pupils become more mature and independent in the midst of all the activities. We also found that the pupils were generally very compassionate and that they do think of the less fortunate. They were eager to help those in need.

As such, we hope that these pupils will continue to learn to serve the community better and in meaningful ways long after they leave RGPS.

Mdm Choong Pek Lan *is a Chinese GEP (Gifted Education Programme) teacher of Raffles Girls' Primary School. She is also the Head of Department of Discipline/ PCCG/ CME/ CIP. Email: cpd@moe.edu.sg*



Use of Computer Technology in Child Ca

Cheung Wing Sum and Hu Chun

Introduction

Computer technology impacts on all of our lives. Children are exposed to the use of the computer when they are very young. Some teachers and parents believe that "computer experience as a key to winning the race to financial success" (Healy, 1998, p.90). In recent years, there is more software in the market for young children (SPA Consumer Market Report, 1996). "Market researchers tracking software trends have identified that the largest software growth recently has been in titles and companies serving the early childhood market" (NAEYC, 1996, p.11). Many young children are using computers even before they go to primary school.

There are positive and negative effects of computer technology on young children's learning and development (Clements, 1994; NAEYC, 1996; Haugland, 1997; Healy, 1998). "Developmentally appropriate software offers opportunities for collaborative play, learning, and creation" (NAEYC, 1996, p.11). Many studies indicate that there are positive effects in integrating the use of computer into children's learning environment. The positive effects include enhancing language and fine motor skills (Wright, 1989). Liu (1995, p.73) suggests that "Computers are also seen to as tools to increase children's self-esteem and attitudes". Other studies (Goldstein, Olivares, & Valmont, 1996; Stine, 1993; Matthew, 1995) suggest that the use of CD-ROM storybooks will help children to improve their vocabulary and comprehension skills.

Haugland and Wright (1997) believe there are good developmental software packages in the market for young children. Haugland / Shade Developmental Scale

enters

was developed to help teachers and parents to select developmentally appropriate software for young children (1997). The scale was used to evaluate educational software for young children (Haugland & Wright, 1997, Haugland, 1998, Haugland, 1999).

However, there are other potential visual, postural, skeletal, and radiation problems when individuals use computers (Healy, 1998). She believes (Healy 1998, p.218) that "In the case of a child under seven, there are few things that can be done better on a computer and many that fail miserably by comparison". Haugland and Wright (1997, p.6-9) identified the following potential dangers of using computer technology with young children:

- Computers replace other activities
- Computers rob children of their childhood
- Computers are too abstract
- Computers provide children with an unrealistic image of the world
- Computers encourage social isolation
- Computers reduce feelings of awareness and creativity

Context

In Singapore, children aged between 2 and 6 years old may attend childcare centers (Sharpe, 1998). Programs are either half day or full day for five and half days a week. Child care centers are required to follow guidelines laid down by the Ministry of Community Development and Sports (MCDS). These guidelines include staffing ratios, safety, health and record keeping. Child care centers are also required to follow MCDS's curriculum guidelines which include age appropriate learning activities in language arts, math, and art and craft. Childcare center teachers are accredited by MCDS.

In Singapore, people value education very much. Children's education is the number one worry for many parents (The Straits Times, July 19, 1999). They worry that their children "need to study more", and "need more tuition". They want their children to learn as much as possible because they believe education is a powerful mechanism to have a successful life. However, most children have working parents. They cannot afford to spend the time with their children, but they would like their children to have a good education. It is not uncommon for parents to send their children to childcare centers. This is because parents expect the centers to look after their children and prepare them academically for their primary schools.

In 1997, the Singapore government launched the "Masterplan for IT in Education" with a S$2 billion commitment from 1997 to 2002. We believe the term "IT" used in the Master plan refers to "computer mediated information technology". The plan is a blueprint for the use of IT in primary and secondary schools. The highlights of the curriculum changes include integrating IT into all subjects, using IT as a resource for teachers and students, having 30% of the curriculum time as hands-on use of computers, using IT as a tool for curriculum assessment, and having IT skills in the school curriculum. With a clear vision, planning, support, training, and implementation, computer technology has been used extensively in primary and secondary schools.

Since all the primary schools use computer technology in the classrooms, some parents expect their children to learn the technology before going to primary school. As a result, many childcare centers allow children to use computer technology in their curriculum and / or enrichment programs. However, little is known about the content and practice of the use of computer technology in these centers.

Methodology and Research Questions

This is a survey study about the use of computer technology used in Singapore childcare centers and the extent of the teacher training given in the use of the technology. One hundred and ninety-four centers' supervisors or principals were involved in this study. The study reflected the views from them for their centers. We used descriptive statistics and SPSS 10.0 to analyze the data. With regard to the number of children in the centers, the range is from 9 to 400 (N=191), the mean is 79 and the standard deviation is 45.

Our study intends to find out to what extent computer technology has been integrated into childcare centers in Singapore. We have five major research questions in this study.

1. How are children exposed to the use of computers in the centers (regular curriculum or enrichment program)?

2. To what extent do teachers received training in the use of computer technology?

3. To what extent are the children exposed to computer technology in childcare centers?

4. To what extent do teachers use computer technology in classroom activities?

5. What are the available computer facilities in the centers?

Findings and Discussion

1. How children are exposed to the use of computers in the centers (regular curriculum or enrichment program)?

Many childcare centers use computer technology in their regular curriculum and / or enrichment programs. Sixty-eight percent of the centers allow children to use computer technology in their regular curriculum and / or enrichment programs. In a sense, they are using computer technology to facilitate children in their learning. We name these centers as "computer-supported" centers. Fifty-eight percent of them allow children to use the technology in their regular curriculum. Thirty-three percent of them allow children to use it in their enrichment programs.

From the above findings, we believe the majority of the children are exposed to the use of computer technology. However, parents still have a choice if they want their children to use computer technology at such an early age because some centers still do not allow children to use the technology and some of them only have it in their enrichment programs.

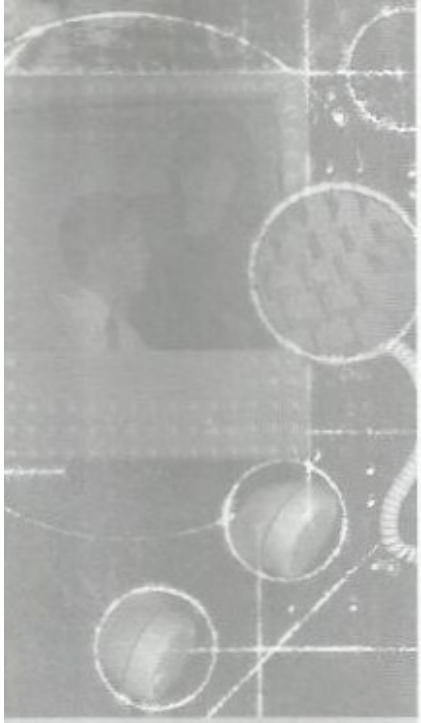
Since the majority of the centers are using computer technology in their programs, the computer training for the teachers becomes an important issue. The following research question will investigate to what extent teachers received training in the use of computer technology.

2. To what extent do teachers received training in the use of computer technology?

Many educators believe teachers need to be able to select appropriate educational software and to integrate them effectively into the learning environment for children (Cheung, 1994, Davis & Shade, 1994; McCraw, Meyer, and Tompkins, 1995; Swick, 1989).

Teachers in most of the centers have not received training in the use of the computer technology. Thirty-three percent of teachers received training in using computer technology in all the centers. Forty-four percent of the teachers received training in using computer technology in all the "computer-supported" centers.

The majority of the "computer-supported" centers did not provide training for their teachers. We believe the following situations may happen in the centers which allow children to use computer technology but have not provided training for their



teachers. First, teachers who are using computer technology in the centers have already received training or learned the knowledge and skills in using computer technology. Second, some companies offer computer hardware, software, and teachers to childcare centers. Those companies set up the required computer facilities for the centers and send teachers to the centers to deliver the lessons to the children. These centers usually charge an additional tuition fee for the "computer lessons" to pay the companies. In this sense, teachers from these centers do not teach any lessons using computer technology because staff members from those companies take care of those "computer lessons". In these cases, should the parents hold the kindergarten or the computer companies responsible for the quality of the "computer lesson"? Third, teachers are not ready to use computer technology to teach the children but they were still asked to do it.

3. To what extent are the children exposed to computer technology in childcare centers?

We believe it makes good sense to analyse the extent children are exposed to computer technology only in "computer-supported" centers. This is because other centers do not expose computer technology to children at all.

3.1. How much time do children spend in using the computer on each occasion?

Duration of using computer each time	Percent of the "computer-supported" centers
Less than 15 minutes	2%
15 to 30 minutes	54%
30 to 45 minutes	36%
More than 45 minutes	8%

Fifty-six percent of the "computer-supported" centers (56%) allow the children to use the computer for 30 minutes or less each time; forty-four percent of them allow children to use it for more than 30 minutes each time.

3.2. How often are the children are allowed to use the computer in their regular curriculum?

	Centers which allow children to use computer in their regular curriculum
Once a week	59%
Twice a week	14%
Three times or more in a week	10%
Others	17%

We analyzed how often children are allowed to use computer in those centers where the use of computer is part of their curriculum. There are one hundred and

two centers. The majority of those centers (73%) allow children to use the computer once or twice a week. However, seventeen percent of the centers choose "others" because they allow children to use the computer according to various situations such as their grade level, and whether the children are enrolled in the half-day or full day programs.

3.3. How do the centers usually group children when using the computer in class?

Grouping Style	Percent of the "computer-supported" centers
Individual	26%
In pairs	46%
In a group of three or more	9%
Others	18%

Most of the children work in groups when they use the technology. If the teachers provide appropriate instructional activities and guidance for them to work in-groups, children may develop good social and communication skills. However, if the teachers do not know how to handle the class in computer group work situation, students may not be "on-task".

Eighteen percent of the centers choose "others". This is because they usually use a combination of grouping styles. For example, some centers usually allow children to use the technology on an individual basis as well as in pairs. They use both grouping approaches most of the time.

3.4. What are the expected computer skills for K2 graduates?

Expected computer skills for K2 graduates	Percent of the "computer-supported" centers
Use a mouse	79%
Turn on and off the computer	67%
Able to type	65%
Use CD-ROM	63%
Use a floppy disk	46%

The above finding indicates that even when children were exposed to the use of computer technology, they may not know some of the basic computer skills such as using a mouse and turn on / off the computer. Primary-one teachers need to be aware that some of the children in their classes need to learn these basic computer skills in order to use the technology effectively.

4. To what extent do teachers use computer technology in classroom activities?

We analyzed how teachers use computer technology in their classroom activities in "computer-supported" centers.

4.1. To determine the percentage of centers using computer technology to help children learn languages.

Using Computer Technology to Learn Languages	Percent of the "computer-supported" centers
English	85%
Chinese	37%

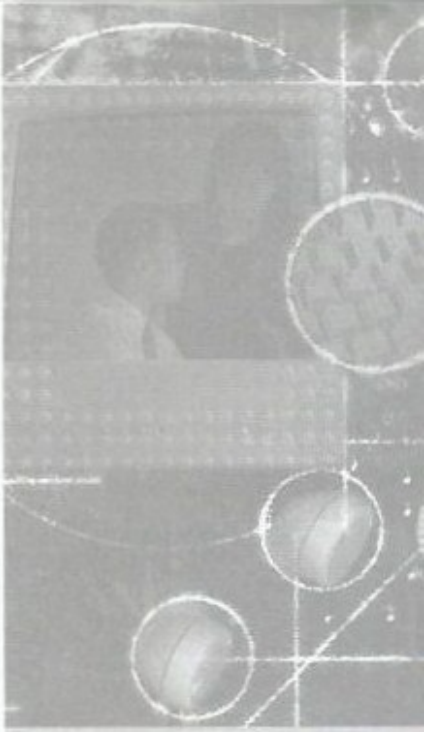
Many centers use computer technology to help children learn English and some use it to help them learn Chinese. We believe most of the available software packages for young children already in the market are either in English and Chinese. This may be one of the major reasons why centers use the technology to help children in learning those two languages.

4.2. What are the specific areas that teachers usually use computer technology to help children to learn?

Computer technology is used to help children to learn in specific areas	Percent of the "computer-supported" centers
Learning numbers	81%
Learning alphabets	73%
Learning color	68%
Learning phonics	62%
Playing games	61%

Many centers use computer technology to help children learn numbers, alphabets, color, and phonics. The question we should ask is, "Does the computer accomplish the task better than other instructional activities?" Teachers have been using other instructional activities to teach young children in these areas for many years. We need to find out if using computer technology to help children learn these areas is better than other instructional media. In a sense, teachers should justify why they need to use computer technology to help young children to learn in these areas. Educators tend to agree that "if the computer can accomplish the task better than other materials or experience, we will use it" (Healy, 1998, p.218). Otherwise, computer technology should not be used. To make wise decisions to use or not to use the technology with young children, we believe teachers need to have training and experience in using computer technology with young children.

Sixty-one percent of the "computer-supported" centers allow children to play "computer games". Teachers need to know the pros and cons of computer games. For example, playing video games "may develop certain forms of visual-spatial reasoning" (Healy, p.157). On the other hand, poorly chosen games may teach children "bad values" such as "one must kill first to survive" (Healy, 158). Healy warns teachers to be cautious when choosing video games for children.



5. What are the available computer facilities in the centers?

We analyzed the computer facilities in the "computer-supported" centers because we are concerned about how computer technology is used in helping young children to learn. Computer facilities include the hardware as well as the software.

