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EMPOWERING THE GEOGRAPHY TEACHER – PRACTISING INSTRUCTIONAL LEADERSHIP IN THE CLASSROOM

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SYNOPSIS

For many beginning teachers, the struggle between adopting innovative strategies within limited curriculum time may be daunting. However, discrete selection of appropriate strategies constitutes an important element of instructional leadership. Participants will be introduced to various time-efficient approaches that promote interest in Geography.

INTRODUCTION

Rear Admiral Teo Chee Hean, the Minister for Education in Singapore, proposed in his March 1999 speech that “[w]e can introduce new programmes ... [that] work towards achieving the Desired Outcomes [of Education]. But unless we change what counts, it will be difficult, if not impossible, to change the orientation and focus of our education system”. What is meant by “What counts”? Certainly the main stakeholders of the education system are the students, parents, teachers, schools and the Ministry. If we think of students and parents as clients of education service, then the quality of the service providers counts! So what are some qualities that make good teachers and good schools? Among the many items outlined in the School Excellence Model (SEM) proposed by the Ministry, ‘leadership’ is a component in the model that “counts”.

What relevance is leadership to an ordinary classroom teacher? We propose that as a teacher, there are certain instructional practices that “count” and that they may take a lead in implementing and even propagating these practices. Also, the leadership that is advocated here is not positional. Indeed, we propose that being in control constitutes leadership. Rather than being mere followers, being in control of what one practises in

the classroom is one manifestation of leadership. Leadership in instructional practice may be one very viable route to achieving the Desired Outcomes of Education (DOE). Not only is such instructional leadership extremely useful for beginning teachers who have just embarked on their journey towards teaching excellence, accumulated experience through these practices will empower them with the potential to develop their instructional leadership as well.

We will propose 5 strategies that we have practised as Geography teachers. Although these strategies are based entirely on anecdotal success with our students, there is theoretical basis for each of these practices. We propose that instructional leadership may be practised through:

1. Visualization
2. Graphic Organizers
3. Cooperative Learning
4. Use of IT
5. Analysis of Questions

VISUALIZATION

Visual images are often used in the classroom as teaching aids. Rod Gerber (1989) compiled a list of visual aids that could be used in teaching Geography:

1. paintings
2. horizontally viewed, oblique or vertical aerial photographs
3. cartoons or comic strips
4. graphs
5. diagrams such as field sketches, wind roses
6. puzzles, word codes, etc.
7. maps

Indeed, visual images may “increase learner interest and motivation,” present “inaccessible processes and events” to the learner, “sharpen powers of observation, guide learners to think and make conclusions, present relationships, organize new information, function to integrate facts, skills and judgement” (Chatterjea, 1998). The importance of visualization becomes particularly apparent when using examples from Geography education as the Geography “discipline is about images” (Chatterjea, 1998). However, a picture may not be worth very much (much less than a thousand words) if its graphic message is not received effectively by the people who read it. Gerber (1989) proposes that for the graphic to make meaning, the teacher has to ensure that the students can understand the intent of the graphic. Words are useful as labels for key parts of the graphic and to explain and elaborate on the meaning of the information on a graphic. For example, the cartoon below (See Figure 1) will have no meaning until attention is drawn to the words.

GRAPHIC ORGANISERS

A popular instructional approach to infusing creative thinking into teaching is Swartz's infusion approach which seeks to integrate thinking into content instruction, and which is based on three key principles (Swartz & Parks, 1992):

1. The more explicit the teaching of thinking is, the greater the impact it will have on students
2. The more classroom instruction incorporates an atmosphere of thoughtfulness, the more open students will be to valuing good thinking
3. The more the teaching of thinking is integrated into content instruction, the more students will think about what they are learning.

Ong (2000) suggests that "a more explicit approach yields better learning". For Ong's (2000) study, Swartz's instructional methodology for infusing thinking into content was chosen because its key features, namely, graphic organizers and thinking maps, were considered to be a useful starting point for the teaching of thinking skills in the classroom. In this paper, we agree with this stand and will illustrate with examples during the workshop of how graphic organizers can be used effectively to not only encourage students to use thinking skills, but also to cut down teaching time. Indeed, teachers faced with the challenge to complete the syllabus on time while trying to adopt various teaching strategies might find the potential time-efficient method of graphic organizers welcoming. Used together with group work, the time-saving potential of graphic organizers is increased. Examples of such graphic organisers are included in the appendix. (Figure 5)

COOPERATIVE LEARNING

Spencer Kagan (1994) provides an excellent definition of cooperative learning. Cooperative Learning (CL) involves:

1. simultaneous interaction
2. positive interdependence
3. individual accountability and
4. equal participation

by students. Indeed, Kagan argues that, not only does CL promote academic achievement, it also improves ethnic relations, social skills, self-esteem and self-direction in the student. However, there are three main approaches to CL, namely, structural, learning together and curriculum specific approaches. We subscribe to a more structural approach. Kagan (1990) proposes that "[t]he structural approach to cooperative learning is based on the creation, analysis and systematic application of structures, or content-free ways of organizing social interaction in the classroom". Based on these concepts, CL, adopted together with the use of graphic organizers, effectively result in co-constructed knowledge in the case of Geography. It fosters

individual accountability as well as simultaneous interaction as each student puts forth his/her perceptions or notions of the topic in a graphical manner.

USE OF IT

Information Technology, more well-known by its frequently hyped-up acronym IT, refers to an extremely varied spectrum of "technologies" ranging from plain electronic manifestation of printed material to self-contained, highly interactive, communication-enabled and multi-mediated materials. Instruction with IT is quickly seen as a necessity and the predominant way in education in the new millennium for Singapore.

Learning arises from a constructive process of reflection on the material provided and interacting with it (Farnham-Diggory, 1990). Indeed "[k]nowledge is not merely a collection of facts" or even a recollection of facts. Although we may be able to memorise isolated undigested facts for a short while at least, meaningful learning demands that we internalise the information: we break it down, digest it and locate it in our pre-existing, highly complex web of interconnected knowledge and ideas, building fresh links and restructuring old ones. Among some of the advantages of using IT for instruction are the allowance for self-paced learning, visualisation, facilitated learning, multi-mediated learning, constantly updated materials, assessment tailored to learners' progress and the resource-rich nature of materials on the internet. Instruction with IT is now seen as a necessity in a 21st century classroom. Educators and researchers are quickly examining how IT may enhance learning (eg. Fabry, 2000, Lynch, 2000, Rada et al., 1996 and Scott, 1996).

"The scenario painted for our Singapore classrooms of tomorrow is a very exciting one, and one that is intimately connected with technology. There is no escaping the web of information technology, and preparing our children to deal with the myriad aspects of this innovation is a task we cannot ignore" (Cheah, 1997: 140). Apart from hardware and software, we need to consider the "human-ware" that is required for IT in instruction. Our school teachers are not and never have been trained to perform the role of an IT expert. For IT to be successfully used in teaching, three aspects have to be considered – the content, pedagogy and IT expertise. All our teachers are supposed to be adequately trained for their content and pedagogy mastery but the same cannot be said for IT expertise. How then can we expect successful infusion of IT? In our experience, the teacher's IT expertise was in her ability to source for an IT expert to collaborate on IT teaching resources. Some of these IT resources can be found on the Teacher's Network website. This example shows that a teacher need not be an IT expert to practise IT expertise. In fact, this division of labour and collaborative effort is more productive and efficient. We argue that instructional leadership in using IT for teaching should be sought through collaboration with people who have the IT expertise.

ANALYSIS OF QUESTIONS

We believe that an effective teacher is one who passes on the passion for the subject to her students. This can be seen as a lofty ideal. However, the other side of the coin is for the teacher to enable her students to be armed with enough content and

information to clear the examinations with flying colours. Too often, the students have access to that information but are not able to apply this in the tests or examinations. We have an intuitive theory as to why this happens. One of the reasons could be because the students are not exposed to a wide range of questioning techniques, particularly the terms used. Instructional key words like 'compare', 'contrast', 'distinguish', 'evaluate' are terms that are constantly used in assessment modes. Students are not taught to tune in to such terms but simply regurgitate whatever they have learnt, hoping that at least some of the information they have written is valid.

When analysing test or examination questions, there are three areas of the question to address. They are the key words, the instructional terms and the boundary words. In particular, we are interested in teaching students how to deal with instructional key terms such as "compare" and "evaluate". Instructional terms are often used in exam questions. They tell you what to do with the subject of the question. The exact meaning of these terms varies depending on the subject. A table of these common instructional terms used in questions is included in the appendix. (Table 1)

REFLECTIONS

We feel that the impact of using these techniques, as well as others not covered in this paper, is indeed overwhelming. Not only have the students imbibed the knowledge of Geography, they have also done extremely well in the examinations. In our opinion, the latter is a mere extension of the love for the subject. We also believe that once the students are taught the love for the subject, they will inevitably do well in it.

