



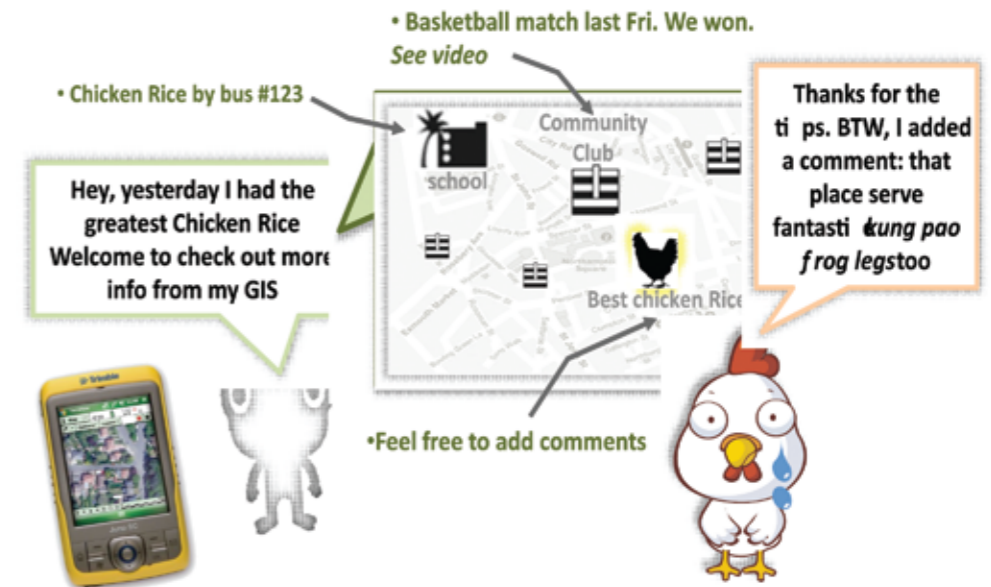
4TH ANNIVERSARY (1969~2009)



GEOSPATIAL SCIENCE & GEOGRAPHICAL INFORMATION SYSTEM (GIS) FOR EDUCATION

Open up Google Earth, you see a global map, the school is the spatial data, facilities within and surrounding activities would make up the attribute data. It is such partnership: map, position and data that enable GIS to become an indispensable daily tool. This article shall share with you how much fun your students can share from GIS and **spatial analysis**.

Before that, how do I know where am I? Well, you can use a GPS and where GPS fails, a WiFi network can be used to get a fair location of your GPS-WiFi enabled mobile devices. Let's begin. Science is boring unless it is put into action:



- **Treasure-Hunt** *Ahoy!* Begin with a theme, say *frog-habitat*, we will leave the more interesting



ones to your imagination. Choose several spots to hide items of significance. Have their position taken and publish on the GIS. You can provide witty clues using its attribute function. Oh, enable the students to track progresses, what's treasure hunt without competition, strategy and thrill. May the best hunter win!

- **We'r-a Community** *GIS for township-planning, watch out may develop socially-responsible students.*



Let's begin with a map. Encourage the students to seek for news surrounding the school. Report the results in a blog style. Photographs and videos may be encouraged. All these info shall be published on the GIS. It will get interesting when teachers and students (even grassroots members) are allowed to interact and rate the articles. Now, you have set things brewing; prepare to be amazed at how these spatial-contributions could affect the surroundings of the school.

The convergence of technology has brought about the convergence of academic fields. The potentials of GIS as a tool and positioning technology are really varied. GPS Lands will like to hear from you, especially if you are curious about fun with GIS and indoor-outdoor positioning.

Email us: yksam@gpslands.com , gerry@gpslands.com, www.gpslands.com.



Foreword

This commemorative publication marks the 40th year of the Geography Teachers' Association of Singapore (GTA). It paints a fascinating tapestry depicting the relationship the Association has enjoyed over the decades with geographers within and beyond our shores. In this volume, some of these geographers share with us their motivations, their inspirations and the lessons they have learned as they sought to serve the Association as best as they could. The stories of GTA unfold themselves through these pages.

As an Association, we have always collectively striven to be adaptive and responsive to the changes in the requirements of the local geographical education scene and the developmental needs of geography teachers. Organised in close consultation with representatives from the Ministry of Education, the National University of Singapore and the National Institute of Education, our annual seminars are always a highlight of the calendar year, to the extent that in recent years, social studies, economics and history teachers

have numbered themselves among the participants.

While seminars and fieldwork have been our focus in the past, in recent years there has been a shift to meet the pedagogical needs of geography teachers. Talks organised in various ways, including discourse, have been explored. Our wide spectrum of beneficiaries has grown to include junior college students; we have been driven by the vision that it is never too early to kindle a love for geography, and that the best geographers have generally been those who have enjoyed a healthy mentoring relationship with those already in the profession.

I invite you to join me on this journey, as we let the stories of GTA speak to you through the voices which introduce themselves in the following pages.

Ms Ho Soh Tin
Chairman,
Geography Teachers'
Association



EDITORIAL



Front: Ms Koh Cheow Choo, Ms Dorothy Tay, Mr Tan Joo Kheng
Back: Ms Kan Beo Lan, Mr Lee Hoong Cheong, Ms Ho Soh Tin, Ms Woo Woon Kiew

It is my privilege, on behalf of the Editorial Committee, to pen these words in this 40th Geography Teachers' Association Anniversary (GTA) Commemorative Publication.

First and foremost I must thank GTA, under the Chairmanship of Ms Ho Soh Tin, for rounding us "old timers of GTA" up to spearhead this publication. This has allowed several of us to renew our bonds and friendship established since our days in GTA in the 80's. The ad-hoc committee first met on Sat 18 October 2008 to discuss the objectives of the publication, what should go into the magazine, and what would bring out the spirit of GTA. Our enthusiasm was aroused and there was no stopping us!

We got to tracing GTA to its roots; the pioneers of GTA: Mr Naidu, Ms Betty Lim and Mr Tan Joo Kheng. We had the most wonderful experience of interviewing our stalwarts of yesteryears on their remembrance of GTA. We discovered a common thread

amongst them - that of a like-minded passion for Geography and teaching it through field activities! This passion runs through even to our current key holders of GTA!

It was tough work trying to "dig up the past," but through it all we are enriched by the experience of meeting up with people who "worked tirelessly" to get GTA into the forefront of the teaching profession. It is this commitment and shared responsibility that keeps GTA



From left: Mrs Lenie Cho & Ms Wee Siew Sun

going. GTA's partnership with Geography exponents from NIE, NUS and MOE helps to keep it current in championing the teaching of Geography in the schools.

In this publication, we tell GTA Stories of the Past Years, our Fieldtrips, our Seminars and our GEONEWS, GTA Stories of the Current Years and GTA Stories of the Future Years. We hope that you will treasure this souvenir publication as you treasure the times with GTA!

It leaves me now to congratulate GTA for its 40 years of being the flagship of Geography teaching in the schools and beyond. May it continue to be the leading professional organization in the next 40 years to come and thereafter!

Ms Dorothy Tay
Life Member, GTA



GTA Stories: Our Past Years

Accolades to Our

- Pioneers and Stalwarts
- Past Chairmen
- Fieldtrips
- Seminars
- Geonews



Flagships of GTA

Pioneers & Stalwarts



Mr T P Naidu
Chairman
1969 - 1974

The birth of the Geography Teachers' Association (GTA) must be credited to three stalwarts in the Education Service, namely Mr T P Naidu, Mr Goh Yong Hung and Ms Betty Lim Hsiu Yun. Concerned over the possible weakening of the teaching of Geography in schools as a result of the introduction of Social Studies in the curriculum, they felt a need for the formation of an association where Geography teachers could come together to share their experiences and ideas, and to champion the study of Geography!



Ms Betty Lim Hsiu Yun
Chairperson
1979 - 1983

The Geography Department of the former Teachers' Training College in Paterson Hill in the 1960's was a small department comprising four lecturers. Besides supervising the teachers in the classroom, they conducted field trips, believing that Geography comes alive when the study is done in the real world, outside the confines of the classroom.

To better promote this, Mr Naidu, Mr Goh and Ms Lim, according to Miss Lim, set out to meet the late Mr Ong Pang Boon, then the Minister for Education, at the Ministry of Education at Kay Siang Road, in 1969, to present their case for a Geography Teachers' Association. The Minister listened and gave his consent and so the pro-tem committee was formed. Mr Naidu recounted that the team called a meeting with the Geography teachers and worked on the GTA Constitution. They then took the step of having it formally registered with the Registry of Societies and Mr Naidu was

appointed first Chairman of the GTA.

Mr Naidu recalled the days when Geography was made relevant through fieldtrips to Clementi to study the erosive power of rain resulting in landscape with gullies and deep valleys, to Bedok River for a study of river processes from the source to the mouth, and to Potong Pasir for the study of landuse mines. When asked what he would like to see in Geography study presently, he had this to say, "Get children involved in the study of the MRT!"

Both Mr Naidu and Ms Betty Lim agreed that efforts of the GTA to spearhead both local and overseas field studies were noteworthy, culminating in the geographical and cultural tours of China, Indonesia and Japan.

Pioneers & Stalwarts



Mr Tan Joo Kheng
Chairman 1974 - 1979,
1986 - 1997

Mr Tan Joo Kheng was Chairman of GTA, spanning two periods: one in the 1970s and another in the 80s. A true geographer at heart, Mr Tan loves traveling and discovery of differences in culture and nature everywhere he goes. In his earlier days, Mr Tan worked closely with local geographers, like A/P Yee Sze Onn, A/P Wong Poh Poh, Brother Patrick and Sister Maria Bernadette.

As an educator, Mr Tan began as a primary school teacher in the early '50s, and then went on to head Serangoon Secondary School in 1967 and Upper Thomson Secondary School in 1984. He retired at the end of 1987. In all his over 40 years in



the Education Service, he was staunchly behind GTA!

Mr Tan is remembered for his hand in organising the overseas field trips: the first to China in 1979, even before diplomatic ties with China was established, and the second, the Japan Geographical and Cultural Tour in 1986. The 12-day Japan tour was an enriching one with many spin-offs. The group that went on this trip has bonded so well that they still meet annually for lunch, and have come together in support of this GTA 40th Anniversary publication.

Mr Tan is our anchor-man; our shining example of "active ageing," with total dedication and service to the GTA!



Mrs Mok Choon Hoe
Chairperson 1983/84,
Director Ed Programme,
MOE

Mrs Mok's involvement with GTA began in the 70s when she was a Geography teacher in NJC. She became the Principal of Bukit Merah Secondary School from 1980 to 1982.

As we met up with Mrs Mok over tea, she reminisced that it was the interest and love for the subject that brought several like-minded people to GTA. She spoke in particular of A/P Prof Yee Sze Onn from NIE and Mr Tan Joo Kheng, then Principal of Serangoon Secondary School,

who were concerned about how to motivate students to take up Geography which was viewed as a "Cinderella" subject.

GTA provided an avenue to bring together expertise and resources to give a boost to the study of Geography in schools. Mrs Mok remembered working with the National University of Singapore Geography Department, tapping on the then Dr. Wong Poh Poh, Dr. Chia Lin Sien and Prof Ooi Jin Bee's knowledge and expertise. Together they worked at making Geography meaningful through field trips. GTA then became closely associated with field work exposure.

Mrs Mok was Chairman for one year (1983/84). It was a watershed year with clear focus and direction set. Her "driving force" steered the Executive Committee into action. Each Exco member belonged to a sub-committee where the direction for the year was chartered. GTA really took off. She successfully played the leading role in getting the team to work together to bring the Association closer by sharing the same vision and making it alluring!

In her career in the Ministry of Education, Mrs Mok went on to become the Senior Inspector, the Assistant Director, the Deputy Director of the Schools Division, the Director of Curriculum Planning and eventually the Director of Education Programme. She retired in 2001 after an illustrious career in the education service.



Pioneers & Stalwarts



Associate Professor Yee Sze Onn

Ask any geography teacher in Singapore, A/P Yee Sze Onn is no stranger. A firm believer and shining model of a geographical fieldworker who brought teachers as well as students into every feasible spot in the region, exploring and investigating the true nature of geographical phenomena, breathing life into the subject and carrying the knowledge and interest of teachers and trainees to realms well beyond the confines of textbooks.