5.1. Computer Hardware

Computer Hardware	Percent of the "computer-supported" centers
1 to 5 computers	75%
6 – 10 computers	21%
More than 10 computers	4%

Though most "computer-supported" centers (75%) have only one to five computers, we believe the available computer sets may be sufficient because most centers allow children to have only limited access to the computer. Many centers also put children in groups when they use the technology. However, 87% of the "computer-supported" centers have the CD-ROM drive. This shows only 13% of the "computer-supported" centers cannot use a CD-ROM software package. Nowadays, most of the educational software packages for young children are in CD-ROMs. If the computers do not have the CD-ROM drive, they may not be able to use the most recent educational software packages.

5.2. Computer Software

5.2.1. To determine the quantity of the software collection that the centers have.

Quantity of software collection	Percent of the "computer-supported" centers
No software collection	18%
1-10 software packages	29%
11-20 software packages	15%
21-30 software packages	10%
No response	9%

Most of the "computer-supported" centers do not have many software packages. As a result, teachers do not have many choices in selecting software for their children. It may be interesting to realize that some "computer supported centers" (18%) do not even have any software packages. This may be because some computer companies provide services to childcare centers by giving them hardware, software packages, and even teachers to deliver the computer lessons.

5.2.2. To determine the types of software packages that the centers have.

Types of software packages	Percent of the "computer-supported" centers
English	86%
Math	77%
Chinese	42%
Science	38%
Art	29%
Religion	2%

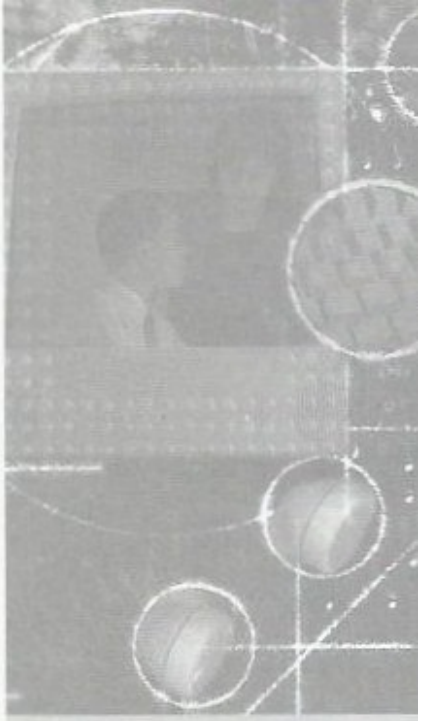
The majority of the "computer-supported" centers have English and Math software packages. Here are some possible reasons. Firstly, there is more quality software in the market for the centers to choose from for teaching of English and Math. Secondly, the curricula emphasizes English and Math. Thirdly, centers tend to believe that using computer software in class is an effective way to teach these two subjects. Further investigation is needed to confirm the above possible reasons.

We believe there is potential in using computer technology to help young children develop their artistic talents. For example, Kid Pix allows children to develop creative artwork with user-friendly features.

Conclusion

Computer technology is just another technology available to teachers and students. Many educators tend to have the view that if the technology can provide students with a better learning environment, then it should be integrated into the environment (Healy, 1998). We agree with National Association for the Education of Young Children that "a professional judgement by the teacher is required to determine if a specific use of technology is age appropriate, individual appropriate, and culturally appropriate" (NAEYC, 1996, p11).

To make sure computer technology is used in an appropriate way to educate our young generation, teachers need to be trained in selecting computer hardware, software, identifying the potential advantages and dangers of using the technology, and developing meaningful instructional activities to integrate the technology into our children's learning environment.



Reference:

Cheung, W. S. (1994). *A New Role for Teachers: Software Evaluator.* International Federation for Information Processing, Philadelphia, U.S.A., Elsevier Sciences B.V (North-Holland).

Clements, D.H. (1994). The uniqueness of computer as a learning tool: Insights from research and practice. In J.L. Wright & D. D. Shade (Eds), Young *Children: Active learners in a technological age* (pp.31-50). Washington, DC: NAEYC.

Clements, D.H., Nastasi, B. K., & Swaminathan S. (1993). Young Children and Computers: Crossroads and Directions From Research. *Young Children*, x(x), 56-64.

Davis, B. & Shade, D. (1994, December). Integrate, don't isolate: Computers in the early childhood curriculum. In ERIC/EECE Digest, EDD-PS-94-17.

Goldstein, B., Olivares, E. & Valmont, W. (1996). CD-ROM Storybooks: Children's Interactions SITE conference

Haugland, S. (1998). *The Best Developmental Software for Young Children.* Early Childhood Education Journal, 25(4), 247-254.

Haugland, S. (1999). *The Newest Software That Meets the Developmental Needs of Young Children.* Early Childhood Education Journal, 26(4), 245-254.

Haugland, S. (1997). *Young Children and Technology A World of Discovery.* Boston: Allyn and Bacon.

Haugland, S. W. & J. L. Wright (1997). Young Children and Technology. Needham Heights, Massachusetts: Allyn and Bacon

Healy, J. M. (1998). *Failure to Connect.* New York: Simon & Schuster.

Matthew, K. I. (1995). A comparison of the influence of CD-ROM interactive storybooks and traditional print storybooks on reading comprehension and attitude. Unpublished doctoral dissertation, University of Houston.

McCraw, P., Meyer, J. and R. Tompkins. (1995). Technology Integration and Thematic Instruction in a School / University Partnership. Journal of Computing in Childhood Education, 6(1), 43-57.

National Association for the Education of Young Children (1996). Position statement on technology and young children: Ages three through eight. *Young Children*, 5(6), 11-16.

Sharpe, P. (1998). Aspects of Preschool Education in Singapore. *Early Child Development and Care*, 144, 129-134.

Stine, H. A. (1993). The effects of CD-ROM interactive software in reading skills instruction with second grade Chapter 1 students. (Doctoral dissertation, The George Washington University). Ann Arbor, MI: University Microfilms International.

Swick, K. (1989, January). Appropriate uses of computers with young children. Educational Technology, 7-13.

SPA Consumer Market Report (1996). Washington, DC: Software Publishers Association (SDA).

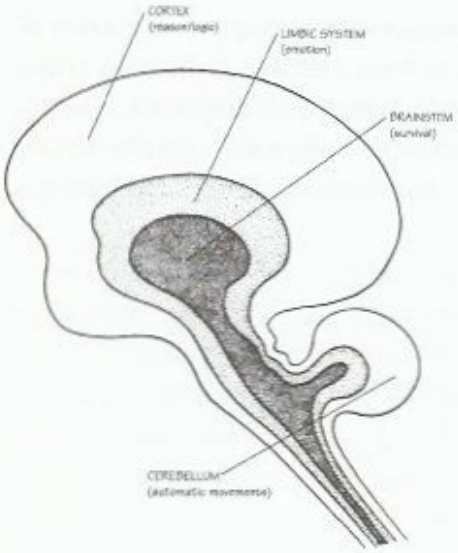
Cheung Wing Sum *and* ***Hu Chun*** *are attached to the National Institute of Education Nanyang Technological University, Singapore 637616*

Emotions, Values, Good Thinking

Agnes Chang Shook Cheong & Ang Wai Hoong

To most laymen, emotions and thinking seem to be at the opposite ends of a continuum. Behaviors, especially negative or impulsive behaviors are perceived to be emotion-driven. At the same time, good thinking is usually associated with cleverness and intelligence. Indeed, good ideas and great deeds are originated from brilliant minds. However, a review of ancient as well as contemporary history would provide a plethora of cases on poor decisions or heinous deeds associated with illustrious people. Similarly, police files would also yield rich evidence of tragedies created by people with high intelligence. The question is: Does good thinking get undermined by strong emotions?

MacLean's Fig. 1
MacClean's Triune Brain Model



Neurobiologists and neuropsychologists could easily answer the question from the findings of brain research. From Paul MacClean's Triune Brain Model (1978), it is easy to locate the various brain structures of importance and their functions: the cerebellum (automatic movements), brain stem (survival), limbic system (emotion) and cortex (reason, logic). (Fig. 1) Cognitive scientists currently are in favour of a modular brain organization that increases the importance of the limbic system.

Our emotional system is a complex and error-prone system that defines our basic personality early in life and unfortunately, resistant to change (Sylwester, 1998). It has

also been found that there are more neural fibres projecting from the brain's emotional center into the logical/rational center than the reverse. This indicates that emotion is often a more powerful determinant of our behaviors than our brain's logical/rational process.

Two interrelated brain's systems share the regulation of our emotions:

1. The brain stem and the limbic structure around it focus inward on our survival, emotional and nurturing needs. The limbic system is our brain's main regulator of emotion and plays an important role in the selection and classification of procedural and declaration knowledge for storage in the long-term memory.

2. The cerebral cortex regulates the higher functions and addresses our interaction with the external world (Edelman, 1992). It responds very rapidly (in milliseconds to seconds to various space-time demands. The system (i) receives, categorizes and interprets sensory information; (ii) makes rational decisions and (iii) activates behavioral responses.

Factors that Impact our Thinking

From the hard evidence of scientific brain research, we realize that emotions indeed are strong determinants of our behaviors and often override our reason and logic. Before we can learn to override our survival and emotional impulses, we need to confront our own personal barriers in order to come on top.

Enculturation

Our racial traditions, religious beliefs and values are deeply instilled in us by our culture and parents at a very young age. These define the basis of our attitudes, and values which may be in conflict with the critical thinking and decision-making demanded of us in resolving a problem. There are religions which forbid operations and blood transfusions and the believers are left to die even though a simple operation could have saved their lives. Superstition has also been the cause of tragedies and scams. The importance of a male heir for many Asian races has led to infanticides, illegal abortions and abandoning of female babies. The comical irony is that this has also resulted in a lack of suitable brides for the males when they grow up because of male gender preference.

Superstitious Chinese parents are unhappy if their daughters are born in the Year of the Tiger as it would be difficult to marry them off. An open mind is indeed crucial for critical and creative thinking to take place.

Self-concept and Self Worth

A person with a positive self-concept tends to be confident and secure and is more likely to make unbiased and fair decisions. It is important for us to think of ourselves

as a worthy person. We are also more likely to use self-defense mechanisms, self-serving biases and other distortions to ensure that we appear good and worthy, at least to ourselves.

Ego Defenses

Ego defenses are psychological coping strategies that distort reality in order to protect ourselves from guilt, fear, pain or other negative feelings about ourselves. Common ego defenses are Denial, Projection and Rationalization.

Denial

Refusal to accept an unpleasant reality is denial. This is commonly seen in cases of parents denying the bad behavior of their children in school, or a wife denying the husband is having an affair, despite solid evidence. Denial inhibits our ability to think objectively of the situation.

Projection

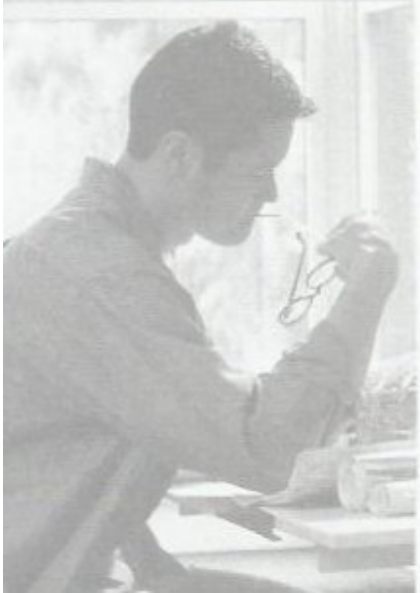
Projection is the defensive mechanism whereby we see in others a negative part of ourselves which we cannot accept and often do not realize or recognize. We often accuse others of behaviors which are mirrored in ourselves such as deceit, laziness and incompetence. Sad to say, projection relieves a person of guilt but interferes with his ability to think critically about self and others. That is why an insecure and incompetent boss is more likely to be a suspicious, unfair and harsh leader.

Rationalization

Rationalization is distorted thinking that attempts to justify behavior motivated by self-interest. Rationalization is lying to ourselves about the real reason for certain behaviors and decisions. Indeed, the easiest person to deceive is ourselves.

Self-serving Biases

Biases in our thinking to protect us from threats to our self-concept are called "self-serving biases". According to Maslow (1954), most people tend to see what they want to see in order to maintain their strength and positive feeling about themselves. The self-serving bias is the tendency to take credit for our success and to blame our failures on external factors (Zuckerman, 1979, Bradley, 1978).



Expectation

We tend to think about the world according to what we want to see and what we need to see. We also tend to think of the world in terms of what we expect to see. Hence, we tend to perceive and think about others and situations in terms of the

ideas we have already formed about them. Often, we will distort the truth to make it fit into an existing scheme. This is how prejudice can mislead our thinking and decision-making.

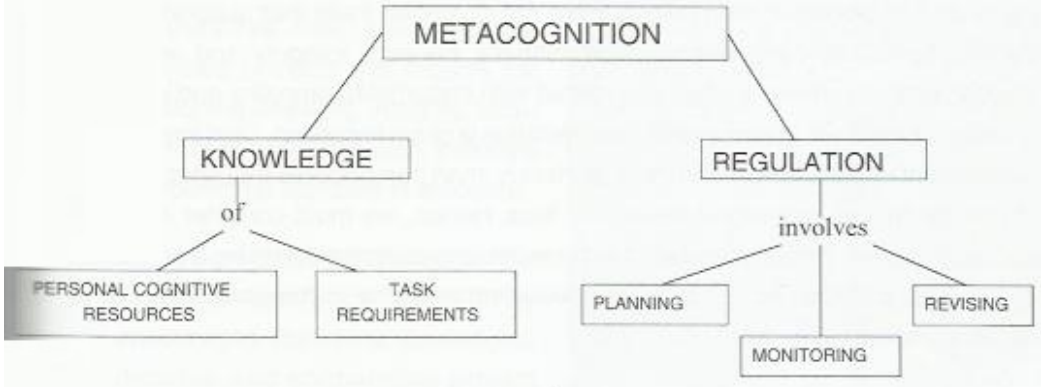
Emotional Influences

Anger, passion, depression, hatred and greed are some negative emotions which have been cited as the sources of poor judgements and crises. But positive emotions such as love and joy have also been known to lead to erroneous decisions being made. The indulgent mother's love for the child can lead to poor eating habits and obesity. Love for his wife has also led a man to commit mercy-killing. In the euphoria of celebration, young people are known to drink and drive recklessly, leading to a car crash and death. So, it is necessary to exercise discreet and critical thinking even when a decision originates from a positive emotion.

