REACT

Review of Educational Research and Advances for Classroom Teachers

NATIONAL INSTITUTE OF EDUCATION
NANYANG TECHNOLOGICAL UNIVERSITY
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LEARNER STRATEGIES IN LANGUAGE LEARNING

Review by
Christine C. M. Goh

INTRODUCTION

In recent years, many second language researchers have devoted much time and effort in identifying types of mental process and behaviour that characterize successful and unsuccessful language learners. These processes and behaviours are referred to as learner strategies. The concept of a strategy, however, is not unique to second language learning. It is prevalent in cognitive psychology, especially in the literature on cognitive strategies in memory, reading comprehension, and problem-solving research.

The purpose of this article is to review learner strategy research conducted in the field of second language learning and classifications of these strategies. My article will also discuss some implications for language teaching.

LEARNER STRATEGY RESEARCH

Rubin (1975) and Stern (1975), who each identified effective strategies that could contribute to success in language learning, were largely responsible for generating intense interest in this area. Many of the early learner strategy studies (e.g. Naiman, Fröhlich, Todesco, and Stern, 1978) focused on language learning in general, but in recent years studies have increasingly dealt specifically with the learning of individual language skills. The scope of learner strategy research has also expanded to incorporate a metacognitive dimension: that is, how learners select and evaluate strategies, and what they know about the strategies they use. Recent studies exploring
learner strategies are reported in Wenden and Rubin (1987) and O'Malley and Chamot (1990). The methods of data collection used included questionnaires, individual and group interviews, ethnographic observations, learner journals, and think-aloud techniques protocols.

The rationale for learner strategy research is that if researchers can identify strategies that successful language learners use, then the less effective learners will benefit from applying the same strategies to their own learning. A major contributing factor to the advancement of learner strategy research has been the emphasis on self-directed learning and learner autonomy. Wenden (1987:8) highlights an important educational goal of research on learner strategies: "It is intended that insights developed from the research guide the development of learner training activities so that learners become not only more efficient at learning and using their second language, but also more capable of self-directing these endeavors."

CLASSIFICATION OF LEARNER STRATEGIES

There are a number of classifications in the literature. I will outline just two here:

1. O'Malley and Chamot (1990), drawing on research in cognitive psychology, identify three types of strategy that are crucial to language learning: metacognitive, cognitive, and social-affective.

   - **Metacognitive strategies** are applied in regulating and managing learning. They are used for planning, monitoring, and evaluating learning processes. Two examples are selective attention and self-monitoring.

   - **Cognitive strategies** are mental operations which interact directly with incoming information. They facilitate comprehension and recall, as well as production. Some examples are summarization, translation, and inferencing.

   - **Social-affective strategies** include ways of involving others to assist one's learning, such as asking for repetition and clarification. This category also comprises ways of controlling one's emotions in order to complete a learning task.

2. Oxford's (1990) system consists of six groups of strategy. These are subsumed under two main classes of direct and indirect strategies which work in tandem with each other.

   - **Direct strategies** involve mental processing of the language and include memory, cognitive, and compensation strategies. (Compensation strategies enable learners to use the new language despite limitations in grammar and, especially, in vocabulary.)

   - **Indirect strategies** support and manage language learning, and consist of metacognitive, affective, and social strategies.

IMPLICATIONS FOR TEACHING

A closer examination of classifications of learner strategies shows a considerable degree of overlap between the various systems, and even within some sub-groups in each system. This indicates, nevertheless, that researchers share a number of principles about the concept of learner strategies:
Learner strategies involve learners in some kind of mental activity. This could be logical and systematic information processing or problem-solving, or it could be mental activity that is more reflective in nature, such as planning and evaluating one's learning.

Learner strategies help the learners to become more independent. By using strategies effectively, they can become more efficient in using the language and self-directing their own learning.

All learners use strategies. The difference is in the range, the frequency, and the suitability of the strategies. By using appropriate data collecting methods, researchers can identify these strategies.

Furthermore, results in this area of research have presented strong evidence in support of three hypotheses:

1. **Successful language learners tend to use more and better learning strategies than the weaker learners, both in understanding and using the language, and in directing their own learning.**

2. **Successful language learners are better able to select and evaluate the strategies they apply than their less successful counterparts.**

3. **Learners who have been trained to apply learning strategies generally perform better in their language learning than those who have not received any training.**

In view of what has been considered in this article, I suggest, therefore, that Singapore schools can benefit from learner strategy research in several ways:

1. **We can use the knowledge derived from this research to help students become more effective language learners.** We often find students who are very interested and conscientious, but who seem to have very little success in learning a second language. This can be very demoralizing for both student and teacher. The problem could be that the students are working hard, but not working smart. Using one of the more comprehensive strategy classifications as a framework, teachers can help students find out if they are applying strategies appropriately and adequately. Learners who are not using effective strategies adequately or are using the wrong ones will benefit from some training. Activities such as those suggested in Ellis and Sinclair (1989) can be readily adapted to meet our students' needs.

2. **Being aware of learning strategies enables students to take more responsibility for their own learning** so that they can eventually become independent learners, an objective of our language programmes (MOE 1991:9). Teachers can guide students in selecting and applying appropriate strategies for processing and producing information in another language, as well as for managing and evaluating their own learning. Students can also be encouraged to reflect on their own learning processes and share this with other students. Finding out about what others have used successfully and experimenting with these strategies themselves, students can expand and refine their own repertoire.

3. **Schools can carry out their own strategy research** based on theoretical frameworks reviewed in this article. Such information on strategies used by students learning a second language will be
a valuable contribution to establishing a more comprehensive profile of individual students. Additionally, such research can add a local, cultural dimension to an understanding of learner strategies.

CONCLUSION

Although there are differences in research focus and ways of classifying language learning strategies, researchers and theorists share a similar view about effective learning. They believe successful learners approach the task of language learning in a holistic manner. These learners activate appropriate mental processes, plan, monitor and evaluate their own learning, and exercise control over their emotions and circumstances. This view of learning that includes both a conceptual and a social-affective basis should be incorporated into language teaching if we are to help our students become more effective as learners, and also independent and self-directing ones.

SOURCES


Rubin, J. (1975). What the good language learner can teach us. TESOL Quarterly. 9/1: 41-51


HELPING STUDENTS TO OVERCOME READING AND WRITING DIFFICULTIES: USING GENRE ANALYSIS

Review by
Audrey Lim Swee Eng

INTRODUCTION

The present Primary English Language Syllabus (1991) which emphasizes the communicative teaching approach and whole language learning, has shifted the onus onto teachers to select appropriate meaningful, purposeful and interesting materials and activities and to ensure that these are "contextualised, interactive and integrated" (Mok, Sandosham and Neufeld, 1995, p. 83). Although the present thematically-based syllabus endorsed by the Ministry of Education, is theoretically in line with the latest developments in language teaching and learning, it has been criticised as being "too open", "unstructured, and "lacking in guidance" (Mok, et. al., 1995, p. 85).

