*Helping Youngsters
at School*

ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT

EXECUTIVE COUNCIL

FOCUS: *Helping Youngsters at School*

OTHER TOPICS

IDEAS

BOOK REVIEW

Message from President, ASCD (Singapore)

Education is an important key to national development. In an age of rapid advances in technology and increasing international competition, the quality of education we offer to our students is crucial to their intellectual and social development. The Association for Supervision and Curriculum Development (ASCD) welcomes all those involved in education, be they teachers, heads of department, principals, curriculum developers, school inspectors, parents, researchers or publishers, to work together in striving for excellence in education for students of Singapore.

Professional organisations in education are not new to Singapore. In the past 25 years, numerous associations have been formed by enthusiastic educators to promote the teaching of specific content areas. We applaud their efforts. ASCD (Singapore) takes these efforts one step further through the promotion of programmes and practices that will facilitate the total development of all persons involved in educational efforts across the curriculum.

Through the assistance and cooperation of ASCD (USA), we will provide training to develop professional leadership, promote cooperative curriculum planning and improve supervisory skills and leader behaviour. The overwhelming response to our training courses in our inaugural year is testimony to the commitment of our educators to develop themselves professionally.

To reach out to all educators, we shall be disseminating information on good educational practices. This journal, the ASCD Review, is a start. I hope that readers will find the articles interesting and where possible, adopt and adapt good ideas. We encourage you to share your experiences with other educators by contributing articles and providing feedback.

In the coming years, I am confident that more and more members of ASCD Singapore will come forward and play their role in the pursuit of excellence in education and contribute towards the national development of our nation.

Ang Wai Hoong

Message from President, ASCD (USA)

Greetings to Singapore ASCD, and congratulations on your journal. I am happy to celebrate your inaugural issue with you. As school reform continues its international sweep, those of us at ASCD welcome the contributions of the Singapore ASCD membership in our common drive to improve our schools.

Keeping our schools responsive to the needs of our young people will require us to share our best thinking, and to consider, perhaps, a reconception of schooling.

The current wave of reform is raising new questions about what knowledge is of most worth in the face of an expanding curriculum, and we must consider what *all* students should know to succeed in the 21st Century. Of equal importance during this paradigm shift, however, is the question of how individual students learn best. As we face the challenge of teaching toward the future in schools shaped by the past, we must be willing to expand our ideas on

settings and methods of teaching and learning.

I welcome the Singapore ASCD journal as a new forum for discussion of these critical issues. I hope each of you, whether readers or authors, will become active in moving school reform forward to meet the changing needs of our young people.

Donna Jean Carter

Message from Executive Director, ASCD (USA)

SINGAPORE ASCD IS WELCOME AS A NEW MEMBER OF AN INTERNATIONAL COMMUNITY OF INSTRUCTIONAL LEADERS

All of us at ASCD are delighted to have Singapore ASCD as the first members from the Pacific Rim to become involved with 150,000 people whose primary professional interests are curriculum, instruction, and supervision. Those of you who spent time preparing for admission into the association are to be commended for your dedication to the needs of Singapore educators. You all should know that the beautiful painting of the Singapore skyline is very much appreciated and is prominently displayed on the first floor near the entrance to our headquarters building in Alexandria, Virginia.

ASCD now has affiliates in the United Kingdom, the Netherlands, Germany, two provinces in Canada, along with Puerto Rico and other Carribean islands. Your participation will afford you with a link to not only U.S. leaders but with people from other countries of the world. As an example, our opening general session speaker at the 1991 Annual Conference in San Francisco will be Martin Davies from the United Kingdom who will discuss that country's new national curriculum. I want to emphasize that I believe our relationship must be two-way - we want to learn from leaders in other countries as well as share our own experience in the U.S.

Recently we adopted an ASCD Strategic Plan for 1990-1995 which will provide expanded services to members in the areas of curriculum and technology. A number of new programs are being developed or have been developed in science, mathematics, social studies, art and other fields which are bound to have an impact on the schools. For example, Project 2061 is an extensive analysis of what it will take to produce truly "scientifically literate" citizens for the 21st century.

Another major focus for the next five years will be an expanded role in policy formulation affecting schools. All of us working with schools must aggressively seek policies that are most significant for the learning experiences children have rather than settle for politically expedient reform efforts. All of our countries need a work force that will produce goods and services of high quality at the lowest possible cost. This means that the young people entering the work force must be able to reason, solve problems, and think critically. ASCD is at the forefront in providing leadership in this area.

I thank all of you for the kindness and hospitality shown me during my last visit to Singapore and I hope it will not be too long before our paths cross again.

Gordon Cawelti
Executive Director
ASCD

CLAIRE E. WEINSTEIN, D. SCOTT RIDLEY, TOVE DAHL AND E. SUE WEBER

Helping Students Develop
Strategies for Effective Learning

By providing direct instruction in learning strategies, teachers can help improve the self-confidence and achievement of their students - especially the educationally disadvantaged

For many years, educators assumed that students developed effective learning and study skills as they grew older and had more experience with school (Brown et al. 1983). This is partially true, but many students do not develop effective learning strategies unless they receive explicit instruction in their use.

Furthermore, students learn these strategies and skills best when at least part of the instruction is incorporated into regular subject matter classes. To acquire and integrate most cognitive processing skills - including learning strategies, problem solving, reasoning, decision making, and critical thinking - students need guided practice and feedback (Anderson 1985). By providing these experiences, content-area teachers can play a large role in helping students develop effective learning and study strategies.

What Are Learning Strategies?

Broadly defined, learning strategies are behaviors or thoughts that facilitate learning (Weinstein and Mayer 1986). These strategies range from simple study skills, such as underlining a main idea, to complex thought processes, such as using analogies to relate prior knowledge to new information. In this paper, we will concentrate on those strategies that most directly affect the initial acquisition of knowledge: elaboration strategies. (We are using elaboration only as an example, however; most of our comments and suggestions are appropriate for many other learning strategies as well.)

Clearly, students acquire knowledge through rote memorization and, more specifically, by some form of mnemonic device (e.g. using the acronym HOMES to cue the names of the five Great Lakes or using the alphabet song as a cue for the order of letters). In general, however, a mnemonic device is an artificial memory support, helpful for remembering isolated bits of information but less useful for meaningful long-term knowledge acquisition.

When teachers promote rote memorization as a single strategy, they foster only limited short-term retention of information. High school and college students are well versed at retaining content long enough to take exams, but dreadfully inept at maintaining that knowledge in long-term memory. To achieve this, students must create meaningful connections between what they already know and what they are attempting to learn. In other words, the new information must take on personal relevance. This type of learning - making connections - requires students to use some form of elaboration.

Elaboration

To elaborate is to add a symbolic construction to what you are trying to learn in order to make it more personally meaningful. In other words, elaboration involves using what we already know to help make sense out of what we are trying to learn. "What we already know" includes our prior knowledge, our experiences, our attitudes, our beliefs, and our values.

Consciously focusing on related prior knowledge, experiences, and beliefs that come to mind while we are trying to learn helps us to build bridges to the new information. These bridges provide points of connection to previously sterile, dull, or meaningless data symbols; they allow us to perceive these symbols as important because they add to or modify personal knowledge relevant to our successful functioning. In other words, the bridges built by elaboration strategies create personal meaning -a reason the new information is important for the student to remember.

Use of elaboration strategies improves future recall not only because the student's depth of processing is

greater, but also because these strategies help the student store new information with related knowledge. This is analogous to using a filing cabinet for storing information. If one person adds files to her cabinet randomly as they are created, and another person stores his related files together in a personally organized fashion, who will be more successful when trying to find information in the future? Major differences between novices and experts reside in the amount of information they have accumulated and in the way this information is organized.

Using Elaboration Strategies

We can relate what we are trying to learn to what we already know in many ways. These ways include creating analogies; paraphrasing; summarizing in our own words; transforming the information into another form such as a chart, graph or diagram; applying the new information; directly relating prior knowledge; using compare and contrast methods; drawing inferences or conclusions; and trying to teach what we are learning to someone else.

While elaboration can take many forms, the specific method a student uses does not appear to be critical for success. A group of successful learners often use a variety of methods for the same task, and an individual student often reports using different methods for what might appear to be highly similar tasks. Individual preferences, the perceived difficulty of the task, the learner's prior knowledge or experience with similar tasks, the perceived importance of the task, and the learner's expectancies about his or her ability to perform well on the task - all are variables that determine what elaboration strategy, if any, a student will use for a particular task.

A repertoire of elaboration strategies - of learning tools - helps students to perform a wide spectrum of tasks. A carpenter often has one or two favorite hammers that she uses for most tasks, but her tool box will contain more than a dozen dif-

When teachers promote rote memorization as a single strategy, they foster only limited short-term retention of information.

ferent hammers for special jobs. Similarly a good repertoire contains many different types of strategies for the student to choose from, providing both fluency and flexibility. If a high school student is having difficulty making sense of what he is reading in his American history textbook, he could take a break; but this might not be sufficient to solve the problem. A student with a flexible repertoire might also try taking a break, but if this did not work, she could then try different methods: re-reading, calling a friend in the same class, reading other related material in the library, speaking to the teacher, asking a parent, or looking over class notes. Students with a flexible repertoire of strategies can generate alternative approaches that increase their chances of successfully solving the problem.

To foster the use of elaboration strategies, teachers must ensure that students view these techniques as practical and beneficial. Therefore, creating a positive impression when first presenting the strategies is crucial. We recommend demonstrating how students can ask themselves questions that help them make sense of new information based on what they already know.

Teachers can develop fluency and flexibility in their students' elaborations by encouraging a broad list of questions representing a variety of different techniques (analogies,

transformations, comparing-contrasting, and the like). To access one's repertoire of strategies, one must often generate and answer questions about the material, such as the following:

- What is the main idea of this story?

- If I lived during this period, how would I feel about my life?

- If this principle were not true, what would that imply?

- What does this remind me of?

- How could I use this information in the project I am working on?

- How could I represent this in a diagram?

- How do I feel about the author's opinion?

- How could I put this in my own words?

- What might be an example of this?

- How could I teach this to my Dad?

- Where else have I heard something like this?

- If I were going to interview the author, what would I ask her?

- How does this apply to my life?

- Have I ever been in a situation where I felt like the main character?

Students should practice generating and using these types of questions in different contexts. Learning about elaboration strategies and how to use them, like any procedural skill, requires practice, with feedback. With time and practice, students realize that using elaboration is easy and useful in a variety of learning situations.

Training for Teachers

As part of the Cognitive Learning Strategies Project at the University of Texas we have developed several teacher training workshops. Lasting from three days to one week (not including follow-up activities), these workshops emphasize information about common student learning and study problems, the types of effective strategies and skills successful students use, and techniques for teaching these strategies and skills. The workshops address eight different areas: (1) identification of teacher concerns and perceived student problems; (2) what we mean by "successful students"; (3) high school learning and transitions to college and job-related learning; (4) categories of effective learning strategies; (5) methods of teaching learning strategies; (6) implementing the metacurriculum (teaching learning-to-learn skills and strategies while teaching a content area); (7) developing individual action plans for each teacher in the coming year; and (8) follow-up activities needed during the school year.

More than 2,000 teachers at the high school and college level have participated in these workshops and similar training activities. Following are just a few examples of ways these teachers have improved their instruction by teaching these strategies.

In one high school the arts teachers worked together to develop a set of adjunct curriculum materials to help students learn the arts as a form of elaboration, to help them understand ideas they were studying in literature and history. A 9th grade biology instructor set aside some class time each week to help students learn about note-taking, selecting main ideas for further study, and using application and analogies to understand scientific principles. Several faculty members in a community college nursing program created a series of in-class and homework exercises about how to use knowledge acquisition strategies, how to take practical tests, and how

The bridges built by elaboration strategies create personal meaning - a reason the new information is important for the student to remember.

to reduce anxiety when studying or taking tests. Other teachers have taken time at the beginning of a semester to explain effective ways to read a textbook, used class discussions as a springboard for discussions about specific learning strategies, and developed and integrated special materials, which specifically address learning-to-learn rather than just the course content, into regular curriculum.

The implementation of many of these techniques has been evaluated in an undergraduate learning-to-learn course at the University of Texas (Weinstein 1988). The results have been very encouraging. Not only do students appear to acquire study and learning strategies that significantly improve their academic performance, but they also appear to gain self-confidence and to feel better about themselves as learners. Given the need for lifelong learning, this is an important outcome.

Today, we know what learning strategies are, how to help teachers learn to teach them, and what outcomes we can expect if they are taught. Clearly, students benefit from learning these strategies; this is especially true for the educationally disadvantaged. We must, therefore, continue to help teachers learn about these strategies and then translate that learning into effective instruction. Our students deserve no less.

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KENNETH DUNN AND RITA DUNN

Dispelling Outmoded Beliefs About Student Learning

Students learn best when instruction and learning context match their learning style.

Established teaching and scheduling practices have made the American educational system strong and successful over the first half of this century. However, that system never had to service such a diverse group of students as it is trying to educate today. Only two decades ago, divorce and drugs were uncommon in our society, pregnancies among elementary school children were unheard of, and teenage pregnancies were something that happened to uneducated, undisciplined hoodlums in inner cities.

Today we recognize that unless we educate every child, we all suffer. At-risk students place society at risk by what they do to us, our children, our property, and our educational system. Fortunately, the results of newer, more sophisticated statistical approaches to research now point the way to making instruction more responsive to youngsters who do not learn and retain information in ways that conventional education provides.

Research Challenges 15 Popular Beliefs

Fifteen old-fashioned beliefs are the subject of this article. We have found that when teachers expand their instruction to respond to students' individual learning styles, it takes as little as six weeks to see increased achievement and a decrease in discipline problems. Even at-risk youngsters begin to learn and feel better about themselves, and teachers no longer regret having them in class.

Fallacy Number 1. Students learn best when seated upright at a desk or table.

The Research. Almost all classrooms have wooden, steel, or plastic chairs and desks for students. When a person sits on a chair constructed from those materials, approximately 75 percent of the total body weight is supported on only four square inches of bone (Branton 1966). The resulting stress on the tissues of the buttocks often causes fatigue, discomfort, and the need for frequent postural change. Wouldn't it seem obvious that someone, somewhere, must have conducted extensive research and revealed that all children learn most easily when sitting up straight in hard chairs? That research was never done. Instead, two well-designed studies show that making youngsters sit upright in their seats does not necessarily make them more receptive to learning.

Shea (1983) identified high school students with strong preferences for sitting informally on cushions, pillows, couches, and carpeting. When permitted to work that way, they performed significantly better (.001) on an English comprehension test than when they were required to sit in conventional seats. Another population of underachieving seventh- and eighth-graders achieved significantly higher mathematics test scores when taught and tested while seated on pillows, lounges, and small carpets (Hodges 1985).

Classroom design affects at least 20 percent of secondary students, for whom achievement is either increased or decreased based on where they are permitted to work. Therefore, every classroom should provide *both* formal and informal types of seating.

Fallacy Number 2. Students perform better on tests and learn more from their homework in an absolutely quiet environment.

The Research. Many adolescents think and remember best when studying with music (Price 1980). Furthermore, 20 percent of one elementary population earned significantly higher reading scores

> **"Making students sit upright in their seats does not necessarily make them more responsive to learning."**

when tested in a *noisy* environment (Pizzo 1981). Incidentally, a few students require so much silence that they perform efficiently on tests when wearing earmuffs or earplugs.

Each classroom should have quiet sections for those youngsters who cannot concentrate with noise, and areas where the 20 percent who *need* sound while learning can listen to music on a listening set.

Fallacy Number 3. Students learn best in well-illuminated areas and damage their eyes when they read in low light.

The Research. Many students perform significantly better (.01) in low than in bright light, which makes them restless, fidgety, and hyperactive (Krimsky 1982); low light calms these youngsters so that they can relax and think clearly (Dunn et al. 1985).
Right-brain-dominant students ap-

pear to prefer dim light when concentrating (Dunn et al. 1982). The younger children are, the *less* light they seem to need. Children need only that amount of light for reading in which they feel comfortable, but their need for light seems to increase every five years (Price 1980).

Loosen one bulb in a corner of a classroom and permit students who prefer low light to sit there. Observe their behavior, attention, and grades during the next six-week period. You will be surprised at the improvement among eight out of ten students -*particularly the underachievers*.

Fallacy Number 4. Students learn difficult subjects best in the early morning, when they are most alert.

The Research. We all know early birds, night owls, and people with either high- or low-energy levels at different times of the day or evening. Research demonstrates that no matter when a class is in session, it is the wrong time of day for almost one-third of that population (Freeley 1984, Price 1980, Worthington City Schools 1980, Virostko 1983). Another investigation reported that when junior high school students were allowed to learn subjects at their preferred time of day, their behavior, motivation and mathematics scores began to improve (Carruthers and Young 1980).

When an elementary school student is on-task is likely to be far more important than the subject being studied or the amount of time devoted to it. For example, one elementary school required one hour each of reading and mathematics for every youngster in grades three to six. Half of each grade were taught reading in the morning and math in the afternoon; the other half had those subjects reversed. At the end of one year, 286 students achieved significantly higher scores (.001) in the subject taught during their preferred learning time and significantly less well in the subject taught at the opposite time. During the second year of that study, the disciplines were reversed. Thus, those students who
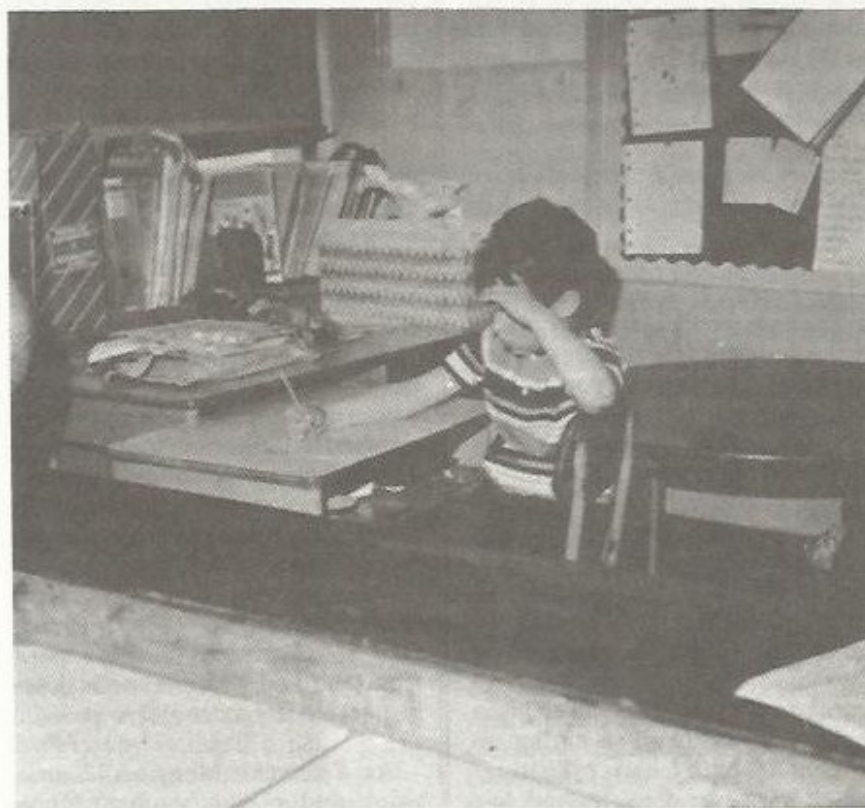
Normal classroom illumination makes some youngsters either lethargic or hyperactive. This elementary student selected a relatively dark area in which to work and consistently shielded his eyes.

Tactual/kinesthetic youngsters learn better through resources that match their perceptual strengths than when listening to the teacher.

had reading in the morning previously were taught reading in the afternoon, and so forth. At the end of the second year, more than 90 percent of these youngsters achieved significantly better in the *other* subject (Virostko 1983). That study won the Kappa Delta Pi International Award for the best research in 1983.

Try administering standardized achievement tests three times - in the early morning, late morning, and afternoon. Permit students to take those tests when their energy level is highest. One elementary principal additionally allowed children to choose whether they preferred to sit in their chairs or on floor mats. She obtained significantly higher test scores merely by responding to those two elements of learning style (Lemmon 1985).

Fallacy Number 5. Students who do not sit still are not ready to learn.

The Research. Half of one junior high school's seventh-graders

needed extensive mobility while learning. When permitted to move from one instructional area to another to learn new information, those youngsters achieved statistically better (.001) than they did when required to learn while remaining seated. Twenty-five percent of the students needed to sit still, and the other 25 percent needed to be able to move about when not motivated or interested (Della Valle 1984, Della Valle et al. 1986).

Try using small-group instructional techniques like Team Learning, Circle of Knowledge, Brainstorming, and Case Studies (Dunn and Dunn 1978) to get children actively involved. Most teenagers will learn more, pay closer attention, and get higher grades on tests than they do by merely sitting and listening in class.

Fallacy Number 6. Whole-group instruction is the best way to teach.

The Research. Some middle school

"The younger children are, the less light they seem to need."

As students mature, they prefer to learn independently. These secondary science students use peer-oriented learning under the teacher's supervision.

The Research. Well-designed and often award-winning research verified that students achieved significantly higher scores when taught through methods that responded to their individual learning styles (Carbo 1980, DeBello 1985, Della Valle 1984, Domino 1970, Gardiner 1986, Hodges 1985, Krimsky 1982, Kroon 1985, MacMurren 1985, Martini 1986, Murrain 1984, Perrin 1984, Shea 1983, Virostko 1983, White 1980). Motivation also increased when students exercised control over their own studies (Mager and McCann 1963) and experienced success (Ford 1969). Motivation appears to change from day to day, class to class, and teacher to teacher.

Fallacy Number 8. Students concentrate best when classroom temperature is maintained at from 68° to 72° Fahrenheit.

The Research. Preferences vary dramatically among age groups, between the sexes, and among individuals whatever the age or sex. Within the same middle school environment, youngsters reacted differently to heat and cold and achieved better when they were tested in a thermal setting that matched their requirements (Murrain 1983).

Fallacy Number 9. Effective teaching requires clearly stated objectives followed by detailed step-by-step, sequential explanations until students understand what is being taught.

The Research. Global learners grasp large concepts and then tackle the details and facts related to the concept. Learning is exactly the opposite for analytics, who pay attention to a series of facts that build up a concept. Both groups learn equally well but achieve significantly higher scores when taught in a style that is correct for them (Douglass 1979, Trautman 1979).

Sixty-five percent of the teachers we've tested teach analytically. Many special education teachers tend to use a global style. By expanding their

and elementary students do their best thinking alone. Many work better in pairs or teams. Some like to learn with adults, whereas others need peers (DeBello 1985, Johnson and Johnson 1975, 1976, 1980). A small percentage of students cannot concentrate with *anyone* present and may not have the skills to work independently. Some of those students work better with media than with people (Dunn 1971) or with computers (Martini 1986). Gifted students tend to prefer to learn by themselves (Dunn and Price 1980, Griggs and Price 1980, Kreitner 1981, Perrin 1984, Price et al. 1981, Stewart 1981, Wausson 1980). Some students can learn well in any combination-alone, with others, or with media (Dunn and Dunn 1978).