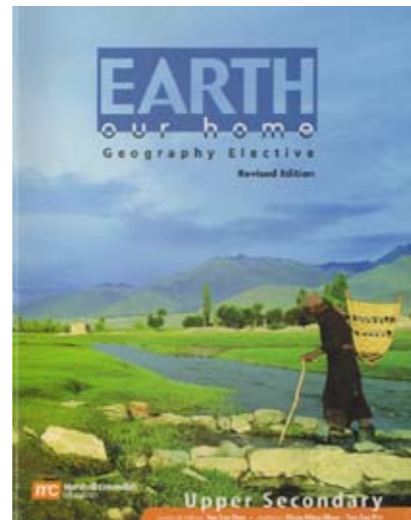
After more than 3 decades of dedicated work in the NIE, A/P Yee has nurtured many generations of young Geography teachers and taking under his wings countless others as their mentor and leaving his hallmark of a passionate fieldworker onto them. Notably, all NIE trainees under his charge would have completed a series of physical and human fieldwork projects during their training period and internalised that Geography without fieldwork is equivalent to science without laboratory experiments. By the time a geography trainee graduates he or she would have learnt typically about the coastal weathering and erosional processes along Labrador Park, the Jurong Formation on St John Island, village settlement

in Kampong Ubin, vegetable gardens at Sembawang, pig and poultry farms in Punggol (eventually phased out), landuse patterns in the CBD, granite quarries and pseudo-karrens on Pulau Ubin and Pulau Sekudu, etc.



A/P Yee, together with his fieldwork partner in NUS, such as A/P Wong Poh Poh explored this region far and wide, from coastal features along the east coast of Peninsular Malaysia to the neighbouring Indonesian islands of Bintang, Karimun to even the Wanagama District in Central Java. At the height of their deep involvement with GTA as advisors and MOE Humanities and Aesthetics Unit, there was a keen desire to set up permanent fieldwork centres in this region. However, despite much groundwork done and the success of several exploratory school trips to these areas and liaisons with university lecturers in the Wanagama Region and the Gadjah Madah University, these efforts were abandoned as a result of the political reality of Indonesia in the 1990's.

A/P Yee also devoted his bountiful energies and resourcefulness to fulfill the void of geographical teaching material in the schools. From the 1980s to now, he has edited a series of geographical texts, first with the Federal Publisher and currently with Marshall Cavendish, keeping close tab with the syllabus changes and updating information. He was also the prime mover in the publication of the MOE-NIE Fieldwork Techniques for lower and upper secondary students.. He made contributions to the MOE syllabus review committees. He contributed



a lifetime to the Geography education in Singapore and was awarded the highest accolades by NUS & GTA upon his retirement in 2006. We wish him the best of health and continued active involvement in Geography Education of Singapore.

Pioneers & Stalwarts

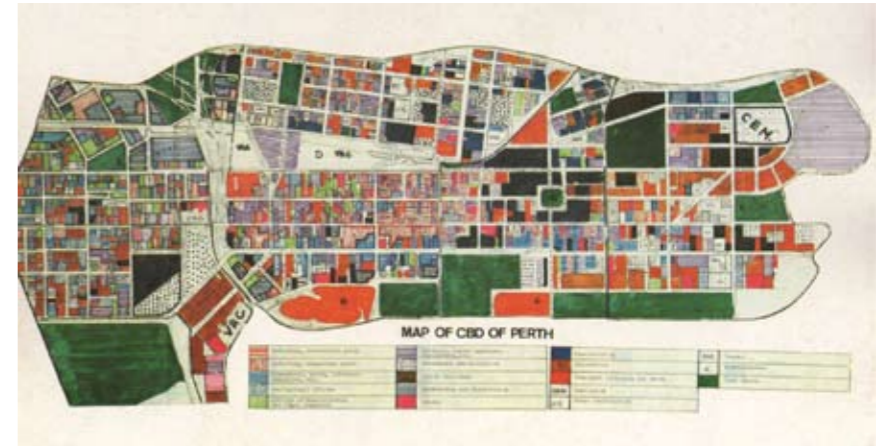
OXBRIDGE GEOGRAPHY TUTORS:

**Mr Anthony Shallcross
Michael White and
Charles Elwin**

Mr Anthony Shallcross was the pioneer Geography tutor recruited from England to tutor PROMSHO (Pre-University-cum Overseas Merit Scholarship for the Study of Humanities at Oxbridge) scholars in Hwa Chong Junior College in 1979.



Besides preparing the PROMSHO scholars for Oxbridge universities, he played an instrumental role in initiating and conducting overseas field studies for students from other junior colleges. A notable field expedition to Western Australia under the umbrella of GTA in 1983 was led by Mr Shallcross.



The party comprised 31 students from five junior colleges: Anglo-Chinese Junior College, Catholic Junior College, Hwa Chong Junior College, Raffles Junior College and St Andrews Junior



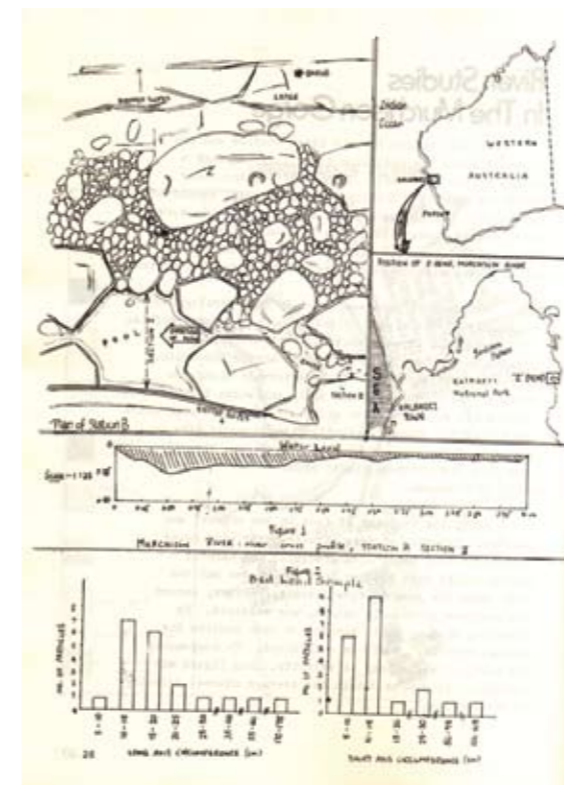
College, and one pre-university centre: Beatty Secondary School, and 6 teachers from the colleges. A detailed report of field studies done on this trip was published which provided good resources on Western Australia for geography teachers.

Mr Shallcross also provided inputs to the revision of 'A' level Geography syllabuses. He co-authored a textbook "Modern Concepts in Geography," 1982, published by Book Emporium Singapore Pte Ltd, for lower secondary students.

assessments which were well received by teachers. Mr Shallcross had left a mark on the geography scene in Singapore. He was succeeded by Mr Michael White who helped organised numerous fieldtrips to African countries, notably the trip to Mauritius. His contemporary, Mr Charles Elwin, who tutors Special Level geography in Temasek Junior College was also invited to share his expertise with A-level geography teachers.



He was also remembered for conducting numerous workshops on pedagogies and



Pioneers & Stalwarts



Mr Takeshi Kubota

Former Secretary of All-Japan Geography Teachers Association (1980s), Former Vice-Principal of Singapore Japanese High School (1992-1996), Former Principal, Haneda High School, Tokyo.



My close encounter with the Executive Committee of GTA dated back to 27-28 December 1983, when about 150 geography teachers from both countries held the first academic and cultural exchange at the RELC International House in Singapore. Thanks to GTA chairperson, Ms Betty Lim Hsiu Yun, and the secretary, Mr Lawrence Gomez, the gathering had benefitted both sides. During the conference, Mr Govindarasu (MOE Geography Specialist) reported on Geography education in Singapore, Dr Teo Siew Eng (NUS Geography Dept) and Mr Tan Teck Min (URA) lectured on urban planning and development in Singapore. We talked about Geography education in Japan and reported on the comparative survey of geographical awareness between students in Japan and those in Southeast Asia. We were much impressed by the leadership quality of active women in Singapore.

Our ties continued after the conference. After more than a year of correspondence and preparation, a group of 23 GTA members, led by Mr Tan Joo Kheng, made a 12-day tour of Japan on 6-17 June 1986. The organising secretary was Mr Lee Hoong Cheong (Hwa Chong Junior College). The group first visited Kagoshima, Sakurajima, Kumamoto and Beppu on Kyushu Island, before coming to Tokyo region, visiting Nikko, Tsukuba Science City, Tokyo

City and then Fuji-Hakone area. During their stay in Tokyo, we had some academic exchanges and school visits. There were conducted tours of a steel mill and an automobile factory. It was a pleasant surprise for us to discover that there were good musical talents among the Singapore participants.

A year later (1987), the Geography Education Committee of the Association of Japanese Geographers invited Mr Lee Suat Hui from the Curriculum Development Institute of Singapore (CDIS) to Tokyo. He and a Korean researcher each made a report on the writing of Geography school textbooks.

Six years later (1992-1996), I had a chance to work in Singapore as the vice-principal of the Japanese High School at West Coast Road. During this period, several GTA members, particularly Mr Lee Hoong Cheong and Mr Lee Suat Hui, had offered me much assistance and encouragement. Indeed Singapore was then my second home.

On the happy occasion of the 40th Anniversary of GTA, may I wish the Association and all my good, old friends great success in your future endeavour.



Pioneers & Stalwarts



Associate Professor Christine Lee

Head Curriculum Dept, Teaching & Learning (2006-07), Head of the Humanities & Social Studies (2000-2006) and Vice-Dean of the School of Arts (1997-2000) - National Institute of Education

A/P Christine, impressed with the commitment and dedication of geography teachers who have come forward to contribute to GTA as Ex-Co members with a single-minded desire to promote geography in the schools; several of whom have served many terms of office, felt that the least she could do when she became a faculty member at the National Institute of Education was to come on board the Ex-Co of GTA and support them in the development of Geography teachers

Her goal was to develop a collaborative partnership and synergy between a teacher professional association (GTA) and a teacher education institution (NIE). This partnership has continued with an NIE faculty member holding office in the Ex-Co each year.

In her office in GTA, A/P Christine proposed a GTA Annual Book Prize, to be awarded to an outstanding teacher trainee in Geography from the Humanities and Social Studies Education Academic Group in NIE. This initiative was accepted and the first GTA Book Prize was presented in 2001.

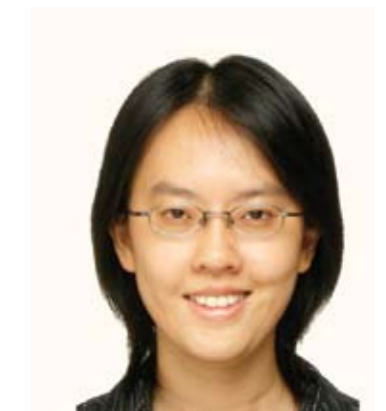
The first recipient of the book prize, Teo Juin Ee is now a member of the faculty in the Curriculum, Teaching and Learning Academic Group, NIE. Juin Ee has been awarded the Overseas Graduate Scholarship to pursue her doctoral studies.

Juin Ee received the GTA Book Prize in 2001. She was also the valedictorian at the PGDE Investiture. Juin Ee had been posted to Hong Kah Secondary School, where Ms Dorothy Tay was principal then. It was a delightful moment for her when Juin Ee received her prize and made her valedictory speech.

About receiving the award back then, Juin Ee has this to say, "The Geography Teachers Association

Book Prize encouraged me to invest in books which share the collective wisdom of educators. As a beginning teacher, reading was a powerful way to gain experience vicariously through the writing of those who love teaching and students. One of the books I bought with the prize is *The Courage to Teach* by Parker J. Palmer. The inspiration gained from this book is with me to this day. I am grateful for the opportunity afforded by the prize to consciously look for good professional literature at the start of my teaching career."

Since 2001 it has become an annual book prize presented at the NIE Investiture Ceremony to



Ms Teo Juin Ee Overseas Graduate Scholar

an outstanding trainee teacher in Geography from the Humanities and Social Studies Education Academic Group in NIE.

Pioneers & Stalwarts



Associate Professor Chia Lin Sien

Vice-Chairman 1984/85, GTA Conference Convenor & Chief Editor

During his short but active term of office, in May 1985 A/P Chia successfully mobilized the GTA Ex-co and other keen members to organize a Conference on “Biophysical Environment of Singapore and its Neighbouring Countries”. It was attended by some 112 teachers and educationists from schools in Singapore, the United World College, officials from the Ministry of Education, lecturers from the Institute of Education and participants from Malaysia and even Japan! 18

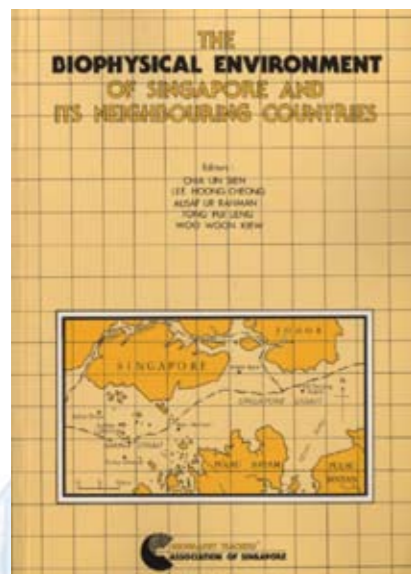


Junior College and University students also participated in the Conference. A/P Chia Lin Sien and A/P Ausaf u Rahman, both lecturing in NUS together with our own Dorothy Tay compiled and published the Conference Proceedings and eventually the Conference Papers. The book entitled “The Biophysical Environment of Singapore” was published by Singapore University Press for GTA and was distributed to all Secondary Schools and Colleges in 1991.