The main problem English Language teachers in Singapore now face, with the implementation of the new syllabus is the selection of appropriate materials based on the themes/topics in the syllabus, and in applying practical teaching strategies and classroom-based activities that would provide opportunities for integration of the four language skills in meaningful student interaction and communication in realistic and contextualised situations (Lim & Segeram, 1994). Faced with this challenging task, what criteria should teachers apply in their selection of materials and instructional activities? A review of research reveals that “genre analysis” may be a useful tool at the teacher's disposal as it provides the organisational basis for the selection of suitable materials for teaching reading comprehension and writing. A few studies reviewed (Meyer 1982, Carrell 1984, Langer 1992, and Reppen 1994) demonstrate that instruction which guides students in identifying text structure, by providing them with a wider repertoire of organisational types, not only improves reading comprehension but also helps them in their written compositions as they are better able to choose the appropriate structure and linguistic devices to accomplish specific communication goals and make their writing more effective.
WHAT IS "GENRE ANALYSIS"?

"Genre analysis" is a technique of identifying conventional aspects of language use within a text. For pedagogical purposes, it is useful to identify the various genres that students are likely to encounter in their reading and writing, namely, narrative, descriptive, expository or argumentative. In addition, it is also useful to highlight specific lexi-grammatical features/structures and expressions associated with each genre for instructional purposes. (Bhatia, 1993).

WHAT DOES RESEARCH SAY?

Research has shown that teaching students about top-level rhetorical organisation of text, that is, genre analysis, enhances their reading comprehension and writing skills.

Empirical data gathered by Meyer (1982) demonstrated that five different types of text structure affect reading comprehension, namely, causation, comparison, problem/solution, description, and time-order. In one study of ninth graders, students were required to recall (immediately and again a week later) two texts, one written with the comparison structure and the other with the problem/solution structure. Through analysis of the written recall protocols, Meyer found that students who organised their recall of texts according to the structure of the text, remembered more content, including the main ideas and the supporting details. They did better on a true/false test based on the content of the passage and they had higher scores on standardised reading comprehension tests. Meyer obtained similar results in studies with older students, including university undergraduates.

Carrell's (1984) study yielded similar results. This study involved students reading expository texts which conveyed the same content but employed different organising structures, that of comparison, problem/solution, causation, or description. The results showed that readers who organised their recalls based on the structure of the text version they read were able to recall significantly more ideas from the original text than those students who did not use the structure to organise their recalls.

A more recent study by Langer (1992) analysed reports written by a sample of 16 third graders, 36 sixth graders and 15 ninth graders using an adaptation of Meyer's prose analysis system in which tree diagrams were generated to depict how children interrelated central content and ways of subordinating, linking, and elaborating their ideas. This analysis structure involved representing the overall organising idea at the top level of the tree and placing all other content in the text which elaborated on this idea at subordinate levels. In this way, Langer demonstrated the range of structures used by these mainstream American children and their development with maturity:

(1) simple description,
(2) topic with description,
(3) topic with description and commentary,
(4) topic with elaboration or
(5) point of view with defense.

Reppen (1994/1995) described a pilot study of an ESL instructional unit which combined writing process approaches, integrated language arts activities and direct instruction on different genre forms. This unit was piloted in a fifth-grade public school classroom in Arizona city. Each section of the unit followed a similar pattern of instruction, beginning with a brief review of content and genre information covered in previous lessons. The writing instruction over a 5-week period progressed from narrative to descriptive to persuasive to expository. Pre- and post-assessment measures demonstrated
positive changes in student writing, content knowledge and attitudes. The findings of this study indicated that instruction focusing on language use and genres requiring different ways of organising information as well as explicit practice and guided support enhanced students’ awareness of different ways of constructing texts and improved their chances of experiencing success in school.

INSTRUCTIONAL STRATEGIES FOR TEACHERS

Here are some useful strategies for teaching students to apply genre analysis in reading comprehension and writing.

1. **Identify the genres** that students require in reading and writing: narrative, descriptive, expository or argumentative.

2. **Focus on the characteristic organisation pattern/structure and typical language items** used in a particular genre such as Chronological Order, Spatial Order, Classification, Shift of Focus, Logical Order, Ranking Order and Balance of Contrasts. (It is to be noted that this list is by no means exhaustive and that different terms have been used to refer to these organisation structures.)

3. **Select materials that are good examples of the particular genre** and that are organised based on a particular organisation structure and include the language items (grammar, cohesion and vocabulary) typical of the genre.

4. **Help students to identify these characteristic features** in the reading passages.

5. **Provide ample and varied exercises** to guide students to practise this organisation structure and language items in their own writing, for example, in writing topic/supporting sentences and in writing introductions/conclusions.

6. **Provide independent practice** to enhance mastery of the organisation pattern, linguistic and cohesive devices as well as the vocabulary items associated with a specific genre.

7. **Have students apply the organisation structure** and related vocabulary/language items/cohesive devices to a variety of texts and tasks.

Only when students have mastered the basic organisation structures, should teachers proceed to point out and teach combinations of these features.

CONCLUSION

In meeting the challenge of implementing a syllabus based on a thematic and whole language approach, genre analysis may provide the organisational framework for helping students with reading and writing, both of which are essential skills for the mastery of English Language. Explicit instruction on the use of organisational text structures not only enhances reading comprehension, much more than instruction based on content of reading material, but also helps the student to select the rhetorical, organisational structures to achieve specific communication objectives and to signal the organisation of a text through appropriate linguistic devices in their own writing (See also Carroll, 1987). Proficiency in the language which is the medium of instruction in Singapore will help students cope with the demands and exigencies of academic life by ensuring better performance in other subjects whether in commerce, the humanities or the sciences.
REFERENCES


INTRODUCTION

Can history be taught in an interesting manner? Will students understand abstract historical concepts? Will students enjoy their history lessons? In Singapore, where history is a compulsory subject for all Secondary One and Two students, these questions are of particular relevance. This is because the students have never studied history as a separate subject. In the primary school, the students only learn about Singapore's historical development in their Social Studies classes. Consequently, it is only in their first two years of secondary schooling that the students learn about the subject of history. Therefore it is essential for history to be taught well to these students since many of them do not continue with the subject in Secondary Three.