Experiment with grouping students for instruction based on their sociological preferences. Use small-group techniques for the peer-oriented, direct teacher instruction

for those who learn best with a teacher, and independent study for the capable ones who learn best by themselves. For those youngsters who do not like to work closely with a teacher - but who are not ready to work independently, use a Multisensory Instructional Package (Dunn and Dunn 1978, Gardiner 1986).

Fallacy Number 7. Most students could achieve well academically if only they were self-motivated.

"Gifted students tend to prefer to learn by themselves."

teaching to include elements of both styles, teachers can increase the understanding of their analytic and global students.

Fallacy Number 10. Eating should not be permitted in classrooms except at snack time; food belongs in the cafeteria.

The Research. Some students eat, drink, chew, or bite on objects as they concentrate. A recent middle school study showed that students who were permitted to eat vegetables and popcorn while taking a test achieved significantly higher scores than those who needed food but were denied it (MacMurren 1985).

Fallacy Number 11. Students learn best in blocks of time of approximately 40 to 55 minutes with variations for lab period (80 to 110 minutes).

The Research. When students are permitted to learn in an environment that responds to their mobility (Della Valle 1984, Miller 1985) and furniture needs (Hodges 1985, Shea 1983) and can learn through their perceptual strengths (visual, tactile, and/or kinesthetic) rather than solely by lecture (Carbo 1980, Jarsonbeck 1984, Kroon 1985, Urbschat 1977, Weinberg 1983, Wheeler 1983), they are better able to concentrate and remember, whatever the scheduled amount of time.

Fallacy Number 12. Youngsters who cannot remember verbal instruction tend to be less intelligent than those who can.

The Research. Each youngster's specific perceptual strengths (i.e., auditory, visual, tactual, kinesthetic, or some combination thereof) should be identified. New material should be introduced to students through their strongest modality, reinforced through their second strongest, and reinforced again through their tertiary modality (Kroon 1985). Students should then be required to use the new information in a creative way (e.g., by making

"Global learners grasp large concepts and then tackle the details and facts related to the concept."

up a crossword puzzle with the answers, writing a rhyming poem with the information, or pantomiming the answers to a series of related questions) (Dunn 1984).

Several investigations that examined the relationship between perceptual strengths and achievement (Carbo 1980, Kroon 1985, Martini 1986, Urbschat 1977, Weinberg 1983, Wheeler 1983) found that whenever students were taught through resources or approaches that complemented their modalities, they achieved significantly higher test scores. The same was true of "learning disabled" second-graders who, when taught through their strongest modality, consistently achieved scores higher than 80 percent correct on their class reading tests (Wheeler 1983).

Fallacy Number 13. Homework should reinforce what has been taught and should be assigned from an appropriate text after a lecture.

The Research. Because students achieved higher grades when taught through their perceptual strengths, as just noted, it is only reasonable that the same concept should be applied to doing homework. Auditory students should hear the teacher's lecture, review by reading and writing answers to specific questions, and then use the new material in a creative application (e.g., "Make a crossword puzzle where the answers describe at least five outcomes of the

Revolutionary War" or "Write a six-line, rhyming poem describing at least five outcomes of the Revolutionary War"). Visual students should read the material first, write answers to specific questions *during* the class lecture, and then develop an original application (draw a map, write a play, make up a song, etc.). Tactile students should be *introduced* to the outcomes of the Revolutionary War by using tactile materials (electroboards, multi-sectioned Task Cards); then they should answer questions while reading the materials, listen to the teacher's lecture in class, and create an original game, pantomime, model, or map based on the new information.

Fallacy Number 14. Generally, the older students are, the easier it is for them to adapt to a teacher's style.

The Research. Older students require less teacher motivation (Price 1980) and less structure (Hunt 1982). Students continue to learn differently from each other and to require different amounts of attention, direction, structure, caring, support, guidance, or freedom. Nothing is more unequal than treating individuals as though they were equals in all ways.

Because most students tend to need more independence as they go through the grades, they should be permitted options for completing their assignments and for learning required objectives (Mager and McCann 1963, White 1980, White et al. 1982). Options and choices can be reduced if students prove they are unable to handle the extra responsibility, but periodically they deserve the chance to show that they are maturing and are willing to be responsible.

Fallacy Number 15. Truancy is related to poor attitudes, home problems, lack of motivation, and other factors having nothing to do with students' preferred learning time.

The Research. At least one study of secondary truants verified that when

their learning time preferences were matched correctly to their academic schedules, they attended class more frequently (an amazing 3.5 units per ten-week marking period). There was also a significant interaction among degree of truancy, learning time preference, and whether or not they had the same teacher during the treatment condition and pretreatment. When students who had been truant were assigned to a teacher *different* from the one with whom they had been truant, they attended classes more often (Lynch 1981).

Beliefs Can Change

All popular beliefs have some basis in fact. These 15 do, too. Because they *are* so widely accepted, it is important to counteract their influence with experimental evidence. Instruction has improved in schools throughout the nation where the Learning Style Inventory (Dunn et al. 1975, 1978, 1979, 1981, 1984, 1985) has been used to identify students' strengths and instruction has become more sensitive to their individual needs (Ballinger and Ballinger 1982; Cavanaugh 1981; K. Dunn 1981; Hodges 1982, 1983; Jenkins 1982; Lemmon 1982, 1985; Lynch 1982; Martin 1977; Vigna and Martin 1982; Wedlund 1984). Instruction that is responsive to individual differences may help improve learning conditions for students at risk of academic and lifelong failure.

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RICHARD SALZER

Why Not Assume They're All Gifted Rather Than Handicapped?

The trend toward overtesting and isolated skills-teaching gives young children, who need a supportive environment in which to learn and develop, too much too soon.

It was the city's top-rated nightly news broadcast. Amid the reports of fires and muggings, a parent was expressing concern about her own problem in the corridor outside a school district meeting. "He's just a regular kindergarten kid," she said slowly into the reporter's microphone. "I don't know what this program is all about." She was standing with her back to the camera to avoid identification as a critic of the school system.

The program she and other parents were unhappy with is one of several that emphasize much testing of pre-kindergarten and kindergarten children, isolated skills teaching, and even such bizarre procedures as blindfolding students for group perception lessons. What this mother's child faced was retention in kindergarten, one of seven to be so treated in a class of nineteen children attending school in a rural community made up primarily of solid, lower-middle-class families.

According to the school, the boy had not measured up to expectations for success in sound blending, visual-motor integration, and, in the case of this particular program, cursive handwriting. The situation is not unusual. All over the country there are similar reports of students being retained at the kindergarten level and the creation of pre-first-grade classes for others who cannot be promoted because of specific deficiencies.

The trend has become so much a professional concern that opposition statements have been published regionally (Nebraska State Board of Education 1984) and nationally (International Reading Association 1986) in the form of "Literacy Development and Pre-First Grade' (see sidebar), sponsored by ASCD and five other educational organizations. The pamphlet cautions against rigid pre-reading programs and concentration on the teaching of isolated skills.

"Deficit" Instruction as a Model

The desire for ever-higher scores on standardized tests is undoubtedly at the root of this emphasis on separate skills teaching of young children, but the approach itself grows out of behaviorist programs for the handicapped in which the test-teach-test pattern predominates. Such instruction is based on the "deficit" model: find out what is "wrong" with the learners and "fix" it by teaching them what they do not know. Too often the terms used have become accepted as defining quality teaching - the "building blocks of learning", "diagnostic prescriptive procedures", and "skills mastery."

Several developments in recent years have contributed to the notion that large numbers of young children should be treated as if they suffer from some handicapping condition. First came DISTAR (Science Research Associates 1969), originally conceived of by special educators for use with poverty-level, often minority, students in compensatory education classes, and then offered for remedial work and even general classroom instruction. The program is based on the presumption that many young children cannot learn from holistic activities but must have

very specific teaching of sequentially arranged skills.

The most recent development related to handicapped education has been the introduction of kindergarten screening for the identification of at-risk children when they enter school (New York State Education Department 1982). The result of this testing, now mandatory in many states, has been a focussing of attention on what five-year-olds cannot do rather than on their abilities. Such programs as Early Prevention of School Failure (Werner et al. 1979) emphasize identification of deficiencies and direct teaching of bead-stringing and other skills.

> **Reading and writing experiences at school should permit children to build upon their already existing knowledge of oral and written language**

The Hammondsport Program of Assured Readiness (McInnis and Curtis 1982) is an example of materials created in direct response to a special education concern, the possibility of a child being learning disabled. The basic assumption here is that, because some students may have difficulty in learning, all children should complete several sets of perceptual training exercises that are thought to be preventive. The handicapped model on which these various procedures are based

Pre-First-Grade Literacy Development

Objectives for a Pre-First-Grade Reading Program

Literacy learning begins in infancy. Reading and writing experiences at school should permit children to build upon their already existing knowledge of oral and written language. Learning should take place in a supportive environment where children can build a positive attitude toward themselves and toward language and literacy. For optimal learning, teachers should involve children actively in many meaningful, functional language experiences, including **speaking, listening, writing, and reading.** Teachers of young children should be prepared in ways that acknowledge differences in language and cultural backgrounds and emphasize reading as an integral part of the language arts as well as of the total curriculum.

What Young Children Know about Oral and Written Language Before They Come to School

1. Children have had many experiences from which they are building their ideas about the functions and uses of oral language and written language.
2. Children have a command of language, have internalized many of its rules, and have conceptualized processes for learning and using language.
3. Many children can differentiate between drawing and writing.
4. Many children are reading environmental print, such as road signs, grocery labels, and fast-food signs.
5. Many children associate books with reading.
6. Children's knowledge about language and communication systems is influenced by their social and cultural backgrounds.
7. Many children expect that reading and writing will be sense-making activities.

Concerns

1. Many pre-first-grade children are subjected to rigid, formal pre-reading programs with inappropriate expectations and experiences for their levels of development.
2. Little attention is given to individual development or individual learning styles.
3. The pressures of accelerated programs do not allow children to be risk-takers as they experiment with language and internalize concepts about how language operates.
4. Too much attention is focused upon isolated skill development or abstract parts of the reading process, rather than upon the integration of oral language, writing, and listening with reading.
5. Too little attention is placed upon reading for pleasure: therefore, children often do not associate reading with enjoyment.
6. Decisions related to reading programs are often based on political and economic considerations rather than on knowledge of how young children learn.
7. The pressure to achieve high scores on standardized tests that frequently are not appropriate for the kindergarten child has resulted in changes in the content of programs. Program content often does not attend to the child's social, emotional, and intellectual development. Consequently, inappropriate activities that deny curiosity, critical thinking, and creative expression occur all too frequently. Such activities foster negative attitudes toward communication skill activities.
8. As a result of declining enrollments and reduction in staff, individuals who have little or no knowledge of early childhood education are sometimes assigned to teach young children. Such teachers often select inappropriate methodologies.
9. Teachers of pre-first graders who are conducting individualized programs without depending upon commercial readers and workbooks need to articulate for parents and other members of the public what they are doing and why.

Recommendations

1. Build instruction on what the child already knows about oral language, reading, and writing. Focus on meaningful experiences and meaningful language rather than merely on isolated skill development.
2. Respect the language the child brings to school, and use it as a base for language and literacy activities.
3. Ensure feelings of success for all children, helping them see themselves as people who can enjoy exploring oral and written language.
4. Provide reading experiences as an integrated part of the broader communication process, which includes speaking, listening, and writing, as well as other communication systems such as art, math, and music.
5. Encourage children's first attempts at writing without concern for the proper formation of letters or correct conventional spelling.
6. Encourage risk-taking in first attempts at reading and writing and accept what appear to be errors as part of children's natural patterns of growth and development.
7. Use materials for instruction that are familiar, such as well-known stories, because they provide the child with a sense of control and confidence.
8. Present a model for students to emulate. In the classroom, teachers should use language appropriately, listen and respond to children's talk, and engage in their own reading and writing.
9. Take time regularly to read to children from a wide variety of poetry, fiction, and nonfiction.
10. Provide time regularly for children's independent reading and writing.
11. Foster children's affective and cognitive development by providing opportunities to communicate what they know, think and feel.
12. Use evaluative procedures that are developmentally and culturally appropriate for the children being assessed. The selection of evaluative measures should be based on the objectives of the instructional program and should consider each child's total development and its effect on reading performance.
13. Make parents aware of the reasons for a total language program at school and provide them with ideas for activities to carry out at home.
14. Alert parents to the limitations of formal assessments and standardized tests of pre-first grader's reading and writing skills.
15. Encourage children to be active participants in the learning process rather than passive recipients of knowledge, by using activities that allow for experimentation with talking, listening, writing, and reading.

This Joint Statement of Concerns about Present Practices in Pre-First-Grade Reading Instruction and Recommendations for Improvement was prepared for:

- Association for Childhood Education International

- Association for Supervision and Curriculum Development

- International Reading Association

- National Association for the Education of Young Children

- National Association for Elementary School Principals

- National Council of Teachers of English

- by the Early Childhood and Literacy Development Committee of the International Reading Association. The brochure may be purchased from the International Reading Association in quantities of 100 at a cost of $5.00 per 100, prepaid only. Single copies are free upon request by sending a number 10 self-addressed, stamped envelope to International Reading Association, P.O. Box 8139, Newark, DE 19714-8139.

tion activities. As the mother who appeared on the television news broadcast found out, however, all is not that simple when the results of classroom implementation are seen firsthand.

Gifted Education as a Model

What occurs when all young children are assumed to be handicapped is not especially attractive. Students unable to demonstrate that they are not disabled receive additional doses of the same treatment. The treatments themselves are narrow and repetitive, often producing poor attitudes toward learning. The child's first contact with school will sometimes have punitive overtones of negative labeling and failure made public. In addition, there is the growing concern that the entire approach may be wrong-headed, as some special educators are giving up the isolated skills model for a more holistic one (Thurman and Widerstrom 1985).

It may seem advantageous, then, to consider adopting a different model, perhaps the one identified with the opposite end of the ability continuum - gifted education. In the teaching of the gifted there is no reason to concentrate on student deficiencies: either there are none, or they are inconsequential in view of the individual's other capacities.

Too little attention is placed upon reading for pleasure: therefore, children often do not associate reading with enjoyment

has credibility with many parents, teachers, and administrators because of its connection with two values very important to most Americans - technology and medicine. The tests define precisely what needs to be done, and then the curative power of appropriate treatments will be brought to bear. This, it would seem, is much to be preferred to blocks, paints, and the conventional early childhood educa-

Ensure feelings of success for all children, helping them see themselves as people who can enjoy exploring oral and written language

Testing is not used as a guide to teaching and often not recommended as a sole means of selection since young children do not respond reliably (Roedell et al. 1980).

Many authorities believe that programs developed for gifted students should be widely used. For example, Maker (1982) emphasizes planning guidelines such as curiosity, creativity, independence, sensitivity, and self-expression. Activities meeting such criteria would be highly unlikely to be limited to perception drills.

If all young children were assumed to be gifted, then their classroom experiences might well consist of free play activities (independence and curiosity), painting and block building (creativity and self-expression), and music and story dramatization (sensitivity). Those familiar with the present situation in early education will recognize these experiences as the very ones being dropped to make room in the schedule for additional teacher-directed lessons on specific skills.

Dewey's Choice and Ours

Dewey commented on the remarkable promise represented by the human infant. The great man might be a bit distressed with present tendencies to view extreme youth as a handicap rather than the tremendous opportunity he thought it to be. Not many would consider the nearly immobile and nonreading six-month-old to be in need of remediation. The opportunity to grow and learn in a supportive environment is all the baby needs and is exactly what will benefit each and every young child, gifted or not, handicapped or not. Intruding too early and too often to do specific teaching results in two problems: wrong things are done and right ones are not.

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LIM LEE HEAN

Surviving in a Pressure Cooker
- A Conversation with Jennifer Chalmers

How teachers can help younsters cope with a fast and changing pace of life

In your opinion, do youngsters of today face greater difficulties in life than in the past?

It is hard to say. In the past, young people often had to face poverty, hunger, homelessness, war, disease, lack of education, lack of job opportunities, being tied to family land or family occupations, very strict cultural and religious pressure. There were rigid class barriers, lack of choice in life style, and in the extreme, invasions of homeland and becoming subject people. So, there

were opportunities for the privileged few in the past but for the majority, life opportunities were restricted and there was little hope of escape.

On the other hand, in the past, for traditionally minded young people, a role in life was predetermined. They knew in childhood who they were in terms of identity. Sex roles were clearly defined. Family authority and the family structure were usually not questioned. Religion and culture were part and parcel of a person's life. Occupational choices were often predetermined by family

position. There was a sense of belonging to the community. Mobility was less and so relationships, once established, were long and lasting. There was loyalty to the kin and a feeling of communalism.

Today, young people face quite different stresses, challenges and problems. Basic needs are more adequately provided for and extreme poverty is rare. There is better health care and standards of hygiene. Education is available to all who want it. There are ample job opportunities for young people. Although Singapore is vulnerable in terms of its size and position, there is greater national security, despite the recent example of Iraqi's invasion of Kuwait. In the region around Singapore, at the present time, neighbouring countries are friendly and threatened military invasion is not considered an immediate problem. Class, race and religious barriers have eased and there is a more harmonious mixing of peoples and a chance for betterment for them. In these aspects, life is easier.

Life today is not just a matter of struggling to survive but a matter of making of it what you will.

But making of it what you will is not always easy. *There is greater difficulty in terms of finding an identity and a*

niche in life. *While basic needs are well satisfied, higher order needs are harder to satisfy because of conflicting pressures and the variety of choices that can be made.* One does not have a predetermined slot in society. The rapid social and economic changes over the last 25 years have upset such traditional patterns of life.

No longer are young people certain of much. In fact, they question much. They question their sex roles, the pattern of authority, religious, cultural and material values, and family pressure to make decisions about educational or occupational roles.

At the same time, greater mobility in terms of housing and social position has broken down communal ties while the competition of a meritocratic society means that people behave in a far more individualistic way than previously. Some of the support of the community structure and the guidance of family elders and community leaders are no longer so readily available.

The demands placed on adolescents have not changed or lessened, despite all these conflicting choices. The tasks of young people which Erikson described in 1965 are still true today. Basically, what adolescents have to do is to achieve identity formation. This involves the identifying of a working role, acquiring social attitudes and opinions, separation from parents emotionally and adopting a sexual role. But problems arise at every step along the way in achieving these goals.

Job choices are very wide and they require a long period of preparation which makes young people dependent financially on parents for a prolonged period. Because of their financial dependence on parents, the parents have a certain level of expectation and this puts pressure on the young person to conform to parents' wishes, rather than seek to fulfil their own aspirations.

In acquiring social attitudes and opinions, the traditional family influence has been watered down and may conflict with attitudes portrayed openly in the media. Media influences may be part of a deliberate national socialization policy or more anti-establishment and menacing, passed on through subtle or unintended messages received by young people in their exposure to the entertainment media or pop groups, magazines, TV and movies.

Young people also have conflicting demands and pressures placed on them by peer group, the nation and parents. There is great difficulty for them in finding their future role in life, in choosing among the many alternatives.

This includes adopting a sex role or sexual identity and values. Traditional roles have eroded and no longer is the man simply the breadwinner and the woman, the housewife. Today in most marriages, there are shared responsibilities and coming to terms with what these responsibilities are is a task for every young couple. This is especially difficult when young people have different types of models at home from what they wish to establish in their own future relationships.

In addition, more open attitudes and greater opportunities for sexual experimentation have produced in some young people a set of new unrestrained sexual values. As a result some young people are at risk of sexual exploitation. In the past, in *kampung* society or farm villages, there was closer supervision of young people.

So, we find that there are many difficulties young people face in achieving an adult role. The tasks have not changed, and they are still as appropriate now as they were 25 years ago when Erikson wrote about them. However, the changed society means that achieving those tasks is much harder. The nature of our society puts extreme pressure on youth during an already tough transition from childhood to adulthood.

Jennifer, what do you think are the specific needs of adolescents in our changing society?

To achieve the tasks of adolescence, young people need an *identity as an individual*. That is, a view of who they are and where they are going, what their role in life is now and a vision of future roles.

The second thing they need is a *positive self-concept*, that is, a feeling of being a worthwhile person. To develop that positive self concept, they need to have experienced success; success in social relationships, success at school and to have developed a feeling of "I can do things", "I will make things happen", and "I shall accept challenge and make a success out of my life".

In Singapore's "Pressure-cooker society", to cope with the stresses, the competitions of society and the various challenges that come with life, youth need to have *coping mechanisms* like problem-solving and decision-making skills. They have to learn cognitive control over their behaviour, to learn relaxation techniques and to be reflective about their lives.

The fourth thing they need is *guidance and support* from adults and more experienced people such as teachers and parents. They also need positive support from the peer group. Too often young people see the peer group as offering friendship

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With the fast pace of life, it is important to ensure that there is time for young people to explore social relationships and to develop positive social relationships within the peer group.

but when it comes to stressful situations, sometimes the support is not there because there is competitiveness in the peer group environment, for example, at examinations and in being selected for teams.

Another need is the opportunity to learn *social perspective taking skills* because we have to learn that we are in this world together and not on our own. In fact our successes in life very often are dependent on our understanding and being able to work with others. If we want others to help us, in turn we need be willing to help others. There needs to be a mutual support system. In fact, research into the mental health of people living under stressful or demanding conditions indicates those who have active support networks with family, neighbourhood, peer group or colleagues are those who can cope better with the stresses and demands of society.

What do you consider are the key problems of youth in today's society and in what ways can we face the challenge of helping youngsters cope with life?

The key problems are often related to the fast and changing pace of life in Singapore today. In the past, things were more stable and unchanging. There was a more communal way of life. But today, it is a more individualistic way of life which runs at a fast pace so that everything is hot-housed along. This leads to very little time for people to reflect, to think about where they are going in life, to think about their futures, their goals, their needs and values. It leaves very little time for recreation and leisure. *Recreation and leisure are very important for adolescents.* Playtime offers opportunities for discovery learning, not just about relationship within the physical world but also discovery about the social world. Children need unstructured time for play with their peers so they learn what sort of behaviour will achieve what sort of response in another child. Social learning is about social perspective taking and being able to see things from another's point of view. One learns by experimentation with behaviour, by seeing others who have socially effective behaviours and learning to model them. Time for play, time for social interaction is very important for children and adolescents because the peer group is a reflective setting in which you can try out your ideas and behaviours and the group will give you feedback on them. With the fast pace of life, it is important to ensure that there is time for young people to explore social relationships and to develop positive social relationships within the peer group.

Could you elaborate on what you have shared previously with me about the importance of social perspective taking?

It is the basis of most socially skilled behaviour. It involves what I call cognitive, self-monitoring skills in which individuals deliberately set themselves apart from their own egocentric or self-centred impulses and become aware of how what they do will affect others. It is a deliberate way of looking at an issue, from the point of view of others as well as from your own perspective and then of monitoring your behaviour accordingly. If we consider all points of view and work that way, we can create a more harmonious society.