A/P Chia’s constant concern was “how to make Geography relevant,” and he spared no effort to bring about this both in his lectures at NUS and through his research and activities. He remains to this day a member of the Advisory Panels of the Chartered Institute of Logistics and Transport (CILT) and the Singapore National Shippers’ Council (SNSC) and served for a time as a member of the Public

Transport Council (PTC). It was through the 1995 Conference that GTA Exco liaised with the All-Japan Geography Teachers Association and paved the way for the 1986 Geographical and Cultural Tour of Japan.

When we met up with him over lunch last December, he was pleased with his past role in GTA. But he felt that the past was behind us now. His advice for the new generation is “to look forward and continue to evolve and stay relevant, relying on the intrinsic strength of Geography as a spatial science.”



Pioneers & Stalwarts

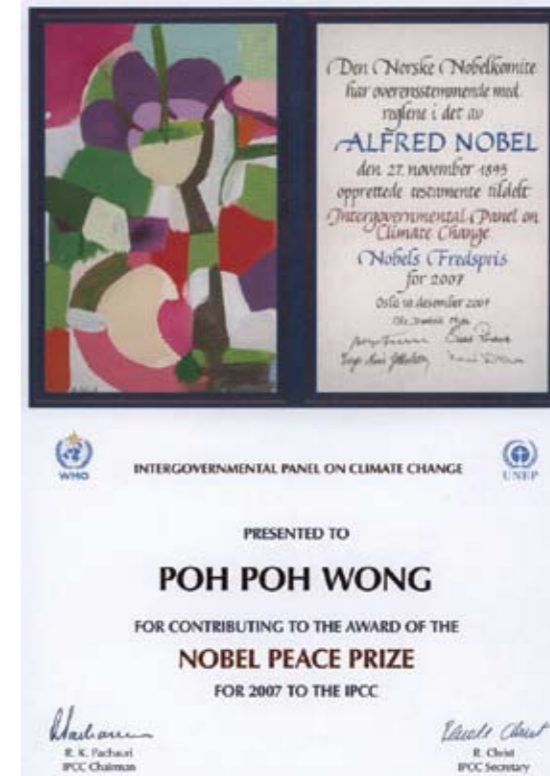


Associate Professor Wong Poh Poh

NUS Coastal Geomorphologist, IPCC Co-recipient of Nobel Peace Prize 2007, Senior Lecturer & Mentor NUS

A/P Wong is our home-grown geographer closely associated with GTA activities from late 1970’s till now. His meticulous research and down-to-earth teaching approach are amply displayed in his academic distinctions and career. Through his advisory role in curriculum revisions, he played a pivotal role in aligning Singapore geography teaching methods with latest developments in other advanced countries.

Though not directly holding any official post in GTA, A/P Wong was one of the earliest lecturers from our local university to be invited to conduct talks and fieldtrips, both locally and overseas. In 1978, he led the first China trip, a 16-day expedition, first ever to be attempted by a group of eager-eyed educationists, to witness the opening up of mainland China. Travelling from



Guangzhou to Beijing, this trip became a forerunner to many other subsequent GTA overseas trips, for example, to Japan, Indonesia and India. In fact, due to overwhelming responses, a second China trip was mounted in 1999 to the Sichuan region.

An expert coastal geomorphologist, much of his research centred around the coastal environment and lately, the imminent changes wrought by climate change and tsunamis. A/P Wong is both a strong advocate and practitioner of fieldwork. Like A/P Yee and Mr. Naidu, he firmly believes that the study of geography should start from the home environment, but should not end there. A/P Wong is tireless in his pursuit to promote geographical learning in the schools. His latest “Atlas-Singapore and the World, 2nd edition” was released last December. Published by

Pearson Education, it features many local sites of both physical and human geographical interests.

In the 1980s, Prof Wong was a member of MOE Geography Review Team to look into the improvement of geography syllabus. Together with the Oxbridge tutor, Mr Shallcross, the Review Team recommended the adoption of a systematic and interactive geography teaching approach, which was subsequently implemented from the lower and upper

secondary levels, in line with what was already being done at A-level. A/P Wong’s contribution to field studies in the region is pervasive. Apart from his pioneering research on tourism and the coastal environment, together with A/P Yee and others, they had made countless trips to explore feasible fieldwork locations in Peninsular Malaysia, the Riau Archipelago and the main islands of Java and Sumatra in Indonesia. GTA warmly congratulates him for his 2007 Nobel Prize accolade as Coordinating Lead Author in the Intergovernmental Panel on Climate Change (IPCC).

Pioneers & Stalwarts



Ms Kan Beo Lan
HOD/Humanities – Active
Life Member

I can still remember attending the inaugural meeting of the GTA in 1969. I was into my third year of teaching. It was held in a classroom in the Teachers' Training College at Paterson Road and the first committee was formed on that day. Time flies and it is celebrating its 40th anniversary this year.

The Association provided me with the opportunities to learn through the seminars, talks and fieldtrips it organised. I gained my confidence in organising fieldtrips for my students by taking part in fieldtrips organised by the Association for teachers. The Association kept up with the times and responded quickly to necessary changes made by the Ministry of Education in the Geography syllabi over the years. The Association assisted us by organising workshops to prepare us for the new syllabi each time. When information technology was launched in schools, GTA was quick to help equip Geography teachers with the teaching skills and knowledge by working closely with CDIS (Curriculum Development Institute of Singapore) and later ETD (Educational Technology Division). Assistance was again given through workshops and I

am grateful for what the association had done for us.

Through the Association's activities, I got to know many fellow Geography teachers. At the seminars, workshops and fieldtrips, we shared ideas and I learned useful teaching techniques and found out suitable fieldtrip destinations from other Geography teachers. Friendship was forged and I still keep in touch with several fellow Geography teachers now.

An unforgettable overseas trip organised by the Association was the China trip in 1979. That trip was made only a few months after China's liberalisation in 1978. We visited several big cities like Beijing, Shanghai and Guangzhou. We also travelled by train through the rural areas between cities. That trip was not only an eye-opener for me but also allows me to make a comparison of China then with the present China, thirty years after liberalisation.

Well done, GTA and thank you!



MR K KANAGASINGAM

Chairman 1988 - 1991

Mr Singam was GTA Chairman for three terms (1988-1991) while serving as one of the Geography textbook team writers with the Curriculum Development Institute of Singapore (CDIS). He reflected that he had worked with wonderfully supportive committees which enabled him to initiate numerous seminars, workshops and fieldtrips.

During his time, GTA managed to get geographers from Malaysia to come and share their field of study. Lecturers from the University of Malaya spoke on the Environment and Oil Exploration to our teachers. At two other GTA organized seminars, Dr David Hilling from the University of London spoke on "Ports" and Dr Ausaf Ur Rahman from the National University of Singapore conducted a talk cum workshop



Pioneers & Stalwarts

on "Rocks." Mr Singam was well remembered by his many GTA trips to FELDA schemes in KEJORA (SE Johor) and the 2-day round-island trip to the island chain off Mersing.

Those were exciting years for GTA he recalled. He is heartened to know that some of these GTA pioneers are still helping to carry GTA's light forward. He sincerely congratulates GTA on its 40th Anniversary!



Ms Woo Woon Kiew

Chairman 1991 - 1993

Ms Woo headed GTA for two terms from 1991 to 1993. As a full time Geography teacher, she committed her time to GTA, managing and organizing activities for the benefit of fellow Geography teachers.

In earlier Executive Committees, Ms Woo had served well in the Organizing Committee and Editorial Board for the Conference on the Biophysical Environment of Singapore and its Neighbouring Countries held in 1985. The conference papers

were published in a book entitled "The Biophysical Environment of Singapore" in 1991.

As Chairman, she recalled liaising with the Urban Redevelopment Authority in 1992 to jointly organize the URA-GTA School Project, known as the Long Island Project. The Project was intended to draw students' attention to the contents of Singapore's Revised Concept Plan and allowed them to put into practice the concepts, theories and skills they learned in the classroom to design a master plan for the land uses of a fictitious island to be

reclaimed along the East Coast and to build a physical land use model to showcase their ideas. Their works were then judged and exhibited. We were pleased that this joint URA-GTA School Project was a huge success.

Ms Woo salutes all committee members, past and present, for their unflinching support and strong spirit which has enabled GTA to reach its 40th Anniversary milestone with great confidence. She sends her best wishes to GTA and all Geography teachers!



Pioneers & stalwarts



Mrs Lenie Cho

Chairman 1993 - 2000

Mrs Lenie Cho was GTA chairman for 7 terms of office. During this period she worked with a great team of committee members, who came from the schools, NIE and NUS. All were united in their common love and passion for Geography. They shared related working experiences as Geography teachers and lecturers in the classrooms, lecture halls and the world outside the educational institutions.

Lenie enjoyed the Saturday afternoon meetings held at ACS (Independent) where she was working as Vice Principal. There they planned conferences, seminars, talks and local and overseas fieldtrips for fellow geographers. The teachers who attended the activities would in turn bring the knowledge gained



Mrs Kiter Chee

As a Life Member of GTA and an ex-geography teacher for 23 years I really feel that I have benefited a lot from the Association.

Firstly, the GTA publication, Geonews had helped me by informing me of the latest trends in Geography and giving me ideas of what other teachers were doing in their schools. This motivated me to try new strategies and new teaching methods.

Secondly, the field trips were great learning journeys of joy and information as every trip was a new discovery for me. Of these, I enjoyed the trip to South Australia most. I really had two weeks of Geography lessons in the field and the exchange of ideas of like-minded professionals was most stimulating!

Then the talks and seminars throughout the years were very well structured and organized, bringing up-to-date and current

to their respective schools, making the study of Geography more practical and interesting.

Lenie also recalled that during her term in office, her committee produced a souvenir publication to celebrate GTA's 25th Anniversary. GTA was never short of volunteers and things always got done. Lenie also expressed, "Geography teachers are a great bunch of wonderful people and it was my joy and privilege to have worked with them through the years!"

Lenie is still in the education service, having taken on principalship at St Francis Methodist School. She still has GTA very much at heart.

issues to keep us abreast with the changes. Besides being able to learn new things on such occasions, I used to look forward to such functions as I could meet up with the friends I made at GTA.

Many of these like-minded friends have become life-long working partners. We exchanged test and examination papers, plan lessons together and share our loneliness and frustrations as there were few Geography teachers in each school.

My happy memory of a teaching career definitely includes GTA which has provided a great deal of professional support for me. My thanks again to GTA as it goes on to achieve greater heights in its years ahead!

Our Fieldtrips

Fieldtrips are regular activities of GTA. In its 40 years of history, the Association organised close to 100 local and overseas fieldtrips. These fieldtrips introduced teachers to possible sites for field studies and helped develop their field techniques. They also provided opportunities for teachers to share their knowledge and experiences. In this section, only selected fieldtrips are reflected to offer members glimpses of the collective joy and experiences they shared.

THE CHINA TRIPS (1979 & 1999)

by Ms Kan Beo Lan

The first trip was arranged in 1979, a year after China opened up to the rest of the world. Participants visited several big cities like Beijing, Shanghai, Nanjing and Guangzhou. The main objective was to learn about the cultural features of China, including the country's education system. The participants visited a teachers' training college, a kindergarten and a primary school and noticed that the classrooms were spartanly furnished.

The day journey by train gave participants a chance to see China's very scenic countryside and villages. The picturesque sceneries of Lushan (mountain) in Central China, looked just like beautiful Chinese brush



paintings. Other unforgettable recurring incidents were the curious crowds that gathered around our coach each time we stopped by busy streets. The people were fascinated by we visitors who were dressed so differently from them. We overheard a man commenting as he caught sight of our name

tags, 'Hey, these people have names with triple Han characters too!' It was such an eye-opening and memorable trip.

The second China trip was made to Sichuan region almost two decades later in November 1999. It was winter. Roads along river ravines were narrow and the long journey from Chengdu by land was treacherous. As the air got thinner when we travelled higher up into the mountainous region, some became breathless. We bought



Our Fieldtrips

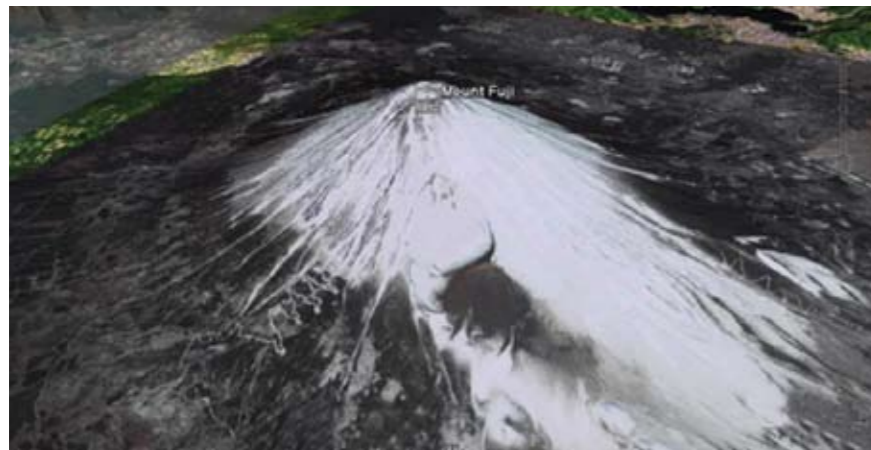
THE CHINA TRIPS (1979 & 1999)

canned oxygen from shops at a stopover point. Despite the suffering on a gruelling journey, we were rewarded with beautiful sights all the way. Deep gorges appeared threatening but were indeed captivating. There were emerald lakes waterfalls, frost-covered trees and snow-clad mountains at higher elevations. We spent two days taking in the wonders of mother nature.