As the teacher plays a crucial role in providing students with a firm foundation in history, it is important that the teacher has a mastery of the subject matter as well as the ability to organize and present content clearly to students. To help the teacher operate more effectively, researchers have identified various strategies. One such strategy is concept mapping. This strategy is especially useful for the history teacher as the subject of history consists of abstract concepts like nationalism and kingship. These are difficult ideas for the teacher to explain and the students may have problems in understanding these terms.
What is Concept Mapping?

According to Novak and Gowin (1984), a concept map represents meaningful relationships between concepts in the form of propositions. Propositions are two or more concepts linked by words. An example of a proposition is "the king is powerful". The concepts are hierarchical manner with the more general superordinate concepts placed above the more specific concepts. For example, the concept trade is placed above and therefore subsumes more specific concepts like monopoly, entrepot trade and free trade. The concept map also permits relationships among concepts. For instance, different forms of trade involve various degrees of government control. Thus, a concept map of trade might be as follows:

```
TRADE
    I
Monopoly FreeTrade EntrepotTrade
    I
control free port import and reexport of goods
```

By providing a visual road map which shows some of the pathways the teacher and student may take in connecting facts, the concept map is therefore a useful device to help teacher and student identify the main ideas they must focus on. It also shows the importance of making links between new and existing knowledge. Students have to re-sort ideas and relate new ideas in preparing a concept map of a topic being learnt.

BENEFITS OF USING CONCEPT MAPPING

1. **Key concepts** can be identified and explained by the teacher

   As an expert who is knowledgeable about the subject manner, the teacher can help students to identify and understand key concepts. Chi (1985) points out that this is important as what people know affects the way in which they approach a problem. She cites the example of children and adults. She argues that they both structure knowledge in a similar way. However, she notes that children's categories of knowledge may be more restricted in terms of the number of categories which they can form and in terms of the content of these categories. She explains that children form fewer categories with fewer core items because of the deficiency of their knowledge base. However, if the child is knowledgeable in the area being studied, the child may categorize content differently. Chi illustrates this with the example of a four and a half year old boy, M.K., who knows a great deal about dinosaurs. He is able to use his knowledge about them to sort the dinosaurs into two groups - meat eaters and plant eaters. Chi (1985, p 478) concludes that a very young child is capable of sorting at a superordinate level (food habits), one that has been found by zoologists to be basic to classification of mammals because of the well organized and highly enriched representation that M.K. had of dinosaurs. In contrast, the novice adult with little knowledge about dinosaurs, focuses on perceptual features and looks for visual similarities. Thus, knowledge and not age is the determining factor in the way in which a person classifies information into meaningful categories by using more abstract ideas or concepts. By sharing his knowledge about these concepts with students, the teacher can help the novices acquire a better understanding of difficult historical ideas.
2. "Weasel words" can be clarified

Concept maps are also useful in helping the teacher explain the meaning of "weasel words" (Gunning, 1978). According to Gunning (1978, p. 20) more attention must be given to such words as "these words are difficult abstractions which might cause pupils trouble". Weasel words are not particularly "history" words and may occur in almost any context. The words do not even sound difficult. Words like immigrant, settlement and contribution are examples of weasel words which the teacher needs to explain to students. Hull (1985, p. 71) concurs and suggests that the teacher has to explain what a phrase like "the country was poor" might mean to a 12 year old as it might "conjure up an image of everyone in rags". In Singapore, we cannot assume that students understand the meaning of supposedly simple words like contribution. This word is used in the Primary 4 Social Studies Textbook. A concept map can be used to explain the contribution of early settlers. It can focus on what immigrants did in four areas for example - trade, hospitals, schools and places of worship.

```
Contributions

<table>
<thead>
<tr>
<th>Economic</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade</td>
<td></td>
</tr>
<tr>
<td>Growth</td>
<td>Hospitals</td>
</tr>
<tr>
<td></td>
<td>Tan Tock Seng</td>
</tr>
<tr>
<td></td>
<td>Places of Worship</td>
</tr>
<tr>
<td></td>
<td>Temples Mosques Churches</td>
</tr>
</tbody>
</table>
```

Such a concept map is useful as it helps students to understand that early settlers contributed in various ways to the social and economic development of Singapore.

3. Students' conceptual understanding can be assessed

Concept maps can be used to obtain information about students' understanding of concepts. In Physics, researchers like Cohen, Eylon and Ganiel (1983) reveal that their students' concept maps showed that they had difficulties in understanding concepts like current, potential difference, battery, and internal resistance. Peters (1982, p. 501) also reported that even honours students had misconceptions. If students can be asked to develop their own concept maps, the teacher will be able to obtain valuable feedback about students' misconceptions, and then be better prepared for "remedial" lessons. For instance, if the teacher examines a student's concept map about trade, the teacher may discover that the student is not sure whether the same goods are re-exported in entrepot trade or whether the traders have to pay taxes in the free trade port. This information is useful for the teacher when conducting a remedial class on the growth of trade in Singapore.

4. Content can be more effectively organised

The teacher can develop concept maps to show students how to organize information. In the case of history, the teacher can use concepts to connect facts together. By seeing patterns in historical events, students will not view history as a list of isolated and unrelated events which have to be memorized. Instead, the students will understand how events are related.
IMPLICATIONS FOR SCHOOLS

The research findings on the use of concept mapping has the following implications for schools:

1. Provide training for teachers

   Teachers will need more training and support in developing concept maps. By learning how concept maps help to organize historical content, teachers will no longer just transmit an accumulated body of facts to students. Instead, teachers will be able to show students how to relate historical evidence through the construction of concept maps.

2. Encourage student participation in history lessons

   The use of concept mapping provides ample opportunities for the teachers to involve students in the process of constructing a picture of the past. By developing concept maps, the students will not only have a better understanding of abstract concepts in history but also learn how to interpret historical data.

REFERENCES


DEVELOPING MENTAL COMPUTATION SKILLS

Review by
Khoo Ewe Ewe

INTRODUCTION

Mental computation is the ability to compute exact numerical answers mentally without the aid of any recording or calculating device like paper and pencil or a calculator. It is not only a practical skill which is useful in our daily lives but has other benefits. It is beneficial in promoting a greater understanding of the structure of numbers and in developing useful computational estimation techniques (Sowder and Kelin, 1993). In Singapore secondary schools, where calculators are being introduced, mental computation skills are fast becoming obsolete. In Britain it was reported, that thousands of school leavers who are starting work were unable to perform simple mental arithmetic, without the aid of a calculator (The Straits Times 1.10.1996). Mathematics teachers and educators have a reason to worry when there is an over-reliance on a calculating device, even though the numerical task can be solved mentally.