Another related problem is the high level of expectations which young people have for themselves and which the parents and teachers also have for them. Some research has been done here in Singapore on the career aspirations of young people. This research has found that young people have very high aspirations in terms of career, that is, they see themselves in prestigious, glamorous or public positions, as lawyers, doctors, pop-stars, disk-jockeys or pilots. Positions not necessarily related to the real world, their ability, or resources in terms of education and things like that. It is a form of egocentrism. So, *a touch of realism is needed. The difficulty here is that parents also have high expectations for their children.* Parents' expectations are that children will do better than they did and so parents are willing to sacrifice a tremendous amount, in order to give their children more opportunities. But in doing so the parents expect some kind of payoff. They expect their children to put their noses very hard to the grindstone. The children are expected to commit themselves to the goals the parents set for them. Such expectations place great stress on the children.

You are concerned then about how unrealistic expectations can produce stress.

Yes, stress arises from expectations that the child will pursue perceived opportunities. Opportunities for a high proportion of children to go into fairly exclusive professions are just not there. *The rejection and failure rate of those with these unrealistic expectations is high and that is damaging to that person's self esteem and self-confidence.* If they had started off with a more realistic expectations, then the likelihood of achieving their goal would be higher.

You imply then that if we want to adopt a more holistic approach to the problem, it involves the education of parents...

Yes, of course. Advice for parents not only in terms of parenting skills but also in terms of having realistic expectations of their children. *Too much emphasis is given to top level professions and not much credit is given to the social value of other apparently less prestigious occupations, in terms of their immense value to the community.*

I think we need to think more about that. Let's have more realistic role models as in traditional society. The role models that were around the young people in the past were the strong farmer down the road or the skilled carpenter in the village. Real people from their own community. They didn't aspire to be president because they were not in touch with people like that. They aspired to be somebody within their own realm of living. With the mass media today, we bring the president's position into our living room and such positions appear to be possible aspirations for many.

Realistically, given the child's background, education and the parents' role in life, a more sensible expectation might be two steps up from where their parents are rather than twenty steps up the ladder.

That also means that in our helping youngsters to cope with life, the school parent-teacher association can play an important role.

Yes, especially in terms of career guidance. The school parent-teacher association can bring in people whose occupations are interesting, down to earth and practical. *There are many opportunities in the middle level which people are not aware of because they are not publicized, and the parents do not know how to channel their children towards them.*

Another problem is the question of high levels of competition, caused by high aspirations and expectations.

This competition starts very early in life and the parents set the competitive example. They compete to get their children into the right kindergarten and we read in *The Straits Times* of queues of parents 'sleeping (at the registration place) overnight to enrol their children because they want to get them into the right school. Some of this must have rubbed off on their children. Once they start school there are exams, tests and homework. The children have to strive hard from primary one level onwards. So, learning becomes a struggle to win, a struggle to get a high place in class. It is a very individualistic approach that is being promoted as a result of that competitiveness.

Competition always means a small number win, and a large number don't win. Those who don't win start to be labelled as of lesser intelligence, of lesser value. In a competitive system where there are winners and losers, it means that for the winners things are good but for the losers there can be loss of spirit. Cooperativeness is lost as well. The feeling that we are working together for a common goal is not there. It is seen as more worthwhile to work for individualistic goals. This encourages prolonged egocentrism, and an attitude of "I win" or "For me". *I think, this is one of the things that contributes to the infamous "Kia-suism"; this spirit of egocentrism or self-centredness which does not enhance a feeling of communalism, cooperativeness or social cooperation.*

We are so "Kia-su" that even some foreigners learn about the local use of such words!

"Kia-suism" is the result of competitiveness which is an egocentric way of looking at things rather than taking a social perspective way of looking at things. If you are a social perspective taker, you think, "I'm concerned with how my neighbour feels too". I will never forget a running race in New Zealand. One little child fell over and his friend stopped to help him up. He held his hand and they ran along to the end and they

> **Too much emphasis is given to top level professions and not much credit is given to the social value of other apparently less prestigious occupations, in terms of their immense value to the community.**

were last, but they were the ones to be given a special prize because they helped each other and they finished the race and they were laughing when they finished the race. They did not mind that they did not win. That's not "Kia-suism" and to me, those two little boys got more out of that race than the winner who had streaked out in front of the others. The spirit of helping others and thinking about our friends is very important.

If such examples were to be highlighted during school assemblies, perhaps that would be an effective strategy ...

Very much so. I think awards need to be made for such behaviours. There are the courtesy campaigns in Singapore which are a way of awarding people who are concerned about others. *Teachers should acknowledge not just the competitive ones but also those who are concerned about others and are prepared to put themselves*

out in order to help someone else come along. That's why *I am very much a promoter of cooperative learning activities in the classroom, where the stronger members of the group are able to bring the slower members of the group along with them.* There is shared responsibility to complete a task, and the task needs a group of people to complete it. Weaker members must also contribute and can by succeeding with the group achieve a feeling of success which might be otherwise be denied them. It is another way of teaching social perspective taking skills because the bright ones who would normally move quickly along a tough task are forced to pace themselves and to bring others along with them.

I have heard people say that we can't afford to slow our future leaders, our bright pupils down... But if we truly want the bright pupils to be real leaders of the future, they have to be leaders of people. Very few of them are going to be isolated in an ivory tower carrying out individual research. The very bright need to learn to relate to other people so that they can become good team leaders. And that means everybody working in the team. Not the leaders doing all the work and the others shuffling papers behind them. Cooperative learning is very good preparation because it means the future leaders learn to lead a team which together attains greater collective achievement than could have been accomplished individually.

I think this is be especially important in our Singapore society, where there are different races...

... they need practice in decision-making, problem-solving, value-clarification and goal setting.

That's right, of course, in a country where different races need to work together. With cooperative learning activities, one of the most important things is to have a heterogeneous group so that you don't have a group of very bright students of the same race, but you have mixed groups; mixed by way of gender, ability, culture and background. That leads to harmonious mixing of very different people and promotes social understanding. When you work with someone, you learn to understand them, how they learn, how they work, what motivates them, what is reinforcing for them, what they don't like doing, what their weakness and strengths are. You get a far more realistic picture and expectation of them.

Another key problem for young people is the conflicting choices and values. Choice in terms of job, education or recreation, and along with all those choices are different values and value systems. Do you value material things more? Do you value cultural things more? Do you value recreational time, activities with people and social orientation? It is very difficult for children to be certain and to establish what they think their role in life or their values are to be, because of all the choices presented by parents, peers and the media. We even have different inputs from the various media, what they see on TV in the foreign programmes may be quite different from what is being promoted locally and this creates conflicts.

So, to help them make reasonable choices *they need practice in decision-making, problem-solving, value-clarification and goal setting. They certainly need career and vocational education. All these come into Pastoral Care and Career Guidance (PCCG) programmes, which are now a very important aspect of most secondary schools.* In the past, PCCG may not have been so necessary because there were not as many conflicting values and choices.

Today, in learning to solve problems and establish goals and

By finding that they can overcome difficulties on their own, they develop self-motivation, rather than carrot-and-whip type of motivation.

priorities, the problem is that young people have not got enough freedom and are not given sufficient responsibility to allow them to develop the skills they need to make wise choices and to solve their problems. *They must learn to think for themselves. This issue needs to be addressed.* Many children's lives are overcontrolled and they are overprotected. It's done by parents and teachers who have the best will but they are overcaring, overprotective, and because of the expectations that they have, overcontrolling.

What children need is to develop more independence, and some survival skills, to have challenges that they have to overcome because by encountering challenge, they learn skills to overcome difficulties. *By finding that they can overcome difficulties on their own, they develop self-motivation, rather than carrot-and-whip type of motivation.* They are not donkeys. They are thinking people and they need to learn to face challenges for themselves, to think of ways to resolve problems and to overcome them. They need more adventurous and challenging types of activities which may be outdoors or indoors. They have to pit themselves against something that is difficult and not always have somebody there,

right on top of them guiding them. Sometimes, parents need to let their children fall over and cope with their own needs. If we overprotect the children, overcontrol their lives and protect them and cushion them against any failure, they are not going to become self-determining people. They are not going to become people who can deal with difficulty. They are going to yield under pressure.

Young people have got to think of ways to solve their problems and be ready to risk failures. That needs much security in terms of the emotional base from which they operate. They need supportive and caring parents. But, sometimes the most supportive and caring parents are those who will stand back a little when the child is trying something new, will let them try for themselves and if the children fall over, encourage them to get up, put the bandage on, and try again by themselves.

Challenge comes in many forms, not just in examinations and competitions. What Singapore children need is freedom to develop their strengths to cope with things on their own or in the group. *Independence does not mean individualism.* By independence, I mean the ability to stand on my own two feet, to face difficulties, maybe on my own or with my team or with my friend so together we survive. *Young people need independence from unnecessary adult protection and supervision, but interdependence in terms of working together* with peers.

I think this will require modifications in curriculum and evaluation, changes in school structure and greater autonomy given to principals to provide a programme to suit the needs of its pupils.

Schools don't have to be fully independent but must be given greater autonomy. They can have funding and staffing through the government, but more independence to develop their own identity, to move in the direction they want to go and to acquire a character of their own. This will enable schools to provide a variety of challenges to those couch potato pupils as well as provide for those with different needs. Because sadly, besides overcontrolled, overprotected children, there are some at the other end of the scale. These are the undercontrolled, the underprotected. The children of what I call, neglectful parents. So while some children need more independence, other children need more guidance, more support. The latch key children who are left to their own devices, have no structure in their lives, and are just as badly off as those children whose lives are overstructured.

In life, there should be a balance between control and freedom. Some control is needed, some guidance is needed, some supervision is needed, but also some freedom is needed.

Cooperative learning is very good preparation because it means the future leaders learn to lead a team which together attains greater collective achievement than could have been accomplished individually.

Some development time and opportunity for choice. *It's maintaining or finding the right balance that is important: the yin and the yang.*

Thank you, Jennifer, for sharing.

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CHIONH YAN HUAY

Enhancing Self-Concept and Self-Esteem

Crucial for Total Development of Pupils

Currently, *Total Development* of pupils is the in-thing hotly pursued by educational institutions striving for academic excellence. What does Total Development encompass? Put simply, it involves the education of a *whole person*, developing the pupil to his fullest potential in all domains, chiefly the intellectual, physical, social, emotional, spiritual and aesthetics.

How can educational institutions provide for the total development of their pupils? A well-designed curriculum programme which takes into consideration the needs of every pupil, especially in the domains listed above, is obviously necessary. But what is crucial here is the provision of a comprehensive programme for the enhancement of the pupils' self-concept and self-esteem. Such a programme forms an integral component of the overall curriculum of the school.

The underlying structure of a building is a solid base with well-laid groundwork. This is further reinforced by key pillars. The building takes shape, stand strong and tall or fall apart, largely dependent on the strength of its underlying structure - its foundation! Likewise, a comprehensive programme for enhancing a pupil's self-concept and self-esteem is the basic, yet crucial, building block upon which the effectiveness of the overall school curriculum programme hinges. How receptive pupils are to a well-designed curriculum and how much of their potential can be maximised depend greatly on the pupils' themselves. Herein lies the influential roles of self-concept and self-esteem.

We are aware that the mind is instrumental in shaping the behaviours and attitudes, in short, the performance of an individual. How an individual performs depends on two factors, his actual capability and his belief of his own capacity. Very often the latter is the deciding factor of the level of his performance. Because of this factor, the school plays an important role in helping to build and maintain a positive mind set of her pupils, the crucial areas being the self-concept and self-esteem.

What is self-concept?

Self-concept is the 'private me that only I can see' (Hamachek, 1987). Unlike the so-called 'public self', self-concept is a collection of beliefs and attitudes an individual has about himself. It can be viewed as a cognitive aspect of the mental picture an individual has of himself. This aspect of the mental image is built upon the numerous interactions of various facets of his experiences, physical make-up and development, beliefs, social dynamics and the environment in general.

Broadly speaking, self-concept has four inter-related but separate aspects. These are the physical, intellectual, emotional and social aspects (Hamachek, 1987). These four aspects of self-concepts are unique in their own ways and yet each influences the other, affecting the overall self-concept of the individual.

Each of the above four aspects of self-concept has three facets, namely the Perceived Self, the Ideal Self and the Real Self. These three facets of self overlap and research has found that the bigger the area of overlap, the higher the self-concept will be (Rogers, 1969).

Self-concept is dynamic and multi-dimensional. It grows and changes over time. Its most malleable form in an individual is during the years between childhood and late adolescence. Schools thus have a decisive role to play in building up and enhancing pupils' self-concept.

Self-esteem and its Link with Self-concept

Self-esteem refers to the affective part of the mental image of the self. It is related to the overall sense of

good feeling, self-worth and importance. If our self-concept is positive, our self-esteem will also be positive. The reverse is also true. Self-esteem is an important force behind our performance. It is the 'barometer' of our achievement.

Enhancing the Self-concept and Self-esteem of Pupils

A comprehensive programme for enhancing pupils' self-concept and self-esteem could form part of the pastoral care programme of a school. While schools could consult materials on ways of enhancing pupils' self-concept and self-esteem and adopt various strategies in designing such a programme, the ultimate programme should be one that best serves the school culture in general and yet is flexible enough to be easily adapted to meet the needs of all pupils. Such a programme requires expertise on the part of teachers and should be reinforced through the daily expressions of teachers' interactions with pupils - during formal and informal lessons, within and out of the classroom, and within and out of the school.

I will now turn to some of the salient factors which affect pupils' self-concept and self-esteem.

Factors Affecting Pupils' Self-concept and Self-esteem

Pupils are impressionable young adults. They are at an age when positive self-concept and self-esteem could be easily inculcated and enhanced. However, the reverse is also true. Thus pupils, being a priceless resource, have to be treated with extreme care! Here I would like to discuss three areas involving teachers' roles in helping to build, enhance and maintain pupils' self-concept and self-esteem. These three areas are:

- Expectations
- Feedback
- Attention/Acknowledgement

Result of
Development of
Self-concept & Self-esteem

Expectations

In school, pupils look to their teachers for directions. It is only natural that pupils, either consciously or unconsciously work towards their teachers' expectations of them. When teachers communicate high expectations, pupils will tend to adjust their performance accordingly to fulfill their teachers' expectations. On receiving positive signals from their teachers, pupils would feel a sense of self-worth and will have their self-concept boosted. Consequently, pupils' morale will be high and high performance will naturally result. This self-fulfilling prophecy phenomenon has been demonstrated by research (e.g. Rosenthal and Jacobson, 1968).

Teachers should exercise discretion when setting expectations of their pupils, whether collectively or individually. Such expectations could and should shift over time. In setting the expected outcomes, it is important to remember that every person needs the 'success' experience. All the more for pupils! The good feeling that is associated with success would spur pupils further - to want to achieve and stretch their potential to the maximum. Hence the expected outcomes should be those that are achievable and yet challenging enough for pupils to feel a sense of accomplishment and success. Such positive feelings will enhance pupils' self-concept and self-esteem.

A simple remark such as "I am confident that you can make it" to a pupil who shows doubts about his abilities, either in the academic or non-academic areas, could work wonders for the pupil. The confidence of the teacher is passed on to the pupil. The spin-off is a confident pupil who is very likely to produce positive results. Pupils like assurances and affirmation from time to time. Thus teachers' positive expectations of their pupils play an influential role in

the enhancement of pupils' self-concept and self-esteem.

Feedback

Related to expectations is feedback given by teachers. Academic achievement affects the intellectual self-concept of pupils markedly. Research (Purkey 1970) have shown that academic achievement and self-concept are highly related, especially during the years between childhood and late adolescence.

Whether high academic achievement gives rise to positive self-concept or vice versa is immaterial. What is important is an awareness of the feedback loop.

How can the above insight be related to the teacher's role? For a start, verbal feedback is important during interactions. A simple response to a pupil's correct answer ("Yes, that's right!") would enhance his self-concept and self-esteem.

However, teachers should give positive feedback only where appropriate. Praise is something nice to receive and give. To the giver, he is assured that it will be well-received; to the receiver, it makes him feel good. Although some need it more than others, it would be wise if, like

When teachers communicate high expectations, pupils will tend to adjust their performance accordingly to fulfill their teachers' expectations.

everything else, moderation and appropriateness are observed. When praise is given too freely, it loses its value and when it is given inappropriately, it loses its meaning. Furthermore, not everyone responds to praise in the same way. To an introvert, praise energizes him and propels him forth for further challenges, but to an extrovert, it may not have a positive effect (Leith and Davis 1969).

Written feedback on assignments is also important. It helps pupils to refocus his academic self-concept. Studies have shown that specific and encouraging written comments in assignments result in greater improvements than mere marks or grades. Feedback which makes an impact is one which is precise and personal (Hamachek 1978). Feedback such as "Jansen, your account of the physical factors, in particular the climatic aspects, affecting rice cultivation are thorough and succinct. However, your answer could be further enhanced with relevant examples such as the rich basic soil in Java ..." would provide motivation to the pupil and guide him to further improve on his answer.

In setting assignments or tests, the setter would help to enhance or maintain the positive self-concept of pupils if the task assigned or set is one where success is achievable if pupils put in effort. In other words, the assignment or test stretches the intellectual capacity of pupils and yet is within their grasp to have the 'success experience'. (Tests and assignments, however, should not be too easy.)

At this juncture I would like to consider the issue of marks or grades awarded to pupils. I personally advocate that part of the marks/grades be awarded to pupils who put in effort in their assignments or tests. A pupil may not get an answer right, but the effort he puts in should be acknowledged. This acknowledgement will spur the pupil on. The problem is how to measure 'effort'. There is no standard rule to measure it. For me, it comes from knowing the pupil and

examining his work.

From time to time, teachers may have the unpleasant task of having to let their pupils know that they are not performing. Here, great care must be exercised. The "what, how and when" of breaking unpleasant news could either spur pupils to work harder and thereby make improvements subsequently or reinforce their less than desired performance. The strategies teachers adopt for effective positive results would require them to have sufficient insights of their pupils' personalities. As a rule of thumb, give constructive comments and do so in small measures. Be sure to point out the good qualities and commend the effort put in, even if it is a minute one! Such positive observations when given could do wonders for pupils.

Attention/Acknowledgement

Generally, people feel good when their presence is acknowledged. Their self-concept and self-esteem will be enhanced too when they feel good. In class, teachers can achieve this by involving all pupils in class interactions, discussions and duties. Every pupil is important. He is a member of the class and as such his presence must be acknowledged.

What about the attention-seeking pupil and the 'please leave me alone' pupil? Teachers need to be tactful in relating to these pupils. Perhaps private sessions with these pupils individually would help greatly to build good pupil-teacher relationships. Both pupils and teachers must remember that everyone is unique, yet there are common grounds and that everyone has a part to play. So due acknowledgement must be accorded to each and everyone.

Social interaction also affects pupils' self-concept and self-esteem. Acceptance by the class, being able to relate to others, the feeling of being wanted and the feeling of being useful help to enhance self-concept and self-esteem. Teachers play an important role in building a cohesive classroom atmosphere whereby all

Feedback which makes an impact is one which is precise and personal.

pupils feel a sense of belonging to the class.

A "Good morning" greeting initiated by teachers to their pupils when they meet along the corridors, for example, would enhance the self-concept and self-esteem of pupils. Similarly, a nod of the head or the signal of the hand initiated by the teacher, when the physical distance between them is great, would also effect positive self-concept of pupils.

Food for thought

While teachers may seek ways and means of enhancing the self-concept and self-esteem of their pupils, they may encounter behaviours which pupils use to protect their self-concept and self-esteem. According to Hamachek (1987) these behaviours are related to

- the thought that one is always right;

- the tendency of emphasizing one's importance;

- the thought that one is excluded from change; and

- the search for reasons to account for one's shortcomings.

Hamachek cautioned us that while the above self-attribution processes are ways to protect and enhance one's self-concept and self-esteem, one has to use them with care. This is where teachers can help pupils who use these 'shields' too frequently to be more realistic and to know their strengths and weaknesses. Teachers can help pupils 'grow' and develop a more accurate self-concept.

Whatever the strategies adopted, it would be good if teachers ponder over their roles and the impact their actions may have on pupils. Some areas which teachers can think about include:

- the relationship of discipline to self-concept/self-esteem;

- types of disciplinary actions (e.g. suspension from school);

- desist: the extent and frequency;

- sincerity of their remarks;

- their body language;

- the role model they project; and

- the interest they have for their pupils as reflected in their care and concern.

Much as we pride ourselves in the use of modern technology and instructional strategies to improve the quality of teaching and the design of a curriculum that could cater to the total development of the pupils, our efforts towards educational excellence will fall short if we neglect this important area.

Positive self-concept will generate positive self-esteem which in turn will effect positive and healthy results and vice versa. Building a positive self-concept in our pupils is crucial to their total development. The school environment plays a decisive role in promoting and sustaining the growth of positive self-concept of pupils. Pupils are guided in setting achievable and realistic goals as they come to terms with their strengths and weaknesses. In this way, they would be able to maximize their potential.

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Using Knowledge of How Students Think About Mathematics

Teachers informed about recent research on children's learning can modify their instruction to help students construct knowledge.

A common metaphor is that the mind of the learner is like a tower of building blocks: the foundation must be built before higher blocks can be added. Accordingly (fortified by task analysis and behaviorism), most teaching in elementary school has rested on the assumption that students must learn lower-order facts and skills before they are able to master higher-order problem-solving and application skills.

Recent theory and research from cognitive psychology, however, suggest that knowledge is stored in the learner's head as a network of concepts or constructs: the mind of the learner is like a construction of tinker toys. Learning is the making of connections between new information and the learner's existing network of knowledge - the *construction* of knowledge by the learner - and instruction should facilitate these connections.

In a network theory of cognition and learning, the concepts of lower- and higher-order learning rarely make sense. For example, computational skills do not exist as lower-order prerequisites for higher-order mathematical problem solving, but rather are learned in relation to *and as part of* problem-solving (see, for example, Resnick 1985). Both "top-down" and "bottom-up" processes occur in learning mathematics.

If we are to foster the formation of these cognitive networks, new information must be related in a meaningful way to information that the learner already knows. Problem solving and meaningful learning are based on knowledge: people "continually try to understand and think about the new in terms of what they already know" (Glaser 1984, p. 100). Moreover, the specific content knowledge one already possesses plays a central role in one's thinking and learning.

New research on cognition and instruction can be used profitably to "formulate the principles that can guide interventions designed to help people learn" (Resnick 1985, p. 180).

To help teachers apply this research in the classroom, we gave 1st grade teachers access to recent findings on children's mathematics learning (Carpenter et al. 1988, Fennema et al. in press). The teachers then used this knowledge in their own ways to modify their teaching of addition and subtraction. We turn now to the research findings that we shared with the teachers.

Children's Informal Knowledge of Mathematics

When young children first begin to solve addition and subtraction word problems, they can only create a direct concrete representation of the problem (Carpenter and Moser 1983, Riley et al. 1983). They typically use their fingers, physical objects, or counters to represent each quantity in the problem, and represent only the specific action or relationship described in the problem. For example, suppose we gave a kindergartner the following problem: "Melissa has three cookies. How many more does she need to have six cookies all together?" To solve this problem, the child might use counters (or spools, buttons, or rocks) to make a set of three objects, add more objects until she had a total of six, and then count the number of objects she had added to the original set.

Computational skills do not exist as lower-order prerequisites for higher-order mathematical problem solving, but rather are learned in relation to and as part of problem solving.