Emotions and Metacognition

One way to override the influences of emotions over logic and reason is to practise metacognitive processing or reflective thinking. In most definitions on metacogntion, they refer to an awareness of the mental process and strategies required for the performance of any cogntive endeavor. This knowledge is manifested in the form of strategic control of the processes necessary for performance. Hence there are two parts to metacognition, knowledge and regulation (Schmitt and Newby, 1986). But knowledge here is strictly limited to knowledge of personal cognitive resources and task requirements. There is no reference to knowledge or awareness of personal emotions.

Fig. 2
The Components of Metacognition

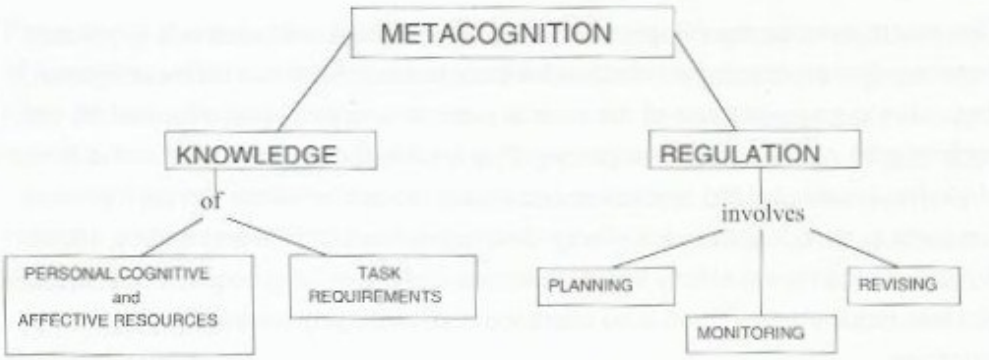


(Schmitt and Newby, 1986)

The knowledge that emotions can undermine reason and logic would cause one to pause to think about the role of emotions in this important component of thinking-metacognition. Awareness of one's own personal cognitive resources alone will not be sufficient to motivate one to plan the best strategies to solve a problem. For a bright but insecure manager, he is aware of the man he needs as his assistant and how to go about choosing the assistant manager. But his insecurity may distort his decision-making at the interview to dismiss a better candidate in favour of a weaker candidate.

When a person's mind is crowded with highly emotional conflicts, he is in no position to do critical thinking. Hence, it is important to introduce the sub-component of awareness of personal emotions as part of knowledge.

Fig. 3
New concept of Metacognition



(Chang and Ang, 1999)

Character Traits that support High Level Thinking

According to Shari Tishman (1990) there are character traits that support critical thinking-traits, like perseverance, commitment, honesty, integrity and empathy. Though critical thinking is often associated with impartiality, empathy and integrity are very critical traits to ensure that consideration is given to context. Cold impartiality can prevent us from perceiving the important human perspectives that shape many of the intellectual and moral issues we face. Hence, we must consider different options in decision-making and always consider consequences of taking a particular option. This provides opportunity for developing empathy in the participants in a decision-making exercise.

Implications for the Classroom

How would the knowledge that emotions affect thinking and learning help teachers in their classroom practices? According to Sylwester (1998), teachers should not only focus on developing the cognitive abilities of students but should also attempt to integrate emotional experiences into classroom life. There are some suggestions for classroom teachers:

1. Students need to learn and develop alternative ways of self control that encourage non-judgmental and non-aggressive forms of emotional expression. Teachers will need to be role models of such behavior.

2. Classroom activities should promote more metacognitive activities that encourage students to be open about their feelings, to learn to listen empathetically to others and be sensitive to others' emotions. Swartz's thinking strategies and attitudes on decision thinking promote effective thinking and are easy to follow (Swartz and Perkins, 1990). The suggested strategies are:

   2.1 Explore options thoroughly.
   2.2 Examine the pros and cons of options.
   2.3 Allow "heart" as well as "head" reasons to count when appropriate
   2.4 Retain the feeling that decisions matter a lot because they shape people's lives.

"A non-threatening and emotionally secure learning environment promotes productive learning in contrast to a highly evaluative and stressful learning environment."

Practices are essential for the development of reflective thinking in students. Role play and debate on issues arising from historical events and literature texts help students develop empathy and compassion. The use of reality therapy in disciplining misbehaving students is another opportunity offered to impulsive youngsters to think through their actions and to chose alternative ways of behavior.

3. Classroom activities should promote social interaction. Tishman (1995) emphasizes that collaborative activities provide the means for developing empathy, integrity, trust, high-level thinking and positive interpersonal attitudes in students.

4. Classroom activities which draw out students emotions should be encouraged. Role play, simulations, debates and cooperative project work would be useful memory prompts for emotional releases.

5. A non-threatening and emotionally secure learning environment promotes productive learning in contrast to a highly evaluative and stressful learning environment.

A recent 1999 survey administered on a group of 30 post-graduate Diploma-in-Education trainee teachers solicited their views on the impact of emotions on thinking and learning. The results show that they were able to relate the effects of positive and negative emotions to attitudes towards learning, achievement and good thinking. This group of students participated in the survey at the end of the course on Effective Strategies for Thinking and Learning.

Conclusion

Acknowledgement of the crucial function of emotions in thinking and learning is important for teachers, students and parents alike. Promotion of positive attitudes and practices which encourage reflective thinking, empathy, integrity, cooperation and self-discipline should be given serious considerations by all involved in the welfare and learning of young people.

Agnes Chang Shook Cheong *and* ***Ang Wai Hoong*** *are attached to the National Institute of Education, Nanyang Technological University, Republic of Singapore*

References

1. Bradley, G. (1978). Self-serving biases in the attribution process: A re-examination of the fact or fiction questions. Journal of Personality and Social Psychology, 36, 56-71.
2. Edelman, G. M. (1992). Bright Air, Brilliant Five: On the Matter of the Mind. New York: Basic Books.
3. Kirby, G. and Goodpaster, J. R. (1995). Thinking. New Jersey: Prentice Hall
4. MacLean, P. (1978). A Mind of Three Minds: Educating the Triune Brain in Education and the Brain, 77th National Society for the Study of Education Yearbook, edited by J. Chall and A. Mirsky. Chicago: University of Chicago Press.
5. Maslow, A. (1954). Motivation and Personality. New York: Harper and Brothers.
6. Schmistt, M. C. and Newby, T. J. (1986). Metacognition: Relevance to Instructional Design, Journal of Instructional Development, 9, 4, 29-33.
7. Swartz, R. J. and Perkins, D. N. (1990). Teaching Thinking: Issues and Approaches. California: Critical Thinking Press and Software.
8. Sylwester, R. (1995). A Celebration of Neurons: An Educator's Guide to the Human Brain. Alexandria, Viginia: ASDC.
9. Sylwester, r. (1998). How Emotions Affect Learning. In Student Brains, School Issues: A Collection of Articles, Edited by R. Sylwester. Arlington Heights, Illinois: Illinois: Sky Light Training and Publishing, Inc.
10. Tishman, S. (1995). High-Level Thinking, ethics and Intellectual Character, Think, 6, 1. (October) 9-13.
11. Tishman, S., Perkin, D. N. and Jay, E. (1995). The Thinking Classroom: Learning and Teaching in a Culture of Thinking. Boston: Allyn and Bacon.
12. Zuckerman, M. (1979). Attribute of success and failure revisited: Or the motivational bias is alive and well in attribution theory. Journal of Personality, 47, 245-287.

Understanding Human Potential, its Fallacies and Development

Teo Chua Tee

Young people cannot achieve the full range of intellectual capacity to solve problems on their own simply by being obedient and by memorizing data. Human intelligence attains its power and development when the conditions for its nurture have been provided for with conscious knowledge. As a child passes through childhood, adolescence and enters the phase of maturity, families and schools need to be aware of the needs at each stage before appropriate provisions can be made. Till today, all are concerned with the problem of underachievement or non-achieving behaviour.

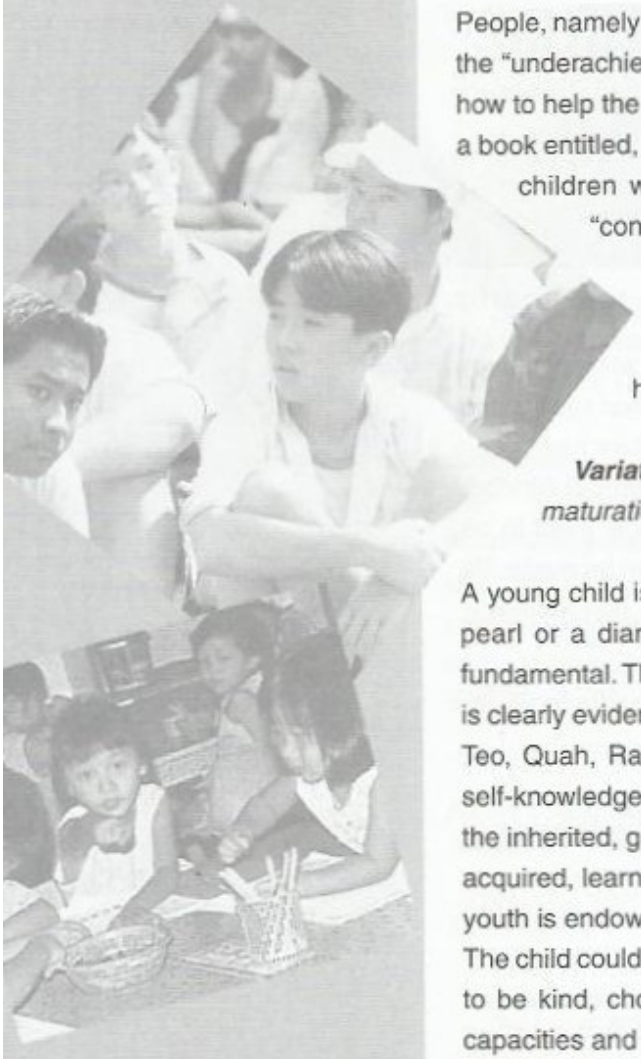
Defining underachievement

Rimm (1997, p. 18) defines underachievement as "a discrepancy between a child's school performance and some index of the child's ability" while most research defines it as a phenomenon that occurs when the child's achievement test score is below his IQ score. Many programs in schools are designed to help those with poor academic performance, to prevent pupils from dropping out of school and to wage war against drug and alcohol abuse and in some cases, to prevent violence.

Peterson and Skiba (2002, p. 114) advocate *prevention*, *identification* and *intervention* for pupils at risk of having difficulties. Rimm (1997, pp. 21-22) suggested the use of the Trifocal Model to reverse underachievement. It comprises several steps, the first of which is assessment, leading to communication with parent and child, identification of the child's profile, and changing parent teacher expectations. The final step involves the design of both home and school strategies and modifications. Children are expected to make progress between six months to a year using the Trifocal Model.

"... adults must learn to look at what children can do and not emphasise what they cannot do."

Some interesting proposals that are being offered to improve academic achievement of pupils include creating new models of schooling that give both parents and pupils more control over the types of school environment and imaginative academic programming with a greater variety of options offered to pupils to suit their needs and preferences. In a press release (Reference No. EUN N25-02-004 V61) this year, the Ministry of Education in Singapore states that they are in the process of customizing and tailoring the national education system to create more choices and greater diversity in courses and subjects for both upper secondary and junior college education to cater for differing needs of pupils.



People, namely the pupil, his parents and teachers are unhappy when they discuss the "underachievement" phenomenon. However, they are cheered if we speak of how to help the pupil to do better. In fact, Mandel and Marcus (1995) have written a book entitled, "Could do better"! There is an Arabic saying that is helpful to those children who are deemed to underachieve. It says that the peacock is "contented because it never looks at its feet – which are very ugly – but always at its plumage which is very beautiful." Similarly, adults must learn to look at what children can do and not emphasize what they cannot do. Before helping pupils to achieve, adults must have a clear understanding of the concept of human potential.

Variations in human potential: *Inherited / innate / acquired character & maturation*

A young child is like an unpolished gem – be it a ruby, a sapphire, an emerald, a pearl or a diamond – of differing grade. The difference in human potential is fundamental. The difference in capability and capacity of one person from another is clearly evident. No two individuals are alike, even if they are homozygous twins. Teo, Quah, Rahim, Rasanayagam (2002), when expounding on the concept of self-knowledge, named three factors in the composition of character. These are: (i) the inherited, genetic or biological factor, (ii) the innate or inborn factor and (iii) the acquired, learnt or environment factor. In addition, we also note that each child or youth is endowed with the freewill, which the precious stone is being deprived of. The child could therefore, choose to act, choose to learn, choose to create, choose to be kind, choose to serve, ... and choose to "shine" regardless of his innate capacities and capabilities. Each person must decide to grow on his own volition, or will, or choice, otherwise no intervention or programming effort, no matter how rigorous or extensive, will ever take effect.

Each person must decide to grow on his own volition, or will, or choice, otherwise no intervention or programming effort, no matter how rigorous or extensive, will ever take effect.