Jiuzhaigou was an interesting old settlement of predominantly single-storey buildings. Beside the shophouses, pedlars sold their products in a market square outside. Animal skins were common items on sale. But toilet facilities were poor. Public toilets short distance from the town centre, were just raised shacks built on vacant land. Human waste and toilet paper were strewn by residents (and visitors alike) on the ground around. Perhaps more attention is needed here.



JAPAN-GEOGRAPHICAL & CULTURAL TOUR (1986)



This 10-day Geographical and Cultural Tour was held on 6-15 June 1986. After almost a full year of preparation, led by Mr Tan Joo Kheng, a group of 21 GTA members, toured parts of Kyushu Island and the Kanto

Plain region of Honshu in Central Japan. Highlights of the Kyushu Island tour included a reception by the Mayor of the City of Kagoshima, visits to the geological field station and a geothermal plant at Sakurajima,

visits to hotspots and volcanic areas in Kirishima, Beppu and Mt Aso.

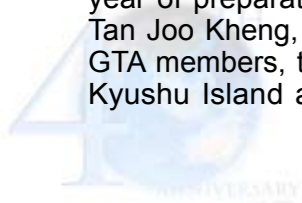
In the second leg of the journey at Tokyo, there was a formal reception by our Japanese counterparts, arranged by Mr Takeshi Kubota of the All-Japan Geography Teachers Association. There were some academic exchanges at a modern AV Centre, a visit to the Bunkyo Elementary School, the University at Tsukuba Science City, Nissan Car Plant, the Nippon Steel Mill, followed by field trips to Nikko and the Fuji-Hakone area, accompanied by Professor Kazuyuki Koike, a volcanologist from Komazawa

Our Fieldtrips

JAPAN-GEOGRAPHICAL & CULTURAL TOUR (1986)

University, with several other Tokyo school teachers.

Participants were impressed by the similarities in oriental culture such as the use of Han characters, traditional customs and architectural designs and drive for excellence. Japanese hospitality and friendship were well expressed through the homestay programme where many of the participants happily accepted. This trip opened a new chapter for many of the participants as warm ties were established. Mr Isao Ota of Bunkyo School visited Hwa Chong Junior College twice and the College even adopted a sister school (Sakura High School) for student exchange and immersion programmes during Mr Chan Tung Fong's term as Principal. Enduring friendship was maintained with Mr Kubota, who later became the Vice Principal of the Japanese High School in Singapore. Periodic visits of Japanese friends and exchanges of publications and gifts continued for many years.



NEW ZEALAND FIELDTRIP (1987)

by Ms Lok Ha Noi



GTA's trip to New Zealand was both educational and leisure. We visited the many geographical wonders which made geography come alive. We saw with our own eyes the work of nature. The teachers, needless to say, took hundreds of photographs and slides at every opportunity. They were eager to use these prints and slides in their geography lessons. Such dedication is typical of the geography teachers.

We experienced a variety of accommodation modes, from hotels to motels to camp sites. Each type of accommodation provided unique experiences for us. The warm hospitality of the

Kiwis matched the enthusiasm of the teachers.

The trip took us from Auckland in the North Island to Milford Sound at the southern tip of the South Island. The teachers also



collected specimen of rocks, pebbles, plants, shells for their geography lessons. Some teachers were enthralled by the willowy wild 'toi toi' plants we saw along the roadside and could not believe that even wild plants could be so beautiful.

We also had the opportunity to walk on the Fox Glacier which is fast melting because of global warming. During this trip we experienced the effect of the four seasons from the warm north to the wintry south. It was indeed a memorable trip. Teachers who went on the trip do remember the fun time we had; the sights we took in; the learning we achieved and the friendships which were forged.



SOUTHERN JOHOR FIELDTRIPS

ULU TIRAM AND KOTA TINGGI FIELDTRIP (1979)

by Ms Kan Beo Lan

It was organised with the objective of familiarising Geography teachers with the palm oil industry in Johor. Ulu Tiram was chosen because it had a palm oil factory serving the hundreds of square kilometres of oil palm plantations. A tour of the factory was an eye-opener for the teachers because for many of them, it was their first experience. They were taken through the whole process of palm oil production by a factory guide. It was an interesting and useful tour. Equipped with what they learnt, many would now be able to organise similar fieldtrips for their students with more confidence because they had the contact they needed and the knowledge and experience they had gained.



CRUISE ON SUNGAI JOHOR (1987)

by Ms Kan Beo Lan

A small group of GTA members went to Pengeran, a little village near the mouth of Sungai Johor by coach. After lunch, they boarded a boat for a cruise of Sungai Johor. This was an excellent opportunity to study the vegetation of coastal areas as well as the banks of Sungai Johor. Mangroves were the main types of natural vegetation along the coast and the lower banks of the river.

This trip also brought us to a charcoal-producing factory on the bank of Sungai Johor. One of the workers explained to us how charcoal was made. The raw material, he explained, came



from the mangrove forest found along the river banks and coastal areas nearby. It was an interesting trip which gave the group the

opportunity to study the coastal and river bank vegetation and at the same time to visit a dying trade in this area.

Our Fieldtrips

JAVA-BALI TRIP (1988)

by Ms Lok Ha Noi

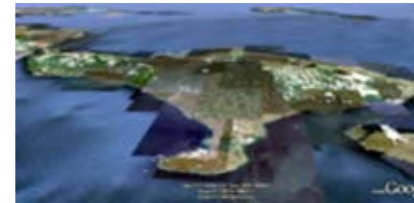


This was an 18-day cross-islands trip in 1988 which took participants from Jakarta in Java to Denpasar in Bali and back. Part of the return trip from Surabaya to Jakarta was by train.

During our first leg at Jakarta, we were hosted by the Geography Department of a local university. There we learned about the geographical environment of Indonesia. This provided the background information for the

rest of our journey. Indonesia is indeed a land of 'opportunities' – opportunities to study the different types of physical landscapes and socio-economic geography.

We visited the hot springs of Bandung, the volcanoes near Jogjakarta, the padi fields in Bali, the plateaus of central Java, the receding Kuta beaches on Bali Island and many others. The modes of transport we took



included coach, train, ferry and even horses!

The trip had certainly opened our eyes to the many geographical features found so near Singapore. It provided the teachers with valuable teaching materials to enhance their lessons and also new destinations to bring their students for field trips. (Bali Island)

WANAGAMA, INDONESIA (1995)

by Mrs Mae Teo



Wanagama is a re-forestation field research area in Central Java managed by the Faculty of Forestry of the Gajah Mada University near Yogyakarta. To enable Geography teachers to learn first-hand how re-forestation had revived an area badly affected by drought and over-exploitation, GTA conducted a series of related studies there. In 1995, after some briefings by Forestry

Faculty staff, the participants were led through the field station to learn about the different types of trees that were replanted and visited homes of the villagers to see how local resources were used in the culinary arts and handicrafts.

Other field studies were conducted on the karst landscapes at Pegunungan Seribu and Gunung Kidul, while beach studies were carried out at Parangtritis and volcanic studies were also done on Gunung Merapi and the Deang Plateau. At the Bribin Cave, participants had to crawl inside to reach an underground reservoir. They learned about

how the locals had struggled with nature at Parangtritis coasts and understood better the effects of volcanic eruptions.

This fieldtrip had enhanced participants' teaching experience and sharpened their fieldwork skills. It was made possible by the strong collaboration between GTA and the Geography Department of Gajah Mada University in Yogyakarta.



Our Fieldtrips

VIETNAM (1998)

by Ms Koh Cheow Choo

A 6-day reconnaissance GTA trip to Southern Vietnam was conducted on 6-11 December 1998. It was intended to explore and assess the fieldwork feasibility of selected sites. Vietnam had just emerged from years of protracted internal conflicts. It is re-unified and now, following China, has embarked on an open-market economy.

The group of 35 teachers was led by Dr Wong Tai Chee (NIE lecturer) and assisted by 3 GTA committee members. A geomorphologist from the Vietnam National University was invited to conduct field

studies on weathering and tors, volcanic cones and lava tubes, and riverine features at the Cat Tien National Park. Field studies were also done on the urban landscape, land use planning and development, transport and tourism, rural settlement, wet-rice cultivation, population growth and industrialization.

Highlights of the tour included a visit to the College of Education of the Vietnam National University, visits to two schools and the Ho Chi Min City Office for Planning and Investment and the Cu Chi Tunnel (a wartime relic).



SOUTH INDIA STUDY TOUR 2004

Bangalore (Bengaluru), capital city of Karnataka State in India, third largest in population, is reputed to be a Garden City and the Silicon Valley of India. On 13-21st December 2004, GTA conducted a 9-day study tour of Bangalore and its surrounding region.

Led by Associate Professor Kalyani Chatterjea (NIE), the 27 GTA members were exposed to beautiful monuments and ancient temples, lush green National Parks, tranquil lakes, plateau landscapes and contrasting historic cities against a throbbing modern metropolis.

Located on the Southern Deccan Plateau, flanked by the Western Ghats, the group covered the region from Bangalore to Hasan (Hosur), then from Nagarhole (Ramanagaram) to Bandipur (Mandya City) and eventually Mysore (Mysuru). A/P Chatterjea personally conducted fieldworks on ancient



rock formations and weathering; in addition to fluvial landforms and their human impact. Two experienced scientists from the Centre for Ecological Sciences (Indian Institute of Science) were invited to assist in the field studies within the National Parks.

Thanks to the expertise and wide contacts of A/P Chatterjea, the participants had benefitted much from their first exposure to the rich history and culture and varied landscape of this ancient subcontinent.



WORKSHOP & FIELDTRIPS ON TROPICAL GRANITE LANDFORMS

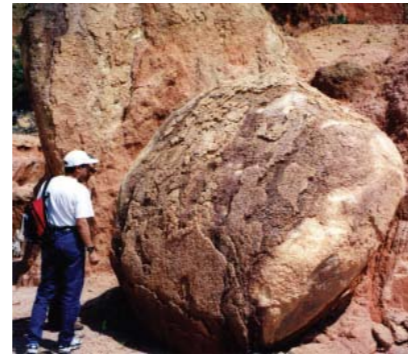


During 29 Nov – 2 Dec 1999, GTA, NIE and the Teachers' Network jointly held a 4-day Workshop on the study of Tropical Granite Landforms. The world-renowned Professor Charles Rowland Twidale and Dr Jennifer Bourne from the University of Adelaide were specially invited to conduct this Workshop, which included 2 days lectures, followed by 2 days fieldtrip to Karimun, a unique island in the Riau Archipelago.

During the lectures, Professor Twidale discussed the Plate Tectonics, landforms development on intra-plate continent, weathering and landforms in humid tropics, possible geological hazards in urbanized areas, fieldwork techniques and pedagogy in geomorphology. Dr Bourne demonstrated typical items used by geomorphologists, such as the geologic maps, geologic hammers, augers, hand lenses,

clinometers, a GPS (Global Positioning System) and field-notebook and field sketches.

Led by A/P Yee Sze Onn from NIE, a contingent of 24 Geography teachers, accompanied by Professor Twidale and Dr Bourne, visited the Karimun Island on the second part of the Workshop. The objectives were to study the roles of rain and wave actions and weathering on granitic landforms. The party surveyed beaches at Tanjong Sabatak, Pongkar and Pelawan. They analysed corestones, nubbins and earth pillars at Bukit Masjid and Bukit Paninjau. Professor Twidale explained weathering and the development of soil profiles in great details and challenged our conventional perceptions on weathering and erosion.



OUR SEMINARS

Annual Seminars of the Geography Teachers' Association have always been a big draw for our members and friends. If the members are busy and do not attend the many activities we organise for them throughout the year, they will come at least once a year to our Annual Seminar. It is a gathering of old friends, colleagues and teachers whom we have not met for a year. There is much fun and laughter and professional exchange on our favourite subject - Geography.

The committee will take pains to choose an appropriate venue and the usual setting is in a hotel, to provide ambience and to take the teachers away from the school setting. At these seminars, we will invite

publishing companies to set up a booth to promote the latest geography books available in the market. We will also invite travel agencies to publicise their educational tours relevant to Geography.