Through interviewing children and studying how they talk about problems, researchers have found that children's problem-solving strategies become increasingly abstract as they are able to engage in more abstract thinking. Children then begin to use more advanced counting strategies like "counting on" or "counting back". For example, to solve the cookie problem above, the child might use a "counting on" strategy if she recognized that it was not necessary to construct the first set of three objects. The child might simply count on from three to six, keeping track of the number of counts either on her fingers or with objects.

Children's Invented Mathematics Strategies

Eventually children memorize number facts that help them solve word problems. Children learn number facts over an extended period of time rather than all at once (Carpenter and Moser 1983). Also, they learn some number facts earlier than others, such as doubles like $5 + 5 = 10$. Most important, until they have memorized all the addition facts, many children naturally employ a small set of memorized facts to derive solutions for problems that have various number combinations. The following illustrates children's use of derived facts to solve a word problem:

Teacher: "Six frogs were sitting on lily pads. Eight more frogs joined them. How many frogs are there then?"

Rudy, Denise, Theo, and Sandra each answer "14" almost immediately.

Teacher: "How do you know there are 14?"

Rudy: "Because 6 and 6 is 12, and 2 more is 14."

Denise: "Eight and 8 is 16. But this is 8 and 6. That is 2 less, so it's 14."

Theo: "Well, I took 1 from the 8 and gave it to the 6. That made 7 and 7, and that's 14."

Sandra: "Eight and 2 is 10, and 4 more is 14."

Problem Type			
I Join	A. Connie had 5 marbles. Jim gave her 8 more marbles. How many does Connie have all together? (result unknown)	B. Connie has 5 marbles. How many more marbles does she need to win to have 13 marbles all together? (change unknown)	C. Connie had some marbles. Jim gave her 5 more marbles. Now she has 13 marbles. How many marbles did Coonie have to start with? (start unknown)
II Separate	A. Connie had 13 marbles. She gave 5 marbles to Jim. How many marbles does she have left? (result unknown)	B. Connie had 13 marbles. She gave some to Jim. Now she has 5 marbles. How many did Connie give to Jim? (change unknown)	C. Connie had some marbles. She gave 5 to Jim. Now she has 8 marbles left. How many marbles did Connie have to start with? (start unknown)
III Part-part-whole	A. Connie has 5 red marbles and 8 blue marbles. How many marbles does she have?	B. Connie has 13 marbles. Five are red and the rest are blue. How many blue marbles does Connie have?	
IV Compare	A. Connie has 13 marbles. Jim has 5 marbles. How many more marbles does Connie have than Jim?	B. Jim has 5 marbles. Connie has 8 more than Jim. How many marbles does Connie have?	C. Connie has 13 marbles. She has 5 more marbles than Jim. How many marbles does Jim have?

Fig 1. Classification of Word Problems

Most children - not just the gifted - derive new facts from the facts they have already learned. Even without explicit instruction, children discover these strategies; and even with instruction that emphasizes symbol manipulation, children continue to rely directly on these strategies to represent problems and on counting techniques to solve them.

Children's Knowledge of Word Problems

In the eyes of children, not all addition or subtraction problems are alike. Children perceive important distinctions among different types of addition problems and among different types of subtraction problems. One way of classifying problems correspond to the way children themselves think about problems. This classification scheme distinguishes problems that children solve in different ways and provides a framework to identify the relative difficulty of different problems (fig 1).

In this model, there are four basic categories of addition and subtraction problems: Join, Separate, Part-Part-Whole, and Compare. Join and Separate problems involve action. In Join problems, elements are added to a given set. In Separate problems, elements are removed from a given set. Part-Part-Whole problems involve comparisons between two disjoint sets. Within each of these categories are several distinct types of problems that differ according to which quantity is the unknown: the initial quantity (start unknown), the second quantity (change unknown), or the final quantity (result unknown). Textbooks often include only Join Result Unknown and Separate Result Unknown problems, thus limiting children's ability to apply their mathematics skills to solve problems.

Principles for Classroom Instruction

From our reading of the research on 1st graders' learning and cognition in mathematics, we derive several principles for instruction:

• Rather than introducing story problems to children *after* they have mastered computational skills, teachers should use problem solving as the basis for teaching addition and subtraction.

• Teachers need to be familiar with a broad array of word problems and to know the processes that children usually use to solve different problems.

• Teachers can assess not only whether a child can solve a particular problem but also *how* the child solves the problem. Teachers need to analyze children's thinking by asking appropriate questions and by listening to children's responses.

• Teachers need to use the knowledge they derive from assessment and diagnosis of children to design appropriate instruction. Teachers should organize instruction so that children can easily and active-

ly construct their own knowledge.

- Teachers should ensure that their mathematics instruction stresses relationships among concepts, skills, and problem solving.

We defined an instructional approach based on these principles called "Cognitively Guided Instruction" (CGI).

Teachers' Knowledge of Student Cognitions

We hypothesized that it might be important for teachers to know the mental processes, or cognitions, by which learners acquire specific subject matter knowledge in mathematics. Therefore we investigated whether teachers knew the cognitions that 1st graders use to solve addition and subtraction problems. We wanted to answer these questions: (a) What do teachers know about distinctions that children naturally make between story problems in addition and subtraction? and (b) What do teachers know about the cognitions and strategies

that children typically use to solve different addition and subtraction word problems?

In our study, we measured the knowledge of 40 1st grade teachers through questionnaires and interviews (Carpenter, et al. in press). We found that most of the 1st grade teachers were able to identify the critical distinctions between addition and subtraction word problems (fig. 1), and the kinds of strategies that children use to solve such problems. However, the teachers had not organized their knowledge into a coherent network relating the different types of word problems to their difficulty and to children's cognitions for solving them.

An Experimental Study

To determine whether providing teachers access to recent research on children's mathematics learning would cause them to modify their instruction, we conducted a controlled experiment. Forty 1st grade teachers agreed to participate (the same teachers whose knowledge we had surveyed). Half were assigned randomly to an experimental or CGI

group, and half to a control group. Control teachers participated in a half-day workshop on problem solving. CGI teachers participated in a four-week summer workshop during which we presented recent findings on children's learning and cognition in addition and subtraction. We did *not* train the participants in either workshop in specific techniques for classroom instruction.

Following the workshops, these four assumptions elicited more agreement from CGI teachers than from control teachers:

1. Children construct their own mathematical knowledge.
2. Mathematics instruction should be organized to facilitate children's construction of knowledge.
3. Children's development of mathematical ideas should provide the basis for sequencing topics for instruction.
4. Mathematical skills should be taught in relation to understanding and problem solving.

We found that, as a result of the workshops, the knowledge base of CGI teachers was enhanced; and they subsequently changed their classroom instruction.

Effects on teachers' classroom instruction

The workshops took place in June 1986. During the 1986-87 school year, we observed the teachers and their students for four one-week periods, the first in October and the last in April. Both systematic observations and anecdotal evidence revealed differences between CGI and control teachers in their teaching of addition and subtraction. CGI teachers posed problems more often, and more often expected students to use multiple strategies rather than a single strategy to solve a problem. They often began the lesson by telling a story and then posed word problems based on the story. Control teachers' interactions more often concerned computations and number facts.

A CGI Teacher in Action

The following illustrates how one CGI teacher encouraged the use of multiple strategies to solve word problems that had practical meaning for students.

During the first few minutes of the day, Ms White asked how many children wanted hot lunches that day. Eighteen children raised their hands. Six children were going to eat cold lunches. Ms White asked,"How many children are going to eat lunch here today?"
By starting with 18 and counting on, several children got to the answer of 24. One child got out counters and counted out a set of 18 and another set of 6. He then counted all of them and said "24".

Ms White then asked,"How many more children are eating hot lunch than are eating cold lunch?"

Several children counted back from 18 to 12. The child with the blocks matched 18 blocks with 6 blocks and counted the blocks left over.

Ms White asked the children who had volunteered to tell the rest of the class how they got the answer. Ms White continued asking for different solutions until no one could think of a new way to solve the problem.

Effects on students' problem-solving and computational skills

In September and again in May, students in the CGI and control teachers' classes completed the Iowa Test of Basic Skills (ITBS) and an experimenter-constructed word-problem solving test. Regression analyses on students' post-test scores, adjusting for pretest achievement scores, showed that students in CGI teachers' classes had significantly greater ability to solve addition and subtraction word problems, particularly complex word problems. Further, a significant aptitude-treatment interaction (ATI) with prior achievement showed that lower-achieving CGI classes especially benefited from the CGI approach, as shown by their achievement on a test of simple word problems. In addition, students in CGI classes were more confident of their ability to solve word problems than were students in control teachers' classes. Finally, although the observation data indicated that control teachers spent more time on addition and subtraction number facts than did CGI teachers, the students in CGI teachers' classes did as well as students in control teachers' classes on a computation test, and CGI students actually had better recall of number facts.

Extending Teachers' Knowledge Base

We draw three important conclusions from our study. First, a sub-

stantive knowledge base now exists regarding the psychology of children's classroom learning of mathematics. Second, even experienced teachers do not have this knowledge. Third, if teachers are given access to this knowledge, they can enhance their understanding of children's classroom learning in mathematics and improve their classroom instruction.

These experiences demonstrate that knowledge of the psychology of children's learning and cognition is useful to teachers. The challenge is to make this research-based knowledge accessible to both practicing teachers and students in teacher education programs. If we do so, perhaps all teachers will be able to help their students actively *construct* knowledge.

> **Children perceive important distinctions among different types of addition problems and among different types of subtraction problem.**

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LOW GUAT TIN AND LIM LEE HEAN

Humour in Teaching and Learning

Teachers can make learning more enjoyable and effective by using humour

The idea that teaching and learning can be fun is quite alien to some people. A head of department in a secondary school recently confided that when his students said they laughed a lot in his class, he felt very uncomfortable as the idea of having students laughing during history lessons was not his idea of teaching and learning. Many educators equate learning with hard, serious, solemn work. But is this what teaching and learning is all about? Though necessary at times would the serious, solemn atmosphere in the classroom be able to sustain a student's interest for six hours?

We want to suggest that teachers consider using humour in the classroom. The use of humour as an educational tool has been investigated since the 1930s (e.g., Perl, 1933) and in recent years much research has been done in this area. In fact the growing recent awareness and interest in this area led to the organisation of the First International Conference on Humor in Wales in 1976, and subsequent international conferences held in other countries (Apte, 1985).

Humour - How Important is it?

We believe that teaching will be less stressful and children less stressed if humour is introduced into the classroom. If teachers and children can share a joke and have a good laugh together, it will not only reduce anxiety (Freud, 1928; Spencer, 1960) but researchers have even claimed that it can contribute to clearer thinking (Cousins, 1979); foster cognitive development (Walker and goodson, 1971); increase attention and interest in a topic (Gruner, 1970; Markiewics, 1974); motivate, reduce dullness and encourage discussion (Gibb, 1964); increase creative thinking in adolescents (Ziv, 1976); create a positive classroom environment (Bateson, 1969) and help in the management of undesirable behaviour (Linfield, 1977).

Many see laughter as "internal jogging." The end result is a lessening of tension and an increase in energy. Simonton (1980) even wrote about the healing power of play and laughter. Research shows that humour is positively related to healthy adjustment. Indeed to Kuhlman (1984) the ability to laugh (and play) is an essential characteristic of a fully functioning person and O'Connell (1979) noted that there is a positive correlation between the degree of humour appreciation and psychological measures of maturity. It is apt at this stage to define the term "humour."

Humour - What is it?

The difficulties of arriving at a satisfactory definition of "humour" which acceptable to all investigators have been repeatedly emphasized in the literature. The words "laughter," "comic," "joke," "wit," "amusement," "funniness," "playfulness," "mirth," are sometimes used synonymously with humour. It appears that attributes of humour (Apte, 1985) are as follows:

a) sources that act as potential stimuli;

b) the cognitive and intellectual activities responsible for the perception and evaluation of these sources leading to humour experiences;

c) behavioral responses that are expressed as smiling or laughter or both.

Then there are attempts to categorize humour. Feinberg (1978) subdivided the varieties into sexual humour, scatological humour which revolts against standards of propriety, cosmic humour which denounces the way the universe is/was designed, black humour which flails out at everything, nonsense humour which is against logic and order, and word humour or wordplay which is a form of nonconformity. It is interesting to note that Feinberg believes that there is an element of aggression in all humour: ranging from mild satisfaction of language twisting to malicious pleasure. Aggression becomes humourous when tempered with playfulness and ambivalence. However, if humour is associated with aggression how can we justify the use of humour in the classroom?

Humour - Why use it?

Firstly, as humour helps in developing insight and inferencing skills, it might be helpful for teachers to consider it as one of the many possible tools or an extra "gadget" in the class-

room. To us, to be able to use humour is a great asset to teachers.

Secondly, humour connects. It can help us to establish rapport with our students. Through sharing a joke together, teacher and students are brought closer together.

Thirdly, humour encourages creativity. It is not uncommon to note in gatherings that when one starts telling jokes others in the group will follow suit. Creative energy is released and this can help in problem solving too.

Fourthly, research cited earlier has shown that humour can reduce stress. To be able to laugh at oneself, to be able to see the funny side of things is good medicine. One of the contributions of cartoonists such as Shulz, is that of thought provocation. Humour can be used to provoke, to force readers/listeners to think. Shulz has, through Charlie Brown and his gang, critically examined numerous sensitive subjects.

Fifthly, we have found in our teaching that using humour in our classes can be quite motivating to both the teacher and the taught. As a teacher it is very motivating to see students getting excited or to see a sea of solemn faces breaking into laughter. For students, teachers who use humour to break the monotony of the lesson show care, care that lessons would not turn out to be drudgeries. It is no wonder that Highet wrote in *The Art of Teaching*:

One of the most important qualities of a good teacher is humor. Many are the purposes it serves. The most obvious one is that it keeps the pupils alive and attentive because they are never quite sure what is coming next...the real purpose of humor in teaching is deeper and more worthy. It is to hook the pupils and the teacher and to link them through enjoyment.

Humour - How can it be used?

In language teaching, the use of riddles, puns and jokes, can help children see the "other" meanings associated with words. Through a "playful" experimentation with words much can be achieved in a reading lesson as such play on words require fairly complex linguistic skills and a certain amount of creativity. To Whitmer:

Word play offers children much expression in categorizing as they discern likeness and differences, compare and contrast meanings, and evaluate what is appropriate and inappropriate to the situation.

To be able to understand riddles, puns and jokes children need to understand the multiple meanings of words, metaphors, idioms and to see connections sometimes in the most unlikely ways as can be seen in these "quiptograms" (Fig 1).

And riddles such as those shown in Fig 1 can tickle children's fancy such that they are prepared to spend time working on the answers. It is not uncommon to see children teasing and provoking each other with riddles. As they grapple with the riddles, it often forces them to become divergent thinkers. They need the ability and creativity to detect the nuances and ambiguities of the language.

Besides riddles which often rely heavily on words, there are those which use pictures and are called "Puniddles" (McMillan, 1982) from the two words pun and riddle. Try working out the two examples we have set out in Fig 2.

Cartoon strips such as *Peanuts* and even *Andy Capp* abound with puns that language teachers can use. There is thus no need for teachers to spend time writing materials to be used.

Other ways of arousing interest and also adding humour to classroom lessons would be to present students with pictures and have them supply the catchphrases (Fig 3).

Students too could be encouraged to produce drawings/pictures of

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Quiptograms

you just me	-	*"just between you and me"*
arrest you're	-	*" you're under arrest"*
lines reading lines	-	*"reading between lines"*

Riddles

Q: Why did the boy out on wet trousers?
A: Because the tag said "Wash and Wear".

Q: What did the boy say when he found a button in his salad?
A: I guess it fell off when the salad was dressing.

Q: Why is a crack in a chair like a policeman?
A: Because both will pinch you if you don't park right.
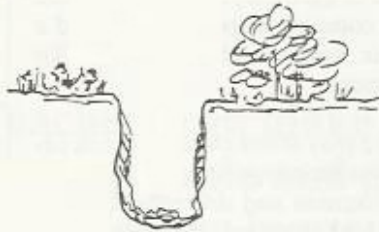
(Source unknown)

Fig. 1

Pundiddles

Fig 2

Ans: Armpit, Betray

good way of sharing their creative ideas or thoughts.

Other humorous brain teasers include malapropos which are incorrect substitutions of words such as:
"distinquish" being substituted with "extinquish" resulting in "Ladies and gentlemen, *extinquished* guests..."

Word play can take many forms, students could be given a word and asked to play around with it, e.g.,

The heart of the problem is that the EAR of the hEARt did not have the ART to HEAR.
(Low & Cheong, 1990)
Other possibilities are the use of homonyms, word searches and palindromes (words/phrases that read the same backwards as it does forwards). Some simple one-word palindromes would be:
  a feat or exploit (deed);
  mid-day (noon);
  a holy woman (nun);
  blushing even more (redder)
(Brandreth, 1983).

catchphrases and inter-group competitions could be organized. This would certainly set flow a great amount of creative juices.

Students have also found the exercise (Fig 4) interesting. In fact when students use transparencies to present what they written the atmosphere of the class changed instantly.
Students' creativity can be stretched too when they are encouraged to experiment with words. For instance, they could work out humourous definitions for common, mundane words. And word play or "wordles" such as: "Age is a matter of the mind, and if you don't mind, it doesn't matter" can add a lot of interest to learning of multiple meanings. Then there are word pictures, which are basically self descriptive words, or rebuses which is a picture or figure representing a word/phrase, or doodles (Fig 5).

Doodles can be used to force students to think divergently too. They could be encouraged to doodle and to share them with the class. It is a

Fig 3

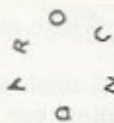Ans: Bottoms-up; Making Ends Meet

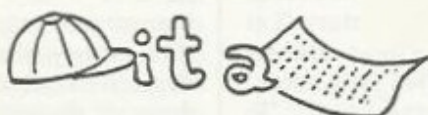*Fig 4. One would be amazed to read what students write*
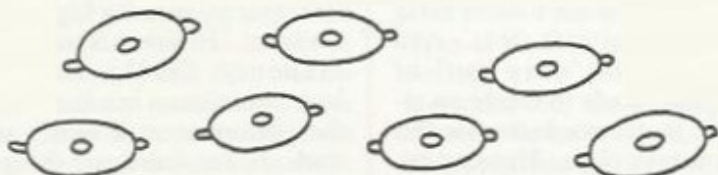
Word Pictures

DEAL

(big deal)

roller-coaster

R O
T C
L Z
a

Rebuses

(a cap) it a (rain)

Capitalist

Doodles

A Mexican Cycle Race

Fig 5

To be able to pun requires an ability to dabble in the language. A Straits Times headline on the work of a food technologist had the phrase "Best Food Forward" a pun on the well-known phrase "Best foot forward." Other interesting Straits Times headlines include:

Salespeople are never out of order; Book-keepers have great figures.

And there are countless examples of a misuse of language, mistakes made unwittingly, yet nevertheless resulting in very humourous outcomes. A tailor shop in South Bridge Road had a notice that read, "Come in and have a fit" (Sim, 1989). Those who have travelled to foreign countries have collected a list of instructions and advertisements which are very humourous and would make good teaching aids. The following are some of them:

In a hotel in Athens:
Visitors are expected to complain at the office between the hours of 9 and 11 a.m. daily.

In a hotel in Japan:
You are invited to take advantage of the chambermaid.

In a tailor shop in Rhodes:
Order your summer suit. Because if big rush we execute orders in strict rotation.

In a Norwegian Cocktail lounge:
Ladies are requested not to have children in the bar.

At a Budapest zoo:
Please do not feed the animals. If you have any suitable food, give it to the guard on duty.

The possibilities of using humour in the classroom are indeed limitless.

The subject that offers the greatest possibility of exploiting the use of humourous materials in classroom teaching and learning is Language. The learner appeal of something funny and attractive has prompted Chiaro (1987) to write about "A sense of humour: the fifth skill" which to Chiaro is just as important as the other four skills in language learning--listening, speaking, reading and writing.

But what if students have to memorize formulae, how can we make this less of a chore? How can we make the "recognition" component which requires the recall of a specific fact, definition or statement of a theorem easier for them?

Some students have shared with us their unique ways of recalling mathematical formulae. The mneumonic methods they use are quite remarkable! Some have added an element of humour. Once after recapitulating the trigonometrical ratio of a given angle:

$$\text{Tan } X = \frac{\text{Opposite side O}}{\text{Adjacent side A}}$$

$$T = \frac{O}{A}$$

students were told that one way of assisting recall is remembering *Toa* of Toa Payoh. They were then challenged to work out ways to help them recall cos x and sin x?

$$\text{Cos } X = \frac{\text{Adjacent side A}}{\text{Hypotenuse H}}$$

$$C = \frac{A}{H}$$

$$\text{Sin } X = \frac{\text{Opposite side O}}{\text{Hypotenuse H}}$$

$$S = \frac{O}{H}$$

To the amusement of the whole class, someone came up with *Cah* for

foot (in Hokkien) and *Soh* for Auntie (in Hokkien). She further summed up, "Therefore, we shall have *"Toa Cah Soh"* which translated literally is "Big Foot Auntie" for Tan x, Cos x and Sin x! The class roared with laughter and there can be no doubt that they will remember the formula.

Again, in the area of Mathematics, "open-search" Mathematics problems are usually phrased in the following way: "Prove that..." "Show that..." It must be noted that many other more interesting variations are possible. Thus instead of phrasing questions in a typical, dry style we could explore ways of phrasing questions such that students' interest is aroused. Butts (1980) even suggested that problems be posed in a manner that encourages intelligent guessing.

We find that in the introduction to quadratic equations, it helps to spend some time just initiating the pupils into the open search for graphical types in the form $y = ax^2$. The pupils are encouraged to guess and generalize after some actual tryouts of curve-sketching. They do respond well to: "Which curves are 'smiling'? Which ones are 'frowning'? When the students come out with *"positive* a: *smiling"*, *"negative* a: *frowning"* (Fig 6), then it is time to ask, "Guess why it is so ..."

And, in the teaching of concentric circles, it is at times worthwhile to spend just 5 minutes brightening classroom atmosphere by having students create their own geometric figures that can be more interesting

than the one shown in Fig 7. Or, to ask, how many concentric circles are there? Where are they?

Indeed, mathematics, physics and even history can be made more fascinating and interesting. Students and teachers can become excited with learning and teaching if only we are prepared to explore ways of making what we teach come alive.

The French author Anatole France wrote at the turn of the century: "Let our teaching be full of ideas. Hitherto it has been stuffed with facts." And Ashley Montague noted: "In teaching it is the method and not the content that is the message...the *drawing out*, not the pumping in." The great teacher Socrates saw himself as a "midwife" to his students. His job was to deliver or to bring forth what was already there. And before one can "draw out" or "deliver" one needs to create an atmosphere that is conducive for this process to take place. Humour can be used to relax students who are nervous and uptight. It can make the classroom a less threatening place, a place where students are prepared to take risks, to experiment, to share and to participate. Laughter, accepted and shared in the classroom, contains an invaluable social factor. It is "contagious" and reinforces a sense of group cohesion. This could help minimize the negative effects of excessive competition in our society.