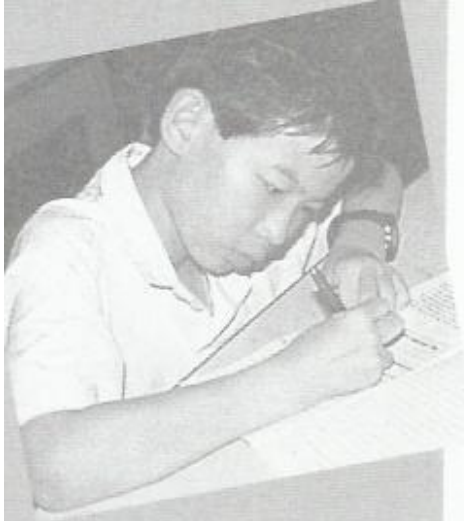
Biologically, it is known that children inherit the strengths and weaknesses of their parents. DF analysis has indicated for instance, that high ability is strongly inheritable (Thompson & Plomin, 1993, p. 111). As such, children born from parents with weak genetic constitution will tend to be feeble as they inherit the debility of their parents, children born from parents with musical talents, for example, would probably be musically inclined. Individual differences also arise from cultural and educational provisions in the environment in which the children are reared. Through education and cultivation of the mind, the ignorant becomes learned. The effects of education, training and environmental conditioning are evident. Take for example, a number of children of one family, of one place, of one school, instructed by one teacher, reared on the same food, living in the same climate, given the same clothing and studying the same lessons, it is certain that among these children, some will be clever in the sciences, some will be of average ability and some dull. It is clear that differences in the

degree and kind of intelligence in the latter cases are not attributable to genetic or environmental conditions but are innate or inborn in character.

Furthermore, it may be noted that no matter how much we may cultivate or polish a shell, it will not turn into a gleaming pearl, neither can a dull pebble shine like a gem. The calocynth and the thorny cactus can never by cultivation, become a beautiful tree. Never, through nurturance, will a fruitless tree bear fruit. It is therefore evident that cultivation, training or education, though powerful in its influence, cannot alter the inner essence of existence – be it a physical capability or an intellectual capacity or giftedness.

On the contrary, a raw diamond – a black stone, will never shine unless and until it is well polished. By analogy, it is unlikely that the potential in a child will be realized without appropriate education, training and experience. A grain of wheat, when cultivated by the farmer, will yield a whole harvest and a seed, through the gardener's care, will grow into a great tree. A child, when nurtured by the teacher's loving efforts, will reach his or her optimum level of attainment. Education does exert a tremendous and powerful influence in bringing forth whatever perfections, capacities, gifts and talents latent within an individual. The tenet is that the potential in the child, whatever it is, may be developed and transformed into achievement or performance via conscious educational provisions in the environment only to the extent of its inherited and innate endowment.

It needs to be noted, in addition, that all created things have their timing or stage of maturity. The period of maturity in the life of a tree is the time of its fruit-bearing. The maturity of a plant is the time of its blossoming and flowering. The animal attains a stage of full growth and completeness at the time of its readiness for reproduction. In the human kingdom, man reaches his maturity when his intelligence attains its greatest power and development. According to biological scientists, maturation appears to be a critical driving force in human development (Rutter & Rutter, 1992). There are several supportive observations. Firstly, for some skills like walking and talking, maturation seems all-important. Below a certain age, no amount of training could induce the desired skill; training could only help speed up skill acquisition marginally. Biological scientists (Fischer, Pipp & Bullock, 1984) have pointed out that maturation includes rapid, abrupt transitions as well as gradual changes. Rutter and Rutter (1992) have pointed out that some growth phenomena, like fear of height in children and the development of self-awareness in the second year of life, may have a maturational or neural basis but their timing is extensively influenced by the availability of



physical experiences and perceptual or sensory inputs from the environment. They (Ibid. p. 82) assert that:

> " ... an ability may be present already at birth but neverthless requires certain experiences to maintain the integrity of the capacity ... ".

The fact is that maturation has to take place in some experiential context and not in a vacuum. Maturation and experience do interact although there is no doubt that genetic influences do operate substantially on the development of abilities. A more mature understanding at this juncture therefore is that education will bring forth the respective inherited and innate capabilities, gifts and talents of the individual pupil in the relevant time frames of maturation.

To say that a child is "underachieving" when he or she possesses less or does not have a particular ability or has not yet been given the appropriate educational opportunities or has not reached the state of maturation, is presumptuous or inaccurate.

The invisible potential: The invisible fruit

From the perspective of biological science, gifts and talents of the child are unknown at birth. Nevertheless, the signs of precocity and/or disability, mental or behavioural, do accompany early maturation. An analogy to this phenomenon is seen in nature. The author calls it the "invisible fruit, invisible potential" phenomenon. It is known that a fruit tree has the "potential" or capability of producing fruits. However, it is also known that if we do not provide the tree with the necessary nourishment or "nurturance", fruits may take a longer than usual time to appear, or, in the extreme case, never appear at all. The fruit, ere it is formed, lies potentially within the tree. Were the tree to be cut into pieces, no sign nor any part of the fruit, however small, could be detected. When the fruit appears, however, it will manifest itself in such wondrous beauty and perfection that no one will deny its existence. Similarly, abilities, gifts and talents are invisible in young children.

In any living organism, the full measure of its development is not known or realized at the time of its inception or birth, just like the fruit that is not visible in the young tree. The fruit becomes apparent only when the tree reaches maturity after much cultivation – when the bud appears. This phenomenon is likewise true for giftedness – the consummation of the human potential is not immediate. Initially, giftedness or talent is invisible in the fetus. It gradually becomes apparent only as the child develops and matures under the loving care of parents and teachers. It is the parent, usually the mother, who first begins to realize that the child responds happily to music or that the child reads early when other children are still babbling.

The farmer could hardly tell if the trees in his orchard are going to bear sweet fruits till he has witnessed their growth and tasted them. The doctors

are unable to tell if the fetus in the womb is a general-to-be, while the teachers cannot foretell the Einsteins and Picassos in the classroom though they all may have their suspicions. However, the farmer could fertilise the trees to the best of his ability, the doctor could give the mother plenty of vitamins to ensure that the foetus grows into a healthy child and the teacher could provide a most stimulating learning environment so that the mental faculties of the students may develop to their fullest potential. Just as a tree needs nutrition before it could bear fruits, the child needs to be nurtured via an optimum educational environment before talents could take visible forms or manifest themselves.

It is evident, from the analogy of fruit-bearing with the manifestation of abilities, gifts and talents, that the identification of abilities and disabilities is an uphill task: for talents and learning disabilities are usually invisible at the beginning. Often, its realization is when its unfolding by degrees becomes more pronounced and this process is, of course, determined by time and the state of biological preparedness of the individual. Basically, it depends on maturation, the process of growth, development and progression in gradual degrees and stages of all organic matters. For human beings, it is the biological timing for the preparedness of the various forms of learning. To label a pupil when he is not ready for learning as "underachieving" is thus incorrect.

Developmental theories & their fallacies

From the educational-developmental perspective, three major views on the development of human potential and learning exist. Generally, the behaviourists believe that the development of intelligence and learning is controlled and conditioned by the environment and that the student is a passive recipient of knowledge and behaviour (Locke, 1690/1892; Watson & Raynor, 1920; Skinner, 1957). Maturationalists, however, place emphasis on heredity, on the natural unfolding of built-in patterns of growth (Rousseau, 1762/1955; Plomin, 1986). Cognitive developmentalists, psychoanalysts and social cognitive theorists, on the other hand, view learning as an interactive process; the stages are maturationally determined while the progression from one stage to the next depends on the success of the previous stage. This success includes experience, language acquisition and adaptive ability of the child as an active participant (Piaget, 1971, 1985; Vygotsky, 1978; Freud, 1973; Erikson, 1950; Bandura, 1986).

These theories become more meaningful when examined in view of logic and the reality of things. The behaviorists appear to have missed the fact that pupils are living organisms with a will to choose to learn or otherwise. The best lessons in the world are useless if pupils choose not to be attentive. Learning will show its best effects when the pupils are mentally mature and ready or prior efforts may end up in vain. The Maturationists need to be reminded of the innate or inborn attributes of the individual in addition to his inherited

characteristics; they need to be aware of the educational effects to hasten the process of maturation. Cognitive psychologists understand the value of education and the timing at which pupils learn best; they need only be reminded to look out for inherited and innate characteristics of pupils, like preferred learning styles.

Developing human capabilities and capacities

Howe (1999) attempted to explain the phenomenon of genius level productions after examining Charles Darwin, George Eliot, George Stephenson, the Bronte sisters, Michael Faraday and Albert Einstein. He suggests that exceptional talents are possibly developed through the combination of environment, personality and sheer hard work. The geniuses appear to have pursued their passion for specific subjects with a characteristic drive, determination and focus.

Today's children grow and learn in a fast paced society with tremendous pressure to show that they are capable winners, or achievers. If human potential, capabilities, capacities, gifts, talents and disabilities are invisible and not quite known, except for the use of IQ tests as estimates, at the beginning of schooling, then the term "underachievement" is a misnomer since the human limit is unknown. Perhaps, it is more accurate to say that the children are "yet to achieve". The "underachievement" label must not be used as it may result in self-fulfilling prophecies, causing children to withhold effort. How often has the incompletion of a school task been attributed to "an inability to concentrate", "a lack of will-power", "a lack of energy" or "a lack of persistence"?

A pupil is the captain of his own ship, the pilot of her own plane. It is only when he has been educated to the extent where he realizes the meaning of his existence and is able to set his life goals, that he is able to work towards them. Parents and teachers could of course guide him to make choices and to empower him with basic skills to deal with those inevitable problems in school life. This type of education constitutes "Humanistic Education" (Robinson III, Jones and Hayes, 2002), an essential component of all successful school curricula in addition to the normal science, computer and arts education. True loss is indeed for a pupil whose days have been spent in utter ignorance of his self, his aspirations, strengths and weaknesses including his learning disabilities.

The following are eight characteristics of achievers given by Heacox (1991, p. 10), the knowledge of which may enable teachers and parents to guide their pupils to set new life goals.

1. **Achievers are goal-oriented.** They set long- or short-term goals and move toward them. Their goals are both personal and professional (or academic).

2. **Achievers are positive thinkers.** They expect that they will be successful. They have already experienced enough success in their lives that they are sure they can continue to do well.

3. **Achievers are confident.** They have strong, positive feelings about their abilities. For this reason, they are able to risk trying out new ideas or methods.

4. **Achievers are resilient.** They do not let failure get them down. They bounce back from defeat and try again. They value improvement but are not disabled if their performance is less than perfect.

5. **Achievers have self-discipline.** They have the ability and drive to stay on task in both their personal and professional/academic goals. They resist distractions and diversions.

6. **Achievers have pride.** They are proud of their accomplishments. They know they have done well, and they believe they have the right to feel good about themselves. These individuals develop a sense of inner satisfaction. They are less dependent on others to say "well" done.

7. **Achievers are proficient.** They have the necessary skills to be successful. Whether they are students with basic learning skills, engineers with mechanical skills, or doctors with diagnostic skills, they have what they need to do well.

8. **Achievers are risk takers.** They are willing to work on the edge. They are able to try new things and push the limits of what is known. Risk taking requires courage and confidence in one's abilities; achievers have both.

It is most debilitating when teachers and parents discuss failures of pupils. No child, youth or adult is perfect. The reality is that we simply have to strive to change bad qualities into good ones-consciously. For example, a child's laziness must be changed into diligence and activity, quick temper must be changed into calmness, pride into humility, falsehood into truth, and deceit into frankness. The development of virtues is one of the essential life goals to be set if the children are to succeed in life.

Professional help needs to be sought if the child has disorders like Asperger's Syndrome (Gallagher and Gallagher, 2002), autism, dyslexia, attention deficit hyperactivity disorder and other difficulties (Psychological and Guidance Services Branch, Ministry of Education, 2001). Early intervention and treatment warrants better chances of developing the pupil's gifts and talents in later life. It is not uncommon to find pupils with learning, emotional or behavior disabilities to be truly gifted or vice versa (Rizza and Morrison, 2002; Winebrenner, 2002).

Children can be motivated with lots of love and encouragement, like plants blossom with fertilizers, except that they may not necessarily be motivated to achieve excellence in academic studies. Wise adults may like to guide or inspire them to attain a balanced life, teaching them to have time for rest and play, to be happy and to be independent.

Reflections

While the manifestation of gifts, talents and learning disabilities is subject to biological (inherited and inborn), maturational and educational conditions, the identification of gifts, talents and learning disabilities via IQ and scholastic tests is not infallible since human potential are like invisible fruits. To optimize learning performance, teachers must first aim to teach fundamental knowledge and skills or core studies using a variety of effective and interesting teaching methods. As not all pupils are capable of engaging in advanced studies, some pupils will have to be given opportunities to study at specialized subject schools like the industrial, commercial, computer, dance, music or art and craft schools to acquire technical, commercial, computer, kinesthetic, musical or artistic skills until they become proficient in a skill. Consideration needs to be given with regard to the field for which the child or youth has an inclination, a desire or a talent.

Other than receiving education for the mind, pupils must be taught to relax, to meditate and to take care of their physical health as well as their social relationships. Moral, spiritual and human educations are also indispensable as these provide the youths with courage to face hardships and adversities in life and enable them to develop praiseworthy virtues to serve humankind. Parents and teachers must learn to listen to their children. Day by day, little by little, they must learn to relinquish the hold and control over the children, teach them to make responsible choices and develop their will or volition, so that they will grow into mature, independent, balanced, achieving and happy young adults. The effects of education to develop latent human potential, gifts and talents will soon be witnessed as teachers and parents become united in their efforts to develop the whole person. Every child is potentially the light of the world. Each deserves holistic education, whatever race, creed or class, gifted or disabled, rich or poor. Let each pupil receive and develop according to his or her capacity.

References

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Erikson, E. H. (1950). *Childhood and society.* New York: Norton.

Fischer, K. W., Pipp, S. L., & Bullock, D. (1984). Detecting developmental discontinuities: Methods and measurement. In R. N. Emde, & R. J. Harmon (Eds.), *Continuities and discontinuities in development* (pp.95-122). New York: Plenum Press.

Freud, S. (1973). *An outline of psychoanalysis.* London: Hogarth. (Original work published 1938).