Every year, we will choose a topic relevant to the Geography syllabus and invite speakers that are experts in that particular field. We are very grateful to the Geography Department of the National University of Singapore and the National Institute of Education for providing the much need resources especially speakers for our annual seminars as well as talks we organise throughout the year. Some of the seminar topics include Geography of the Knowledge Based Economies,

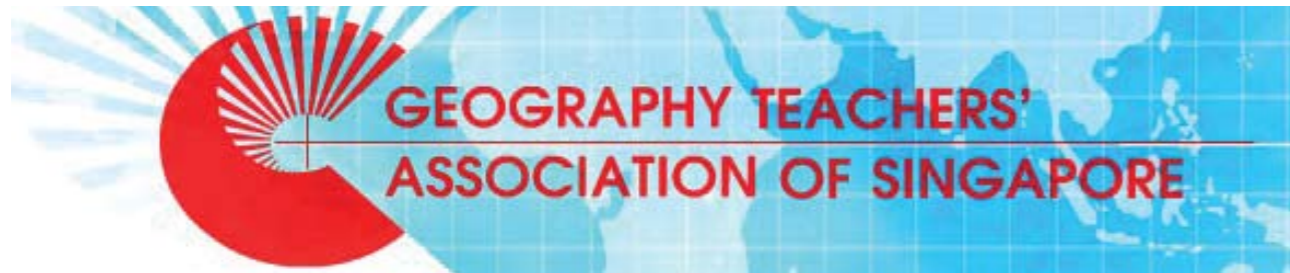
Methodology in Teaching and Assessment of Geography, Geography and Globalisation.

With the introduction of Combined Humanities for the "O" level students in the main stream schools, the component of Social Studies became very relevant to Geography. Our seminar topics in the later years will include social studies as well. As such we have also invited the Social Studies teachers to join our association.

We have captured scenes of several of the seminars we conducted. Enjoy!

Lenie Cho





GEONEWS
Website: <http://www.gta.org.sg>



Lee Suat Hui



A/P Kenneth Lim

Geonews was published twice yearly to keep members of the Geography Teachers' Association of Singapore (GTA) and other teachers in Singapore informed of activities organized by GTA as well as developments pertaining to the subject Geography and its teaching. The Association website mast-head consists of a red letter G, which stands for Geography, with radiating rays of light, symbolising that GTA is vibrant, inspiring and forward-looking.

Under the dedication of Mr Lee Suat Hui, CDIS Geography Textbook Team Leader, Vice-

Chairman (1992-94), Geonews was published in simple black and white paper format during 1980s and early 1990s. It eventually turned into a more sophisticated coloured bi-annual publication. The publications were sent to all members as well as all secondary schools in Singapore. Via Geonews, teachers were informed of annual seminars, conferences, workshops, local and overseas field trips as well as the AGMs. It has served as a platform for teachers to share resources and teaching experiences. To keep up with changes in our school curriculum, In 2003, Geonews even included the coverage of Social Studies as well.

Then in July 1996, Mr Kenneth Lim (Chairman 1994-2005) initiated GTA online. GTA thus became the first professional teachers' body to run a website. This website, accessible at www.gta.org.sg, now reaches out to a wider audience, enabling them to locate resources, share experiences and the latest development. On 1 Jan 2009, GTA Online has become more interactive with the launch of a blogsite. The Homepage of online GTA is clear and functional. Apart from the introduction of current Exco and highlighting major events through Our Team and What's On folders, it features folders like Teaching Resources, which is further subdivided to useful weblinks from MOE/NIE sources, resources from specific teaching topics, actual teaching materials, such as photos, powerpoint slides and lesson plans. Starting from 2006, Geonews became available

online only. The past 6 issues reported on major seminars and talks and researches and reflections from both experienced and newcomers in the profession. The contents and powerpoint materials of some of these events are even archived and linked. Indeed, it will be great if online GTA could scan and archive all past issues of Geonews before its present digital form so that present teachers may reach back to experiences of their predecessors as well.



GTA Stories: Our Current Years

Accolades to Our

- Geography Exponents from MOE, NIE & NUS



- 39th Executive Committee



Key drivers of GTA

Our Current Years



Mdm Ang Siew Hong,
Senior Curriculum
Specialist,
Curriculum Planning &
Development Division, MOE

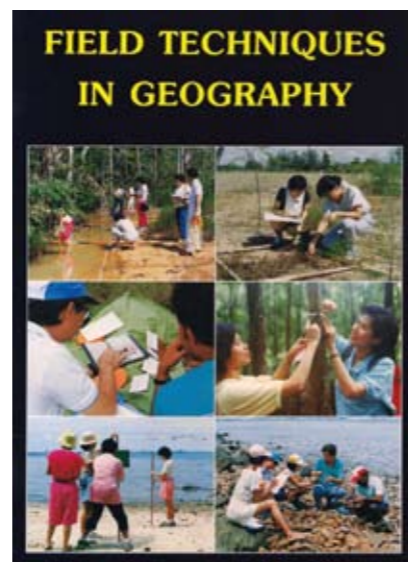
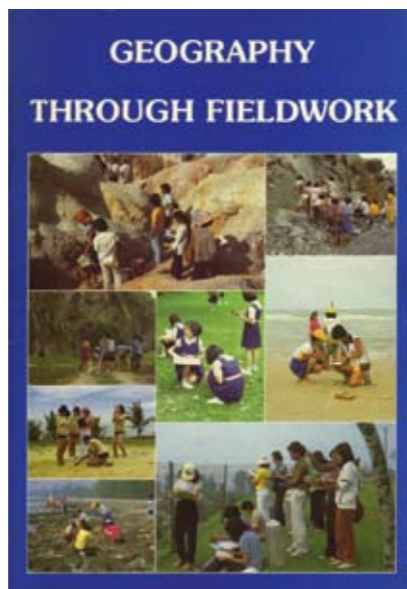
Graduated from the Geography Department in the former University of Singapore with a First Class Honours Degree in 1979, Mdm Ang was posted to Hwa Chong Junior College to work with Mr Anthony Shallcross, Geography tutor in the Pre-University-cum-Overseas Merit Scholarships (PROMSHO) Scheme, the forerunner of the Humanities Programme to prepare top students for Oxford and Cambridge universities in UK.

Upon completion of her Master Degree in 1984, Mdm Ang joined the newly formed Curriculum Branch of the Schools Division in MOE as a Geography Specialist Inspector. The early 1980s witnessed sharp decline in school geography candidature, especially at A-level where students had to offer a content heavy geography syllabus comprising physical geography, practical geography and regional geography of Western Europe. Mdm Ang had played a key role in coordinating several working committees to revise geography syllabuses and facilitating numerous in-service courses for geography teachers. As a life member of the GTA, she is in

touch with geography teachers and plays an active role in explaining MOE initiatives and policies.

According to Mdm Ang, geography in Singapore schools had undergone many changes over the last half a century – dating from the early regional geography in the 1960s and 1970s with emphasis on locational and descriptive information. These emphases had evolved to include man-environment issues and global perspectives in the 1980s and 1990s, with the introduction of conceptual geography and systematic geography. In the current ‘ability-driven phase’ of education starting from 1999, content reduction had been effected in the geography syllabuses to incorporate thinking skills, national education and information technology.

Mdm Ang is an ardent advocate for fieldwork. She is instrumental to the initiation of in-service courses on fieldwork for teachers as well as locating fieldwork sites like the Wanagama Re-forestation Centre in Java and Lake Kenyir in Peninsular



Malaysia. Her efforts culminated in the publication of two fieldwork projects Workbooks based on fieldwork conducted by school teachers and their students. Besides fieldwork, Mdm Ang also spearheaded the organization of competitions for geography students in the 1990s like the National Geography Quiz, Geography Morning and National Geography Camp. These annual competitions stimulated considerable student interest in the subject. With concerted efforts from the universities, schools and MOE and the timely revision and implementation of syllabuses, Geography has since 1990 become a popular Humanities subject.

*MOE & NIE Collated Fieldtrip
Techniques Workbooks*

Our Current Years

Reflections of NIE lecturer

Assistant Professor Kenneth Lim



Assistant Professor Kenneth Lim was a former Oxbridge scholar who has answered to the call of the education service. He had also served in GTA Ex-co between 1994 to 2005, presently teaching pre-service teacher-trainees Social Studies and Geography, specializing in Interactive Digital Media and the Web. In 1996, he created GTA online, which helped the activities and resource materials of GTA to reach out to a greater audience.

Assistant Professor Lim is interested in the educational opportunities of virtual worlds and environments. He is keen to design learning environments, using the latest technology as he sees the potentials of present student cohorts take to digital

and new media environments like ducks to water. His research interests are in what is generally known as Interactive Digital Media and Web 2.0 . He is interested to help students and teachers to understand the relevance of many of these skills in the New Media to the curriculum and to facilitate the transfer of learning through these. Between 1995-1998, he maintained a blogsite ‘No Place Like Home: a Cyberbook on the Geography of Singapore (<http://voyager.blogs.com/about.html>).

Similar to his NIE counterparts, Assistant Professor Lim also saw GTA as an excellent vehicle for Geography teachers to converge to learn and exchange ideas.

True to his role as a teacher-educator, he is concerned about getting teachers to understand how students learn, and understanding how to get students to engage in the learning process. He is a strong advocate of spatial learning. He believes that the training of Geography has equipped us with inherently ‘spatial ways of thinking’. If any one has

something to say about learning in environments where space matters, Assistant Professor Lim believes that it has to be the geographer.

Finally, with regard to the future role of GTA, Assistant Professor Lim feels that the Association and its Ex-co members should set themselves as role models for life-long, participatory learning. He suggests that we would do well to continually re-define ourselves and move forward with the changing environment.

Our Current Years

REFLECTIONS OF NIE LECTURER MS LIAN LAY CHENG



Ms Lian Lay Cheng served in the GTA ExCo between 1991 and 2002 in the Fieldwork SubCom and helped organized fieldtrips to Indonesia, Vietnam, India and Nepal. She is at present on secondment to NIE, teaching pre-service and in-service teachers.

For some of the fieldtrips Ms Lian organized, she was able to invite experts (both local and overseas) in the special areas of Geography to lead. One benefit Ms Lian gained was the close friendship with fellow geographers whom she acknowledged have shaped her as a geographer teacher.

In reaching out to her students in NIE, Ms Lian would draw upon her rich fieldwork experiences to try to help them to discover their own potentials in teaching and learning and in the understanding of Geography. She believes that the students need to see the relevance of Geography in our world and that contents studied in the classroom are related to larger issues of the world they live in.

Ms Lian sees GTA as an excellent vehicle for geography teachers to converge to learn and exchange ideas as there is a wealth of expertise and experiences from both the beginning teachers and

experienced teachers. In addition, she thinks that GTA can serve as a catalyst to initiate sharing, collaboration among geography teachers. It is her hope that through this professional exchange of learning, a fraternity of geographers, dedicated to promoting the status of Geography, is built.

Looking at the school level, Ms Lian sees two existing tensions. The first is the tension between the teacher and the students. Teachers are facing a different generation of students, who want to learn differently and who increasingly ask why they are learning what they are learning. She attributes this tension to the differing beliefs and values of what is schooling and learning of the two parties concerned.

The second tension, Ms Lian has observed, is knowledge versus understanding. She reasons that we are in this stage of the conceptual age where the fact or knowledge is no longer an issue with the advent of the internet. More importantly, she argues, is an individual who can think deeply about things. She feels that teachers need to revisit their beliefs and values about teaching and learning and go back to the fundamentals of education. Teachers, she thinks, have lost their students as they focus only on content and examinations.

When asked what directions she thinks GTA can undertake to improve on its supportive role to geography teachers, Ms Lian compliments GTA for being able to evolve to keep up with the changing world and the needs of the geography teachers. As an ExCo member, she adds `GTA needs to re-invent itself urgently in the 21st century to

make itself relevant to geography teachers and that is to promote the status of Geography in schools and in society. Not only do we need to help teachers improve their teaching of Geography but more importantly deepen their understanding of the discipline and provide an avenue for professional discourse so that they can make Geography more visible in their lives, their students' lives and in our everyday lives.'



Our Current Years

Reflections from Associate Professor Chang Tou Chuang



Associate Professor Chang Tou Chuang
Chaired Talks/Seminars
SubCom till 2003

Associate Professor Chang Tou Chuang was co-opted as the NUS representative in GTA and chaired the Seminars Committee, 2002 - 2003 and 2005 - 2007. He helped organise four seminars, including 'Black Jack or Bluff: Geographies of the Integrated Resorts', 'Appetite for Geography : Food and Its Geographic Expressions' and 'Singapore : A Little Green Dot?' In 2007, he helped produce a recipe book of world cuisines (with recipes contributed by GTA committee members) and also a 'Green Sale' to help raise funds for the Singapore Environment Council.