VIEWS ON LEARNING BASIC NUMBER COMBINATIONS

How do children learn basic number combinations? Basic number combination refers to the 100 addition combinations with single digit addends (0 + 0) to (9 + 9) and the 21 combinations in the series (10 + 0) to (10 + 10), including their commuted pairs. This includes subtraction, multiplication and division combinations.

Baroody (1985) outlines the historical debate of the two major views on how basic number combinations are learnt. The drill theory as its name suggests emphasizes memorizing by means of repetition or drills. Answers are retrieved from associative memory and the understanding of number relationship is not necessary. This explains the rapid fact of retrieval in simple mental mathematics. According to the meaning theory, children master number relationships through meaningful experiences and habitual production of the number combinations.
Baroody proposes an alternative model, where the mastery of number combinations include discovering and internalising relationships. Meaningful instruction like the teaching of thinking strategies would probably contribute more than drills. Nevertheless, drills may foster the formation of specific numerical associations and routinize the application of rules, procedures and principles.

MENTAL STRATEGIES

Hope and Sherrill’s research (1987) has shown that students who are not skilled in mental computation very often use strategies which are similar to the written algorithms. Students ignored the obvious number relationship and routinely used the formal paper-and-pencil algorithms even when it was not necessary e.g. (35 + 100) and (30 X 5). This is in contrast to the more skilled students who used strategies based upon number properties and other self-taught strategies. In one case study a 13 year-old student, who was very skilful at mental arithmetic, was able to solve very difficult tasks by using ingenious self-taught calculations which she developed through investigation with numbers and number patterns.

In the number domain from 20 to 100, Beishuizen (1993) found two main (noncolumnwise) strategies for mental addition and subtraction widely used by Dutch second graders. The first one is the split method also described as decomposition or regrouping procedures. The second is the jump method not so popularly used but a more efficient method.

Example for addition (38 + 16):

- **split method:**
  
  $38 \rightarrow 30 + 10 = 40 \rightarrow 40 + 10 = 50, 50 + 4 = 54$
  
  $8 + 6 = 14$

- **jump method:**
  
  $38 + 10 = 48,$
  
  $48 + 2 + 4 = 54$

Whereas mental addition and subtraction require the basic addition and subtraction skills, mental multiplication requires a better understanding of number concepts. Hazekamp (1986) described two mental strategies for mental multiplication as the front-end approach and compensation approach. The first is characterized by renaming (or estimating) one of the factors, multiplying the parts separately, and then adding (or subtracting). Below is an example applying the front-end approach:

Example: $5 \times 38$:

- **front-end approach:**
  
  $38 = 30 + 8$
  
  $5 \times 30 = 150$
  
  $5 \times 8 = 40$
  
  $150 + 40 = 190$

  or

  - round 38 to 40
    
    $5 \times 40 = 200$
    
    $40 - 38 = 2$
    
    $5 \times 2 = 10$
    
    $200 - 10 = 190$
In the compensation approach the product is found by using easy multiplications and divisions to simplify the problem. Example of this approach for \((25 \times 64)\) is shown below:

\[
\begin{align*}
\text{i)} & \quad \text{multiply one factor and divide the product by the same number,} \\
& \quad \text{think: } 4 \times 25 = 100 \quad \text{then } 100 \times 64 = 6400 \quad \text{then } 6400 \div 4 = 1600 \\
& \text{or} \\
\text{ii)} & \quad \text{successively double & halve each factor,} \\
& \quad \text{think: } 25 \times 64 = 50 \times 32 = 100 \times 16 = 1600
\end{align*}
\]

These are some examples of strategies useful for mental computation of the four operations. More important though is how they can be integrated into the mathematics curriculum for teachers.

IMPLICATIONS FOR INSTRUCTION

Recent studies have demonstrated that some children use informal counting and calculation methods to reconstruct certain basic number combinations from previously memorized facts (Carpenter & Moser, 1984). Helping children to calculate mentally would enable them to build on previously learned strategies. A few implications for instructions are as follows:

1) **do not teach mental computation in isolation** but incorporate into lesson plans on a regular basis and integrate with other topics. For effective learning to be achieved, not only instruction and practice is necessary but discussion is crucial.

2) **give students a chance to discuss and communicate their thinking** so the fear of giving a wrong answer is reduced. There may be multiple strategies in solving a mental calculation as the teacher probes the students. At this stage, speed in the mental calculation is secondary as compared to understanding.

3) **give the students examples to practice on** and so reinforce certain strategies and shortcuts, and perhaps show them the teacher’s method of working too.

4) **emphasize the strategies using number properties and visual thinking. Number lines** are helpful in visualizing addition and subtraction and repeating patterns can help in multiplication (Hope, J A., Reys, B.J. and Reys, R.E., 1988)

5) **delay the introduction of written methods** until a thorough understanding of the mental strategies has been developed. (Interestingly, in a study by Carraber & Schliemann (1985) it was found that children developed their own computational routines in preference to school routines).

CONCLUSION

Mental computation plays a vital role in mathematical reasoning. The need for instruction in mental computation strategies must be recognised. Hence, as teachers, we must constantly seek opportunities to extend children’s use and appreciation of mental methods. It is a must for mental computation to be incorporated throughout the mathematics curriculum and not taught in isolation.
SOURCES


The Straits Times (1.10.1996): Young British workers cannot count. (pp.4).
ESTABLISHING EFFECTIVE RULES FOR PHYSICAL EDUCATION CLASSES

INTRODUCTION

Rules are usually written statements that “identify general expectations for behaviours that cover a variety of situations” (Siedentop, 1991, p. 83). Rules are formalized guidelines that frequently indicate unacceptable student behaviours, although rules can also be positively stated. Regardless of how rules are stated, they always imply both what is and is not acceptable behaviour.

The purpose of establishing rules in any class is to guide and limit student conduct. Students know what to do, how to do it, and when to do it. In addition, consequences for behaviours that either stretch or violate their boundaries need to be clearly explained. Sometimes the consequences are explained to students, posted on bulletin boards, or printed and handed out to students. A posted set of rules permits the teacher to focus attention on and create a strong expectation about behaviours that are very important. Usually posting rules is not mandatory or common practice in secondary schools, but such a practice is strongly recommended for primary classes. Furthermore, a teacher might send a copy of the rules home to be returned with parents’ signatures.

Therefore, when rules are properly established, they allow students to function responsibly. This article describes how rules can be effectively developed for different behaviours in physical education classes, and provides guidelines for teaching such rules to students.