Students can become actively involved in their own learning. The use of humour can help teachers establish rapport with students, because

humour connects, humour helps to build bridges and to close the gap. Baughman (1979) noted: "When people of all ages, races, religions and politics laugh and become exuberant together, all differences for the moment are removed."

As humour can reduce tension, researchers have looked into other ways that it can be used in class, e.g., the possibility of using it in examinations. Dixon (1980) suggested that humour is a response incompatible with anxiety, therefore humourous items in examinations may serve to decrease students' anxiety and thus improve test scores. This was the finding reported by Adams (1972). Smith, Ascough, Ettinger and Nelson (1971) suggested that the introduction of humour can facilitate performance by relaxing highly anxious students. However Townsend and Mahoney (1981) found that humourous items in a test decreased the performance of highly anxious students but increased the performance of the less anxious students, possibly because the addition of the humourous items increased the anxiety of the already very anxious students. It is important that teachers use humourous questions with care. They must ensure that the humour does not distract the students.

CONCLUSION

The main purpose of writing this article is to share with you a tool which we have used. We have used this extensively with young children, teenagers, college students and even
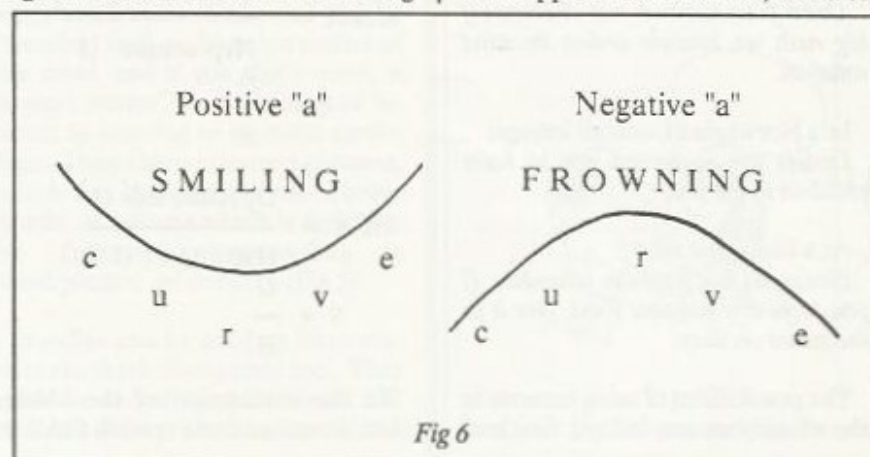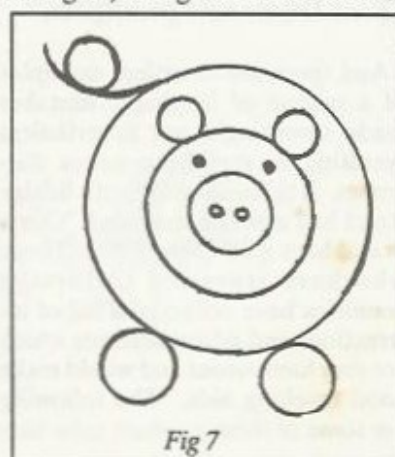

Fig 6

Fig 7

with adults. We have seen how an audience of serious adults/teenagers warm up to us and we have successfully used this tool to establish rapport with our "captive" audience. Teachers can consider the use of humour as one of the tools to enhance student learning. It is a tool and the ability to use it can be easily acquired.

We see this also as a way of improving lesson presentation and it can generate greater learning interest and higher motivation both for the teacher and the taught. Further, the use of humour will benefit the teaching profession by "enhancing the quality of teachers' lives" (Powell and Andresen, 1985). The two researchers wrote:

Teaching is an exacting and often unrewarding activity which may be made more sustainable if the teacher is able to derive satisfaction from arousing a positive response from students through the use of humour.

Maybe it helps for us to realize that we learn in different ways. Some are visual-holistic, while others are verbal-sequential learners. If chalk-and-talk, routine practice, typical remedial lessons do not work...why not try another path? Dr Wong Khoon Yoong, a former lecturer at the Institute of Education, once asked: "How can we teach less yet students learn more?" It is interesting to experiment on alternative paths that can also lead to the goal.


RE COGNITION
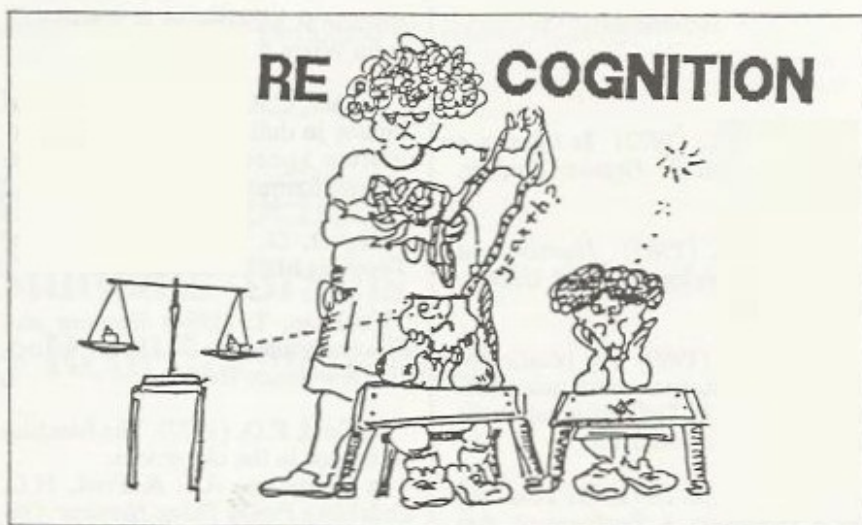
And humour is a tool that one can use on such a path. But, a word of caution is needed. We believe in the discriminate use of humour. Not all types of humour are suitable for all students at all times. Humourous materials, too, can be subjected to misuse, overuse or abuse. To ensure its appropriate use, it is essential that teachers are clear about the objectives and are selective in their choice.

Besides incorporating humour into classroom teaching, teachers need to be sensitive and to be alert to or to respond appropriately to humour expressed by students for "a difference of taste in jokes is a great strain on the affections" (George Elliot). What is heartening to note is that there are many creative teachers in our midst, teachers who have the gift of writing short humourous anecdotes. We have read quite a number and we would like to end with one such anecdote called The Art of Miscommunication:

When I was about to finish school, my father asked me what I was going to do. I said I didn't know. "Why don't you preach?" he asked. Father was a religious man and I had a hearing problem from a young age; so I thought he said teach, and I thought why not. So I enrolled in TTC (Teachers' Training College) which made my father happy because he thought it was the Trinity Theological College. And so the months passed. My father did wonder why I read so little of the Bible. When the time came, I told him I was going out for teaching practice. My father was really happy to know that they had preaching practices. Not in his days, he said. Father had a hearing problem too. But then he was 64. He asked me where and I told him "Paya Lebar" which made him happier because it was an established church. He said so. I looked at him and smiled. Father was getting on, but 64 was a little young to be senile. "School," I corrected him and he smiled. "Youngsters nowadays," he said, "what sort of word was that? Cool indeed!"

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OPEN-SEARCH
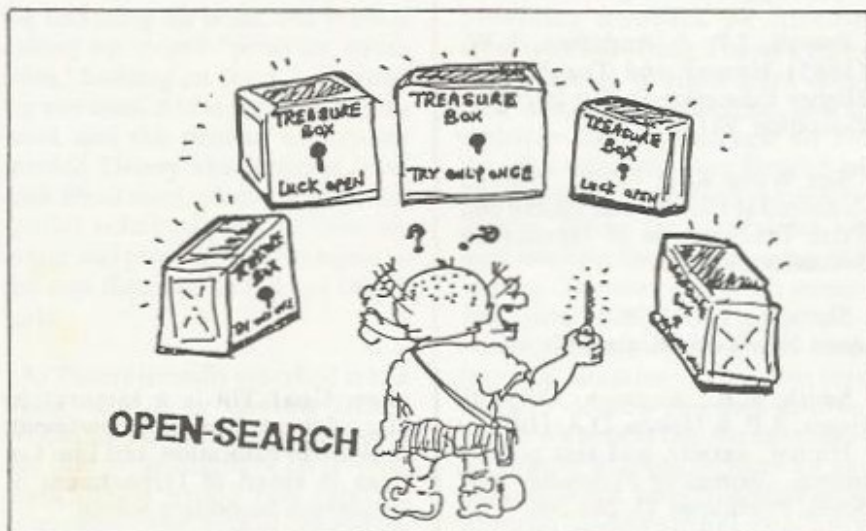
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RENATE M. NUMMELA AND TENNES M. ROSENGREN

What's Happening in Students' Brains May Redefine Teaching

Harmonizing new experiences with old in a rich, nonthreatening environment helps students learn more naturally and fully.

Timmy is learning to fly his kite on the beach. Carefully he makes sure that he has the appropriate tension on the string, that the wind is at his back, and that the kite remains steady. Every movement requires him to call on motor and visual skills, some only remotely related to what he is doing.

Although Timmy's progress may appear to be inefficient, he is actually involved in a remarkable feat: focusing and using his brain. His brain is calling up stored "program structures," building on them, and creating new ones. As the natural environment and the present experience provide Timmy with intricate feedback about wind velocity, angles, and spatial relationships, he uses his motor and physical skills to adjust to the new data and to refocus his efforts.

As Timmy is totally absorbed in kite flying, what is he thinking about? Would his "internal messages" give us any clue to the degree of his involvement? How would this internal processing differ from sitting and lis-

tening to someone's explanation of the finer points of kite flying? Can his brain's involvement in the learning process be assessed by checking what he is thinking?

We believe such internal thoughts can provide feedback about the degree to which the brain is involved in doing what it does naturally - making sense of and seeing meaning (looking for cause and effect relationships) in what it is experiencing. Beyond providing feedback on specific aspects of kite flying, Timmy's mental processing is much more complex: unspecified, unlimited, and at multiple levels. Although all his thoughts and actions are focused on kite flying, his *peripheral* experiences include feeling the sand under his feet, smelling the ocean, seeing and hearing the waves, and much more.

Can teachers approximate such learning situations? Can teachers teach to develop this total involvement? We believe that the most comprehensive learning includes an absence of threat, careful orchestration of multidimensional teaching

strategies, real-life experiences, and an understanding of barriers to learning.

The Brain's Natural Process

Brain research and information-processing theory are providing exciting insights into the learning process, inviting us to observe learning as a natural phenomenon - similar to the heart beating and the lungs taking in air. By stepping back and looking at what happens inside students as they receive information, we can begin to recognize teaching strategies that go beyond superficial learning.

Logic tells us that during the teaching/learning process, students inevitably receive external sensory input followed by internal processing. Examples of external sensory input could be a lecture, a film, a text reading, a field trip or, for that matter, any event taking place in the real world. Each of these exposures to external stimuli requires some form of internal processing for the brain to make sense of external input. Brain

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theory tells us that the brain is continually attempting to categorize and pattern new information with what is already stored (Hart 1983, Luria 1975, MacLean 1978, Pribram 1971). In other words, in an attempt to store new information, the brain "calls up" or matches, compares, and patterns in-coming information with similar or perceived-to-be similar factors already stored in an individual's memory. This is done at a very high rate of speed (Hart 1975) and apparently in random order on both conscious and unconscious levels. Thus, every externally experienced learning event will result in the calling up of meaningful, related information stored within each student's brain. (If you stop yourself as you read this article to observe your own behavior, you can identify this process yourself. Very likely, you have been calling on familiar information to make sense of what has been said so far.)

Whether it is experiencing a random event or a carefully orchestrated classroom experience, the brain functions the same way. We suggest that the more meaningful, relevant, and complex the external sensory input is, the more actively the brain will attempt to integrate and

"The most comprehensive learning includes an absence of threat, careful orchestration of multidimensional teaching strategies, real-life experiences, and an understanding of barriers to learning."

develop what Hart (1983) calls "program structures" or "prosters". He defines these as "a collection of stored programs, related to a particular pattern, such as walking, running, letter recognition and related concepts, which can be used as alternatives." (Hart 1983, p. 95). According to this definition, the most effective learning occurs when external sensory input challenges the student's brain to (1) "call up" the greatest number of appropriate programs, (2) expand an already existing program, and (3) develop new programs.

How Stimuli Affect the Brain

The brain is actively engaged in calling up old prosters or creating new ones regardless of the external representations. In other words, the brain does not remain inactive when not fully engaged in learning specific information. We speculate that when a student is not involved in specific learning, the brain is involved in less focused patterning - random thoughts, feelings, physical sensations, daydreams, and "escape" fantasies, which could lead to inappropriate behavior. This type of internal processing seems to occur when external sensory input is not sufficiently organized, motivating, or meaningful to stimulate a desired proster activity.

Thus we need to redefine "attention" to include the internal world of students. A lesson with too little challenge, too much threat, or a lack of necessary complexity will not involve students in the lesson and will, in fact, cause their attention to be diverted to whatever else is available. The teaching process becomes a matter of orchestrating the entire lesson to influence related and focused internal processing.

Lozanov (1978), the controversial Bulgarian psychiatrist and learning theorist whose work is only now beginning to have some impact in the United States, discusses the powerful influence of peripheral stimuli - such as the temperature of the room, the teacher's appearance, the

student's perceived meaning of the significance of the lesson, posters on the walls - or perceived threat. He supports the notion that learning occurs constantly at both the conscious and unconscious levels, and when meaningful, comprehensive learning does not occur, the brain continues to engage in personally meaningful activity not necessarily related to the lesson or what the teaching is teaching. The brain continues to pattern and categorize, influenced by random stimuli in the room. Instead of focusing on the lecture on railroad conglomerates or the multiplication table, for instance, a student may focus on the teacher's blue shirt and be reminded of what to wear to the dance next Friday or mother's favorite dress and what she's making for dinner. Thus, the student continues to match and pattern but in a direction not intended by the teacher.

Teaching Methods for Internal Processing

What kind of teaching and learning methods lead to a more comprehensive and desired focusing, patterning, and creation of new program structures? We know already that the more senses we involve in the learning process, the more complex the matching and developing of programs. As Hart (1983, p. 77) put it: "Because the ordinary classroom does not provide this richness in learning and, in most instances, limits what the brain can do, students become addicted or habituated to this limited, sequential approach."

Limited, sequential school learning, unlike real-life learning, asks very little of students. Much more could be available. As an example, we could contrast history classes whose teachers focus on isolated facts and dates with teachers who give personally meaningful details. By using a story format describing actual events, suffering, and dilemmas experienced by those living during the period students are studying, emotions as well as cognitive intents are generated, and thus both the left and right brain hemispheres

> **"Learning occurs constantly at both the conscious and unconscious levels, and when meaningful, comprehensive learning does not occur, the brain continues to engage in personally meaningful activity not necessarily related to the lesson or what the teacher is teaching."**

are engaged. According to Levy (1983), "If students are emotionally engaged, both sides of the brain will participate in the educational process regardless of subject matter." In addition, stories tend to relax students and may stimulate more efficient functioning of the entire neocortex (Hart 1983), leading to an "open" state more receptive to existing prosters. Lozanov comments on the importance of creating a more relaxed, "child-like" receptive-learning state in the classroom. In *Suggestology and Outlines of Suggestopedy* (1978), he writes:

In childhood, new things are memorized more easily and, what is more important, without strain and effort. The memorization process itself takes an unconscious course in normal, calm perception. However, if the teaching is misguided, this normally spontaneous process in the individual development can involve great effort and strain. The natural mechanism of memorization is deformed. The maxim that everything can be acquired through work, although fundamentally true, is incorrectly understood and students get the idea that they must make extreme efforts to memorize (p. 197).

This child-like state is exceptionally receptive to incoming information; it supports the notion that a supportive environment and the absence of threat stimulates learning (the formation of new prosters). As Hart (1983) explains, the brain tends to "downshift" under threat. Shifting down means activating the older, more primitive brain that deals with reflexive behaviors and emotions (MacLean 1978). Old brain-programmed behaviors and responses allow little room for reflection, insight, foresight, and other more complex learning associated with the neocortex and development of new prosters.

Teaching for Child-like Learning

Strategies for creating the child-like state and methods encouraging the use of both hemispheres can be taught in teacher education programs. However, creating a true child-like state that is free of threat is far more complex than might be assumed. Lozanov takes into account both conscious and unconscious characteristics that the teacher presents to the student.

"Teacher prestige," for instance, is a measure of the degree of respect and admiration the teacher can command. The word *command* - here it means "without overt demand" - is a natural outgrowth of teachers' ability to express their knowledge of the subject matter and to show its relationship to other subjects and life experiences.

Additionally, Ivan Barzakov, a former master teacher in Lozanov

Schools, states that all teachers, actors, physicians - that is, those working with the public - must have what he refers to as the "dual plane" (Optima-learning [TM] Workshop, 1983). The dual plane is a term used to describe a very complex set of characteristics, including the teacher's ability to generate trust and affection. This ability stems from the sense of genuineness, of "realness", of deep concern and integrity which the teacher projects. When these elements are detected by the student, they become powerful invitations to learning. Students become far more open to what is being said and done in the classroom, and the teacher functions as a "magnet", encouraging appropriate patterning.

Ivan Barzakov has expanded on Lozanov's theories of teaching. His teaching model, which is beyond the scope of this article, includes several "brain-compatible" features[1]. As an example, teaching is done in a series of "movements" where material to be learned is presented in a constant flow from the inductive to the deductive and back to the inductive.

The teacher begins with what Barzakov calls "pre-exposure" to the subject. The Optimalearning (TM) pre-exposure acts as introduction and primary motivator and has some of the characteristics of Ausubel's "abstract organizer" (Ausubel 1968). The pre-exposure could be a story, an experience, a guided imagery or concert reading (a practiced reading to baroque or other classical music). Using careful transitions, the teacher then moves on to the "exposure". The exposure introduces the subject more clearly, usually through a multidimensional experience, which is then further developed in the third phase, the "expansion". The final "re-creation" creates experiences that allow students to express and use what they have learned, and subtly introduces the next lesson. Teaching moves like a symphony, with its major theme repeated numerous times, always in a slightly different context. Material is repeated in a variety of ways, leading to long-term storage and bypassing rote

memorization or "forced" instruction. Additionally, the teacher uses all methods that aid in the experiential acquisition of material, including a broad incorporation of the arts.

This teaching model calls for the teacher to orchestrate complex, "real-world" teaching environments. What may appear to be a spontaneous learning-environment is, in fact, the result of precise planning. Such planning focuses almost entirely on how the classroom can create "here and now" experiences for the student, rather than on expected outcomes. The expected outcomes are goals that guide the lesson from pre-exposure to recreation, but they are not the focus of planning. This is important because it virtually eliminates the threat of meeting specified outcomes, and it allows what Barzakov calls "educative feedback to guide learning." Both student and teacher look upon learning as an expansion of knowledge similar to Hart's acquisition of prosters and not as the accomplishment of goals to be evaluated and rewarded.

Barriers to Desired Internal Processing

To summarize thus far, we suggest that specific teacher characteristics, various teaching methods, and

"The sense of genuineness, of 'realness,' of deep concern and integrity which the teacher projects ... becomes a powerful invitation to learning."

peripheral stimuli (external setting) all help to activate the internal states in the appropriate or desired direction. In each case, the brain's natural function of comparing, patterning, and categorizing is being optimally activated.

There are also, however, particular events and teacher behaviors that block learning by creating internal states that are incompatible with the acquisition of new prosters. Both Lozanov and Barzakov identify such events. According to Lozanov, these "barriers" to learning are alerted automatically, are self-protective, and relate to the external source of information, or to the information itself. These three barriers are the intuitive/affective barrier, the critical/logical barrier, and the ethical barrier.

The *intuitive/affective barrier* is aroused when students experience real or imagined threat in the classroom, such as fear or mistrust of the teacher. When this occurs, students cease to be involved in the learning process and reflexively focus on themselves to defend against the perceived threat. Sarason's (1982) research with high-anxious students describes the type of thinking these students do when threatened. Their thoughts move away from the task and focus on their own failure: "I can't do this"; "I'm dumb." Their less-anxious counterparts, on the other hand, can focus on the exam questions and invoke their problem-solving skills. In terms of brain theory, we may be seeing an example of "downshifting" of the brain in the high-anxious students. The higher brain functions of reasoning and problem solving are abandoned; overpowering emotions characterized by the subcortical limbic system or older brain take over.

The *critical/logical barrier* refers to new information that does not make logical sense or creates cognitive dissonance. Lozanov (1978) suggests that "when suggestion (i.e. learning) with a greater or smaller conscious ingredient falls within the field of the consciousness of critical thinking, it

"Teaching moves like a symphony, with its major theme repeated numerous times, always in a slightly different context."

is weighed up carefully in all its aspects before being accepted." In terms of Hart's brain theory (1978), the incoming information is critically evaluated by whatever information is stored within that particular brain. If incoming information is contrary to already established programs, the learner will resist it. This resistance will take the form of internal conflicts leading to rejection of the new information. In any event, the student no longer participates in the lesson until the conflict is resolved.

Learners do not experience this barrier until they move into Piaget's formal operational thinking. At this point, learners analyze information on the basis of hypothesis, "fit," and future application. Events that were previously dealt with on the intuitive/affective level are now processed intellectually through reasoning and logic. If new information does not meet the individual student's existing complex intellectual prosters, such information must be challenged or aborted. Unless students are provided with immediate access to further information through questioning or some other means, they will cease to listen or actively focus on events in the classroom. Instead, they will dwell on the conflict, thinking about ways they are right or wrong and about resolving the discrepancy. The most productive learning involves meaningful feedback within a flexible and safe environment, which includes an understanding of internal as well as external focusing. It is critical that the teacher acknowledge the criti-

cal/logical barrier by addressing the issues and being sensitive to pupil behavior.

Ethical barriers are aroused when information is contradictory to the individual's principles, values, or religious or cultural beliefs. Any external sensory input which violates the learner's values or personal beliefs will raise the ethical barrier.

Harmonizing Conflicts for Orchestrated Learning

These barriers interact, and quite often it is impossible to separate them. It is important to remember that barriers are natural, protective, and quite spontaneous, and they may result in a very rapid downshifting of the brain. Teachers may avoid raising unnecessary barriers but can never fully avoid doing so for all students. Factors outside of the school - arguments with parents or a friend, and other "unfinished business" - may also raise barriers. In each case, the teacher's ability to "harmonize" with the barriers (Hughes 1983) becomes the most appropriate way to lower them and return the student to more desired external and internal focusing.

We would include physical factors as an additional distractor for both external and internal focusing. Although neither Lozanov nor Barzakov consider this barrier, we suspect that room temperature, fatigue, ill health, and hunger, as well as other environmental distractors, prevent students' full focusing on learning. Phenomenologists (Combs et al. 1976) have identified many of the perceptual distractors (which, properly mastered and orchestrated, can become "attractors" and "motivators") to desired focusing, and brain research is providing additional data.

In conclusion, we believe that internal processing can be orchestrated by providing for the most efficient method of "calling up" old programs and providing for the creation of new ones. Such learning is stimulated by reducing threat and increasing challenge, presenting multidimensional teaching strategies and experiences, and understanding barriers to learning. Internal processing, which is a gauge to measure when the brain is actively focused, is a critical part of the learning process. It is imperative that teacher education include strategies and methods that acknowledge internal processing as a major aspect of learning.