Currently, Associate Professor Chang teaches Introductory Geography as well as the Geography of Tourism. He finds that generating interest in the Tourism module is not difficult as most students like travelling, new environments and cultures. Students also enjoy organised overseas field courses which will help them to better understand the attractions of places, people and cultures, the ways tours are operated, their policies as reflected on the impacts on their destinations. In 2006, A/P Chang

won the NUS-level Outstanding Educator Award and in 2008, he won the Annual Teaching Excellence Award.

When asked on his view of the role of GTA in promoting the teaching of Geography in schools, Associate Professor Chang observes that it has provided a great platform for interested teachers through its rich network of contacts. Apart from enjoying the company of fellow geography teachers, the inspiring seminars and informative fieldtrips help teachers to expand their horizons and better equip them to teach more creatively. Associate Professor Chang also sees the gathering of geography teachers at each seminar as a 'family reunion' and to him, it is a priceless thing.

When asked if he encounters any gap in terms of knowledge base or geographic techniques among undergraduates pursuing the geographical modules, Associate Professor says that his students do not lack content knowledge, although there always appear to be far more undergraduates interested in Human Geography compared to Physical or Environmental Geography. However, he has observed that writing style

and research techniques have always been lacking. Even after a number of years at the university, he notices that students do not seem to have mastered a good writing style. According to him, reading and writing more are the best ways to improve the situation. Nevertheless, students have maintained an inordinate level of enthusiasm and interest in Geography over the years, and this really inspires him to continue teaching and sharing with them his own passion for the discipline.

On what he thinks GTA could do to improve on its supportive role in assisting geography teachers at school level, Associate Professor Chang remarks that GTA should continue what it has always done and even to increase its number of activities. He suggests more guest lectures and seminars, as well as more local and overseas fieldtrips. Finally, he encourages geography teachers to find time to participate actively in these events. Not only will they get to update their knowledge, but also meet up with members from the "larger geographical family".



Our Current Years

OUR CURRENT YEARS: REFLECTIONS



Professor Henry Yeung,
Chairman 1997-2002, Head/
Seminars SubCom till 2003

He is one of the academic pillars of GTA in recent time. As GTA Chairman (1997-2002) who headed the Talks and Seminars Subcommittee, Professor Yeung had successfully organized 7 annual seminars and was responsible for inviting eminent speakers like Professor Peter Dicken (University of Manchester), A/P Simon Tay (Chairman of Singapore Institute of International Affairs/ Nominated Member of Parliament), Professor Nigel Thrift (former Pro-Vice-Chancellor of Oxford University and now Vice-Chancellor of Warwick University), Mr Kesavapany (Director of Institute of Southeast Asian Studies/ former Singapore High Commissioner to Malaysia and Permanent Representative to United Nations in Geneva).

Prof Yeung is an economic geographer (<http://courses.nus.edu.sg/course/geoywc/henry.htm>) who specializes in the

geographical understanding of transnational corporations, especially those from East and Southeast Asia. Having taught the First Year Introductory Course in Geography for 7 to 8 years, he is currently teaching the Development of Geographical Thoughts to Honours students as the resident professor in the Department. His twelve years of teaching experience in the Department has led him to ponder on the critical importance of “rethinking our role as educators”. He believes that it is vital to change ourselves from being providers of information to be facilitators of knowledge acquisition in order to maintain students’ interest in Geography. It is this ‘curiosity-driven approach’ he stresses which should be initiated early even at school level.

Regarding the role of GTA, Professor Yeung feels that as one of the oldest associations for teachers in Singapore, it has a broad and healthy membership and has been serving well as a critical bridge to bring academic geographers, teachers and students together.

On the question of mismatch of expectation at the tertiary level, Professor Yeung feels that two vital skills are still inadequately developed among new undergraduates, namely, critical enquiry skill and numeric skills. He observes that while teaching the GE1101 (Introductory Course), many students were unprepared to use their critical judgement to

tackle geographical issues, but would rather retreat into the comfort zone of regurgitating known information and mimic answers. He feels strongly that our students need to develop their independent learning and problem-solving skills. Apart from this, they also need to strengthen their basic numerical skills in order to analyse data effectively in support of their research activities.

On the methods of improving GTA’s supportive role, Professor Yeung recommends that GTA should go beyond the annual fieldtrips and seminars to organize regular meetings for geography teachers of various levels, say for Lower Secondary, O-level as well as A-level, to encourage them to work together to share and co-develop suitable resources and pool in experiences.



GTA Stories: Our Future Years

Accolades to Our

- **Geography Teachers, Lecturers and Students**
- **The driving force of Geography teaching in the schools**



Future Perspectives

- **New Challenges**
- **New Technologies**

Hallmarks of GTA



Our Future Years

GTA STORIES : OUR FUTURE YEARS

Our Seminars & Workshops are an indication of our Geography Perspectives for the future.

The annual GTA Seminar provides an excellent opportunity for geography and social studies teachers in Singapore to learn more about and seriously discuss issues of critical importance to Singapore and the world. Over the years, seminar themes have tapped into diverse aspects of society, environment and current affairs. Some of the themes are:

- Geography of Food
- Integrated Resorts and Impacts in Singapore
- Environment and Urban Development
- Geopolitics and Geography of Conflict
- Geography and Technology

Some of our speakers in the seminars past were: Professor Peter Dicken (University of Manchester), Associate Professors Victor Savage and Peggy Teo (National University of Singapore), Dr Margaret Chan (Singapore Management University), Mr Leslie Cheong (Director, Food Supply & Technology Department, Agri-Food and Veterinary Authority of Singapore), Dr Ho Hua Chew (Singapore Nature Society), Mr Cheng Hsing Yao (Head, Marina Bay Development Agency, Urban Redevelopment Authority), Mr Prithpal Singh (Vice President, Hotel Properties Limited), Mr Howard Shaw (Executive Director, Singapore

Environment Council) among others.

Held in conjunction with our 40th GTA Anniversary Celebration is the seminar on

Global Citizenship and Sustainable Development

Speakers include:

- His Excellency Paul Madden (British High Commissioner in Singapore)
- Mr Yong Teck Meng (Habitat for Humanity Singapore)
- Mr Wong Chih Yuan (PhD Candidate, Royal Holloway College, UOL)

About the Seminar

The Economic Development Board describes Singapore as a 'dynamic global city that thrives in a world of change.' Indeed, in recent years Singapore has become the choice location to many headquarters of transnational corporations and attracted scores of foreign talent. The GTA seminar hopes to generate discussion on whether Singapore can go beyond being a key node in the global economy to play our part as global citizens and contribute towards sustainable development as well.

40th GTA ANNIVERSARY PROGRAMME

Seminar on Global Citizenship and Sustainable Development

**Saturday 4 April 2009,
8.30am – 12.30pm**

**Pan Pacific Hotel, Pacific 1,
Level 1**

- 8.30am Registration
- 9.00am Welcome Address by Chairman, GTA
- 9.15am His Excellency Mr Paul Madden, British High Commissioner to Singapore
- 9.45am Mr Yong Teck Meng, National Director of Habitat for Humanity Singapore
- 10.15am Tea Break
40th GTA Annual General Meeting
- 11.15am Mr Woon Chih Yuan, Phd Candidate at Royal Holloway College
- 11.45am Panel Discussion
- Questions & Answers
- 12.30pm End of Seminar
- Lunch

Our Future Years



Mr Josef Tan Hua Hui

*Current GTA Vice Chairman
Teacher, Victoria Junior College*

Interestingly I have been a GTA ex-co member longer than I have been teaching. In 2003, I had registered to attend the GTA Annual Seminar on my NUS lecturer, Dr TC Chang's recommendation and was amazed that I was elected to the 2003/04 Ex-co! Since joining the Ex-co, I have helped out in the Seminar Sub-committee. Every April when I see throngs of fellow geography teachers arriving for a morning of get-together, it renews my belief that organizing seminars is truly meaningful and appreciated. I'm hopeful that our conviction and commitment to deliver quality geography education will be perpetuated.

In a recent talk organised for incoming JC1 students in my school, instead of delivering the usual 'what do you study in geography' introduction, I opted to relate the story of Jack Ma, founder of Alibaba.com, and Jefferey Sachs, special advisor to United Nations Secretary General. Neither Ma nor Sachs studied Geography formally. Nevertheless both men displayed an astute understanding of how

geographical realities critically affect the world and as a result achieved much success in their respective fields.

Ma and Sachs' stories attest to our belief that geographical knowledge and skills are indeed relevant to solving real world problems for us. Nonetheless, the relevance of geography education in schools still remains uncertain in the minds of many students and their parents today. Fortunately, there are real reasons for optimism. Our local universities continue to produce outstanding and passionate geography graduates, and many have joined the education service in recent years. Our curriculum has also become more progressive and sensitive to Singapore's needs. This is clearly evident in the revised A-level syllabus as well as the inclusion of the 'Geography of Food' in the secondary school geography.

More importantly, GTA is celebrating its 40th Anniversary this year. GTA could not possibly have survived for so many years if we, geography educators have not been genuinely enthusiastic

about professional development and passing on our knowledge to younger colleagues. So as long as we stay close together and keep the fire in us burning, I am hopeful that come GTA's 50th anniversary, more would share our conviction that geography education is truly an asset!

Our Future Years

SEMINAR:

GEOGRAPHY OF FOOD ON 17 JAN 2009 AT TJC



Dr Harvey Neo
Department of Geography, National
University of Singapore

I was recently invited by the Geography Teachers' Association to give a seminar to teachers on the topic of "Geography of Food". To be honest, I was actually surprised that secondary students are now learning about "Geography of Food"- a sub-discipline which I became aware of only when I was doing my doctoral studies. What has happened to "Agricultural Geography"? What of the plantations; of the irrigation schemes; of the clear cutting and contour farming? Of the countless other agricultural sound bites that I have committed to memory when I was a student myself? The simple answer is that the world has changed and geography has, for the better, changed along with it. The "Geography

of Food" makes explicit that which was only vaguely hinted at in "Agricultural Geography". The latter can no longer encompass the most critical issues confronting agriculture and food satisfactorily.

The rise of agro-food conglomerates, the increasing use of pesticides and herbicides, the persistence of starvation in the developing world compels geographers to cast a critical and ethical eye on food production. Issues of nutrition, flows and distributions of food, intensification processes, among others, have been brought to the forefront. To put it simply, as far as food production/consumption and food availability is concerned, we live in a world of absolute excess and abject scarcity.

I am glad that I have given this seminar for in preparing it, I have gained as much as the teachers, hopefully, have. These are the three lessons that I have learnt:

1. Geographers can "follow" the food with considerable ease because space and place are key motifs in our discipline. We thus can confidently illuminate the spatial variability in the provision of food.

2. Enlivening the classroom with interesting and real-life events is one of the ways to sustain the attention of students of the internet age. Recent curriculum

changes to the geography syllabus to include food and development afford teachers an opportunity to relate geography back to the ground. Food, in particular, is never far from the minds of young people and there are numerous activities we can use to engage the students with.

3. The Geography Teachers' Association is well placed to advance the most recent geographical scholarship and trigger talking points among teachers through the organizing of such lectures and talks. That GTA actively maintains linkages with geographers from diverse places is particularly commendable.

Going forward, I see two related challenges. First, we need to convey to students the relevance of geography. Second, we need to pique their interest about the world that we live in. For only in cultivating their interest now can we hope to see more becoming geography teachers in the years to come. It would then be they who will be making "new geographies" in a future world that will no doubt have changed too.

Our Future Years

Workshop for JC students on Research Skills

On 5 September 2008, GTA attempted to reach out to the students and help prepare them for future trends. This Workshop on Research Skills was specially targetted on A-level students. Below are photographs of the session.



Workshop: APPETITE FOR GEOGRAPHY: FOOD AND ITS GEOGRAPHIC EXPRESSIONS 2 FEB 2007

On 2nd February 2007, a panel of 3 speakers collectively presented their expertise based on the theme of Food and Its Geographic Expressions. They included Mr Leslie Cheong (Director, Food Supply and Technology Dept, Agri-Food and Veterinary Authority), Dr Margaret Chan (Singapore Management University lecturer) and A/P Victor Savage (NUS Geography Department lecturer). The contents of their deliveries can be accessed from the GTA website under <http://www.gta.org.sg/resources/seminar2007>.



Our Future Years

MESOCYCLOPS AS A BIOLOGICAL CONTROL AGENT

GIS-BASED PROJECT



Done by: **Yang Ziying**
Raffles Junior College

Aim of project:

The project aims to provide opportunities for students to:

- Use GIS and related technologies in authentic problem-solving situations which will benefit the community
- Experience the process involved in research work, including the collection, analysis and presentation of data
- Work with researchers, both local and foreign

Geography of Singapore

Singapore lies just north of the Equator near Lat 1.5 deg N and Long 104 deg E. Because of her geographical location and maritime exposure, her climate is characterised by high uniform temperature of approximately 30degrees Celsius, high-pressure, high humidity and abundant rainfall. During prolonged heavy rain, relative humidity often reaches 100 %.