The instructional leadership practised here is that the teacher was neither bound by the extent of the syllabus nor the time to complete it. The teacher set out to make the lessons more interesting and student-centred so that learning can take place. The outcome was that the students were more participative, willing to discuss issues rather than having the teacher shove ideas into their heads and also, were accountable to their own learning. The students became leaders, in a sense, as they managed the content on their own, writing their own notes and making sense of the content in their own way.

For example, graphic organizers were done even before the chapter or unit was taught to them. The main objective was to get them to make sense of the content and to question certain ideas within their group. In this way, the teacher was able to ask higher order questions, as the students were already familiar with the facts. The end result was that the teacher just needed to help them synthesise the ideas into a cohesive whole. Notes were not given to the students at all. Instead, the completed graphic organisers became their notes, their thoughts of what constituted the facts in that particular chapter or unit. Thus, the students took charge of their learning.

Geography lessons have widely been notorious as 'heavy-going'. The use of cartoons gave a light-hearted feeling during the lessons and indirectly relaxed the students... and the teacher! As mentioned earlier, visual images increase the interest of the students. They have been mostly used as introductions to a topic, thus arousing the

students' interest and curiosity. Indeed, some of these cartoons have also been used in examination questions.

The students were taught how to analyse questions right from Secondary One. This may not seem like a time-efficient technique, but it has proven to be useful in the long run, at Secondary Three and Four levels. Since this was introduced into the lesson, the marking of essays had become less tedious. Students did not give superfluous information and their essays exhibited understanding in relation to the question. There has also been a marked decrease in the number of students who complained that they did not have enough time to complete their essays, especially in the upper secondary levels. In this small way, they had taken the lead in shaping their answers to what the question specifically required of them.

As for IT, we believe in collaboration and teamwork. A teacher who is not IT-savvy should not feel discouraged to practise IT in the classroom. Instead, the teacher can collaborate with another individual who is efficient in the use of IT to develop IT resources for teaching and learning. One may ask why this is necessary, especially when so much of software is available. Indeed, certain facts or information are not readily available in these software. We feel that teachers can always work with someone else to create IT resources which would suit his/her needs. This is one area where instructional leadership can be further developed.

In essence, these strategies which have been discussed are not new at all. It is really the spirit of how they have been adopted in the classroom. We have found that once the students are motivated to learn, they will develop that passion for the subject. Instructional leadership begins with you, the teacher. You are in control of what you want to do and we hope that we have provided some examples that might inspire you to do the same. We believe this is really the true mark of an empowered teacher.

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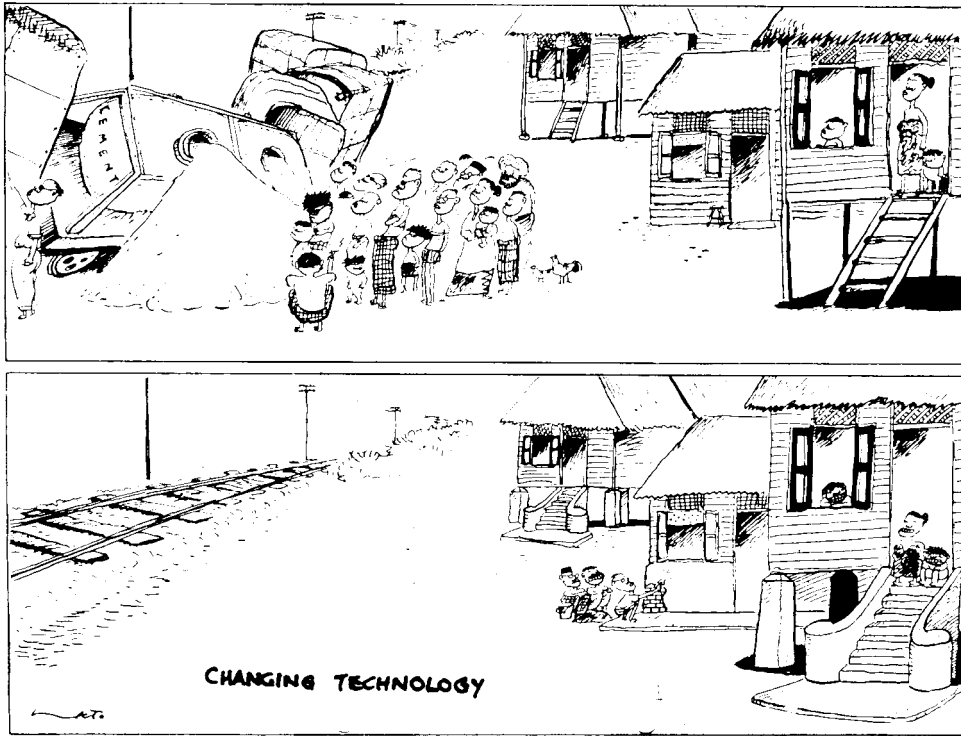
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Figure 1