Gallagher, S. A., & Gallagher, J. J. (2002). Giftedness and Asperger's Syndrome: A new agenda for education. *Understanding our gifted,* 14 (2), 7-12.

Heacox, D. (1991). *Up from underachievement.* Minneapolis, U.S.: Free Spirit Publishing, Inc.

Howe, M. J. A. (1999). *Genius explained.* Cambridge: Cambridge University Press.

Locke, J. (1892). Some thoughts concerning education. In R. H. Quick (Ed.), *Locke on education* (pp. 1-236). Cambridge: Cambridge University Press. (Original work published in 1690).

Marx, G. (2001). Educating children for tomorrow's world. *The Futurist, 35* (2), 43-48.

Mandel, H. P., & Marcus, S. I. (1995). Could do better: *Why children underachieve and what to do about it.* New York: John Wiley & Sons, Inc.

Peterson, R. L., & Skiba, R. (2002). Creating school climates that prevent school violence. In F. Schultz (Ed.), *Education: Annual Editions 02/03* (29th ed.) (pp. 114-122). Connecticut: McGraw-Hill/Dushkin.

Piaget, J. (1971). *Biology and knowledge*. Chicago: University of Chicago Press.

Piaget, J. (1985). *The equilibration of cognitive structures: The central problem of intellectual development*. Chicago: University of Chicago Press.

Plomin, R. (1986). *Development, genetics and psychology*. Hillsdale, NJ: Erlbaum.

Psychological and Guidance Services Branch, Ministry of Education. (2001). *"I'm worried about Kim": A teacher's reference guide on learning, emotional and behavioural difficulties faced by pupils in school*. Singapore: Author.

Rimm, S. B. (1997). An underachievement epidemic. *Educational Leadership, 54* (7), 18-22.

Rizza, M. G., & Morrison, W. F. (2002). An action plan for working with students who are gifted and have emotional/behavior disabilities. *Understanding our gifted, 14* (2), 13-16.

Robinson III, E. H., Jones, K. D., & Hayes, B. G. (2002). Humanistic education to character education: An ideological journey. In F. Schultz (Ed.), *Education: Annual Editions 02/03* (29th ed.) (pp.92-94). Connecticut: McGraw-Hill/Dushkin.

Rousseau, J. J. (1955). *Emile*. New York: Dutton. (Original work published in 1762).

Rutter, M., & Rutter, M. (1992). *Developing minds: Challenge and continuity across the life span*. London: Penguin Books.

Skinner, B. F. (1957). *Verbal behavior*. New York: Appleton-Century-Crofts.

Teo, C. T. (1996). *Achievement of gifted adolescents in Singapore: The effects of perception, creative-thinking ability and an intervention programme "Knowledge/Volition/Action"*. Unpublished doctoral dissertation, Nanyang Technological University, Singapore.

Teo, C. T., Quah, M. M., Rahim, R. B. A., & Rasanayagam, L. J. (2002, August). *Self-knowledge: Teaching gifted junior youths about selflessness or egolessness*. Paper presented at the International Biennial Conference on "Self-Concept Research: Driving International Research Agendas", SELF Research Centre, Sydney, Australia.

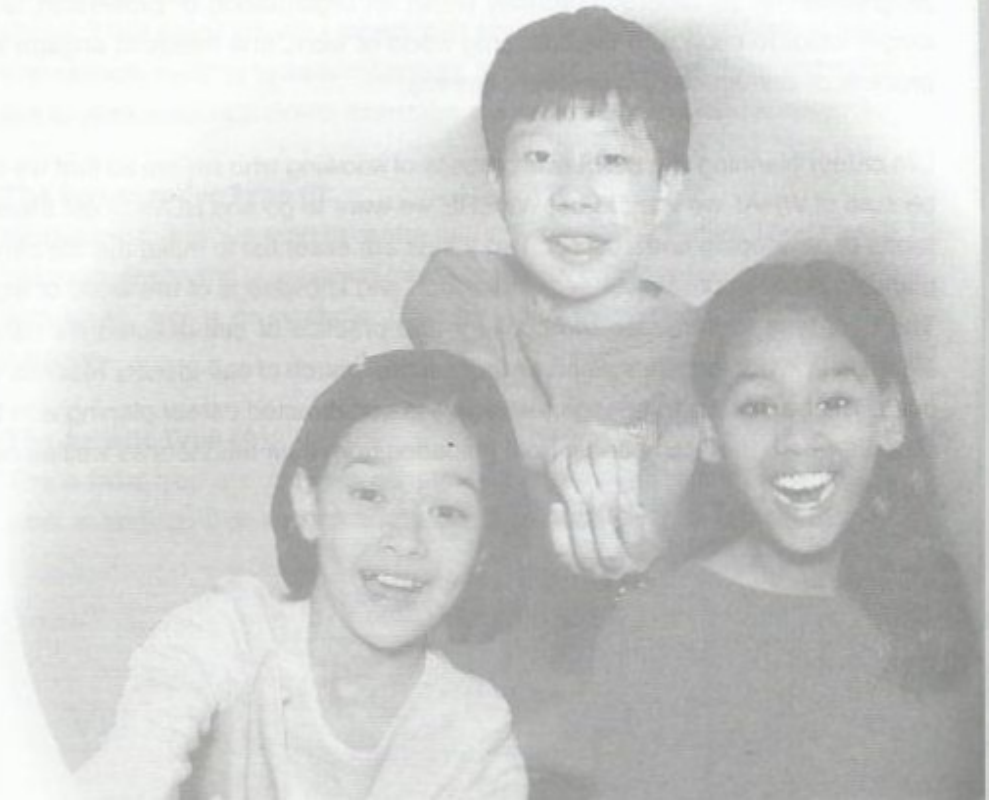
Thompson, L. A., & Plomin, R. (1993). Genetic influence on cognitive ability. In K. A. Heller, F. J. Monks, & A. H. Passow (Eds.), *International handbook of research and development of giftedness and talent* (pp. 103-113). New York: Pergamon Press Inc.

Vygotsky, L. S. (1978). *Mind in society: The development of higher mental processes*. Cambridge, MA: Harvard University Press. (Original works published 1930, 1033, and 1935.)

Watson, J. B., & Raynor, R. (1920). Conditioned emotional reactions. *Journal of Experimental Psychology*, 3, 1-14.

Winebrenner, S. (2002). Strategies for teaching twice exceptional students. *Understanding our gifted, 14* (2), 3-6.

Dr Teo Chua Tee *is attached to the SE Academic Group, National Institute of Education, Nanyang Technological University, Singapore*



Preparing Future Citizens for the Knowledge Economy: A Case for Career Guidance

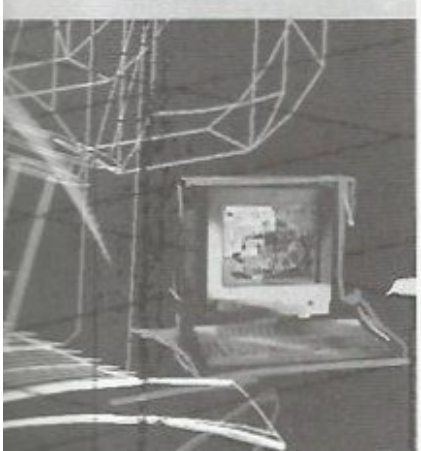
Esther Tan

The children of today are the citizens of tomorrow. The ultimate goal of our ability-driven education system is to maximize the potential of our young, helping them to identify and develop their talents and abilities, both academic and non-academic, to become the best that they can be in their future role as citizens of the new economy. This is the ultimate goal of education – educating the whole person.

Education of the whole person not only emphasises the cognitive aspect of education, but also acknowledges the importance of affective education which covers character building, as well as personal and social education. This education process is delivered through three areas-effective classroom instruction in a learner-centred school environment to produce independent life-long learners; guidance and counselling to facilitate personal growth, values education and national education to guide conduct and develop pro-social behaviour and national identity. The schools have been doing a good job in all three areas. However, one area has hitherto been neglected – career guidance to prepare our young for their future role in the world of work.

To keep pace with modern technology and to remain competitive in the knowledge-based economy, the world of work is fast changing and career planning has also taken on a new meaning. The traditional concept of career development being progression up an ordered hierarchy within an organization or profession, is no longer valid. To cope with the changing world of work, one needs to engage in a process of self-directed, life career planning.

Life career planning is a deliberate process of knowing who we are so that we can be sure of WHAT we want to be, WHERE we want to go and HOW to get there in terms of developing one's career. Two things are essential to make this life career planning process possible – self-knowledge and knowledge of the world of work. The best time to introduce the concept and practice of self-directed life career planning is in adolescence when an individual's search of self-identity reaches the peak. The best place to engage teenagers in self-directed career planing is in the schools where they can benefit from guidance from their teachers as well as peer support.



There are three dimensions to career planning – the cognitive aspect which involves knowing about the world of work, exploring options and making choices; the affective aspect which is influenced by an individual's work values and attitude towards work; and the behavioural aspect which involves hands-on activities in career exploration, learning and practising job-seeking skills etc. A comprehensive and effective career guidance programme in schools should be an activity-based programme designed to a) facilitate the students' self-understanding in terms of vocational interests and abilities, work values and aptitudes b) enhance the students' knowledge and understanding of the world of work and c) help the students integrate (a) and (b) in career exploration and informed career decision-making.

Knowing oneself is the important first step to finding one's life role in the world of work. The late Donald Super, an eminent vocational psychologist, believed that "in expressing a vocational preference, a person puts into occupational terminology his idea of the kind of person he is; in entering an occupation, he seeks to implement a concept of himself and in getting established in an occupation, he achieves self-actualisation." (Super, Stariskevesky, Matlin & Jordaan, 1963). One's chosen career, therefore, helps one to realise one's own self-concept.

Holland's (1985) theory of vocational personality provides a useful theoretical framework in gaining access to career self-awareness. Holland believes that every individual is a product of a characteristic interaction among a variety of cultural and personal forces including peers, biological heredity, parents, social status, culture and the physical environment. Out of these experiences, a person first learns to prefer some activities as opposed to others. Later, these activities become strong interests which lead to the development of a special group of competencies. Finally, a person's interest and competencies create a particular disposition or personality type. Holland postulates that in general, people can be categorized into six major personality types (Holland, 1986):

The Realistic Type (R):
People with realistic characteristics tend to be rugged, practical and physically strong. They enjoy creating things with their hands and would rather work with objects, such as tools or machines, than with people or ideas and many like to work outdoors. Some examples are engineers and land surveyors.

The Investigative Type (I):
Workers in this group tend to centre around scientific activities. They have a natural curiosity and questioning minds and enjoy problem-solving by working with ideas, words or symbols. Scientists and researchers belong to this category.

The Artistic Type (A):
The artistic type are creative people and artistically inclined. They like to work in settings that allow them to express themselves creatively through

activities related to art, music, drama or literary pursuits. Obvious examples in this category are artists, musicians and novelists.

The Social Type (S):

Workers in this category are sociable, responsible and concerned with the welfare of others. They usually express themselves well with words and possess good interpersonal skills. Some examples of social occupations are counselling, nursing and teaching.

The Enterprising Type (E):

Enterprising people are enthusiastic, confident and adventurous. They prefer social situations where they can lead and direct others. They are often in sales or in managerial positions because they are good at leading and convincing people. Businessmen and bankers belong to this category of workers.

The Conventional Type (C)

This group of workers are conforming, organized, precise and meticulous. They prefer solving problems using verbal and numerical skills rather than physical skills. They like jobs where they know exactly what is expected of them. Some examples are accountants and computer programmers.

Holland further proposes that there are six major types of work environments which can be assessed in the same RIASEC terms, since people tend to congregate in environments where their own interests, abilities and attitudes are shared by others. Convinced that "vocational choice is an expression of personality", Holland theorizes that in making career-related decisions, people tend to search for environments where they can use their abilities and find satisfaction in terms of their interests, aspirations and values. The more closely an individual's work environment matches his vocational personality, the more stable his career choice will be and the greater his work achievement and job satisfaction.

Several local studies seemed to confirm the validity of Holland's theory in the Singapore context. A survey on 1930 working adults from 30 occupational groups showed that airline pilots and aviation technologists in Singapore have strong "realistic" vocational personality traits whilst social workers and pre-school teachers belong to the "social" type. "Enterprising" occupations in Singapore include lawyers, architects and marketing managers. The Investigative category includes chemists, dentist, doctors and systems analysts. (Tan, 1995a).