Notes

1. Readers who wish to learn more about Barzakov's work should contact the Barzak Educational Institute in San Francisco.

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LIM GEK KHENG

Personal Development in Polytechnic Curriculum

Polytechnic education should include the development of social skills, moral values and attitudes necessary in the workplace

Personal Development refers to the forming of personal qualities, values and attitudes, and the development of social and life skills in a person. This article examines the rationale for the inclusion of personal development in the curriculum of a polytechnic education, describes the development work in this aspect at the Centre for Computer Studies (CCS) in Ngee Ann Polytechnic and discusses some related issues.

A Broader View of Polytechnic Education

In Singapore, polytechnic education has been geared towards vocational and industrial training to produce graduates with the appropriate skills to meet the needs of the economy. To a developing nation, this functional approach to polytechnic education is a practical approach of matching demand and supply of manpower with relevant skills and knowledge.

To produce graduates for the job market, the technical and business skills and knowledge for a particular vocation form the basis for the subjects in the curriculum development of a course. This makes a polytechnic a training ground rather than an arena for education. Training involves impartation of specialised knowledge and skills for a specific vocation to students to help them to achieve technical competency in per-

forming tasks related to that vocation. Education, on the other hand, is broader - it is concerned with training as well as personal development of students, that is the development of social skills, moral values and attitudes to cope with the demands and responsibilities of work.

The job of a lecturer in a polytechnic is, in the words of Mr. Tan Gee Paw, the principal of Ngee Ann Polytechnic, to "stand at the final threshold of the life of a young person and prepare him for the world. The schools can only show him to the door,......" [1]. Employers expect their employees not only to show technical competency in performing the tasks assigned to them, but also to show the proper attitude, to communicate well and to be able to relate to other people. To prepare young people adequately for the world, it is necessary to develop in them qualities and skills such as self-reliance, perseverance, honesty, punctuality, the ability to work with other people and to communicate with them. A person's excellent academic performance in subject areas related to a particular vocation does not necessarily lead to good performance at work when he enters the industry. Therefore, a polytechnic education should not be confined only to training to achieve technical competence in a vocational area but also to the development of relevant qualities, skills and attitudes in the students.

Personal Development in the Curriculum

Undoubtedly, personal development should have been started in schools or at home before the young people enter polytechnics. Nevertheless, it is still important that a polytechnic education cultivates in the young people social competencies, character traits and intellectual virtues to prepare them for their role as working adults. Activities should be incorporated in the curriculum to see that students are consciously developing themselves in these areas.

The failure to include personal development in the course curriculum will not result in young people being unable to cope with working life. They will ultimately learn to do so through their work experience. However, if such aspects are made more explicit in the curriculum, then the young people will be more sensitized to the practice of personal and social skills and better prepared for adult life and work in our society.

The problem is how to translate personal development into practice in the curriculum. It is important that a right balance should be attained in trying to include personal development in a two-year or three-year polytechnic course so that the teaching of the technical subjects will

not suffer. Can a subject, namely "Personal Development" be included in the curriculum? The risk of doing this is that students would treat it as another subject of study and forget about it after the assessment is over. Many of the skills and virtues can be demonstrated by students only through practical tasks. Hence the traditional method of teaching students facts and assessing by examinations or tests is inappropriate for the teaching of personal development.

The Business and Technician Educational Council (BTEC) in the United Kingdom, in recent years, has adopted a curriculum policy to in-corporate common skills in vocational education. Common skills are defined as transferable or life skills which students can make use of regardless of the vocation they are entering. They are skills such as communication skills, problem solving skills, interpersonal skills, and self management skills. BTEC's philosophy has evolved from demands from employees for graduates of vocational institutions to enter the industry with ability to apply their skills in work situations and to adapt to the changing environment.

BTEC suggested the use of a programme of integrative assignments throughout the duration of a course for common skills development and a student must pass "common skills" before he can proceed to the next year of the course or be considered to have completed the course successfully. Student profiling is used to record a student's achievements in common skills. The student profile can provide useful information to potential employers as well as other educational institutions if the student wishes to pursue further studies.

Common Skills in Computer Studies Course

The Centre for Computer Studies (CCS) of Ngee Ann Polytechnic has incorporated BTEC's philosophy in its recent revision of the curriculum for its Higher National Diploma in Computer Studies course. The product of this two-year course is information systems professionals "with sufficient technical and business skills to provide them the flexibility to work as application analysts/programmmers" [2]. The course team in CCS has identified five major common skills which are of importance to the information systems profession. They are communication skills, team working skills, self development skills, problem solving skills and numeracy skills. Communication skills refers to the ability to speak or write clearly and relate appropriately to the audience and the situation. Team working refers to the ability to work effectively within a team. Self development is concerned with professionalism in work, self reliance and continuous learning. Problem solving skills refers to the ability to recognize, analyse and manage problems. Numeracy skills relates to the ability to apply numerical concepts and quantitative methods to relevant situations.

Students on the course are taught common skills in two subjects, one for each year of the course. However, these two subjects are not solely dedicated to the teaching of common skills. They are subjects concerned

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SKILL ASSESSMENT FORM   **TEAM WORKING**

Description: Ability to work effectively within a team

Situations: e.g. group meetings/discussions, team exercises

Assignment: _____   **Period:** _____

Student Name: _____   **Group:** _____

SKILL INDICATOR   **RATING   REMARKS**
                                       (Circle one)

1 Support & motivate team members   X 1 2 3 4
   members

2 Manage tasks as a team member   X 1 2 3 4

3 Demonstrate proper attitude/behaviour   X 1 2 3 4

4 Contribute & exchange ideas   X 1 2 3 4

5 Resolve conflict with other team members X 1 2 3 4

6 Accept criticism & differing views   X 1 2 3 4

        [X - Not applicable
         1 - Expectations not met   2 - Expectations partly met
         3 - Expectations fully met   4 - Expectations exceeded]

Comments: _____

Overall Rating: _____ Assessed by: _____ Date: _____

Fig 1. Form for Assessing Team Working Skills

Working in Teams

with organisational issues, human factors related to computerisation and management of the information systems development process. The course team is of the view that these two subjects, compared to the other technical subjects, are more suitable for developing common skills. In addition, recognising the importance of communication skills, the course team has included "Communication for Information Systems Professionals" as a subject in the first year of the course. The students are also expected to apply common skills in all the other subjects. Emphasis is to be placed on the processes and activities undertaken by the students. As recommended by BTEC, a programme of integrative assignments is planned to assess students on these skills.

Use of Skill Indicators & Profiling

A list of criteria or skill indicators is identified for each of the common skills. For example, the skill indicators for team working are "support & motivate team members", "manage tasks as a team member", "demonstrate proper attitude or behaviour", "contribute & exchange ideas", "resolve conflict with other team members" and "accept criticism & differing views". These skill indicators are devised to aid observation by tutors. A set of assessment guidelines explaining these skill indicators are used by the tutors. A student is assessed on each of these skills using a four-point scale on the Skills Assessment Form. Figure 1 shows an example of this form for Team Working Skill. Comments which cite evidences or incidents of students' behaviour are recorded to support the rating on the scale.

Feedback of the performance in common skills is provided to the students after each assignment using the Skills Assessment Forms. At the end of each academic year, a profile of each student's achievements in common skills will be built from the Skills Assessment Forms for the year. His development in all the skill areas will be reviewed before it is determined whether the student has passed or failed "common skills".

Evolutionary Process

CCS started the programme for the first year students in the academic year 1990/91. The teaching and assessment of common skills and the planning of a programme of integrative assignments are still in an evolutionary stage. Tutors in CCS have to go through the process of learning for themselves how to develop and assess students' common skills through trial and error. Appropriate methods for the development and assessment of common skills can then be identified through such practice

and experience.

Many issues associated with the development and assessment of common skills have surfaced in the development work in CCS. These issues relate to the skills in assessing common skills, the nature of common skills and the reaction of tutors.

Skills in Assessing Common Skills

The process of recording and assessment of students' achievement in common skills using the profiling method is new to tutors in CCS. Generally, tutors are confident in teaching and marking assignments related to the subject of their specialty. But, with little training and experience in personal development of students, they feel uncomfortable in their new role in common skills development. Although CCS engaged the professional staff from the Institute of Education to conduct a course on common skills assessment, the tutors need to practise and experience for themselves.

The assessment of common skills is largely judgemental, and hence to some extent will be personal and subjective. Although the skill indicators serve as a checklist for assessing common skills and clarifying criteria, they will, to some extent, be subjected to different interpretations and expectations by different tutors. Sometimes the basis for assessment is simply the tutor's gut feelings about the students. Tutors are more used to the traditional method of numerical marking and norm referencing in assessment, whereas common skills requires criteria-referencing and profiling of students.

Assessment of common skills requires a period of observations and recordings. The determination of the one final grade for a student's achievement for all the skill areas from a series of observations and recordings is a difficult decision.

Nature of Common Skills

By administering a test or giving

them practical tasks to perform, students can be assessed on whether they possess the knowledge or whether they have acquired the practical skills by administering a test or giving them practical tasks to perform.

Students, like all human beings, are likely to have strengths and weaknesses. They may vary over time and across different contexts of application. A student may be able to demonstrate good team working skills in a programming subject but cannot work with other students in another subject.

Some skill indicators are difficult to assess, for example self-reliance. A tutor will not be able to make a fair judgement of a student's ability in this aspect during the limited contact hours in the class rooms. One solution perhaps is through peer assessment or self assessment. In fact, peer and self assessments can be very useful for assessing team work and self development skills because they can reveal students' strengths and weaknesses which are invisible to tutors. However, the level of maturity of the students and the reserved nature of most Asians may be obstacles to meaningful assessment.

Reactions of Tutors

Some tutors see this new curriculum development as challenging and are willing to experiment and learn from experience; others view it with scepticism. Such reactions from tutors are natural in any change situation. The inclusion of the common skills development will definitely demand more of their time and effort. The tutors are already involved in lesson preparation, teaching, marking of assignments, and professional development to keep abreast of the latest developments in information technology. The profiling process which requires observation, record keeping and discussion is time consuming. Ideally, common skills development requires regular feedback to be given to students on an individual basis and counselling be provided to ascertain improvements in students' behaviour. Tutors feel that these activities place considerable demands on them.

Conclusion

Personal development in the curriculum is a relatively new concept. It is worth pursuing but time and human resources are required to put it into practice.

Tutors who are used to "quantitative" assessment of students have to be orientated to new teaching and assessment methods. Achievements in common skills are meaningless when translated into marks or grades. Feedback to students in terms of their achievements should be more appropriately done in the qualitative form.

The use of peer assessment and self assessment should be further explored. Self assessment enables students to identify their own strengths and weaknesses and plan their goals. Tutors can benefit from self and peer assessments.

Finally, tutors need time and support to experiment with new teaching and assessment methods, to hold discussions to generate ideas and review these experiments, to give feedback to students and counsel them. Hence the timetable of tutors should be reviewed to allow for time for more interactions with the students and maintaining student profiles. Certain hours in a week should be provided for tutors to hold discussions.

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Peer Observations of Common Skills

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DAVID B. WILLIS AND PATRICIA HORVATH

The Teaching Profession:
A View from Japan.

By examining the role of the teacher in Japanese schools, we can discover directions to follow - and to avoid - in developing the teaching profession in our own country

In Japanese schools, teachers of primary children instill love of learning and love of school in their students; at the upper levels techers become less openly affectionate but maintain close and important relations with their older charges.

Many books and articles on the merits of Japanese education have recently appeared, followed by the inevitable backlash of commentary about what is wrong with Japanese education. Surprisingly, the role of the teaching profession itself has received little attention in this dialogue, despite the fact that East Asian cultures place great importance on the modeling that "virtuous persons" provide. Because the teacher[1] appears to be the pivotal person in the Japanese educational system, we decided to examine the roles, responsibilities, and rewards of Japan's teachers.

Over a two-year period, we observe countless classrooms, conducted many interviews with instructors, and attended professional meetings. We draw here particularly from our 1985-87 study of over one hundred "master teacher-principals" throughout Japan.

Teachers as Virtuous Persons

The Japanese educational system is far from perfect; in fact, Japanese educators have expressed incredulity whenever we have complimented some feature of the system. Nevertheless, the high level of knowledge possessed by Japanese graduates has been well documented by their consistently high scores on tests of international achievement. Social problems are rare in Japanese schools, and graduates make a successful transition to the labor force (Rohlen 1983, Duke 1986, Cummings 1980, Kobayashi 1978, White 1987). What role do teachers play in achieving this success?

In her vivid account of Japanese education, Merry White (1987) notes, "In East Asian tradition, teaching is a respected profession, a lifetime commitment, a much sought after occupation. ... Because learning and the ensuring academic credentials are the most valued pursuits and goals in contemporary Japanese life, teachers are still greatly valued."[2]

The influence of the virtuous person is incalculable throughout Japanese society. Superiors in the workplace, the school, and the home have a highly refined, complex relationship with those below them. Moreover, these relationships extend over the life span.

Teachers are not only instructional leaders; they are also important symbolic figures in the school, an embodiment of the traditions and character of the school. Warm and affectionate, teachers in the elementary grades are more like big brothers and sisters, instilling a love of school and learning in students. Stern and distant, teachers at the upper levels are superparent figures, yet still symbolize the intimate relationship that, once developed in preschool and primary school, continues to exist between Japanese teacher and student.

On the opening and closing days of school and after each vacation, teachers are expected to give inspirational speeches. The content of the talks invariably touches on one of more of the following theme:

- responsibility for one's actions, including a reminder that good behavior (including sincere effort in studies) reflects well on one's school and one's family;

- the fact that all students are representatives of their school;

- the unacceptable nature of behavior that spoils the school name for all (one important duty of teachers is patrolling local hangouts such as game centers and magazine stands);

- a reminder that to succeed in entrance exams and in life, early preparation and hard study are required.

Expectations are high that behavior will be proper and that all students will try their hardest at everything they attempt. These expectations are part of the cultural consensus of what it means to be Japanese. Cooperation and harmony are valued above all else and lie at the core of the Japanese emphasis on excellence in an organization's internal relations and activities. Shame is great indeed if the student fails to succeed, but to fail *without trying* is cause for even greater shame.

How Japanese Teachers Teach

When they teach, Japanese teachers treat their classes as a whole rather than as individuals. There is a great concern with teaching to the average student, and Japanese teachers spend the least amount of time with the top students in a class. Elementary school teachers focus on active, engaged learning, while high school teachers employ a text-centred, lecture format. Middle school instructors play a transitional role.

Because of the uniform pace and common curriculum, Japanese teachers usually use commercially prepared tests for evaluation, rather than preparing their own tests as in the U.S.[3] The aim of these tests is to provide a step-by-step evaluation process leading to a set of final exams that, almost alone, determines the high school or college a student will attend. Because teachers do not need to devote extra time to test preparation, students can be more frequently evaluated and their problems more readily identified and addressed. Moreover, once problems are diagnosed, there is a support system of commercial tui-

Teachers in Japan are important symbolic figures in the school, an embodiment of the traditions and character of the school.

tion academies (*juku*) readily available for those students who need extra work.

Ultimate responsibility for the students is left with the teachers as a collective body, with the principal considered "first among equals" among teachers. Thomas Rohlen (1983) notes the "sociocentric qualities" of Japanese teaching: the faculty takes full responsibility for student behavior and discipline, with teachers typically serving on a number of committees that have authority and power usually reserved for administrators in American schools.

Relationship to the Principal

Respect for knowledge endows special meaning to the symbolic position of the principal, or *kocho sensei*, translated as "principal teacher." The basis of teacher-principal relations is the delegation of authority by the principal to the teachers. The principal gives advice and guidance to teachers, and in return the teachers provide the same for the principal.

> Ultimate responsibility for the students is left with the teachers, as a collective body, with the principal considered "first among equals" among teachers.

Significantly, the Japanese give little consideration to the notion that a good teacher might differ qualitatively from a good administrator or a good policymaker. In Japan, all administrators and nearly all the staff of local boards of education have been evaluated as outstanding teachers. Principals (average age, 55) have thus undergone an evaluation period of at least 20-25 years of teaching before attaining that title.

Compensation and Status

The high quality of Japanese teaching is linked not simply to cultural factors but to a stable, well-paid support system. Salaries vary from over $20,000 for a beginning elementary teacher to $45,000 for a 40-year-old teacher to $70,000 for a 55-year old principal. From entry level to about 35, a Japanese teacher earns more than peers in other jobs and about the same as those in other professions. Centrally determined and uniform throughout the nation, salary schedules are based on seniority. Purchasing power is, on average, equivalent in both countries; but at the upper levels, where there are many more Japanese teachers, purchasing power is much greater in Japan. Japanese teachers receive at least 70 days of holidays, fewer than American teachers but more than four or five times as much time off as Japanese in other jobs.

Other important factors in a teacher's life include an expected rotation between schools after four to seven years. This practice helps the local educational authorities maintain fairly consistent staffing, in terms of quality. Pupil-teacher ratios (1:35), class size (up to 45-50), and duties (including counseling and curriculum) borne by Japanese teachers are considerably greater than those of their U.S. counterparts.

The attractiveness of the teaching profession is demonstrated, though, by the ratio of applicants to available positions (5:1 in 1986) and the fact that beginning salaries are on a par with those of graduates entering the corporate world. Teaching is not

> Japanese teachers typically serve on a number of committees that have authority and power usually reserved for administrators in American schools.

only well rewarded and sought after; it is also accorded much respect by the public. Depending on the academic status of a given school, Japanese teachers command what an American might feel is an inordinately high status. In a 1975 status survey of occupations (Japanese Social Mobility Survey, cited by Cummings 1980), elementary teachers enjoyed higher prestige than civil or mechanical engineers and white-collar employees of large firms. University professors ranked third, below high court lawyers and presidents of large companies, but above physicians.

Solidarity

The way the Japanese deal with personnel matters at all levels in their schools is undoubtedly at the heart of their educational success. The key is solidarity. Great emphasis is placed on social order and commonly shared identity and purpose. Common values include dedication, high morale, motivation, obedience, discipline, and group-centredness. Intense personal committment to the

common endeavor is paramount and is inculcated early in the experience.

Initiation activities, for example, involve everyone. New people, whether students or teachers, are the center of attention, but the initiation in no way resemble hazing. The purpose is to make newcomers feel welcome and relieve any anxieties they may feel about their new status.

At the same time, the hierarchy of the workplace is made clear in subtle ways. Extreme deference in speech indicates who is at the top of the hierarchy. During a personnel initiation party shortly after joining a school, for instance, the person whose beer is poured first, the person who comments on the nature of the food served, and the person who suggests that it is time to go home are all senior people in the school hierarchy.

There are many opportunities for such interaction. In the life of typical Japanese teachers, parties can be expected on all the following occasions: beginning the new job, promotion, transfer, extended trip abroad, publication of a book, marriage, retirement, even death. When a colleague dies, all his or her fellow workers come to pay special respect by eating and drinking sumptuously in a room containing a photograph of the deceased. The average contribution for a typical dinner among peers is Y 5,000 - 7,000 (or $35-$55). The ritualization of many transitions is extended and complex, and attendance is *de rigueur*. If the event is particularly important, such as a year-end party, the cost can easily jump to $150 per person. The end-of-year party and school excursions such as field trips (for which there are elaborate preparations) are particularly important.

Labor and Management

In Japan, teachers' relationships with administrators are usually not as tense as in the U.S., but they can become hostile if the local teachers' union is powerful or if the principal evinces strong executive or rightist tendencies. The leftist Japanese teachers' union, Nikkyoso, has great power, making it unlikely that any one person will rise very far above his or her colleagues. After all, most principals, except those who inherit their positions in private schools, have risen through the ranks themselves.

The principal is ostensibly the government's representative, but most principals have been unwilling to exert this authority. Instead, in keeping with the "first among equals" idea, principals quietly attend daily or weekly staff meetings conducted to exchange opinions (many schools have brief meetings every morning).

Moreover, labor-management confrontation is unlikely because of the school's status as a moral institution. Open conflict or politics of any kind is traditionally forbidden. If a principal has good rapport with the senior teachers, he or she may be able to implement novel ideas; but more principals choose to be unobtrusive.

In Japan, all administrators and nearly all the staff of local boards of education have been evaluated as outstanding teachers.

The situation in schools was not always this way. The principal's position derived its legitimacy from a rigid, paternalistic interpretation of Confucianism; and, before the American occupation, the principal cut a powerful swath in the local community, with almost complete power over teachers. Japanese society in turn had great expectations of its principals; the schools they administered were (and still are to a great extent) regarded as images of the people who ran them. The principal was the personification of the ideal Confucian patriarch.

Ironically, the American presence after the war ended this model, a model many American administrators may now wish existed in the United States. General MacArthur's reforms created one of the most egalitarian and productive (in terms of academic achievement and social placement) educational systems the world has known (Cummings 1980). The egalitarian spirit of the U.S.-inspired "Peace Constitution" led to the formation of a militant teachers' union, the *Nikkyoso*; thus, at the same time that the power of rank-and-file teachers dramatically increased, the authority and aura of the principal were considerably diminished.

With the School Education Law of 1947 as a focus of reforms, the American occupation created progressive forces advocating this strong trade union for teachers. These forces urged that schools convey an egalitarian world view and consider their primary mission to develop "the whole person" (Duke 1973). Conservatives, however, advocated strong central control (by the Ministry of Education, or Mombusho) and an educational system whose purpose was utilitarian, as the primary agent in social selection. Central to this purpose has been the rigorous gauntlet of examinations that functionally determines job placement.

Central to this conflict was whether teachers would be defined as workers or as professionals. Defin-

ing teachers as workers would portray them as potential class enemies of the administrators. The struggle eventually centered on whether teachers or the central government would control the curriculum, with the latter more or less the eventual victor.

To increase control over local units, the Ministry of Education has periodically proposed expansion of the administrative components of schools. In 1971, for example, the government proposed a restructuring of school administration that was supposed to make life easier for the teachers, a proposal strongly opposed by the teachers' union. In the end, the old system of principal (*kocho*) and his assistant (*kyoto*, a position introduced in the 1950s in spite of vehement teacher protest) was retained. A new set of administrative posts was created: a chair of teaching affairs, a kind of curriculum coordinator and business manager who is also in charge of scheduling; chairs for each grade; subject matter chairs; and a student-guidance chair. A small stipend is attached to each position. These reforms, introduced in the late 1950s and still in place, tended to increase the power of the central government in local schools.

A more important issue involved the government's effort to provide principals and the local boards with greater control over procedures concerning teacher salaries and promotions. Laws created during the American occupation had in effect given teachers tenure as soon as they were hired. Salaries were determined according to a simple schedule based on seniority, with no allowance for performance.

In the mid-1950s, conservative leaders advocated a trial period prior to tenure and the introduction of an "efficiency rating system." The trial period never materialized, and the government's efforts to implement the rating scheme provoked a violent and protracted struggle with teachers in the late 1950s. Mass sit-ins, strikes, and a mass leave-taking

Japanese teachers have a measure of freedom that is the envy of salaried workers and an income that is considerably greater than that of government officials.

on a single day by 35,000 Tokyo union teachers, together with the heavy-handed tactics of the government, brought the confrontation to a stalemate. The union eventually began to lose membership as its leaders advocated extreme tactics.