How the project got started

With the rising trend of Aedes mosquito cases being reported in Singapore from 673 in the year 2000 to 2372 cases in 2001, it was a pressing issue for officers in the Ministry of

the Environment (ENV) to look for ways to reduce the vector population without upsetting the natural ecology and food chain system. Meanwhile, officers from the Ministry of the Education were looking into ways in which students could conduct genuine research work to promote holistic learning. This project would thus, meet the objectives of both Ministries while giving participants the rare opportunity to work with foreign experts. As such, the brainchild of both ministries was conceived ---- the collaborative research project using Mesocyclops as a biological control agent against the Aedes vector mosquitoes. Such biological control is preferred to the present insecticidal chemicals as the former is sustainable while the latter is environmentally intrusive, costly and relatively ineffective as it only kills the adult vector mosquitoes. This project involved a total of 20 schools as well as a team of officers from both Ministries. Each school was given a buffer zone of 1.5km from its location to obtain the local data and the

collating of all 20 local data gave us the national data. (Please see Fig. 1)

What are Mesocyclops?

Mesocyclops are microscopic, one-eyed aquatic crustaceans, which have the potential to act as control mechanisms for dengue fever by consuming Aedes mosquito larvae as they are able to tear pieces out of the body of their victims with their strong mandibles. (Please see Fig.2)

Flow of the project Summary of the project

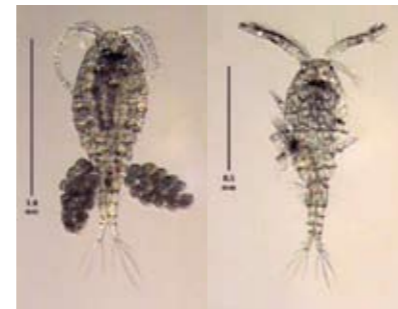


Fig.2 The picture on the left shows a female Mesocyclop, whereas that on the right shows a male Mesocyclop.

Source: Southwest Missouri State University Aquatic Biology Department

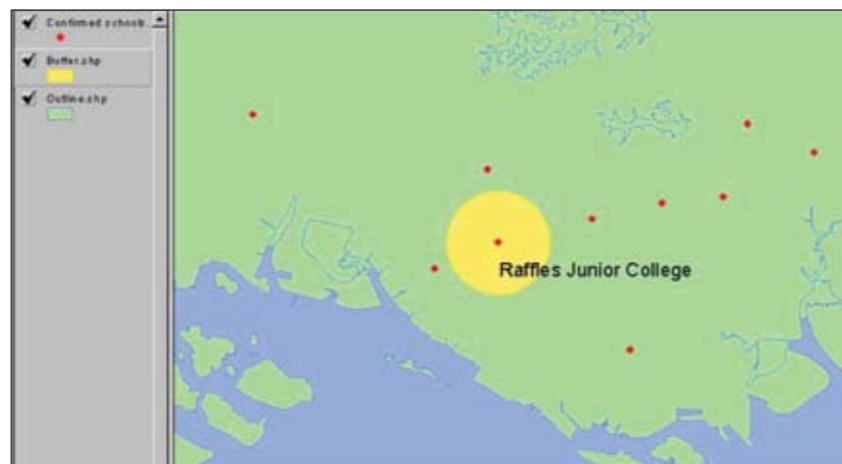
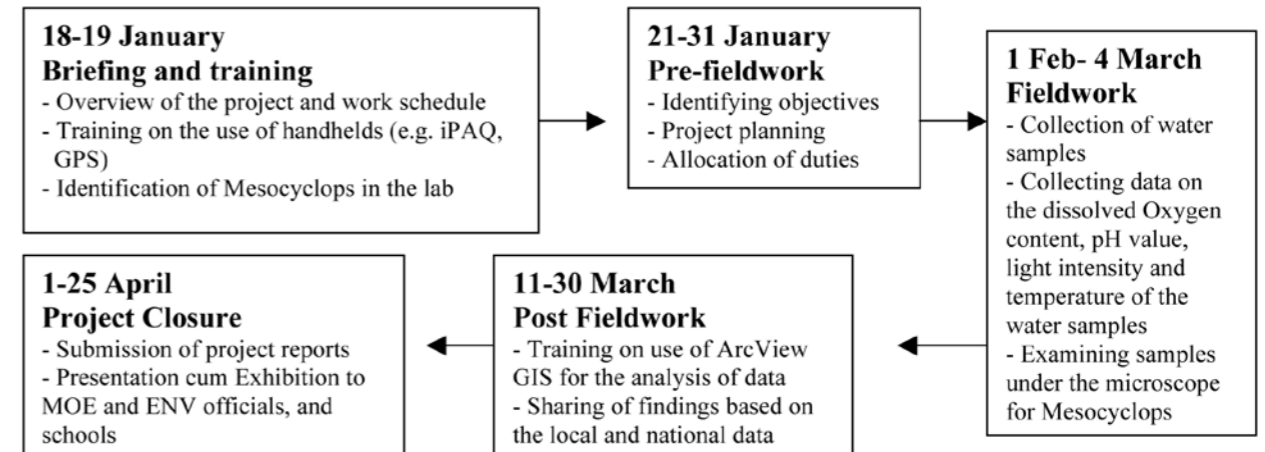


Fig 1: The yellow circle shows the area assigned to my college, RJC. We searched and decided on three water bodies within this area to conduct our study. The red dots represent other schools located in this part of Singapore.

Our Future Years

Students from selected nineteen secondary schools and one pre-



university college (RJC) first attended a briefing and training session where we were taught how to use IT tools such as the handhelds (e.g. iPAQ) and the Global Positioning System (GPS) to collect data. The second half of the training session comprised hands on learning in the laboratory to identify and search/catch Mesocyclops. This one-day long training session laid the foundation for students to conduct their subsequent fieldwork in the water bodies within the 1.5km buffer zone (local data) such as in drains, canals, reservoirs and other water catchment areas.

After a series of planning and allocation of duties, the actual fieldwork took place with all of us brimming with ardent enthusiasm. My 5 team mates and I (consisting of 3 Arts stream students and 3 Science stream students), together with 2 teachers-in-charge as facilitators, went about collecting water samples using both the funnel trap method and the conventional scoop method from various sampling sites. Each location was logged by the GPS. Some of us inputted the temperature, pH, dissolved oxygen content and light intensity readings of the water sample into the form (created using ArcPAD) in the handheld.

The rest of us scooped water and transferred them into transparent containers for our team to scrutinise for darting microscopic organisms, hoping that they were Mesocyclops. Once a likely "candidate" was spotted, it was stored separately and brought back to the laboratory for further analysis under the eye of the microscope. Positive cases were then sent to the Ministry of the Environment to be sent for confirmation and

identification of the species by experts in Vietnam.

Post fieldwork included connecting and analysis of data collected. We were taught how to use cutting-edge tools such as ArcView GIS to assist us in our analysis. We were taught how to "add theme", use the "query builder" to select the relevant information needed from rows of unprocessed national data and to churn out beautiful, telling charts and maps to help us visualise our findings. For example, we mapped out all the sampling sites and highlighted those sites where Mesocyclops were found to

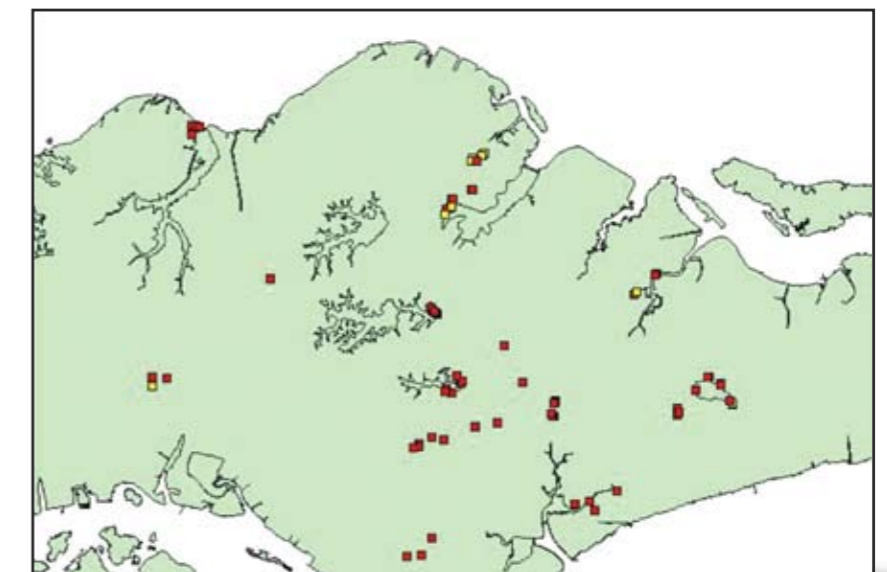


Fig.3: Map showing uneven distribution of Mesocyclops in the northeast part of the island. With ArcView GIS, we could highlight in yellow where Mesocyclops have been found.

Our Future Years

see the distribution. (Please see Fig.3)

It can be observed that the temperature range for samples with Mesocyclops is from 27degrees Celsius to 30.5degrees Celsius. Only one of the samples shows an unusually high temperature reading of about 33.5degrees Celsius, much more than the rest. We think that this is probably another statistical error since firstly, it is an odd reading, and secondly, it is pretty absurd - for the temperature of the water to reach 33.5degrees Celsius when our daily range of temperature in sunny Singapore is only 28 to 32degrees Celsius on most days. This finding is backed by the analysis of the range of temperatures for which the samples do not contain Mesocyclops. The latter shows a large proportion of samples with temperatures below 28degrees Celsius.

With GIS we were able to - show in a matter of seconds, the distribution of all 94 sampling sites obtained in the National data and to highlight the sites which contained Mesocyclops. (Fig 7) We were also able to quickly create charts for other variables such as pH values, light intensity and dissolved Oxygen content to analyse with greater precision the conditions of the water which Mesocyclops thrive best in.

Proposed follow up actions/solutions

From this research project, the preliminary findings have shown Mesocyclops to thrive in areas with waters containing a dissolved oxygen content ranging from 6 to 13, light intensity of 300, pH values ranging from 6.5 to about 8 and finally, temperatures ranging from 27degrees Celsius to 30.5degrees Celsius.

Hence, we propose that the next phase of this project is to look at the various species of Mesocyclops we have managed to find in Singapore and test and confirm if the above conditions

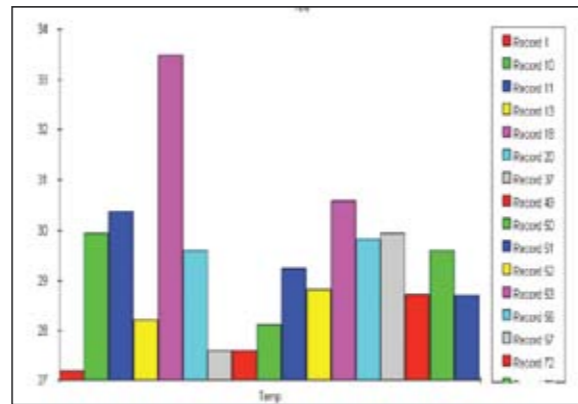


Fig.4 Temperatures for water samples with Mesocyclops

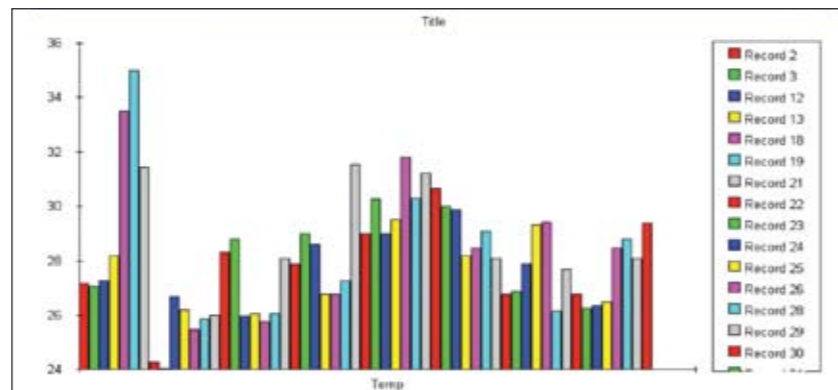


Fig.5 Temperatures for water samples without Mesocyclops

are indeed, the best conditions for them to thrive in. Field trials as well as a careful study of the ecology of Mesocyclops and its predator instinct is also needed before the Vector Control and Research Department of ENV decides to implement the use of Mesocyclops as a biological control agent against the Aedes mosquitoes.

As such, another team of young researchers could conduct more field trials in June and also attempt breeding them under favourable conditions. If it is indeed proven that the introduction of Mesocyclops in Singapore does not affect the ecology significantly in any adverse ways, then Mesocyclops can be considered as a biological control agent against the Aedes mosquitoes especially since it is both cost effective and sustainable.