Work Values and Career Choice

Work values are work-related beliefs. They are the source of motivation for work and the basis for personal fulfilment in work. Work values not only affect our career choice, they also determine our career goals and set standards for our work performance. For instance, if a person believes that being of service to others is

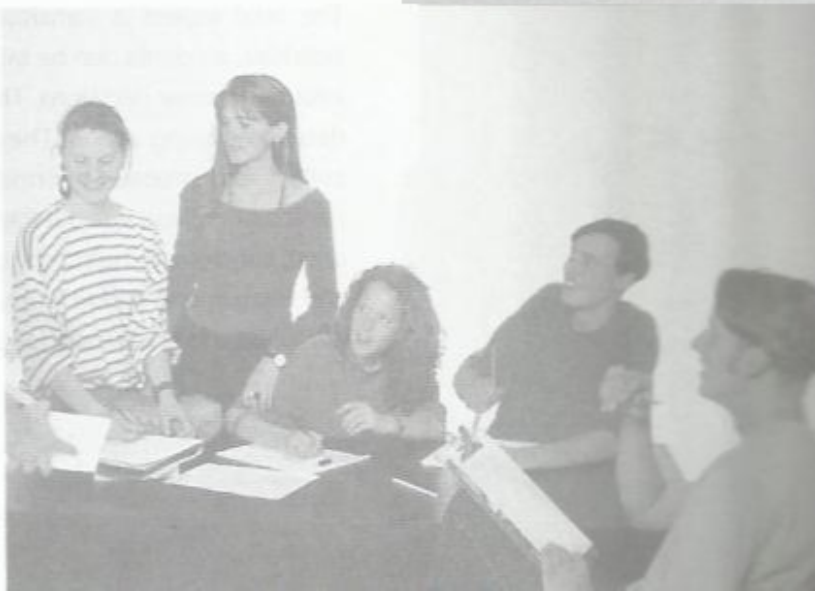
something he values in life, he might prefer a job in the helping professions such as teaching, counselling or nursing. If spending time with one's family is of paramount importance to an individual, he will probably choose a job that has regular working hours and does not require too much travelling. A local study on 426 professionals in Singapore revealed that the top five work values preferred by these professionals were **achievement** (work which gives one a feeling of accomplishment in doing a job well), **self-development** (work which allows one to learn and develop oneself on the job), **independence** (work which allows a person to work at his own pace and in his own way.), **high income** (work that pays well and enables one to have the things he wants) and **life style** (work that allows one to enjoy his preferred life style without constraints.). The same study also found that graphic designers in the sample favoured work values such as *creativity, aesthetics* and *independence* and many social workers were intrinsically-motivated, appreciating intrinsic work values such as *helping others.* (Chew, 1992). Another local survey amongst secondary school and junior college students revealed that the most sought after work values amongst our young people are a) *having good co-workers,* b) *achievement* and c) *having a fair supervisor* (Tan, 1994). Comparing the work values of teachers with those of doctors, lawyers, accountants and engineers, Khoo and Soong (1992) found that doctors and teachers valued *helping others* more than the other occupational groups.

A Comprehensive Approach to Career Guidance

A comprehensive approach to career guidance in schools should cover three dimensions – the cognitive aspect which involves knowing about the world of work and career decision-making; the affective aspect which is influenced by an individual's work values and attitude towards work; and the behavioural aspect which involves hands-on activities in career exploration such as learning and practising job searching skills.

Step 1 : Help Students Develop Career Self-assessment

Holland believes that the match between a worker's personality, the nature of the work and the conditions of the work environment have profound influences an individual's job satisfaction and productivity (Holland, 1985). If one's ideal career is the actualization of one's self-concept, then the first step to career planning is to gain as accurate a picture as possible of one's own career personality profile in terms of personal interests, vocational abilities and work values. Young people need to know what they are good at doing and what they enjoy working at before they could identify their ideal job. Super believes that there is a strong link between one's work values and one's job satisfaction. So it is important to help the



students reflect on their values, what are important to them, and how they can live out their values through their chosen career.

In helping students develop career self-awareness, teachers can guide them through a series of self-assessment exercises to help them identify their personal interests and vocational abilities and link these with occupations. There are many tools that can help students in their self-assessment. In addition to interest inventories developed overseas such as Holland's Self-Directed Search (1986) and Super's Work Values Inventory (1970), there are also indigenous resource materials developed locally such as JOBS (Jobs Orientation Backup System), a computer-assisted career guidance package widely used in Singapore schools (Tan, 1995b).

Step 2 : Guide Students to Explore the World of Work

The world of work is fast changing in our knowledge-based economy. Traditional occupations disappear from the work scene as new jobs are being created. Work knowledge and vocational skills become obsolete faster than expected and up-grading through re-training is the order of the day. Understanding the world of work is no longer a simple matter but teachers can play an active role in helping students gather and integrate occupation. There are many sources for occupational information including printed materials (e.g. newspapers and magazines) and non-print materials (e.g. computer software). Many schools also organise field trips to career fairs and the industries. A more hands-on approach to understanding the world of work is experiential learning through work attachment, internship or work shadowing. Work experience is more than a means to test out the suitability of a job, it offers a total learning experience – a chance to experience making job applications, to observe how people work together within an employment and to assess how others view their role of work in their lives. Job shadowing, on the other hand, gives the student the opportunity to observe another person carry out the job tasks of the career being researched as a possible option.

Step 3: Teach Students Career Planning Skills

The final aspect is transition learning. Through group-based, hands-on activities, students can be taught decision making skills to help them make informed career decisions. They are given opportunities to explore different decision-making styles. They learn how to generate alternatives, how to collect and process information and how to balance the desirability of particular options against the probability of achieving them. They also learn about concrete and practical issues such as preparing for selection interviews and filling in application forms. For older students in graduating classes, it is appropriate to teach them job search skills. Teach them how to write a resume

and prepare for a job interview. Better still, involve them in role plays and mock interviews to practise the skills.

Career planning is not a one time event that occurs as one prepares to enter the world of work. Rather, it is a life long process as one defines and re-defines one's work role to contribute to society. Having learned the necessary skills in developing career self-awareness and career planning, students can transfer the knowledge and skills learned in school to the world of work. As the Chinese saying goes, "a journey of a thousand miles starts with one single step". To prepare our young for their transition from school to work and finally, contribution to society, that important first step should take place in the schools under the guidance of their teachers.

References

Chew, L. C. (1992). Work values of Singapore Professionals – Some empirical findings. Paper presented at the conference Towards Effective Participation in Working Life at Bond University, Queensland, Australia.

Holland, J. L. (1985). *Making Vocational Choices: A Theory of Vocational Personalities and Work Environment,* (2nd ed.) New Jersey: Prentice Hall Inc.

Holland, L. J. (1986). *The Self-Directed Search: A Guide to Educational and Vocational Planning* (Canadian Edition). Toronto: Guidance Centre, University of Toronto.

Khoo, A. & Soong C. (1992). Work Values of Teachers. Paper presented at the 5th Annual Conference of ERA (Educational Research Association), Singapore.

Super, D. E, & Stariskevesky, R., Matlin, N. & Jordaan, J. P. (1963). *Career Development: Self Concept Theory.* New York: Teachers College, Columbia University.

Super, D. E. (1970). *Work Values Inventory.* New York: Houghton Mifflin.

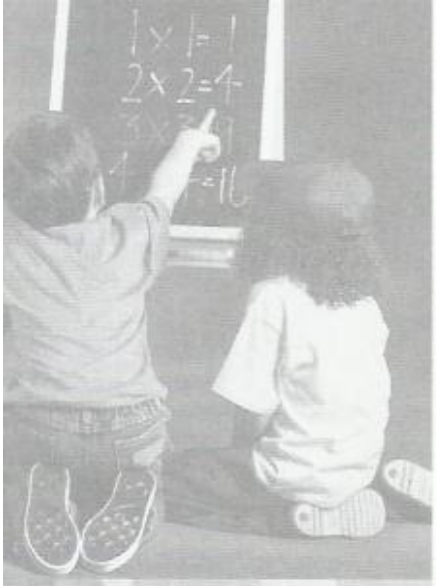
Super, D. E. (1983). A life span, life space approach to career development. *Journal of Vocational Behavior,* 16, 282-298.

Tan, E. (1994). Singaporean adolescents: career aspirations and work values. *Australian Journal of Career Development.* 3 (2): 25-30.

Tan, E. (1995a). The personality type of Singapore professionals. *The Singapore Professional.* 19(5). 7-9.

Tan, E. (1995b). The development of a computer-assisted career guidance programme for Singapore schools. *Singapore Journal of Education,* 15(2), 81-86.

Associate Professor Esther Tan *is Head, Psychological Studies Academic Group, National Institute of Education Nanyang Technological University*



Family & Mathematics Learning in Primary Schools

Lee Ngan Hoe

The importance of parental involvement in the early years of a child's learning and achievement is well documented in the literature. However, with the rapid changes that are taking place in our educational system, parents are often at a loss with regard to 'how' they should be involved in their children's learning. This article seeks to explain the why's, what's and how's of family members' involvement in the mathematics learning of primary school children.

Why family involvment?

To emphasise the importance of strong family support in cases of delinquent juveniles, Yak (2001) quoted studies which showed that "peer influence plays a very strong part in these juveniles' lives particularly when traditional support structures like the family is weak." She also pointed out that "contrary to popular belief that parents' love and care for their children and communication with their children made the difference in whether the juveniles turned delinquent or not, it was the level of parental supervision, parental involvement and moral authority that made the difference."

This does not come as a surprise, as Shonkoff & Phillips (2000) and Shore (1997) reported that warm, responsive relationships help children develop and learn and increase young children's resilience in the face of difficulties. In an analysis of several studies carried out in the late eighties and nineties, Perry & Dockett (2002) noted that "there is a positive relationship between parental involvement in their children's schooling and the achievement of these children in areas including mathematics."

What kinds of family involvement?

Though the research points to the importance of parental involvement in children's schooling, many parents are in a state of loss as to what kinds of involvement is appropriate. In fact, many parents resolve to taking on the role of a teacher to help their children. However, Kilpatrick, Swafford and Findell (2001) pointed out "the mathematics students need to learn today is not the same mathematics that their parents and grandparents needed to learn" (p.1). The Conference Board of the Mathematical Sciences (2001) listed the first recommendation for the mathematics curriculum and instruction for prospective teachers as:

Prospective teachers need mathematics courses that develop a deep understanding of the mathematics they will teach.

Usiskin (2001), in his argument for 'teachers' mathematics', felt that "a teacher needs at least three kinds of mathematics not found in typical college mathematics courses." In other words, having been through the educational system as a mathematics student does not make one an effective mathematics teacher. It is then no wonder the Ministry of Education (2001, June 8) advised that parents "need not take on the role of the teacher".

So, what form should parental involvement in children's learning take?

In a compilation of readings from "Teacher Children Mathematics", "Mathematics Teaching in the Middle School", and "Arithmetic Teacher" on involving families in school mathematics, Edge (2000, p.1) classified family involvement naturally into two types: participation in school settings and participation in home settings. This classification will be adopted to facilitate the discussion here.

How to encourage family involvement?

(1) PARTICIPATION IN SCHOOL SETTINGS

Family's involvement in school settings is not new to the local scene. It often takes the form of parents acting as relief teachers or stand-in teachers for remediation lessons. However, given the specialized kind of training that is required of a mathematics teacher, this kind of involvement may not be that ideal unless the parents are also trained teachers. Most of the parents who are involved in such activities are not trained teachers. There are, of course, other non-mathematical involvement by parents in schools, such as helping out on Sports Day and Prize-Giving Day.

The question then remains in what ways family could be involved in school mathematics within the school settings in such a way that will contribute positively to children's learning.

The following are three types of such involvement by family members which have been carried out by some schools with some success:

a. Family as resource persons
b. Family as partners in the journey of learning
c. Family as consumers of pupils' creative work

a. Family as resource persons

The diverse occupational expertise of parent volunteers provides a wealth of resources schools could tap on to introduce the role mathematics play in real life.

Family members could be invited to give talks on the role mathematics play in their work life or they could be interviewed by pupils instead. A nurse, for example, might share about the importance of the concept of volume in administering medication, while an architect could discuss the role geometrical shapes play in building designs. Parents who deal with collection and exchange of money, for example as cashiers or grocery stallholders, could share something concerning the denominations of money or the importance of mental computation.

Some teachers might get a little nervous over parents sharing such experiences as there is a possibility that parents might contradict what the mathematics teacher has said in class. It would be helpful if the teacher and the parents involved have a short discussion prior to a sharing. The idea is not to convince parents otherwise if there is indeed a disagreement. It provides a golden opportunity for the teacher and parents to see how the gap between school mathematics and mathematics in real life, which has often been said, could be narrowed. A cashier in a supermarket, for example, might dismiss or even undermine the importance of mental computation. The teacher could then invite both parents and pupils to discuss the value of mental computation in mathematics learning – which could certainly serve as an important lesson for all, including the teacher. Both parents and pupils could then better appreciate the need for acquiring the skill, and at the same time the perspectives that the discussion surface would also lend weight to the argument.

The discussion, in addition, provides the teacher with feedback on the affective domain of pupils' mathematical learning in their classroom. It is also through such a process that teachers could better reflect on the curriculum, and provide feedback to curriculum planners to better align the curriculum with societal changes.

b. Family as partners in the journey of learning

As mentioned earlier, if we could agree with Kilpatrick et al's (2001) point that "the mathematics students need to learn today is not the same mathematics that their parents and grandparents needed to learn" (p.1), then we should also see the family as members going on board the pupils' learning journey. By being a partner to the pupils in such a journey, the warm and responsive relationship that is established within the family context could be further reinforced and would help to increase young children's resilience in face of difficulties (Shonkoff & Phillips (2000) and Shore (1997)) during the learning process.

An example of such an activity in the school setting would be the involvement of family members in a mathematics trail. Mathematics trails have gained grounds in Singapore schools over the years. It is now a fairly common out-of-class mathematics activity conducted either by groups of teachers (across or within a level), professional organizations (such as the Association of Mathematics Educators), or commercially set-up organizations. It essentially requires pupils to be present at a selected venue to solve mathematics problems. It is not uncommon for family members of pupils to be involved through provisions and monetary support

(for refreshment and prizes) or providing technical or administrative support. In other words, few family members are participants involved in going through the mathematics trail with pupils.

In the few cases where family members did participate in the trail, the adults were observed to be actively involved in planning the route to take and discussing the approach in solving the problems posed. The discussion is facilitated by the openness of the problem due to the nature of trail venues. As family members and pupils searched for solutions, they entered into a partnership in mathematical problem solving: clarifying for meaning to promote understanding, recall of appropriate mathematical knowledge and skills, selection of problem solving strategies, communication of mathematical ideas, carrying out computation and manipulation of mathematical symbols, checking of reasonableness of answers and reflection of approach taken. When asked for feedback of the event, a pupil wrote, "If only my parents could run as fast as I do, then we could answer more questions!" This reflects the pupil's enthusiasm towards problem solving as he enters into a partnership of learning with his parents.

c. Family as consumers of pupils' creative work

The creative products of pupils' thinking processes could be used to encourage family involvement. As an example, families could be invited to a mathematics games day where stalls are set up by pupils who create the games. Visitors are encouraged to play the mathematical games on display with the pupils through some form of incentive scheme. Questions raised will be answered by these pupils. This will not only provide families with an insight into mathematics learning in the classroom, it will also create an appreciative audience to our pupils' work. At the same time, as family members pitch their strategies in the games against the pupils, they are again entering into an informal setting that promotes sharing of mathematical ideas and problem solving strategies between family members and pupils.