Fortunately for the union, the government's attention during the 1960s became engrossed in the struggle over the Japan-U.S. Security Treaty. Finally, a face-saving compromise on the rating scheme was worked out whereby teachers would submit a record of their activities to the principal, who would fill out the ratings for submission to the local board of education. Possibly because they had to consult with their teachers first, principals ended up giving uniformly favorable marks to all their staff.

What has been the outcome of this protracted struggle? Cummings (1980) reported that a survey of 685 teachers in the Kansai area revealed that 84 percent considered themselves educational workers, 4 percent chose "production-line worker," and

12 percent viewed themselves as professionals. There is general support for the union's activities as long as it does not resort to strikes or other extreme tactics. As for internal school management, nearly 60 percent of those surveyed saw the school staff meeting as the final decision-making body for school policy, a view opposite to that of the government, which holds that the principals have this responsibility. In the same poll, teachers reported that they wanted more control over the school and classroom because of the belief that education changes society rather than being controlled by society.

Teachers in Japan in the 1980s

Today, public acceptance of more traditional role models is growing. Not only has the power of Nikkyoso diminished considerably (few younger teachers see any point in joining the union), but certain traditional ideas about teachers are again current, albeit tempered with more democratic ideals. The idea that the teacher's primary duty is to act as moral preceptor for both staff and students is being revived.

Today, a good teacher in Japan works hard to promote behavior traditionally associated with good schools: a high level of involvement with students, especially in club activities; certain administrative duties that Americans might consider the prerogative of principals; a growing distaste for partisan politics; and a sense of autonomy. Although they work much longer hours than their American counterparts, Japanese teachers have a measure of freedom that is the envy of salaried workers and an income that is considerably greater than that of government officials. As in America, however, public concern with high achievement in schools in terms of test results has meant increased emphasis on discipline and exam preparation.

To the Future

If we look at the way Japanese teachers view American education, we may see directions in which they

might (or might not) like to move. Beginning with a Ford Foundation program in the 1960s and continuing today under the support of the Ministry of Education, teacher study programs have brought large numbers of Japanese teachers to America (recently about 5,000 a year). We have heard many informal comments from teachers who return from these programs, comments similar to those made in a follow-up evaluation of the Ford program[4]. These comments give us insight into the advantages and disadvantages of our own system.

What are the pluses in American education, as viewed by Japanese observers? High-quality facilities, the individual creativity and initiative of both teachers and students, the careful attention paid to differences in abilities, and the active involvement of a class in the learning process. Minuses? The great gap between American educators' ideals and actual classroom practices, the lack of a systematic approach to education, the great diversity between school districts, and the absence of moral education.

If we are to learn from the Japanese, and if the Japanese are to learn from us, it might be best simply to reflect on the power of the teacher as symbol. For America, no less than for Japan, the traditional Confucian concept of the teacher as a virtuous person, someone committed to the nurturance of human relations, is a role worth emphasis and respect. Most important, an explicit awareness of the role of cultural values and expectations in the school can help us strengthen our own commitment to teachers and to education.

We cannot and should not wish to copy the Japanese. Our educational roots, a combination of the traditions of Rosseau, Dewey, and Calvin, are too different. But, as White (1987) notes, we have much to learn from the Japanese about commitment, expectations, and effort. What she calls the "high energy engagement" of good teachers is something our society should recognize and reward.

The Japanese are vigilant in keeping their cultural values and practices at the core of their educational practices. We, too, would do well to give greater emphasis to the power of our own cultural consensus. We should be true to our own roots.

Notes

1. *Sensei*, literally "one who goes before."
2. White, 1987, p. 82. This quotation is from a chapter titled "A Paradise for Teachers?" Many teachers are reluctant to consider the job of principal because it requires mandatory retirement at the age of 60, pays hardly more than 10 percent over a typical teacher's salary, and means greatly increased duties.
3. Cummings, 1986, p. 126.
4. Cummings, 1986, p. 282.

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ALLAN D. WALKER

Supervision: Helping Teachers
to Help Students
or
Supervision at Sledgewood

When May Tan took over Sledgewood School two years ago she faced a formidable task. For years, in fact as long as anyone could remember, teachers had been given no help in the classroom. Consequently, they continued to teach as they had always done without any thought for development or improvement. Student discipline and classroom management were real problems, as was teacher and student morale. Teachers had no 'zip' in their presentations and there were few mechanisms for ensuring students received the education they deserved. Her main concerns focused on this point –how to help students, both socially and academically. Ms Tan realized that if she was to do this, she had to work through and with the teaching staff.

After some careful thinking and many long nights of discussing her problems with fellow principals, she decided that the best way to change the school's direction was through supervision. Ms Tan knew that as principal she was responsible for two distinct types of supervision. First, a mechanism for ensuring staff were adequately meeting student needs was required - some type of *judgmental supervision*. Second, and perhaps more importantly, she knew she was responsible for encouraging both personal and professional growth in teachers (Walker, In Press) -some form of *developmental supervision*. Ms Tan knew she would face many

problems and would not be successful overnight, but she was convinced that the benefits of correctly conducted supervision could bring to both students and teachers would be well worth the effort. She also knew that for any supervisory system to be successful, teachers would have to be involved and kept informed.

Ms Tan's first move was to decide that the Management Team, herself, the Vice-Principal, and the Heads of Department, should be jointly involved in planning and conducting supervision. The team's first task was to decide upon the general responsibilities of the supervisors. They decided that these should include responsibility for helping teachers:

- understand students better

- select and use curriculum materials

- interpret and cope with problems real to them

- develop leadership skills

- develop positive relationships with students

- refine classroom management techniques

- develop a climate for motivating student learning

- become effective team members

- evaluate student achievement

- reflect on and refine classroom practices

- deal with problem of organization and implementation

- plan for improved school community communication

- interpret educational research findings (Dull, 1981).

The scope, or list, of responsibilities was communicated to teachers through contact time and department meetings.

The management team was fully aware that the Sledgewood teaching staff, like all schools, was composed of a diverse group of individuals, each with varying needs and personalities, and at different stages of development. They realized that it was going to be difficult to balance judgmental and developmental approaches, and that a supervisory system which was inflexible and limited to a single method risked accentuating Sledgewood's problems. An inflexible, common system may not be as successful in increasing most teachers competence in the classroom -- the key to improving student success and welfare. In an effort to meet the diverse needs of individual teachers and the school as a whole, the team decided to implement a system of 'differentiated supervision'[1].

The move to introduce differen-

tiated supervision was a brave step. A number of heads of department (HOD) wanted all teachers to be supervised using the widely-accepted clinical supervision cycle. Ms Tan listened to their case and acknowledged the strengths of clinical supervision before stating her objections to a reliance on the clinical or any single approach. First, she explained, clinical supervision was originally intended as a method for training student teachers, not competent, experienced teachers. She could find little evidence in the literature that clinical supervision actually benefited, to any great extent, more experienced teachers. Second, if clinical supervision was conducted as suggested by some experts it would take 10 hours per teacher per year. Sledgewood simply did not have the staff or time available. Thirdly, she believed that one method was not suitable for all teachers. She did not believe that experienced, competent teachers needed to be supervised or developed in the same ways as raw, inexperienced teachers or staff members having specific problems (Glatthorn, 1984).

Ms Tan convinced her management team to trial her method. The team then divided the teachers into three categories.

1. Teachers recently graduated from Teacher Training or returning to school after a substantial break from teaching. And teachers who were having specific problems in the classroom. This group needed fairly intensive guidance in classroom techniques and sharpening or upgrading of skills.

2. Teachers who were experienced and competent and enjoyed working with their colleagues. This group, it was decided, could work together, with guidance from the HODs, on their own professional development.

3. Teachers who were also experienced, competent and dedicated but preferred and worked best alone. This small group of teachers, once again with some guidance from the

HODs, could largely be responsible for their own development.

After much discussion, the management team placed each staff member in one of the three categories and slotted them into the various 'supervisory options'. Group 1 would be developed using Clinical Supervision (CS), Group 2 through Cooperative Professional Development (CPD), and Group 3 through Independent Professional Development (IPD)[2]. These options were intended to encourage the development of individual teachers.

As well as being involved in the developmental options all teachers would be supervised through a number of judgmental approaches, these would not be optional. The team knew this was not only necessary to satisfy Ministry of Education requirements but was vital for ensuring the 'quality control' across departments and the school as a whole. The 'Sledgewood Supervisory System' was taking shape. It aimed to meet both developmental and judgmental needs. Mr Wu, the Vice-Principal, presented the general system outline on behalf of the management team (see Figure 1).

The management team, with some input from teachers, decided that the HODs with senior management support would be responsible for the developmental options plus some Administrative Monitoring and Clerical Supervision. The Principal and Vice-Principal would be responsible for all formal Staff Confidential Report (SCR) observations, Administrative Monitoring throughout the school, and the developmental

supervision of the HODs. The management team put many hours into designing a system which they believed was fair to all teachers and best for the school.

They were ready to present the trial system to all the teachers (various staff members had been consulted at different stages of policy development). Very brief descriptions of each of the supervisory components were prepared, disseminated to staff, and explained in greater detail at various meetings. The descriptions circulated are presented below[3].

Dear colleagues at Sledgewood:

Developmental Options

Under no circumstances will information discussed during developmental options be used for judgmental purposes.

Clinical Supervision (CS)

The clinical process involves a developmental relationship between a single teacher and a supervisor, a member of the management team. The process stresses the importance of a close collegial and open relationship between the two parties. The process we will use has four basic stages (Smyth, 1984). The cycle begins with the *pre-observation conference*, where the teacher and supervisor meet and attempt to arrive at some shared understanding of what will occur during the lesson to be observed. A specific area is selected as a focus. Next, the supervisor *observes* the agreed upon lesson, specifically collecting data in the

Developmental Options	Judgemental Options
Clinical Supervision	Administrative Monitoring
Cooperative Professional Development	Clerical Supervision
Independent Professional Development	Formal Observation
Each teacher - one option	For all teachers

Fig 1 Sledgewood School Supervisory System

The CS option

The CPD option

The IPD option

agreed focus area. This data may be collected using any number of methods, from verbatim transcripts to systematic collection instruments.

Following the observation, either the supervisor or the supervisor and teacher, *analyze and convert* the raw data into a more manageable form which can be used by the teacher to improve performance. The final stage is the *post-observation* conference where the supervisor and teacher meet to share their interpretations with specific reference to the areas targeted during the pre-conference and subsequently observed during the second stage. (See Figure 2 for diagram of clinical model).

Cooperative Professional Development (CPD)

CPD, another form of non-evaluative supervision, is designed for teachers to help each other as professional colleagues and equals. In CPD a small team of teachers work together to observe each other, provide feedback and discuss common professional issues. Initially, these teams will be formed by the management team after discussing your suggestions. Teams can formalize their cooperation by establishing priorities and timeframes, or by agreeing to put each other through the clinical process. Groups may also 'team-teach' and provide informal feedback on a consultancy-type basis.

CPD may be more appropriate for experienced, competent teachers

who value the input of their peers. However, in the future, we may adjust the process to include both experienced and inexperienced teachers as a form of mentoring. Teachers (groups) will keep a type of 'growth log' and meet with the supervisor at agreed upon dates to share information and identify benefits involved in the process.

Independent Professional Development (IPD)

IPD allows individual teachers to assume the major responsibility for their own professional development. Staff members who are supervised under this option will design a yearly

plan of how they intend to enhance self improvement and competence. Basically the process will follow this sequence:

1. Teacher sets realistic targets with accompanying timeframes for how they can improve their teaching and submit the plan to their supervisor.
2. The supervisor will review the targets and provide a written response.
3. Teacher and supervisor will meet to discuss targets and revise them if appropriate. Supervisor and teacher will develop a written summary of the conference.
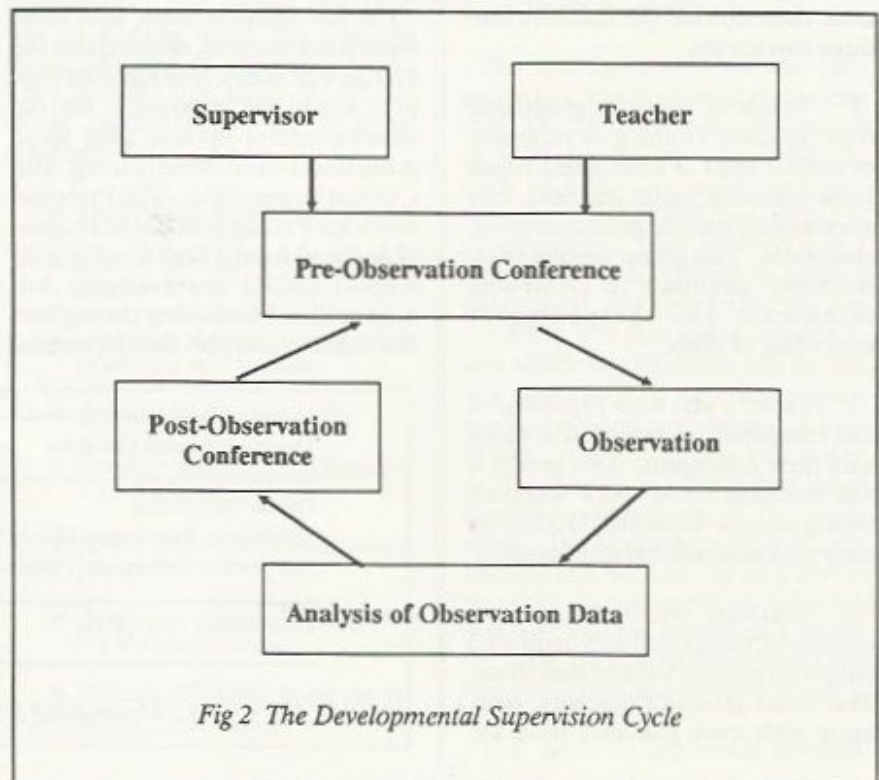4. Teacher is responsible for col-

Fig 2 *The Developmental Supervision Cycle*

lecting appraisal data related to the agreed targets and compiling it for presentation to the supervisor.

5. Supervisor and teacher meet to review the appraisal data and determine success in reaching targets (Sergiovanni, 1987).

IPD is well suited to competent teachers who prefer to work alone. The supervisor will review the targets to prevent them becoming so narrow that they diverge from the broad aims of the school. However, they will take care not to impose targets too rigidly as this may reduce the developmental focus of the process.

The 'non-options' which follow are designed to provide the 'quality control' or evaluative aspect which is necessary to ensure students receive the quality of education to which they are entitled

The Non-Options

All teachers will be involved in these non-options. The evaluative components will be rated behind the developmental option in both importance and time allocation. They are neverthe less vital for the management team to maintain an overall picture of how the school is functioning.

Administrative Monitoring

The Administrative monitoring process requires the supervisor to make brief unannounced visits to the classroom to ensure that teachers are meeting their responsibilities in a professional manner. Administrative monitoring shows you that the supervisors feel you are important and are interested in what you are doing in the classroom.

Although Administrative Monitoring is relatively informal, it will be planned by the management team to provide systematic coverage of all teachers. The following statement explains what the management team plans to do.

In the Administrative monitoring, we'll be visiting your classrooms briefly, primarily to keep informed about *teaching and learning on a day-to-day basis. We will not be making formal evaluations of your teaching; these will occur during formal observation visits. However we will be forming impressions of your work, and making brief notes about the visit. If at any time our brief observations suggest some serious problem exists we will let you know directly (Glatthorn, 1984).*

The supervisor will provide a short written record of what was observed during the time spent in the classroom. A conference may follow if some specific action arising from the visit is requested.

Clerical Supervision

Clerical supervision simply involves the supervisor in regularly and systematically collecting workbooks, folders or other written materials produced in classrooms. In most situations it will be impossible to collect all paperwork. Supervisors will systematically sample from various teachers, levels, or subject areas. They will provide a short written statement of their impressions to the teacher involved and may also take the opportunity to comment on individual students. Supervisors will be careful not to overemphasize written work in comparison to other modes of learning. Clerical Supervision is only one component of the overall supervisory system.

Formal Observation

The final non-option involves the formal observation of each teacher by the Principal or Vice-Principal. This should not be confused with developmental observations carried out during CS or CPD, the purpose is quite different. A formal observation will be conducted at least once a year and concentrate on a standardized list of professional teaching skills. By contrast, in Clinical Supervision the observation concentrates on a narrow area of teaching jointly agreed upon by teacher and supervisor.

Formal observations are judgmental and will take the form of a check-list or rating instrument, items will be standardized for all teachers. You will be informed of the date and time of the observation. The information collected during this observation will be used for the SCR.

If you have any questions regarding the new supervision system please feel free to contact anyone on the management team.

Teacher's Reactions

Sledgewood staff reacted to the trial supervisory system in a number of ways. One fairly large group of teachers objected strenuously, making comments such as. "I don't need to be supervised, I know what I'm doing"; "how can that HOD possibly help me, I've got ten years on the young pup"; "they're not coming into my room"; and "She just wants to spy on me". However, many other teachers, while not fully convinced or trusting the system, could see its merits. They appreciated the time and interest shown in developing the system by Ms Tan and the management team. They also appreciated being informed and involved.

Ms Tan had expected many of the objections and continued to calmly sell the system and reinforce that anything that arose during developmental supervision **would not** be used for judgmental purposes. She asked the staff to trust her and worked especially hard to convince the teachers who were influential in the informal networks within the staff. Ms Tan and her team convinced the staff to give the system an extended trial period and emphasized the ultimate aim of the process -- an improved standard of instruction for the children. The truly dedicated teachers, most of the staff, would not argue with this rationale.

Ms Tan acknowledged that differentiated supervision was not a panacea for solving all Sledgewood's problems but knew she needed a framework to cater for both school and individual supervisory needs. The system admitted the fact that

teachers developed at different rates and grew professionally through different mediums. She also recognized that she needed some mechanism for quality control and a whole-school view of instruction. Ms Tan knew it would be difficult, but she had the system implemented and was determined to give it every opportunity to work......

Two years later: management team meeting sledgewood school .

Ms Tan and the management team sat down to review their internal appraisal findings from the previous year and to set some targets for the following year. The first topic on the agenda was a progress report on the outcomes and effectiveness of differentiated supervision. Mr Loo, HOD eported on his department.

"I have four teachers going through the clinical process, nine teachers working in teams, and three teachers using Independent Professional Development. A majority of teachers have accepted the supervision system. In fact, the feedback I get shows that most of my departmental staff are enjoying the new things they are learning. Innovation and professional discussion have never been more prevalent in formal and informal meetings. Most teachers now seem to accept the judgmental components, many still don't like it, but they accept its value. Dropping in on various lessons is no longer a major problem. The eleven percent increase in exam results and an obvious improvement in student behavior and dedication are difficult to ignore. Mrs Lee and Mr Lau still complain but have little support from their colleagues. The fact that I'm not involved in the SCR is a big advantage and tends to make my presence less threatening. My staff wish to continue with the system but want more say in selecting their own developmental option – I think we should look into this. Overall, my opinion is that the system must continue."

Ms Tan Thanked Mr Loo for his comments. She was generally pleased with the acceptance and success of the system and had high hopes for its continued positive impact. A carefully planned, fairly open system of supervision had certainly helped Sledgewood. She wondered if other schools could benefit???

Notes

1. The term 'differentiated supervision' was originally coined by Allan Glatthorn in his 1984 book *Differentiated Supervision*, Alexandria, VA:ASCD. The concepts and options presented are drawn from the following sources and expanded upon to include judgmental 'non-options': Conners, B. & Schoer, B. (1988). *Towards Effective Teaching: A Guide for Supervisors.* Sydney, NSW: NSW Government Printer.; Glatthorn, A. (1984). *Differentiated Supervision.* Alexandria, VA:ASCD.;Glickman, C. (1981). *Developmental Supervision.* Alexandria, VA:ASCD. and Sergiovanni, T. (1987). *The Principalship: A Reflective Practice Approach.* Boston: Allyn & Bacon.

2. In differentiated supervision options may be selected by the teacher or jointly by the supervisor and teacher. The dual approach may be preferable as it goes further towards ensuring teachers are supervised using the most beneficial option. The options may be adjusted to suit individual school situations, but the developmental emphasis must dominate. Whichever option is utilized, it should be clearly understood that the purpose is non-evaluative and aims towards the improvement of the teachers classroom competence. Glatthorn (1984) believes teachers should be given the choice of which option through which they are supervised. Sergiovanni (1987), however, believes that the principal should attempt to match teachers to options through considering aspects such as cognitive complexity, personal supervisory style, and whether teachers have power, affiliation, or achievement needs. Sergiovanni's ideas for pure and mixed matching of teachers to options make interesting reading.

3. For a more detailed description of Clinical Supervision see Smyth (1984); for IPD, CPD, and Administrative Monitoring see Glatthorn (1984) and Sergiovanni (1987); for Clerical Monitoring and Formal Observation see Conners & Schoer (1988) and Walker (In Press).

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DAVID ELKIND

Helping Parents Make Healthy Educational Choices for Their Children

Educators can guide parents toward developmental programs and away from educational hothouses if they are sensitive to the pressures that make parents anxious about their children's early schooling

We are currently embarked on a social experiment of enormous significance. Never before in our history have more than half of our children below the age of six been cared for outside of the home on a regular basis for extended periods of time.

During the critical early childhood years, young children form lifelong attitudes toward themselves and others as well as toward their capacity for initiative and learning. If we bungle this experiment we may emotionally and educationally disable a significant proportion of future generations. How can we, as professional educators, help parents make informed choices regarding the care and education of their young children?

The Demise of the "Traditional" Family

Family life has changed dramatically in the last quarter century. In the early 1960s some 60 percent of American families could be described as traditional - two parents, one at home, two or at most three children. Yet today, only about 7 percent of our families are "tradi-

tional." The prevalence of two-career couples, single parents, and so-called "blended" families has introduced economic, emotional, and interpersonal dynamics into parents' decisions about what is best for their young children.

The prevalence of new technologies and the transformation from an industrial to a service-based society makes these choices even more difficult. The rate and extent of social change call traditional values - not only with regard to women, sex, and divorce, but also about children - into question. The Freudian-inspired concept of the "sensual" child, which dominated our thinking from the 1930s through the '50s, has been replaced by the concept of the "competent" child of the 1960s, '70s, and particularly the '80s.

Disagreement Among Experts

Those who should be in a position to advise parents about what is best for young children do not themselves agree. Some writers, such as Burton White[1] and the Moores[2], argue that out-of-home care is detrimental to the child's growth and development.

White claims that children need to be kept at home at least for the first three years of life, while the Moores would like children to be reared at home at least until the age of eight. On the other hand, writers such as Schweinhart and Weikart[3] and Clarke-Stewart[4] argue that quality early childhood programs can be beneficial for young children.

Never before in our history have more than half of our children below the age of six been cared for outside of the home on a regular basis for extended periods of time

The disagreement does not stop there. Writers who agree that children should be kept at home during the early years are nonetheless at loggerheads when it comes to the kinds of at-home programs they recommend. White, for example, advocates enriching informal interactions between parent and child during the early years. Glenn Doman[5], in contrast, suggests that parents introduce formal instruction during the first year, including presenting children with flashcards depicting animals, the presidents, and famous composers.