REVIEW OF RESEARCH

Studies of effective teaching with classroom teachers (Brooks, 1985; Evertson, & Emmer, 1982; Sanford, Emmer, & Clements, 1983; Sanford, & Evertson, 1981) and physical education specialists (Fink & Siedentop, 1989; Wragg & Wood, 1984) confirm the importance of establishing rules in class. Although these studies differed in content areas—English, mathematics, science and physical education—and were conducted at both primary and secondary levels, findings were
relatively consistent. Effective teachers were found to be more systematic and thorough in the way they established, implemented and enforced rules.

For example they:
* clearly defined their ground rules for specific patterns of appropriate behaviour
* taught students how to follow a few carefully chosen rules during the first few class periods before any activity began
* were clearer and more persuasive when presenting rules for behaviours and attitudes
* frequently reminded students about the rules throughout the school year
* often prompted and questioned students about rules and provided them with feedback for compliance and noncompliance
* constantly monitored student behavior and stated desired behaviour more regularly
* stopped disruptive and inappropriate behaviours quickly by using rules more frequently
* enforced appropriate consequences consistently

IMPLICATIONS FOR TEACHING

Rules for Different Situations

Teachers have to carefully think through and anticipate behavioural problem areas in their PE classes. They must then decide what rules they are going to set for the class before the start of the new school year. Rules in physical education (adapted from Siedentop, 1991) tend to relate to behaviours in the following situations:

1. Safety
   Using equipment safely relative to self and classmates, e.g. take javelin when instructed, stand a safe distance away from partner with hockey stick, lift and carry equipment correctly.

2. Attire
   Wearing proper clothing for safe participation in physical activity, e.g. no slippers or sandals, remove watches, no jewellery.

3. Respecting the learning environment
   Using and caring for equipment and the facilities, e.g. return equipment to proper location after use.

4. Respecting others
   Being courteous and polite to the teacher and fellow classmates, e.g. listen while others are speaking, no indiscriminate throwing of balls at each other, no teasing or name calling, avoid use of abusive language or hostile gestures.

5. Supporting the learning of others
   Sharing, supporting, and helping the group, e.g. take turns, cooperate with others, do not
6. Promoting the learning process
Using rime well, staying on-task, making an effort to learn, e.g., he punctual, no fooling around, pay attention to instructions, follow directions carefully.

Guidelines for Developing Rules

Siedentop (1991, p. 86) also suggests guidelines for teachers to follow when developing rules for physical education classes:

1. Rules should be short and directly to the point.
2. Rules should be communicated in language appropriate to the age level of the students.
3. Develop between five to eight rules for important categories of behaviour which can be easily remembered by students.
4. When possible, state rules positively, but make sure that both positive and negative examples are provided.
5. Make sure class rules are consistent with school rules.
6. Relate consistent consequences to rules.
7. Don’t create rules which you cannot, or are not willing to enforce.

Teaching Rules to Students

Almost all PE teachers have rules in their classes. Not all, however, teach them effectively, or enforce the consequences consistently. It is important that rules are taught to students early during the first few weeks. In this way, before patterns of misbehaviour can develop, teachers will have communicated relevant expectations and desired behaviour to their students. Furthermore, rules need to be reinforced at regular intervals throughout the school year. The method of presenting rules to the class is also critical to how a system of rules and the rewards for adhering to them, or the penalties for breaking them can be successfully applied. PE teachers can present rules to students using the following sequence:

1. State and explain the rule
   *For example: use equipment properly and with care*

2. Provide a student-centred rationale for the rule
   *For example: if equipment is misused it may not last very long, thus reducing the amount of equipment in use*

3. Give good examples of both obeying and violating rules
   *For example: hold, do not sit on basketballs whilst listening to instructions*

4. Explain the consequences for rule violations
   *For example: if you sit on the basketballs whilst listening to instructions, you will be responsible for collecting and putting them away at the end of the lesson*

5. When rules are broken, the appropriate consequence should be applied
   *For example: all students violating rules have to help put away the equipment after use*

6. Compliance with rules should be positively reinforced
   *For example: praise students for holding onto basketballs rather than sitting on them.*
CONCLUSION

Rules will vary according to school expectations and policies, teacher philosophies, student maturity, and different content areas. Physical education teachers have to decide between selecting behaviour-specific or general rules for all the important situations within the physical education context. Regardless of the type of rules, students must be taught the appropriate conduct in those situations. For example, a PE teacher may make a specific rule like students should be seated while the teacher is instructing. In such an instance, the rule can be taught quickly and enforced easily. However, general rules like, respect the rights of others or take care of the equipment may require the teacher to teach them in a variety of situations and activities encountered in physical education. Students learn compliance to rules through continuous examples of what is the acceptable response to a general rule and what is unacceptable. The younger the child, the more positive and negative examples of appropriate conduct are necessary to develop and communicate the general rule. This will require greater effort by the teacher in monitoring student behaviour and consistency in reinforcing rules. However, in the long run, such an approach is crucial to the success of the class and the "sanity" of the teacher.

SOURCES


HERE A PLAN, THERE A PLAN... WHICH PLAN IS THE BEST PLAN?

INTRODUCTION

Planning is everywhere: in schools, in meetings, in the news. Principals, Heads of Department, teachers, even ordinary individuals have all heard about planning or experienced plans or some form of planning:

- Action plans
- Strategic plans
- Management plans
- Long-range plans
- Financial plans
- Work plans
- Lesson plans
- National development plans
- Short-term plans
- Retirement plans

What do these plans have in common? What good are they? This article attempts to illustrate how planning, specifically strategic planning, can be an important tool for schools and teachers by describing its potential and its problems.

WHAT IS STRATEGIC PLANNING?

The Oxford English Dictionary defines a plan as "A formulated or organised method according to which something is to be done; a scheme of action, project, design; the way in which it is proposed to carry out some proceeding." The dictionary has no definition for planning. The following quotations offer three perspectives on strategic planning from different authors:

Planning is a process by which an individual or organisation decides in advance on some future course of action. . . . Planning can be equally valuable to organisations in achieving their objectives and to individuals in attaining personal aims. (Brickner & Cope, 1977, pp. 2-3)

The principle purpose of strategic planning is to help the organisation systematically arrive at important decisions while involving as many as possible in the deliberations. (Bryce, 1992, p. 158)

[Strategic planning is] a disciplined effort to produce fundamental decisions and actions that shape and guide what an organisation is, what it does, and why it does it. (Bryson, 1995, pp. 4-5)

Thus, strategic planning focuses on the process of making decisions and developing the actions necessary to guide an organisation or individual into the future. Participation by persons who will be involved in or affected by the process is also proposed.