Family members could also be invited to an exhibition of pupils' hands-on creation of art pieces using mathematical concepts such as tessellation. Having viewed the artwork, family members are in a better position to discuss the mathematics and application behind the concept of tessellation with pupils. In teaching the topic of nets, for example, pupils could be asked to construct interesting 'containers' as gifts to parents – be it birthdays or special occasions such as Mother's Day or Father's Day, instead of leaving our pupils to subscribe to the commercialism that has rendered such special days less meaningful.

The whole idea here is to get family members as consumers of pupils' creative product to prompt both family and pupils into a mathematical discussion. The discussion is not a demonstration of mathematics superiority of either party, but a way for family members to be better acquainted with school mathematics, and for

pupils to clarify their thoughts by having to verbalise their learning in a relax and informal setting.

(2) PARTICIPATION IN HOME SETTINGS

The home provides a natural warm, relax and informal setting for families' involvement in pupils' mathematical learning. There are three common types of such involvement:

a. Homework
b. Housework
c. Leisure

a. Homework

Involvement in pupils' homework is probably the most common type of family involvement in pupils' mathematical learning in the home setting – in fact, it is possibly true for other subject areas too. What is worrying though is when family members attempt to 'teach' pupils 'alternative methods' when pupils encounter problems in their homework. Although the use of alternative methods promotes flexibility in pupils' thinking, it could cause confusion and helplessness among pupils.

A typical example would be the use of the model approach to solve word problems in the primary schools. Parents, in their anxiety to help their child and being unfamiliar with the use of the model approach, would try to help the child solve a problem using the algebraic approach. Pupils at primary schools are not yet appropriately grounded in such an approach. Building further knowledge on such weak foundations often results in confusion. Pupils will also develop a sense of helplessness, as it seems that the solution to their difficulties is that of miraculous help from an adult with that 'extra bit' of knowledge. This does not encourage pupils to persevere or be reflective during problem solving. This is contrary to the Framework of Mathematical Curriculum (Ministry of Education, Singapore, 2000).

The energy which parents expended to try 'teach' their child 'new' concepts (often unsuccessfully) could instead be directed to going through with the child what has already been done in class. Family members could sit down with the pupils to examine the relevant materials from their textbooks and workbooks (and possibly class notes), encouraging pupils to explain the learnt materials, and working as partners in their quest for a solution. This nature of involvement results in learning that is beneficial to both parents and child. As the pupil interacts with family members, verbalizing and clarifying the learning, self-reflection will be evoked – recalling, consolidating and re-organising the learnt knowledge and skills. This helps the pupil to gain a better grasp of the materials presented in class and promotes a deeper understanding of their learning. At the same time, the family members are also provided with an insight into the kind of learning that takes place in the

classroom. This helps to establish more common grounds for parent and child discussion of school mathematics.

b. Housework

One of the aims of the mathematics education in schools (Ministry of Education, Singapore, 2000) is to enable pupils to acquire and apply skills and knowledge relating to number, measure and space in mathematical situations that they will meet in life. In fact, due to the nature of the primary mathematics content, it lends itself well to the learning of mathematics in our daily life experiences. Since primary school pupils (especially the lower primary levels) spend most of their time at home with their family members, involving these pupils in household chores could help the child become a responsible member of the home as well as a learner in mathematical experiences.

As an example to illustrate the point, consider the learning of picture graphs in primary one. Parents could set up a chart (Figure 1) – Mother's Helper chart – to help pupils to keep track of the number of times they help the mother with housework for each day of the week.

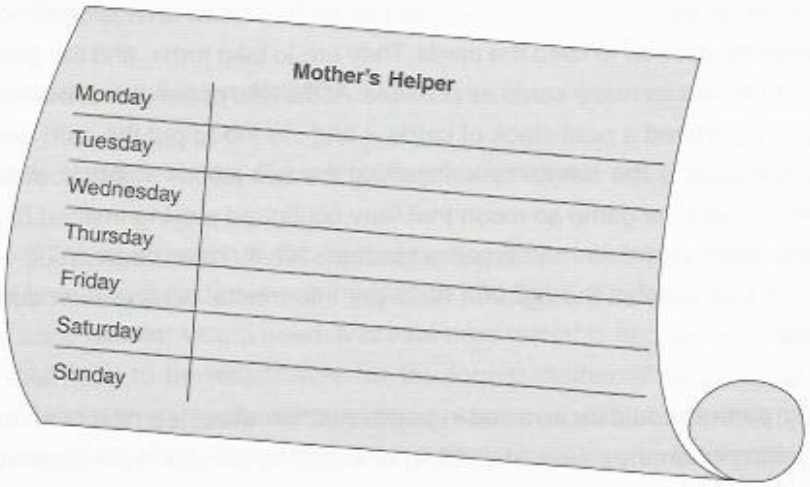


Figure 1: Mother's Helper Chart (Collars, Koay, Lee & Tan, 2000b, p.127)

The chart could be placed on the refrigerator, and pupil is then to place a sticker in the appropriate column each time they help mother with household chores. At the end of the week, the child would have created a picture graph. The parents could then sit down with the child to try to interpret the graph formed, using guiding questions such as:

"Why are there so many stickers drawn on the graph on this day?"
"Why are there so few/no stickers drawn on the graph on this day?"
"Which day do you think mum was the busiest?"

Tapping on the experience that the pupils go through would help them to appreciate the use of mathematics in real life. Furthermore, using contexts that pupils

themselves have undergone will allow pupils to make sense and create meanings to the knowledge learnt in class.

c. Leisure

Another aim of the mathematics education in schools (Ministry of Education, Singapore, 2000) is to enable pupils to develop positive attitudes towards mathematics including confidence, enjoyment and perseverance. Leisure time spent with children could thus also be tapped on as opportunities for family involvement in pupils' learning.

In particular, games played by pupils often include elements of mathematics. So, parents could also make use of the context of a game to actively involve pupils mathematically. Pupils in playing traditional card games, for example, often use playing cards. It is also a common sight that young children would be reluctant to pack the cards neatly to store them away after a game. In fact, in one incident, it was observed that the older child (the Primary 3 child) was trying to 'bully' the younger child (the Primary 1 child) into doing the 'chore'. Needless to elaborate, both were having a tough time arguing over the matter. They were then told to use as many cards as possible that would add up to 20, and when it is done correctly, they would be allowed to keep the cards. They are to take turns, and the goal of the game is to collect as many cards as possible. At the end of the game, both children have each gathered a neat stack of cards – and the job to put the card away in a nice single stack is the simple task of putting the two stacks together. In fact, the children enjoyed the game so much that they continued playing instead of putting the cards away, and their mathematics teachers would have been proud with the amount of practice that the children have put into mental computation during the play time.

Similarly, parents could be involved in pupils' mathematical learning in an informal home setting when they are just chatting or watching television programmes.

By getting pupils to count the various shapes that can be found at home, parents could sensitise pupils to the mathematics around them. Pupils could also be asked why certain shapes occur more commonly than other. This is to train pupils to be more observant – gathering data through all senses, be curious – responding with wonderment and awe, and be seekers of answers – questioning and posing problems. These are all habits of mind or intelligent behaviours that Costa and Kallick (p.7, 2000) felt we should teach our pupils as these habits are "performed in response to questions and problems, the answers to which are not immediately known" – similar to real life situations that our pupils will face.

Looking at photographs and reminiscing the good time that they have spent is a common activity among children. These photographs could also provide a rich source for Primary One pupils to tell addition stories and writing addition sentences (Collars et al, p. 143, 2000a). Such an activity will definitely be more engaging than

presenting a picture which the child cannot relate to. Furthermore, mathematical communication, which is emphasized in the Framework of the Mathematical Curriculum (Ministry of Education, Singapore, 2000), is encouraged and applied to real life contexts.

Watching television is another popular pastime of our pupils. Activities such as those discussed in the preceding paragraphs could also be carried out with television programmes that children enjoy watching. Common shapes found in cartoon programmes, or making number stories and number sentences with a story that they have watched on television are just some examples. In fact, the use of subtitles in a number of our television programmes, though rich in application to our school curriculum, has yet to be fully exploited. An obvious and immediate use of the subtitles is in the area of language learning. By drawing pupils' attention to the need for subtitles, the issue of racial differences and tolerance, in conjunction with the national education programme, could also be addressed. Family members could also get pupils to carry out a word, letter or character count to determine which is the most commonly used word, letter or character in subtitles for a given language. By engaging pupils in a discussion on the significance of the result, pupils are not only addressing a language issue but also appreciating the use of mathematical tools to aid in addressing problems in other subject areas.

Some Issues and Suggestions

Two words stood out in the discussion thus far – informal and partnership.

The word 'informal' refers to the kind of setting that mathematics learning takes place. Much has been said with regard to the kind of special training that a mathematics teacher would need. It is thus unreasonable and unfair to expect all family members to be responsible for the formal mathematical learning of our children. However, generally our parents are keen and wish to be active members in our pupils' learning. The crowd that throngs our Popular Bookstores every weekend – which may explain why the store is as named – could easily outnumber the people attending a weekend outdoor family picnic. And, since our pupils spend much of their time with their family members, pupils' learning could be given a big boost if families' interest in the children's mathematical learning could be appropriately channelled to informal settings.

Nevertheless, as pointed out earlier, the kind of mathematics that our pupils learn today is different from the mathematics that their parents learnt. As parents feel a sense of loss as to how they could contribute to their children's learning, they often resort to the use of assessment books. In fact, The Straits Times ("Taking stock of assessment books," 2001) pointed out "no one knows just how much the assessment book market is worth, but in 1999, the turnover for the local publishing industry including assessment books, was $156 million."

The intention of the parents may be good; however, overloading our pupils with work often kills their interest and promotes rote learning alone rather than encouraging the use of higher order thinking skills. We are all familiar with the saying that 'change is the only constant'. As Alvin Toffler ("The Third Wave Workplace," 2000) pointed out – "What workers learned in schools will not equip them for life. Learning is a life-long process – workers have to learn, unlearn and relearn". Similarly, parents will need to learn the kind of mathematics that their children are doing in the classroom in order to be actively involved in their children's learning. This helps to provide the parents with an opportunity to walk alongside the learning journey with their children. Parents become partners, partners to pupils in their quest for new knowledge and skills. These partners could also provide the encouragement and support to the learners, as these partners have moved a little further in the journey of life.

In order for families to be involved in their children's mathematical learning through informal settings and be partners to the pupils' learning journey, we need to address three issues – awareness, skills and materials.

Just as with the training of teachers, parents need to be aware of the role they should play in their children's learning. Seminars and talks should be organized both at the community and school levels to educate the public about their role so that the family and school support are not working in opposite directions.

However, in order to carry out the new role effectively, parents must also be equipped with the necessary skills. Effective questioning techniques, for example, could help parents to elicit responses from pupils, thus minimizing the possibility of parents telling, instead of guiding the pupils along. Teachers and parents could discuss and identify the kind of skills that may be needed, and training workshops could be organized for the parents either at the cluster or school levels.

Furthermore, since parents are to take up a different role from that of the teachers, parents also need to be supported with a different set of materials for use. Teachers, parents or commercial publishers could develop such materials. The materials should not only provide parents with ideas to carry out but also the kind of mathematics that pupils have undergone in the classroom so that they will be in a better position to involve pupils with the appropriate kind and level of mathematics.

References

Collars, C., Koay, P.L., Lee, N.H., & Tan, C.S. (2000a). *Shaping Maths Activity Book 1A.* Singapore: Oxford.

Collars, C., Koay, P.L., Lee, N.H., & Tan, C.S. (2000b). *Shaping Maths Activity Book 1B.* Singapore: Oxford.

Conference Board of the Mathematics Sciences. (2001). *The Mathematical Education of Teachers.* Providence, Rhode Island: Mathematical Association of America.

Costa, A.L., & Kallick, B. (2000). Habits of Mind – *Discovering & Exploring.* Alexandria, Virginia: ASCD.

Edge, D. (2000). *Involving Families in Mathematics Education.* Reston, Virginia: National Council Of Teachers Of Mathematics.

Kilpatrick, J., Swafford, J., & Findell, B. (Eds.) (2001). *Adding It Up: Helping Children Learn Mathematics.* Washington, DC: National Academy Press.

Ministry of Education, Singapore. (2000). *Curriculum Planning & Development Division, Ministry of Education 2001 – Mathematics Syllabus (Primary).* Singapore: Ministry of Education.

Ministry of Education. (2001, June 8). Parents "Need Not Take On The Role Of A Teacher". *Lianhe Zhaobao,* p.15.

Perry, B. & Dockett, S. (2002). Young Children's Access to Powerful Mathematics Ideas. In L.D. English (Ed.), *Handbook of International Research in Mathematics Education* (pp. 81-111). Mahwah, NJ: Lawrence Erlbaum Associates.

Shonkoff, J.P., & Phillips, D. (2000). *From neurons to neighbourhoods: The science of early childhood development.* Washington, DC: National Academy Press.

Shore, R. (1997). Rethinking the brain: *New insights into early development.* New York: Families and Work Institute.

Taking stock of assessment books. (2001, June 11). *The Straits Times,* p.H10.

The Third Wave Workplace. (2000, April 2). *The Sunday Times,* p.8.

Usiskin, Z. (2001). Teachers' Mathematics: A Collection of Content Deserving to Be a Field. *The Mathematics Educators, 6* (1), 86-98.

Yak, A. (2001). A Review of Recent Studies On Adolescent Development And Juvenile Delinquency. *Research Digest, 2,* 1-4.