Even writers who regard out-of-home care as not necessarily harmful to young children disagree considerably. Some writers and administrators, like New York State Commissioner of Education Gordon Ambach[6], believe that early childhood programs should be a

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During the critical early childhood years, young children form lifelong attitudes toward themselves and others as well as toward their capacity for initiative and learning

downward extention of formal education. In New York City, beginning in the fall of 1986, four-year-old children will enter kindergarten. Other writers like Edward Zigler[7] and I[8] advocate informal educational programs for young children that are adapted to their unique learning styles and limitations.

Choosing Reliable Research

Given this professional Tower of Babel, how are we to help parents choose intelligently the best out-of-home program for their children? First, we need to make our own way through this jungle of educational theory and opinion if we hope to guide parents. We do this best, it seems to me, if we follow the path opened by substantial research and experience rather than that suggested by unsubstantiated theory and opinion. There is considerable evidence from longitudinal follow-ups of Head Start children, for example, that out-of-home programs for young children need not be harmful and can be beneficial.[9]

On the other hand, there is no evidence that early formal instruction, such as that advocated by Doman, the Englemanns[10] and others for children in the early years of life and by Ambach at age four, has any lasting value. Indeed, all of the evidence is against such formal instruction in the early years.

The cross-cultural data are a case in point. Denmark is essentially a middle-class country without our nation's extremes of poverty and wealth. Illiteracy is almost unknown in Denmark, and a strong national policy and sentiment support a literate populace. Yet Denmark's approach to reading instruction is developmentally oriented:

It is a general rule that no formal training whatsoever in the three Rs is given in the kindergarten class. Before children can learn to read, it is considered that they must have acquired a range of skills within the primary spoken language. Such skills are thought to be best developed through total real life experiences in a social context and related to

natural language, not by the artificial segmented training provided by formal pencil and paper tasks. The reading would serve no purpose for the child and hence he might learn, albeit by accident, that 'reading' is non-functional.[11]

Another sort of evidence for the ineffectiveness of early formal instruction comes from two recent studies of gifted and talented individuals.[12,13] These studies are instructive because the aim of many early instruction programs is purportedly to "raise your child's IQ" or to "have a brighter child." The investigators in one of the studies looked at 120 men and women who had attained eminence before the age of 40. In the other, the investigator queried more than 100 individuals who had been awarded the coveted McArthur Fellowships, given to individuals of exceptional talent.

In both studies the investigators asked questions about the role of parents in the achievements of their offsprings. Their results were quite comparable. In the first study, of those who had attained eminence before the age of 40, both the children and the parents emphasized the importance of their culturally rich and intellectually stimulating home environment and the parents' role in providing support and encouragement. In the second study, involving about 50 of the McArthur Fellows, the respondents again stressed the importance of the home environment and support - rather than pressure - they felt from the parents. The parents of these gifted and talented young people did not attempt to teach them math or reading at an early age, but rather created an environment that stimulated their child's interest and curiosity.

Substantial evidence supports the conclusion that introducing children to formal instruction in the three Rs (involving pencil-and-paper tasks) after the age of five is more beneficial than doing so earlier. Children who enter kindergarten before the age of five are more likely to develop learning problems and to drop out of school than are children who enter

kindergarten after the age of five[14]. I am speaking now, of course, about mass education. We should not put any roadblocks in the way of children who seem to pick up reading, writing, or arithmetic on their own and should encourage and support their interest. But for most children, earlier formal instruction in the three *R*s is not better.

Education for Responsible Parenting

As professional educators, then, I think we can responsibly advise parents that out-of-home care need not be harmful to their young children, but that a high-pressure program for young children might have long-lasting negative effects.

Many parents, to be sure, will not be swayed by the evidence. Some of these parents may be victims of social influence: the children of their friends may be in high-pressure programs, and they may feel that their friends' children will have a "leg up" on their own. As one mother said, "If I don't put her in this program all of her friends will be reading and she won't be."

We can give permission to parents who are victims of social pressure to do what they feel is right for their child, even when it seems to fly in the face of social practice. I often tell parents that is it all right to say *no*. Their children do not have to attend a high-pressure school or take ballet lessons just because their peers are doing so. Such parents need support in exercising their parental authority in a loving and caring way.

Other parents are simply overwhelmed by their work and responsibilities. One mother asked me how to teach her six-year-old son more healthy stress-relief mechanisms. When I asked her to explain, she said that she was a working single parent who had to leave her son with a babysitter before and after school. In addition, to give her son what she felt other parents were giving their children, she enrolled him in cub scouts, music lessons, and karate. When I suggested that she could cut

down on some of the activities, she said that it was impossible. But she went on to ask if I could teach her son not to bite his nails and to do deep breathing or relaxation exercises.

We can sympathize with such parents and acknowledge their frustrations that they have no options. Although they are talking about their children's stress, they are also taking about their own. Such parents feel reassured and supported if we acknowledge, honestly, the efforts they are making on behalf of their children. We need to tell them that their efforts are admirable and that in the long run, if not immediately, the child will appreciate them. But we also have to tell them that if they do too much at too great a cost to themselves, it may backfire. Children need their parents more than they need lessons and activities. Cutting down on some activities may not be an act of selfishness but a gift of parental time and involvement.

Still other parents overburden their children out of their own guilt. Although it has become socially acceptable for middle-class parents to put their young children in out-of-home care, even the most liberated parents may question this practice. Such parents are easy prey for the "earlier

Illiteracy is almost unknown in Denmark, and a strong national policy and sentiment support a literate populance

is better" rationalization that argues that out-of-home academic training is essential for later academic success. Such parents often enroll their children in high-pressure, academically oriented preschool programs, believing that they are acting in the children's best interests.

With such parents it helps to acknowledge their apprehension about out-of-home care and to tell them that it can be stressful for young children to be separated from parents on a regular basis. We need to emphasize, however, that the stress of separation is lessened by a solid early childhood program geared to the child's developmental level. On the other hand, when the stress of separation from parents is compounded by the stress of a high-pressure academic program, the child risks adverse reactions.

Strategies for Social Transition

Although some parents are more vulnerable than others to making the wrong decisions on behalf of their children, all parents have needs that require sensitive interpretation and response. A few moments of conversation with parents will usually give an educator enough information to make a "differential diagnosis." Parents who are victims of social pressure will often say something like, "But if I don't enroll my daughter in soccer at 6, she won't be able to make the team at 14." Often the theme of social acceptance dominates discussions with such parents.

In contrast, parents who are overwhelmed with their responsibilities and financial burdens will talk about all the things that they and their children have to do. The tension and speed of their speech conveys their sense of being trapped without options.

Finally, parents who are overburdening their young children out of guilt usually will express ambivalence toward the time and energy they have diverted from family time to pursue a career. "I really want

"...all parents have needs that require sensitive interpretation and response."

to spend more time with Jennifer, but we are in midst of a major ad campaign and it is impossible. Besides, she loves that school and is already reading those little books."

The social dynamics of contemporary life are pushing many parents with the best intentions into making the wrong educational decisions for their children. Some parents respond to social pressure, others feel the burden of financial obligations, others struggle with the guilt they feel in having to choose between career and family. Many other parents, of course, deal with some combination of all three pressure points in their lives. As educational professionals, our task is to identify parents who need our help and to give them information, support, and permission they need to make healthy choices for their children.

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VERNON G. SMITH

Family Day:
An Investment in Our Future

One Indiana elementary school strengthened the ties between students and their parents by hosting a celebration of the family - and strengthened school pride as well.

One the morning after our first Family Day at Daniel Hale Williams School (Gary, Indiana). we-did-it expressions beamed from the faces of a tired but proud and happy staff. It was a dream come true, a successful intervention program executed with precision and affection.

A few months earlier, the words from a banquet speech by Judge James Kimbrough had propelled me into action: "We've lost one generation of young people, and we are in the midst of losing another." As an elementary principal and a city councilman for nearly 14 years, I had suspected for over a decade that our young people were going astray, literally wasting away. However, to hear this idea capsulized in Judge Kimbrough's statement caused me great distress.

As I prepared to go to work the next day, I began formulating questions to pose to the faculty. Was the breakdown in family structure partially to blame for the alienation of our youth? What role could the school play in supporting or rebuilding family strength? Could we offer some kind of intervention to help families at risk?

If we could strengthen family structure for our students for even one day, we might be on our way to proving Judge Kimbrough's dire warnings wrong. In any case, we needed parents' support in our quest for academic excellence.

I began to imagine a family celebration where parents could spend the day with their children, watching films, hearing speakers, singing together, and sharing a day of learning. I presented my ideas and questions to the faculty that afternoon; and with their support we began to form committees to plan Family Day.

We set a target date for the end of the grading period when we normally would have our attendance, pride, and honor roll awards - it happened that the day fell during American Education Week. The committees immediately went into action to locate films and speakers, select activities, coordinate lunch plans, and publicize the event. Students wrote "raps" in celebration of families and send out invitations.

Finally, it arrived - Family Day. We began the day by joining hands and encircling the school - parents, students and staff - to recite our Family Day rap and sing our school song. Even the drizzling rain could not diminish the strong sense of pride and family spirit we felt that morning. We moved through the day with ice-breakers, discussions, films, speakers, lunch, sock hop, and

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"Children learned they could say 'no' to drug use and 'yes' to their parents' authority."

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academics. We closed with our first grading period awards program.

It was a glorious day. Parents and children shared their likes and dislikes and suggested ways to improve their family settings. They discovered each other's uniqueness and learned to cope with each other. Parents learned more about parenting; children learned they could say "no" to drug use and "yes" to their parents' authority. Parents and children danced together, the children mimicking dances of yesterday and the parents struggling to do the dances of today.

Nothing else has been half as rewarding as to see more than 200 parents involved in a full day of activities with their children. With parents' commenting,"I enjoyed this day so much" and "I learned so much" and the children with beaming faces saying, "Let's do it again," you can understand why we feel we have begun restoring school and family pride.

On future Family Days we can continue to make positive changes towards strengthening the fiber of our society. No more lost generations at this school; we count Family Day as an investment in our future.

Vernon G. Smith is Principal, Daniel Hale Williams School, 1320 E. 19th Ave., Gary, IN 46407.

ANG BENG NING

Project Five Dollars

Making the Learning of Economics more Meaningful for Students

Economics is the study of certain behaviourial aspects of society. There are a number of ways in which students can be taught to analyse the connections between theories which they have studied in Economics and the world we live in. Project Five Dollars is an idea which I have tried out at Jurong Institute.

Project Five Dollars allow students to discover for themselves whether the Theory of Production and Costs adequately explains the way in which producers behave and take production decisions. Students were given a loan of five dollars each to start an enterprise. Given a production period of three weeks and a charge of 5% interest on the loan, students were encouraged to make use of what they had learnt in Economics to decide on the mode of production, marketing techniques and other-decision-making.

To make the simulated market competitive, prizes were offered to enterprising students who were able to make money in this very short run period.

A total of 144 students participated in this project. The principal and teachers were very supportive. They were the "bankers" and the "consumers". Over the span of 3 weeks, the school became a "competitive" market with different types of business units. The more popular forms of businesses were partnerships and sole proprietorships. A class in the Commerce stream which comprised 27 students formed a cooperative. The students displayed commendable, creative and organizational abilities. Some raised more capital by

THE TACTICAL MANOEUVRES

A RAG-TAG GROUP OF MERCENARIES

requesting for deposits. Others made samples of products (e.g. photo frames, cards, book markers) with their limited capital to attract and confirm orders from interested customers. In fact, one of the "producers" received such overwhelming orders for his creative book markers that he was unable to deliver all the goods at the close of the project. The successful "entrepreneur" was a sole proprietor who produced unique hairpins. With her system of ploughing back her earnings, she was able to expand sales and made "supernormal" profits. Her marketing techniques included impressive packaging and paying agents commissions to promote her products.

With right timing, this project proved to be successful as an enrichment program for students. The students shared their experiences as producers through a questionnaire and tutorial discussions. Students realised that the world we live in is a complex one. They found the project challenging, especially when they discover that they could find some economic explanations for some of their "real life" encounters when they were "producers".

Economics is a challenging and fascinating subject. Using Project Five Dollars or any other enrichment programs, I hope that students can be motivated to take up the challenge to enliven their studies.

Ang Bing Ning is a Head of Department at Jurong Institute.

THE TRIUMPHANT VICTOR

JOSEPH B.K. LIM

Science Day: The Temasek Way

Making the learning of science fun for all

Science Days are events which pupils, parents and teachers Temasek Primary look forward to each year. Such events bring about meaningful learning experiences to all pupils of a school, encourage parental involvement in school activities and generate greater interest in science. Our experience at Temasek shows that for a successful Science Day, there must be parental involvement, mass participation and pupil project work.
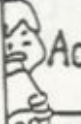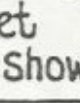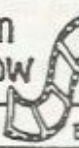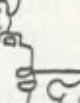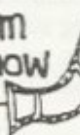
Parental involvement

It is important to get parents involved in school activities. In our Science Days, parents are involved in the pet shows, the search for the most unusual fruit (last year) and the most unusual small animal. They also help in projects (such as plant propagation) undertaken by the lower primary pupils. Temasekians' parents are often spotted at the Botanic Gardens, taking photographs of unusual fruits or at the reservoir looking for unusual small animals.

SCIENCE DAY '90
· programme ·

	P1	P2	P3	P4/4E	P5/5E/7E	P6/6E/8E
8 am / 9 am	Pet Show — fidd	Exhibition — levels 2,3,4		Film show — AVA ETV	Exhibition and Questionaire	Pet show — field
9 am / 10 am	Activity — classrooms L2	Pet show — field	Questionaire	Creative Writing — classrooms L3	— hall	Exhibition and Questionaire
10 am / 11 am	Exhibition — levels 2,3,4	Activity — classrooms L2	Pet Show — field	Pet Show — field	Film Show — AVA ETV	— hall
11 am / 12 pm			Creative writing — classrooms L3	Exhibition — levels 2,3,4	Pet show — field	Film show — AVA ETV

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Mass Participation

All pupils, irrespective of their ability, should be provided with the opportunity and be encouraged to participate in Science Day activities. Activities should be planned so that all pupils can enjoy them and benefit from them. The use of skills in other content areas (e.g. creative writing, design of posters.) is also encouraged.

One feature which encourages mass participation are the Activity Centres. These centres are exhibits set up in the school hall to provide pupils the opportunity to apply their scientific skills (e.g. observation, calculation) with token prizes for pupils who succeed in getting the answers.

To overcome the problem of pupils wandering aimlessly from one exhibit to another, pupils are given worksheets so that their participation will be more structured and meaningul. These worksheets are prepared by pupils themselves with the help of our resource persons.

With mass participation, the movement of children around the exhibits must be properly organized. We made arrangements for pupils to visit different exhibits on an hourly basis (see chart).

The Most Unusual Fruit

Project Work

To generate interest and to encourage pupils to apply thinking skills, we encourage project work which could be based on current issues such as deforestation, the greenhouse effect, environmental polluation etc. Besides class teachers, we have resource persons whom pupils can turn to for help and guidance. Resources (e.g. reference materials) should be available for teachers and pupils. The success of project work during the last 2 Science Days is testimony to the enthusiasm of the teachers, resource persons and pupils.

To make project work more meaningful and interesting, prizes in the form of science-related story books or reference books are awarded to pupils.

What makes Science Days such important events in the school calender? It is the interest, joy and enthusiasm shown by pupils, teachers and parents which makes the effort worthwhile and at the same time educational.
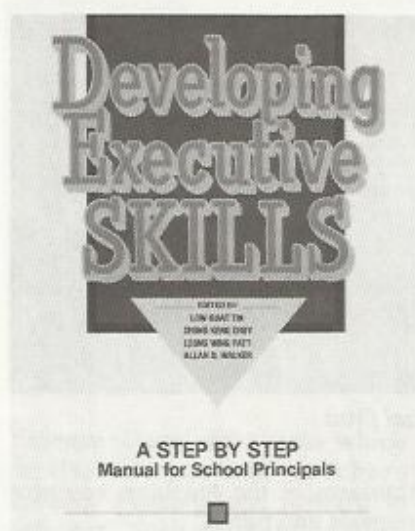

At the Activity Centre

Joseph B. K. Lim is the principal of Temasek Primary School.

BOOK REVIEW
by Norman C. Dennis

A STEP BY STEP
Manual for School Principals

Developing Executive Skills: A Step by Step Manual for School Principals

by Low Guat Tin, Chong Keng Choy, Leong Wing Fatt, Allan D. Walker. Longman Singapore Publishers (Pte) Ltd., 1990

With so many books currently available on leadership and management skills, one is tempted to ask when yet another appears on the market: "Why? Don't we already know enough about leadership? Surely, the basic principles haven't changed over the past decades." The title of this new book, however, gives an important clue as to why it is different, and needed. Developing Executive Skills (edited by Low Guat Tin, Chong Keng Choy, Leong Wing Fatt and Allan D. Walker, from the Department of Management Studies, Institute of Education) has this sub-title: A Step by Step Manual for School Principals. The book is innovative in its approach. It has been designed and written in a manner that will cause individuals who use it to consciously relate theoreti-

cal perspectives to real-life experience. As a handbook, the format (and underlying assumption) reflects a crucial learning principle: nothing can rival what we learn by experience. But, since mere practice (or experience) is not enough, the editors have produced a refreshingly different resource liberally laced with develop-mental exercises. Let me describe the format and contents of this glossy-covered paper-back, before making further critical comments.

The 194-page Manual consists of eight modules (each equivalent to a traditional book chapter): Interaction Simulation; Problem Solving Simulation; Conflict Management Simulation; Consensus Building Simulation; Principal-Parent Conference Simulation; Delegation Simulation; Developmental Supervision Simulation; and In-Basket Simulation. Introductory notes form a preface to each module; this is followed by a series of simulation exercises. The simulations comprise the bulk of the book, and they focus on the development and refinement of ten major major executive skills, namely human relations, perceptual, leadership, assertiveness, organizing, imaging, problem analysis, verbal communication, written communication and team building. Each simulation exercise has been carefully designed, to contain a scenario, a proposed structure (complete with agenda and time allocation) and instructions for the participant(s) and the facilitator. The intention of the authors has been to provide a systematic process of trial...feedback...reflection... as a means of developing and refining skills and behaviours. The case studies (scenarios or critical incidents) serve to provide the vehicle and contextual elements for the simulations and role plays. The total package can also serve as a "convenient set of TEMPLATES" for developers of simulation modules, since they "need only substitute the case incidents with those that are more pertinent to the learners' work environment."

The target audience for which this manual is intended comprises

developers of simulation models, workshop facilitators, principals, and leaders in executive positions. The case studies were developed by the editors over a period of five or six years, during which ideas were tried out and from which the pedagogical (or should it be andragogical?) framework for the present manual was developed: a creative, problem-solving framework, with the focus on a "practice-oriented and practitioner-oriented" process. What then, in summary, are the most commendable features of the manual? These are not hard to enumerate. Firstly, one has to agree with the authors that the manual is a "first" (for this part of the world, anyway) in that it "fosters learning while doing a job in the work place". During the '80's there has been a burgeoning interest in process-oriented models as the best approaches to capture the fluid and dynamic nature of leadership. We also have enough evidence today to convince us that modelling-based training is virtually mandatory to develop leadership skills in traditional supervisors and conservative executives. A second feature relates to the process itself, that of role-playing, simulation and problem-solving. This is a meaningful and powerful way to "invade" the real world. And, by doing so in a non-threatening and controlled risk-taking environment, it affords numerous opportunities for participants to "safely" take on roles, make rules, explore strategies, examine behaviours - with only limited consequences. There is a further distinguishing feature about the process: by reflecting upon and critically discussing incidents, behaviours and outcomes, participants help to bring to a level of awareness why they do what they do, and this leads them to tease out underlying beliefs, values and assumptions. The manual is studded (strategically, and appropriately, I would claim) with humorous illustrations. This feature, together with the lay-out - of narrative description, framed exercise material, differentiate type-face, and captions against screened backgrounds makes the manual an attractive package, overall, and very readable.

On the debit side, there appear to be two rather serious omissions. There is no index, and no references are given. I find this leaves me, as a reader, short-changed. There is no dearth of literature on the subject, and it would have been extremely useful for a selection of good follow-up readings to have been included. Having triggered a lively interest in what the modules present, the manual apparently does nothing to help the participant who would like to explore certain issues further. I find the omission rather odd.

There are two further negative aspects, relating to presentation. The first of these refers to the use of sexist language. The principal, in almost all the scenarios, is referred to as "her" or "she", (usually writers err by using only the masculine form, which provokes the ire of feminists, in particular). In defence, many people would claim that it is not possible to rid a book entirely of "sexism". They would argue that sentences tend to become incredibly tortuous, as attempts are made to moderate or modify sexist language. Personally, I don't agree; a desired style (both of speaking and writing) can be acquired, with some conscious effort. One gets the impression that the authors of the manual decided it was too hard to maintain a 'gender balance' through alternating use of "he/his" and "she/her". They preferred, instead, to inject an element of unreality into an otherwise real working context: are our principals, leaders, managers, and executives, predominantly women?

The second negative element refers to the biblical quotations that appear in various places in the manual (see, for example, pp. 16, 53, 74, 77, 114). I have no doubt they convey a serious message. But, are they not out of place in a text that is written for a secular audience? I believe the quotations are more likely to offend (particularly those sections of the community who may feel that educational texts of this nature should be free of ideological and religious bias). As an alternative, I would have preferred the words of wisdom to

have been culled from the many scholarly works available in the fields of leadership and management. (Incidentally the efforts of one of the authors, LGT, in providing her own "quotable quotes", are to be commended. They serve as refinforces, and provide further food for thought).

To return to my opening question posed at the start of this review, what this manual will do is to ground any developmental work on acquiring leadership skills, in a meaningful work-a-day context, and in an experiential base. It is assumed that follow-up discussion and reflection and introspection will enable participants to appraise their own behaviour, and to become judges of their own actions. This manual heralds a bold and courageous departure from traditional approaches to teaching and learning. It will certainly help to dispel a strongly-held myth about the primacy of method in teaching, and the relative uniformity of students' perceptions of course content. The types of executive skills to be promoted cannot be attained with participants as mere passive recipients of information. It requires action and interaction. And the evaluative process in which the participants engage allows them to become judges of their behaviour: they do this in a formative, diagnostic sense as they identify specific behaviours (or "understandings") that need to be worked on; and they do this also in a summative sense at the end of an entire module of activities.

The manual should find a place on the desk (or shelf) of every workshop facilitator working in the area of executive skills. It offers a powerful technique, capable of shifting attitudes, of providing opportunities to expose power-based authoritarian leadership, and of fostering openness and a freedom from dependence. The end-product (and desired outcome) most likely to be produced is the effective leader with skills in problem-solving, who is capable of establishing mutually satisfyingrelationships with people in an organisation. If this manual enables

such an end-result to be achieved, then it would have succeeded in its mission, namely, to enable learners to master the skills, and to reach the stage of "unconscious competence". The skills they would have mastered would then "be evident from what they do rather than what they say."

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