CHALLENGES AND BENEFITS

Concerns may be expressed that the world is changing too rapidly for planning of any kind to be useful, and that by the time a strategic plan is developed, it is impossible to implement or complete the first phase because the situation is different. Principals may question the value, knowing that the Ministry of Education may announce a new initiative or new requirement at any time. Teachers may question the value if they anticipate turnover in the school leadership team or other teachers. In just the last year, the following changes are a few that have affected education in Singapore:
Changes do occur quickly and the future is hard to predict. But, planning can help individuals move away from dealing with change through crisis management planning, a vision of the future is developed. An organisation or a person defines the ideal, the big picture, and finds a sense of direction for the next 3 to 10 years. Using this vision or basis, priorities are established which provide greater detail and focus for both the short-term (1-2 years) and the longer-term (3-5 years). While the vision may be even longer term in nature, setting reasonably specific priorities too far out usually assumes a more stable environment than can be expected. With a sense of direction and recognised priorities, decision making processes also improve because there is a clearer understanding of what should be supported and why. There is movement away from the reactive, crisis mode and movement toward a proactive, anticipatory mode.

Other benefits of planning are the linking of priorities to resources and the establishing of means to measure progress toward goals. Using the priorities, funding can be directed toward programmes based on their purposes. Activities must be justified in relation to the vision and priorities instead of being funded automatically without regard to benefit or outcome. Accountability is increased in this manner and when measures of progress are evaluated. Is the goal being approached? Should the programme be revised? Is there new information or methods that will help achieve the objective? A school can know more about what is really happening.

For example, two years ago, a local secondary school recognised the importance of information technology (IT) in the future of its students and the need to facilitate access to and integration of IT into the learning environment. Priorities were established for the acquisition of equipment, the training of teachers, and the integration of IT into selected areas of the curriculum. Significant progress has been made on these priorities. Students at all levels are exposed to IT in many different contexts. Most teachers feel comfortable with the new technology and are beginning to explore different ways of using IT as a pedagogical tool. Strategic planning helped the school focus its attention and resources in order to respond to a major trend.

APPROACHES TO PLANNING

The standard approach to strategic planning uses the rational planning model. Two other models also will be considered: the pragmatic model and the lateral model (Knight, 1993). The rational planning approach consists of a cycle that involves several steps:

1. Establishing vision, goals by analysing current situation, future possibilities
2. Developing objectives and targets to be achieved
3. Preparing action plans that set out what must be done and who will do it
4. Linking plans to necessary resources (human, financial, physical)
5. Implementing the action plans
6. Monitoring of progress
7. Evaluating if adjustments are required in action plans, resources, or goals
Although cyclical, the process is logical, one step follows another in a linear manner until the goal is achieved (See Figure 1) The previous example of the school dealing with IT follows a typical rational planning process. Unfortunately, schools and life may not always be rational. Reality may be a very political and unpredictable environment which may make certain aspects of this model untenable.

The pragmatic model (Figure 2) does not assume that the future will flow in a continuous and contiguous path, but does assume the existence of a guiding vision or goals. Progress is made through small opportunistic steps that are not formulated ahead of time. Knight (1993, p. 30) notes that the method is flexible, can build on existing strengths, and may be suited to a complex process, such as curriculum development and implementation.

A science department might have a goal to expand students’ perspectives of environmental science. The teachers will be looking for ideas or opportunities that support the goal. One might discover that students can tour the water treatment facility and have the option of investigating a pollution episode. Another teacher may find a simulation on CD-ROM that will broaden perspectives. Another investigates expanding the use of student projects. The department works towards its goals, sharing and incorporating different elements as they are identified and tested. Unfortunately, the model can become too pragmatic by only emphasising the short-term by failing to maintain an awareness of innovations and alternatives.

The lateral model is an unusual approach, but again rests on an understood vision. Lateral planning attempts to identify all possible means to reach the vision. Brainstorming, involvement of diverse groups, detailed analysis, and creative thinking are required. As options are proposed, each is thoroughly investigated. As shown in Figure 3, some options may be partially successful (E), some may fail (y and z), and others (D) will reach the goal.

A school library might be in a bad state with poor facilities, few materials, and underused by students. The vision is to provide students with easy access to a variety of educational materials, print and non-print. Instead of leaping to the conclusion that the school should improve the facility and buy more books, a school using the lateral model would brainstorm, looking for all the possibilities, and then, investigate each one thoroughly. Perhaps, one idea is to develop a special relationship with the nearby branch of the National Library (y). Another idea is to seek donations of books, films, and CD-ROMs from local publishers and distributors (E). A third idea is to go completely automated, no print material at all (z). Some ideas will work, others will not, but the range of alternatives is broadened and increases the likelihood of finding several beneficial approaches.

This approach is time consuming and should probably only be used in special situations rather than on a regular basis. As schools struggle to link technology and pedagogy, this method may become more important.
SUGGESTIONS FOR THE SCHOOL, THE TEACHER, THE INDIVIDUAL

Try to plan strategically. Attempt to identify what should be achieved over a longer period of time. As one author put it, “Planning is an incitement to action” (Setterberg, 1985, p 89). Any of the above methods or a combination of methods can be used, but all should incorporate the following:

1. Clarify your purpose. What is your vision, mission, personal aim in life? What are your assumptions about the future?
2. Set priorities. Not everything can happen at once.
3. Develop strategies to get the job done.
4. Make the necessary investment in these strategies.
5. Keep your eyes and ears ready for supportive opportunities.
6. Check your progress and adapt.

At the same time, do not forget that planning is not a substitute for leadership. Without the commitment of leaders and followers, nothing will happen. Connections will not be made, resources will not flow, and opportunities will pass by.

Planning itself should not become the focus. The spotlight must remain on the vision, goals, and objectives. Feedback, review, and revision provide the input necessary to keep a strategic plan vital and responsive to new information, a changing environment, and the involvement of different people.

SOURCES


Setterberg, F. and Schulman,
TOTAL QUALITY MANAGEMENT IN EDUCATION

INTRODUCTION

The concept of Total Quality Management (TQM) is attracting increasing attention among educational administrators and practitioners as schools are faced with increasing pressure to achieve a range of performance objectives in a climate of societal change, economic uncertainty and competition. TQM is a framework and a set of practical ideas which school-based administrators can use to become more effective in meeting the expectations of parents and their children and in creating the types of schools in which teachers and students want to work.

This article briefly explains the TQM philosophy, reviews research on the perceived benefits of TQM in education, and suggests ways in which teachers and administrators can implement TQM in Singapore schools.

WHAT IS TOTAL QUALITY MANAGEMENT?

Total Quality Management is a management philosophy developed by W. Edwards Deming out of his experiences in U.S. industry before and during the Second World War. The subsequent adoption of TQM by Japanese industry, but not by the U.S., is widely credited for the former's miraculous post-war economic reconstruction and the current massive trade imbalance between the two countries. In 1986, Deming published a book entitled Out of the Crisis in which he summarised his ideas and exhorted U.S. industry to adopt them as the Japanese had done so successfully. Although his book was intended for manufacturers and captains of industry, it was also read by educationalists who attempted to apply his ideas to the school situation.