According to statistics obtained from ENV, it costs approximately \$190 for each 4-hour long application of insecticides

which can only cover about 16 blocks of HDB flats. This form of application is ineffective in eliminating the vector population that are in either its egg, larva or pupa stage as it only eliminates the adult vector mosquito. Moreover, these insecticidal chemicals cannot be applied frequently since it pollutes the environment and the Aedes mosquitoes might develop a resistance to it over time. There are two other ways of eliminating the Aedes mosquitoes population which is to either apply anti-mosquito oil (\$2.30 per litre) on the water surface or to pour small pieces of solidified granules of chemicals known commercially as sand granules (\$20 per kg) into the water to kill the larvae and pupae of the Aedes mosquitoes. However, these two methods are environmentally intrusive and non-sustainable as they kill other organisms in the water as well. In the former, the layer of oil will also disintegrate over time thus proving ineffective and also

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risk being washed away when there is a heavy downpour.

However, such limitations can be overcome by the introduction of Mesocyclops into water sources. Research shows that Mesocyclops are readily obtainable from the natural environment and it is easy to breed them since they reproduce at a fast rate and do not require much care and attention. Thus, its large scale production is cheap and the fact that it is able to persist almost 2.5 years in crab holes and up to 5 years in wells, tires and tree holes means that it does not require taxing, repeated applications. Thus, it is sustainable and has minimal impact on the natural environment.

Mesocyclops have already proved themselves a great success in some countries such

as Vietnam and Australia. In the case of Vietnam, research workers found that introducing Mesocyclops has wiped out dengue cases in a village, Phan Boi in northern Vietnam, a feat believed to be a world first. They have also reduced dengue-carrying mosquitoes by 96% across 45 villages. "Each Mesocyclops can eat forty larvae per day and continue to kill some even when it is satisfied", said Dr. Vu Sinh Nam, Head of the National Institute of Epidemiology of Vietnam. This could have global implications for combating a disease which is already endemic in more than 100 nations, especially in all tropical areas with up to 50 million cases a year, for which there is still no vaccine nor specific cure. Hence, prevention is the cure and this is a viable area which decision makers

and professionals involved with sustainable development can actually look deeper into, especially with the widespread Dengue fever affecting many continents such as Asia, Africa and America.

Our Future Years

FIELDTRIP TO MARINA BARRAGE

6 SEPTEMBER 2006

Report by Mandy Cheng.



On the morning of 6 September during the term break, a group of Geography teachers visited the Marina Barrage on a fieldtrip organized by the Geography Teachers' Association and hosted by the PUB, the national water agency.

There, we received a warm welcome by the PUB staff who later provided us with an overview of Singapore's water resource management and details on the Marina Barrage visit.

It was intriguing that the concept of using the island itself as a catchment area and creating a reservoir out of the Marina Barrage area was mooted in as early as the 1980s. Indeed, it was the foresight of our Minister Mentor, Mr Lee Kuan Yew, who envisioned and sowed the seeds of possibilities in innovative



water resource management right in the heart of our city.

Setting afoot on the construction sight and taking in a view that spanned from the current CBD and the new Singapore Flyer to the southern coastline of our island, many of us earnestly chatted with the supervisor and engineers to learn more about the building process and technicalities involved. We learnt that alongside with the dam construction, the planners also considered coastal management and had employed hard engineering measures to build a riprap lining the coastline. Of interest is also the boat hoist which will serve to carry small boats between the Basin and the open sea.

The Marina Barrage, completed by end of 2007, has now the largest and most urbanised catchment. A unique project that brings three benefits - a source of water supply, flood control and a lifestyle attraction that offers a host of recreational possibilities. The barrage will be the 15th reservoir in Singapore and will increase the local water catchment area. With a comprehensive flood control scheme, flooding in the low-lying areas in the city such as Chinatown, Boat Quay, Jalan Besar and Geylang will be alleviated. The water level in the barrage will be kept constant and this makes it ideal for all kinds of recreational activities and thereby bringing an attractive lifestyle experience for all.

When completed, Marina Barrage will also house a Visitor Centre which

will allow visitors a panoramic view of the barrage. The Visitor Centre will also tell Singapore's Environmental Sustainability Story as well as introduce Singapore's water story and the operations and workings of the barrage.

By the time the visit drew to a close, many colleagues were greatly enthused and were discussing the possibility of bringing their students to the Marina Barrage. Indeed it was a highly relevant and fruitful learning experience.

For more information on the Marina Barrage and Singapore's water management strategies, you can browse through this website: www.pub.gov.sg. PUB will also be glad to assist in schools' educational programmes. Please contact PUBone@singnet.com.sg.

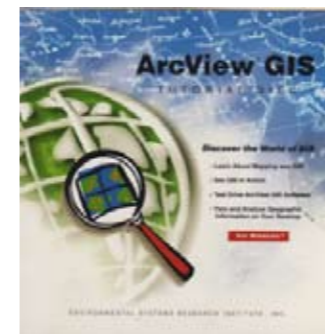


Our Future Years

GIS, GPS, RSI & MOE's IT Masterplan

With the advent of the 21st century, many advanced countries in America, Europe and Australasia are fast moving towards a full integration of GIS, GPS and RSI in the educational curriculum as well as all aspects of their economies (prospecting, defence, transport and communication, environmental monitoring, etc., just to name a few). Increasingly, there is growing acceptance that the mastery and application of these related modern technologies has come to be regarded as the 4th "R" – apart from Reading, (W) Riting and (A)Rithmetic. What then are these acronyms?

GIS or Geographic Information System, stands for any information gathering system that integrates, stores, edits, analyzes, shares and displays spatial information. In general, GIS software applications are tools that allow users to create interactive queries, analyze spatial information, edit data, maps, and present the results of these operations. Thus GIS



allows us to view, understand, question, interpret and visualize data in different ways in order to show relationships, patterns and trends in the form of maps,



globes, charts and reports. It facilitates problem solving by data scrutiny and comparison at high speed.

GPS or Global Positioning System is based on the global satellite navigation system developed and maintained by US Defense Department, the world only fully functional system that can be used freely by civilians for navigation purposes. It uses a group of 24 to 32 Medium



Earth Orbit satellites which transmit precise microwave



signals, allowing GPS receivers to determine current location, time and their velocity. Since 1993, GPS has become widely used in navigation worldwide, for map-making, land surveying, commercial and scientific purposes. New generation GPS All-in-One Unit, whether portable or handheld, are capable of tracking in real time, automatically logging in data and providing massive data storage.

RSI or Remote Sensing Imagery refers to the small or large-scale acquisition of images by the use of either recording or real-time sensing devices, e.g. Earth observation or weather satellites that are not in direct physical



contact with the object or area. Landsat thematic mappers, the IKONOS satellites, take images in multiple wavelengths of electro-magnetic radiation (multi-spectral). Images of land cover and land use from thematic mapping can be

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used to prospect for minerals, detect or monitor land use, deforestation, desertification, etc. The only problem is that such images in their original forms require specialised training to interpret. But fortunately, there are modified versions that are made freely available to us from providers like Google Earth, whose images though not in real-time, are animated and versatile enough for classroom usage.

In 1997 the Ministry of Education (MOE) launched a Masterplan for Information Technology in Education. The Plan emphasized the use of information technology in the school curriculum and \$2 billion was set aside to introduce world's best educational technology in systematic phases. Schools were given IT tools to help teachers to incorporate thinking

skills into the curriculum. Training workshops were conducted and GIS technology was introduced to Singapore secondary schools and junior colleges. The National Institute of Education (NIE) collaborated with MOE Educational Technology Division



to produce a series of 3 GIS-based resource packages, EduGIS, developed on the bases of commercial software ESRI ArcView and the freeware ArcExplorer. MOE offered each school a \$2,000 subsidy to purchase GIS software.

However, in a 2003 NIE survey conducted, it was found that though GIS usage in Singapore schools compared favourably with other developed countries, there were teething problems limiting its wider usage. Four crucial factors hampering usage included insufficient curriculum

time allotted, need for extra preparation time, the limitations of instructional packages and lack of competence in using GIS software. The surveyors thus recommended MOE to incorporate GIS as an essential assessment criteria to motivate attitudinal changes. They added that materials designed for schools need to be simple, ready-to-use, geared to existing syllabus, adaptable to different approaches and time periods and task-oriented. They suggested further intensification of GIS training and the setting up of a GIS teaching community to provide peer support and open-style consultation.

With increasing mastery of the use of GIS and its extended use in schools, it is envisaged that the full benefits will soon be realised in all sectors of our economy and living environment. Only then that we may claim that Geography education and researches have entered a new era.

ACKNOWLEDGEMENTS

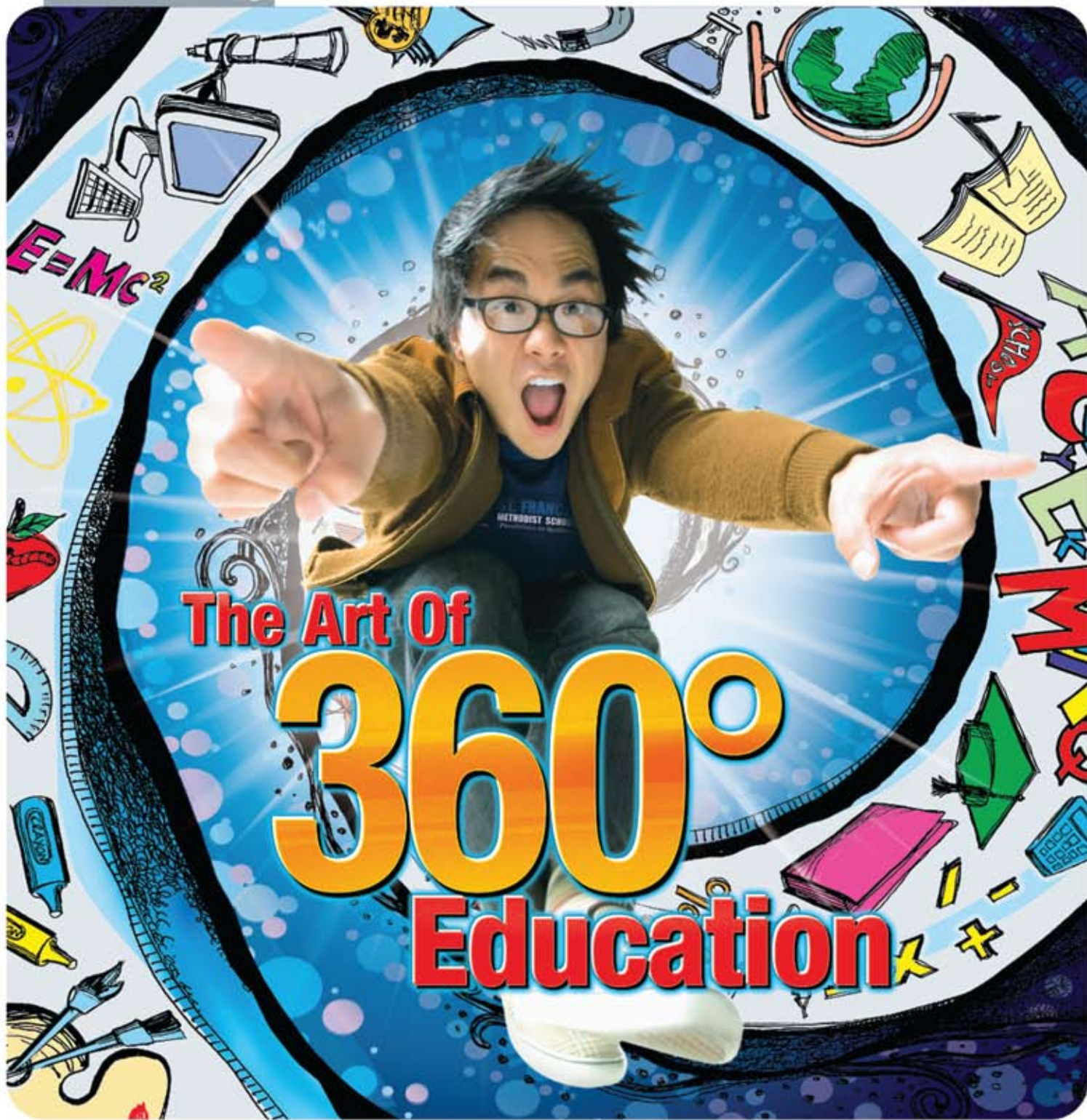
The Editorial Committee is pleased to see this publication to its fruition. We are gratified to the many who have contributed in one way or another to this 40th GTA Anniversary Souvenir Magazine.

We thank

- The pioneers and stalwarts of earlier years in the GTA for their invaluable inputs to the start of the Geography Teachers' Association, Singapore
- Past GTA Chairmen and members for their personal reflections
- Organisers and participants of the fieldtrips, seminars and talks for their records, photos and pictures
- Geographers from the Ministry of Education, National Institute of Education, and National University of Singapore for their practical insights and reflections on the status of Geography in Singapore
- Yang Ziying, student from RJC, for the inclusion of her GIS Project
- Advertisers, GPS Land Singapore & St Francis Methodist School for their support
- Google Earth for permission to use several images in the publication
- Trimble Navigation Limited and ESRI for use of their materials as illustrations in one article

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