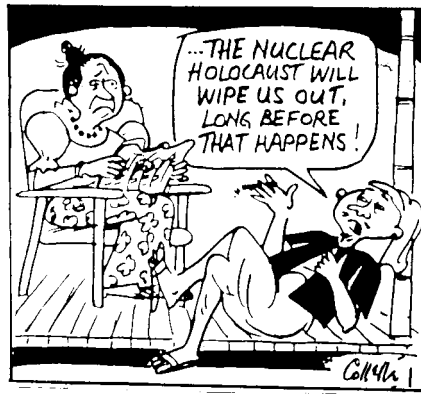
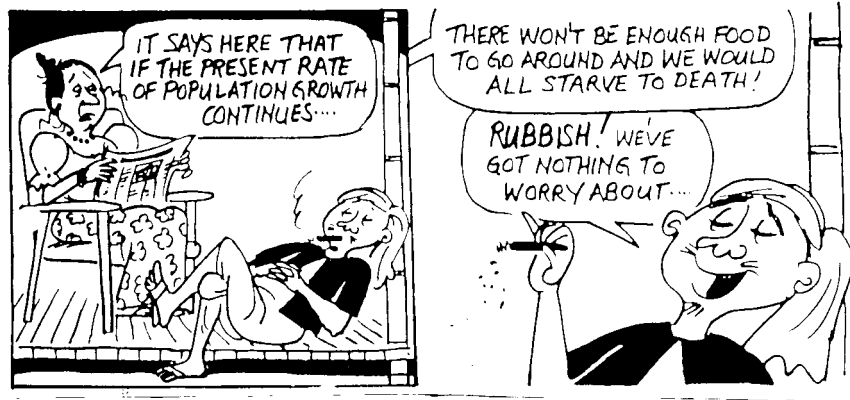
The above cartoon was used in a Secondary Two lesson on 'Technology'. It served as an **illustration** to show how technology was changed over the years. The students were asked to spot any differences and to explain whether they think the changes in technology were beneficial or not. This activity was done as a group.

Figure 2



The above cartoon was used in a Secondary Four class in the chapter on 'Population'. It served to add a little humour to an already 'dry' topic as well as to **introduce** the topic on 'Women in the Workforce'. The students were asked to write the benefits of encouraging women to return to work to meet labour shortages.