In essence, Total Quality Management in education is a continuous improvement exercise which involves everyone in a totally integrated, collaborative effort towards improving the process of teaching and learning at every level. The ultimate purpose of TQM is to create a learning environment in which teachers and students monitor their own work processes to ensure quality of their output and eliminate costly and time-consuming end-of-year final examination procedures. The most significant aspects of this continuous improvement exercise are:

* focus on helping students to maximise their own potentials through continuous improvement of teachers' and students' work together
* empower teacher-student teams to decide on their own processes of teaching and learning
* cease dependence on final examinations to assess students' progress
* use tests, essays, assignments, projects and other indicators of student learning to diagnose inadequacies of the teaching/learning system rather than individual student's progress
* show new teachers how to set goals, how to teach effectively and how to assess the quality of their work with students
• show students how to set learning goals; how to be more effective in their school work; and how to assess the quality of their own work.

WHAT ARE THE PERCEIVED BENEFITS OF TQM IN EDUCATION?

Owing to the limited history of TQM in education, there is no empirical evidence to suggest that the application of TQM improves the academic performance of students. However, a number of researchers indicate that schools which have applied TQM have enjoyed a number of positive benefits. Bonstingl (1992), for example, in a survey of "Quality Schools" in California, New York and Pennsylvania, reports that teachers working collaboratively set goals for themselves and their students, experience a more purposeful working environment and greater collegiality among staff. They also share new ideas about methods, classroom management, curriculum and materials. In addition, faculty members walk away from TQM meetings energised and rededicated to the success of their common cause which is the optimization of teacher and student success.

Similarly, Byrnes et al (1992) claim that in U.S. school districts where TQM is used assertively, teachers and students improve in goal setting and problem solving activities while the cooperative planning exercise improves teacher/student relationships through team activities.

Siegel and Byrne (1994) investigating the application of TQM in high schools in Ohio, found that one of the major benefits of staff collaboration was the improvement in teachers' skills and abilities. They concluded that when staff focused on working together, they taught each other how to teach better.

Muratroyd and Morgan (1993) working in comprehensive secondary schools in Britain which have adopted TQM, report that goal setting for students from lower-income families reduced truancy and ensured that all children from these schools reached the statutory school leaving age with some qualification of value in the labour market.

Gleeson et al (1994) also working in "Quality schools" in the U.K. assert that TQM resulted in more openness among staff, sharing of courses, greater objectivity, and development of programmes which were systematic, practical and workable within the constraints under which teachers operate.

Prawat (1993) and Capper and Jamison (1993), however, are not quite so convinced of the benefits of TQM in education. They argue that industrial models of management are inappropriate for the development of learning communities - people are not machines and cannot be treated in a similar fashion.

Despite the dissenters, there is sufficient evidence from the research to suggest that TQM has the potential to promote goal setting for students' problem solving and critical thinking.

WHAT CAN ADMINISTRATORS DO TO IMPLEMENT TQM SUCCESSFULLY?

Schools need time to institutionalize new behaviours and activities. Siegel and Byrne (1994) suggest that schools adopt the following strategies to help staff become acquainted with the TQM philosophy:

• establish core values and mission statements that motivate all teachers and focus their work

• set challenging goals in measurable terms and then measure progress
* build a permanent training capacity e.g. a series of in-service courses conducted by senior teachers who can analyze and share experiences
* create a quality infrastructure of working groups of staff members to assess needs and progress throughout the school
* integrate identified quality practices into key work processes
* celebrate nsk taking and success

**CONCLUSION**

On the basis of the above review, it would be reasonable to suggest that schools in Singapore could apply TQM to improve.

1. goal setting for teachers and students
2. students' critical thinking and problem solving skills
3. teachers' skills and abilities
4. teacher/student relationships
5. staff collegiality

**SOURCES**


CONCERNS OF THE BEGINNING TEACHER

Review by
Sylvia Nguik-Yin Chong

INTRODUCTION

Beginning teachers often find their initial years of teaching highly stressful. Many feel anxious about the problems and needs they experience when they take up their first appointment to a school. The demands on their time seem overwhelming. Results from a longitudinal study conducted in the United States found that failure to cope with and handle these demands led to as many as 50% of beginning teachers leaving the profession during the first five years of teaching (Heyns 1988).

Beginning to teach is a very complex process which is inevitably different for every individual. Studies investigating the difficulties beginning teachers face in their initial years have obvious implications for teacher education and for educational systems and schools. The focus of this paper however will be on the nature of the expectations beginning teachers have of themselves, the problems involved in adjusting to the demands of teaching and in meeting the needs of students, parents and colleagues.

STUDIES ON BEGINNING TEACHERS

Self-Expectations

What emerges from reviews of research literature is that too much is expected of those who are just starting out. Wildman, Niles, Magliaro & McLaughlin (1989) found that the expectations of the school system, administrators and other teachers are very high with regard to what beginning teachers are actually able to do. They assume that these beginning teachers are trained and qualified, and thus know how to teach from the start. When in reality, despite their preparation at college, they still have to go through a process of learning to teach on the job, while being socialised into the school and profession at the same time.

In an Australian study, Martin (1992) found that her beginning teachers felt that their expectations of themselves had been unrealistically high. Her study reports that beginning teachers had to learn for themselves on the job, with little help from mentors or other teachers. She
proposed that in their initial programme of professional preparation pre-service teachers will go through 3 stages of concerns. These 3 stages are:

1. **Self-concerns** (vocational choice, coping with course demands, basic survival issues).
2. **Task concerns** (mastery of the skills required to be a competent teacher, acceptance by experienced colleagues already in the profession).
3. **Impact concerns** (identifying student needs, developing to meet learning/teaching their abilities).

Self and survival concerns, such as confirmation of vocational choice, unrealized expectations and adjustment must be addressed before the beginning teacher can move on to grapple with task and impact concerns.

It is also important to note that a young teacher's first appointment usually coincides with what is usually a significant period in the individual's life (Watson et al., 1991). Many graduating teachers are often forming significant relationships and are taking on serious financial burdens for the first time. These responsibilities, together with questions and self-doubts that arise from coping with teaching and suitability of a career choice, contribute towards the pressures beginning teachers experience.