Lee Ngan Hoe *is a lecturer at the National Institute of Education, Nanyang Technological University. His research interest covers both primary and secondary mathematics education. (nhlee@nie.edu.sg)*

The PAP of Teaching

Low Guat Tin and Yeap Lay Leng

This is a letter written to all teachers.

Dear 'Cher

Between the two of us, we have over 60 years of teaching experience and definitely not one experience repeated 55 times. We've enjoyed our work tremendously but of course, there are the occasional hiccups and frustrations. But that's what makes work more pleasurable because after every "storm" comes a calm for reflection and hopefully, we grow a little more in wisdom.

We are aware that advice is cheap and most people resent those who dispense such "words of wisdom". But at this stage of our career, we feel very privileged to be able to look back. We would like to share our thoughts as we believe that being able to look back and learn from them helps to prevent heartaches. We are not imposing but simply sharing three things: *Promotion, Attitude and Passion,* hence the title of this paper, the PAP of teaching.

Promotion

One sensitive issue is related to promotion as it frequently upsets people and they would rather not talk about it. Yes, promotions, performance bonus, incremental credits, accelerated increments and so on are important, especially when they are deemed as the management's recognition of workers' performance. We know it hurts when one is not promoted. What is more worrying however, is when one becomes de-motivated and moody. We understand. We have good friends who missed out on promotions too, and to us, they are so 'promotable'.

Work is to be enjoyed. Work can be 'shiok'. Advice from the get-rich guru, Robert Kiyosaki (2001) on 'How to get a rich life' includes 'Make your day job what is truest to yourself. Have fun while you are at it but make sure the fun is legal, ethical and does not harm anyone' (The Straits Times, May 6, 2001, p. 14). A natural consequence of enjoyment will lead to an 'everything is beautiful' syndrome. Happiness, less stress, a willingness to share, cheerfulness, cooperation, light heartedness, and fun will also result. If we have a "back to the grind" mentality on Monday morning and every end of the week is a TGIF (Thank God It's Friday) then we are cheating ourselves of the best time of our lives and the best hours of each day! The push and pull tension of dragging ourselves to school, to the classroom may cause us to 'waste' a lot of energy. Here, we are talking about more than 1,000 hours a year of teaching.

Some people say that if you are not tired out by Tuesday, it means you have not worked hard enough! The belief that people should enjoy work, either doing things they like or actually learning to like what they do, is becoming a common phenomenon today. Truly, work can be enjoyable and as adults we need to unlearn many things which our parents taught us such as:

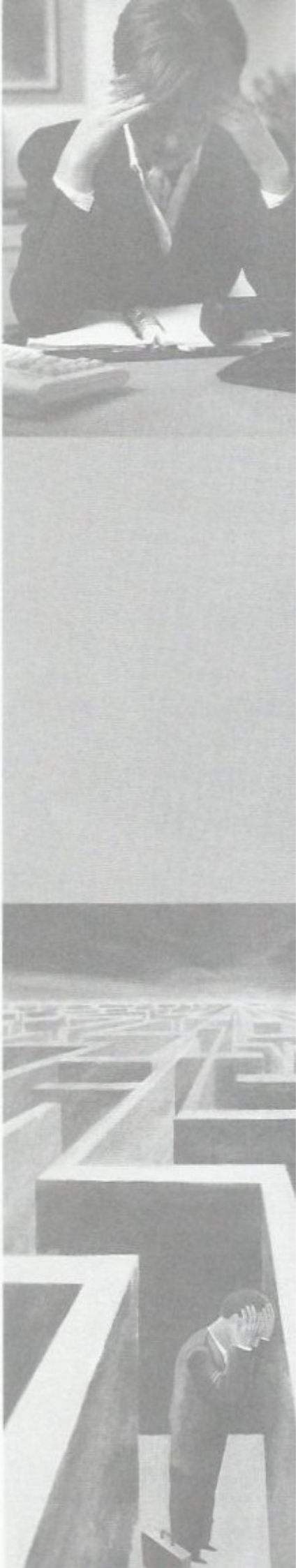
No pain no gain;
Work so that you can enjoy;
Work and fun don't belong together.

Indeed, some management gurus have told us that "The key to personal progress, profit and productivity is enjoyment!" and Mark Twain stated that "The higher the pay in enjoyment the worker gets out of his labour, the higher shall be his pay in money also." To many people, work is play. Robbins (1986) asked a pertinent question, "Do you know anyone who has achieved massive success by doing what he hates?" Twain (in Robbins, 1986) again stated that "The secret of success is making your vocation your vacation." One of the reasons why the Pike Place Fish stall in Seattle became famous is because the fishmongers play at work. They enjoy their work.

We were told that there was a team of insurance agents who got together and decided that for a month, when they met clients, they would focus on enjoying the interaction with them and not on closing a sale. And you know what, they sold more policies in that month than in any other months! So enjoy your work, enjoy your children, enjoy your colleagues and enjoy the subject you teach. Connect with the subject you teach, your children, your colleagues and yourself. Make each day an enjoyable day. Incidentally, bosses are unlikely to make your work enjoyable, you have to make it enjoyable yourself.

If you are not promoted, don't be upset. If you attach a lot of importance to the promotion you may end up disappointed, when you are not promoted. Some even become bitter. Unhappiness and a souring of their relationships with their reporting officers often results. Perception of what is productive and good work, differs tremendously among individuals. There is no objective or accurate measurement of what is deserving or undeserving. It has to do with perception and that is also influenced by an individuals' mental interpretation of the adjectives.

Promotion does not make one rich. If you want to get rich, then you are in the wrong line. Teaching should be a 'calling' and 'callings' cannot be satisfied by dollars and cents. Promotion only gives satisfaction to the fact that your work 'caught the eye' of a reporting officer, or a group of decision makers. Should we be upset because of promotion, awards, and competition? Need their recognition be held with such high regard that when we don't get promoted, we are depressed, bitter, suffer from low self-esteem, and become grouchy?



When work is enjoyed for its sake, then only can we be 'free' to conduct ourselves as professionals. We are not afraid to speak up and out. We dare to disagree. We need not be fearful and meek. We need not dodge. We need not rub the right side of people's shoulders. Of course, we should not deliberately rub them on the wrong side either. We need not be intimidated by people's opinion of us. We will have the 'abundant mentality' in us.

We are happy. We will not 'count'. We will not expect. We do not claim 'rights'. We can regard them as privileges. We won't demand. We can request and appeal. We are respectful of individual differences. We can overlook differences. We will not be 'blackmailed' into doing things that are in conflict with our beliefs and values. We can make an exit graciously and gracefully. We need not compromise but can come to an agreement on ethics, and honesty. We will work for the good of our clients and not because of any hidden agenda. We dare to be transparent.

Attitude

Attitude is very, very important. Indeed it is attitude, not ability, that determines how far we go in life. Can attitudes be taught or is it caught? We were told by learned professors that attitude can be taught. We are told that attitude is an internal state of an individual's behaviour, a learned capability that affects the individual's choice of doing something, an action towards a person, an event or an object. Many things in life may be out of our control but we have control over our reaction to those things. A curt memo may be given to you and your attitude will determine if you're going to be a winner or not! You could sulk the whole day and avoid the person for the whole week and what good would that do?

Some of us were hurt by our principals or HODs and we live with the 'serious internal injuries' all our lives refusing to be healed. Why become so embittered? (Incidentally no one can hurt us, we allow ourselves to be hurt.) Life really isn't about what happens to us but it is about how we see and react to what happens to us. The crux is how we choose to react? Ineffective people often say "Why me?" Effective people ask a different question "What can I learn from this?"

We have met people who are so angry or hurt by others that they live in the past. It's as if life stopped for them way back when they were hurt. Forget it. Let's move on. Remember we are created unique and no two people on earth are the same. Science is constantly showing us where we differ from each other. George Sheehan, a marathon runner who ran countless marathons even when he was in his seventies, was quoted as saying that our parents can make love a million times and they will never produce another 'us'. We are created winners! Think about it, we are one out of 40 million sperms that survived!

As someone has said, attitudes are like the little hinges that attach doors to the frame and big doors swing on them. Hinges play a crucial role, for without them, there will be no door. The wrong attitude brings about unnecessary wear and tear, which finally brings the door crashing down. You choose your attitude.

Passion

So, besides not working for promotion and enjoying your work, what else? Robert Kiyosaki (2001) advised people to 'work to learn, not to make money' and to 'beware of being so busy at work that you end up being lazy about the other parts of life that matter' (The Strait Times, p. L4). So, be passionate about something. You could be passionate about your CCA/ECA, the subjects you teach, or be passionate about working with children. When you are passionate, you lose all sense of time. Passion gives you the quickening of your heart and pushes you on and on. With passion comes boundless energy and excitement. We have seen "dead woods" suddenly sprouting out with life because something touches them and they become passionate. Incidentally, passion is not obsession or 'workaholism'. In the past many people think of the 2Ps – Pay and Pension. In truth, these do not push us on. It is *passion* that will push us on. It is passion that got people like Mahatma Ghandi, Mother Teresa, Martin Luther King and Mandela to work the way they did. It is the same passion that enabled Singaporeans like Miss Teresa Hsu, who at 102 years old, still serves other old folks who are much younger than herself. That same passion drove her to part with her money to build an old folks' home.

So, if you are just drifting along, maybe stop and discover your passion, you may have buried your passion. Ask yourself, what moves you? If you are passionate about something and find it difficult to achieve it, then get others excited, enlist their help and together, achieve what you want to do. Passion to us is contagious and it means to PASS-I-ON (to pass whatever I am excited about on!)

See yourself as a gift to the children. Care about your work until your work becomes a gift of yourself. Cromwell, the 16th Century religious leader, mentioned two little powerful words "Think and thank" (TT). Yes, we need to think of all the things we've been given and to thank God. We need to keep counting our blessings, and when we do, we will truly be amazed at what we have been given.

Sometimes, we think we are helpless, that we can't do much. We have no control in the school and so on. Actually, we have lots more control than we can imagine. We have control over the way we deliver the lesson. We can control how we will relate to the children, our colleagues or the parents and above all, we have control over ourselves. Someone once said that we live in a world where our smallest act can make a profound impact.

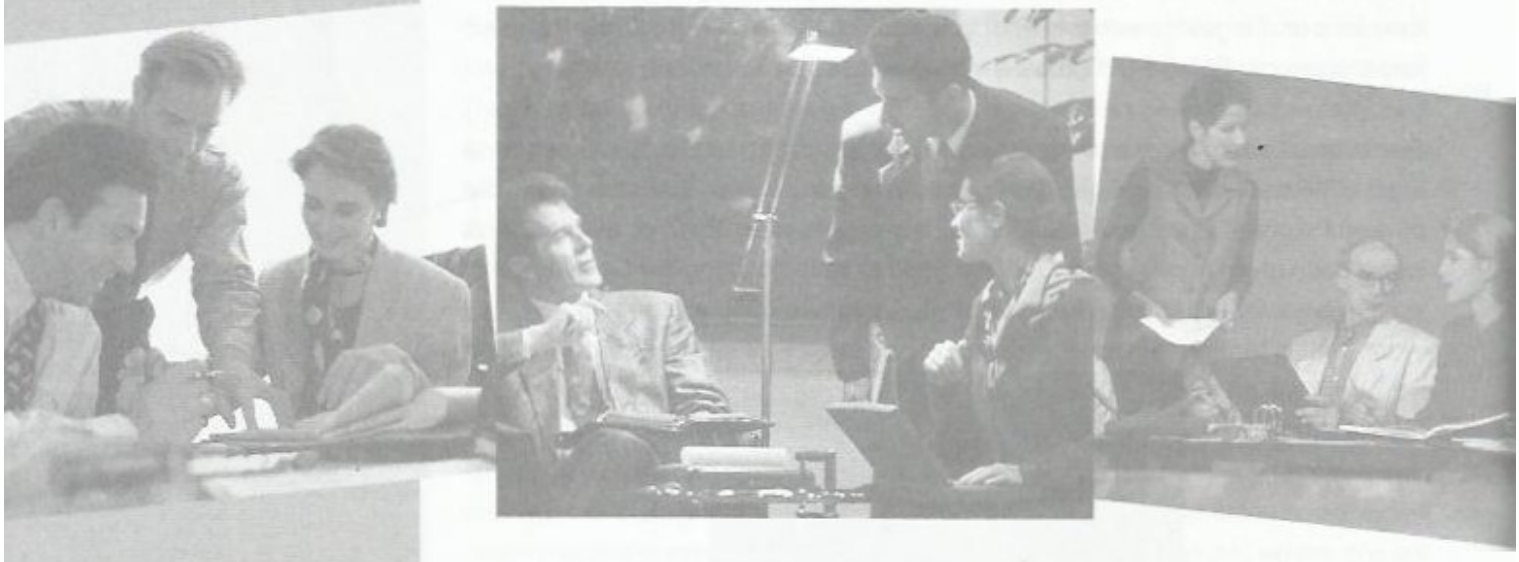
Well, we have written a long letter to you and we really must stop. Thank you for taking the time to read this.

We remain your self-appointed mentors.

Low Guat Tin *and* ***Yeap Lay Leng*** *are Associate Professors attached to the school of Policy and Management Studies Academic Group, National Institute of Education, Nanyang Technological University, 1 Nanyang Walk, Singapore 637616*

Reference

Kiyosaki, Robert(2001) 'How to Get a Rich Life' *The Straits Times*, L4, May 6.
Robbins, Anthony(1986) *Unlimited Power*, New York: Fireside.



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Teachers' Clipboard...

"If education doesn't prepare the young to educate themselves throughout their lives, then it is a failure, no matter what else it may seem to accomplish."

- Sydney J. Harris -

"What a teacher doesn't say....is a telling part of what a student hears." "

- Maurice Natanson -

"I'm not a teacher: only a fellow traveller of whom you asked the way. I pointed ahead – ahead of myself as well as of you."

- George Bernard Shaw -