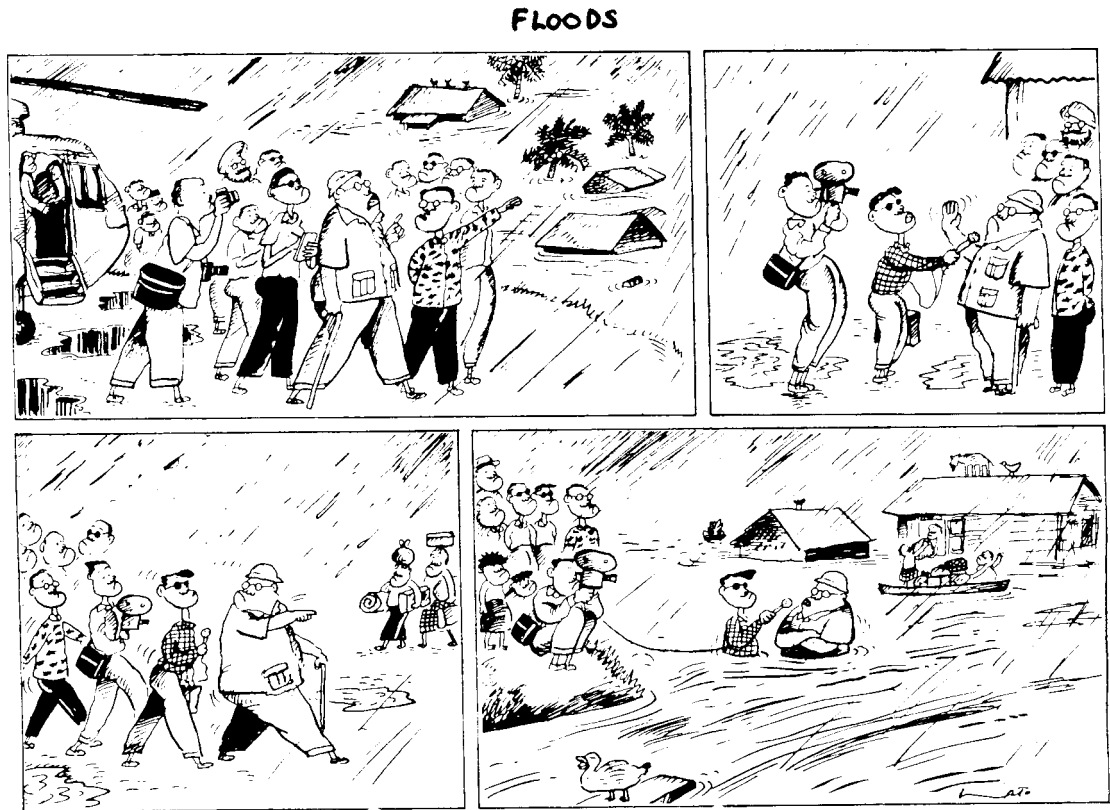
Figure 3



This cartoon was used to spark off a **discussion** on whether population explosion could wipe out the resources of the earth. Although it was an extreme situation, the students were made to be aware that although the destruction of resources as a result of war was more observable and immediate, population explosion was more insidious but just as destructive.

The discussion would inevitably turn out into a lively debate, thus making the topic come alive and relevant to real-life issues.

Figure 4



This particular cartoon was used to **conclude** a lesson on 'Floods' in the Secondary Two syllabus. The students were asked to describe the effects of flooding. Also, the cartoon was used as a basis for **questioning**. For example, the students were asked about what sort of relief efforts would be needed in a case like the above.

Figure 5
Agricultural Systems

Agricultural System	Nature of Cultivation	Type of Crop culture (eg. Monoculture, mixed cropping)	Inputs		Processes/ Activities	Output
			Physical	Human		
Eg. Wet Rice Cultivation	Subsistence	Monoculture	Rain (>1780 mm) Temperature (> 20 °C) Dry period (for harvesting) Flat/low-lying land (floodplains) Soils (alluvium or clayey soils)	Seeds – modern or traditional varieties Fertilizers Tools and Equipment Labour – family based Capital cost – purchase of seeds, extra labour, fertilizers	Before Arrival of rainy season: Preparation of field and the nursery Arrival of the rainy season: Ploughing Sowing Flooding Transplanting Patching Fertilising (optional) Weeding End of rainy season Harvesting Threshing Winnowing	One crop of rice per year Sale of extra farm produce Money obtained from sale can be invested as Capital

Weathering

Name: Frost Action

TYPE: Physical/Mechanical Weathering

Conditions

- mid-latitude regions
- high altitudes
- fluctuating temps. above & below 0°C
- abundant rainfall (200mm - 800 mm)

Processes

- water accumulates in cracks / fissures during day
- water freezes at night and changes to ice
- expands 10% of original volume
- repeated freeze-thaw action exerts stress on rocks

Products

- coarse angular rocks
- accumulation of the above at base of mountain called scree
- accumulation of scree to form felsenmeer

Table 1: Some common instructional terms used in questions.

<p>account for Explain the reasons for, giving an indication of all relevant circumstances. Not to be confused with 'Give an account of' which asks only for a detailed description.</p> <p>compare Look for similarities and differences between two or more things.</p> <p>contrast Deliberately single out and emphasise the differences and dissimilarities between two or more things.</p> <p>define Set down the precise meaning of something. Be prepared to state the limits of the definition. Take note of multiple meanings if they exist.</p> <p>describe Give a detailed and comprehensive account of.</p> <p>distinguish Explain the differences between.</p> <p>discuss Investigate and examine by careful argument. Explore the implications and the advantages or disadvantages. Debate the case and possibly consider any alternatives. This is probably the most common instruction term. It is inviting you to say something interesting in response to the topic in question. You can choose your own approach.</p> <p>examine Enquire into, attempt to discover, investigate, look closely into something.</p> <p>explain Make plain. Account for. Clarify, interpret, and spell out the material you present, giving reasons for important features or developments.</p> <p>how In what way, by what means or method, or to what extent.</p> <p>how far ... Similar to questions which begin 'To what extent...'. You are expected to make your case or present your argument, whilst showing an awareness that alternate or even contradictory explanations may exist. Careful assessment and weighing of evidence are called for.</p> <p>illustrate Make clear and explicit by the discussion of concrete examples.</p> <p>outline Give the main features or the general principles of a subject, omitting minor details and emphasising structure or arrangement.</p> <p>to what extent Similar to questions which begin 'How far...'. You are expected to make your case or present your argument, whilst showing an awareness that alternate or even contradictory explanations may exist. Careful assessment and weighing of evidence are called for.</p>
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