**Adjusting to the Demands of Teaching**

As pointed out in the study by Watson et al. (1991), teachers face 'reality shock' in their first year of teaching. However while most make the adjustment, usually with some degree of difficulty, it is obvious that the process causes stress and feelings of inadequacy. These beginning teachers are often left to work things out for themselves (Martin, 1992). Niles, Magliaro & McLaughlin (1989) suggest that beginning teachers face dual roles namely teaching (with unreal expectations held by both themselves and schools) and learning to teach on the job (coming to grips with reality).

Adjusting to the 'reality' of teaching often presents the beginning teacher with worries relating to the demanding task of teaching, including control and classroom management, programming, adequate knowledge of subject matter, reviewing and assessing instruction or locating suitable resources (Watson et al., 1991). Martin (1992) asked her sample of 102 teachers (52 primary and 50 secondary) to list their three greatest fears during their first year of teaching and how they came to terms with these fears. Teaching efficacy and control topped the table (Re: Table 1, Martin, 1992 p. 38).

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentages of responses</th>
</tr>
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<tbody>
<tr>
<td>Teaching efficacy</td>
<td>28</td>
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<tr>
<td>Control</td>
<td>23</td>
</tr>
<tr>
<td>Content</td>
<td>19</td>
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<tr>
<td>Peer Acceptance</td>
<td>15</td>
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<tr>
<td>Acceptance by children</td>
<td>8</td>
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<tr>
<td>Acceptance by parents</td>
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<td>Programming</td>
<td>6</td>
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<td>Time management</td>
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<tr>
<td>Different levels</td>
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<tr>
<td>Personal characteristics</td>
<td>8</td>
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Other perceived problem areas of coming to grips with teaching included: planning for lessons, locating and making use of resources, gaining realistic views of students and their capabilities, developing effective assessment procedures or organizing group work. Though some of these issues may have been given considerable attention during teacher education programmes and during teaching practicum, being a full time member of staff is different from being a student in training. The transition involves a high degree of 'reframing' with its own set of unique variables. Beginning teachers have to come to a better understanding of themselves as teachers, their classes as learners and the strengths and limitations of the context in which they are now working.

Meeting the Needs of Students

Within this broad issue of coming to grips with teaching, the specific problem of adjusting to the students and their learning needs is identified as one of major importance (Turney et al., 1985; Watson et al., 1991). It is very difficult to summarise the enormous range of factors which contribute to the distinctiveness of any class. These factors might include ability ranges, learning styles, language issues,... the list is endless. In Martin's (1992) study, 68% of her sample felt that with hindsight not only were their expectations of themselves unrealistic, their expectations of their students had also been too high. Teaching classes with a wide ability range and dealing with individual differences, and motivating and assessing students from different backgrounds were areas of concerns highlighted by participating teachers in Martin's study.

Working out appropriate ways on how to best meet the needs of all students is a considerable challenge for newcomers to the profession and will possibly include utilising remedial approaches in various subjects, sound strategies for managing classrooms and ways of working with children in disadvantaged schools (Turney et al., 1985). While general strategies may be addressed in teacher education programmes, for the beginning teachers the adjustment is always to a specific school with its own mix of students. There can be no substitute for school level orientation, together with ongoing induction and support, particularly during the first few years.

Coping with the Demands of Parents

While catering for individual students' needs, beginning teachers are also concerned about relating effectively to different parents. Specific issues range from working with parents who are highly involved with the school and its teachers in the education of their children, to coping with what may appear to be lack of parental interest in students and their progress (Turney et al., 1985). Often beginning teachers are particularly concerned about dealing with what they perceive to be difficult parents, possible conflicts with the home culture, obstacles to communication, or criticism of their efforts with children.

IMPLICATIONS FOR THE BEGINNING TEACHER

The issues raised in the above studies suggest that beginning teachers might find it helpful to bear the following considerations in mind when they take up their first teaching appointments:

- Acceptance of a probably heightened sense of concern should be recognized as a natural reaction to a new situation and challenge, because new teachers must work
through dealing with their worries as well as task concerns, before being able to make an adequate impact on the learning of students.

Anticipation that the initial period of teaching will be quite different from experiences as student teachers should help those entering the profession. Conscious reflection upon action as the beginning teacher goes through the process of 'framing and 'reframing' their experiences will help them handle the multitude of task concerns.

Actively seeking a mentor is one way of tackling classroom issues, working out effective approaches to teaching and finding learning experiences suited to the school posted to. A trusted peer, who can be a supportive, critical friend to talk through problems teaching, helps the beginning teacher to come to grips with the ‘reality shocks' that first involve.

Readiness to ask questions in order to find out about the school culture is another stance which the beginning teacher can adopt.

Assumption of a positive orientation to learning about students and their capabilities is important. The availability of a fellow staff member (or a network) with insights into coping effectively with students’ learning and sharing ideas about how to handle particular students is crucial.

SOURCES


Review of Educational Research and Advances for Classroom Teachers

Editorial Committee
S. Gopinathan
Linda Gan
Foong Pui Yee
Phyllis Chew
John Matthews
Steven Tan
Lachlan Crawford
Eight wide-ranging articles are included in this issue of *REACT*. Two articles consider how students can become *more effective learners of language*. The need to help students become more aware of the strategies they are using to learn language are discussed in the first of these articles, with the second concentrating on the use of genre analysis to assist students in selecting appropriate structures and linguistic devices to improve their reading comprehension and composition writing. Articles on the teaching of history, mathematics and physical education are also featured in this issue, focusing on: the use of concept mapping in teaching history to secondary school students in order to provide them with a firm foundation in this subject area; the development of students’ mental computation skills in mathematics with a description of appropriate methods which can be employed in order to refine such skills; and guidelines for teaching and effectively implementing rules in physical education classes. In the area of school administration, two articles discuss how strategic planning and Total Quality Management can improve the process of learning and teaching at every level of schooling. The final article in this issue of *REACT* explores research which has investigated the concerns of beginning teachers, and the problems they perceive in adjusting to the ‘real’ world of teaching!

*REACT* (standing for Review of Educational Research and Advances for Classroom Teachers) continues the task of keeping teachers, senior school personnel and principals abreast of advances in research in education. *REACT* attempts to *link* research to practice by presenting *reviews* of areas of interest. Each review covers two or more research studies related to a particular topic. The review writer also teases out significant implications for practice.

*REACT* is addressed to a wide readership of practitioners in education. In the interest of communicating with this wider audience, technical details of research and the jargon that goes with the subject is reduced to a minimum consistent with the integrity of the data. Readers who want to know more details are referred to the original research reports and studies cited under *Sources* in each review.

The Editorial Board welcomes contributions for future issues. Articles must be received by February 1 for the May issue and August 1 for the December issue. Send articles to: The Editor, React, Nanyang Technological University, National Institute of Education, 469, Bukit Timah Road, Singapore 259756.