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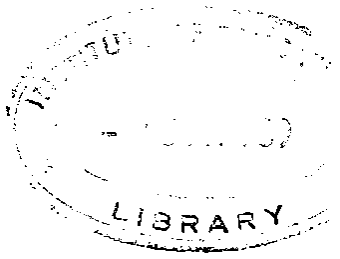


OVERVIEW

by Amy Sobrielo

This issue of REACT consists of a collection of sixteen abstracts of articles dealing with various aspects of learning and teaching. Unlike previous issues, the articles in this issue do not focus on any particular educational theme.

However, there are four articles which deal with young children. John **Brierly's** "Give Me A Child Until He Is Seven" reviews research on brain studies and then gathers together twenty-one implications for early childhood education. J. Peery and W. **Peery's** "Influencing The Musical Preferences Of Young Children" studies the two factors which are thought to have the most influence on the development of musical preference: repetition and social reinforcement. "Enhancing The Development Of Language And Thought Through Conversations With Young Children" by D.L.Rogers, M.S.Perrin and C.B. Waller is a report on a study based on ethnographic fieldwork in a preschool classroom and playground while D.S. Guza and T.F. **McLaughlin's** article on "Comparing Daily And Weekly Spelling Performance" looks into two different ways of getting young children to learn how to spell.

Four other articles study existing situations and analyse these as they exist without introducing interventions of any kind. Paul **Duncum's** "How 35 Children Born Between **1724** and **1900** Learned To Draw" examines the role played by copying and the influence of popular media on the development of children's drawing skills. Rosanne A. Paschal and her team gather together findings of research studies on the topic of "Effects Of Homework On Learning" while Leong Weng Kee and Neo Eng **Guan's "The** Bilingual **(English/Chinese)** Ability Of A Sample Of Primary Three Pupils" examines the **English/Mandarin** speaking, listening and writing abilities of Singapore children. Another Singapore article "Learning Styles of Singapore Secondary Two Students" by Yeap Lay Leng tries to find out more about the way our students learn.

The next five can be considered to be Teaching Methods research studies. Three of these were carried out in Singapore. The first one, Teo Boon Guat and George **P.L.Teh's** "The Effectiveness of Using Instructional Objectives With Less Able Secondary School Pupils", explores the effect of letting pupils know in advance of the lesson, the instructional objectives for that lesson. Liaw Beng Teck's "Practical Experience and Sequential Skills In Map Reading' looks into the effects of practical experience and sequential skills on secondary one students' achievement in map reading. Goh Ngoh **Khang** and his team test the effectiveness of the Modified Laboratory Instruction (MLI) of Quality Analysis in Chemistry (which aims at improving students' acquisition of

science process skills) on a sample of secondary three students. Kym Fraser and John Edwards's "Effects of Training in Concept Mapping On Student Achievement In Classroom Tests" attempts to find out if training in the use of concept mapping techniques can improve student achievement in traditional classroom tests. The next research study "Text Modifications In ESL Reading Comprehension" was carried out in Hong Kong by Tsang Wai King. It experiments with different types of texts to find out whether specially tailored English reading texts are easier for second language learners of English to comprehend.

Finally there are three articles which explore the motivational/self-esteem aspects of learning. Elena Lui Hah Wah's "The Development Of The Self-Esteem Checklist(SEC) As A New Measure Of Pupil Self-Esteem" reports on the validity and reliability of the newly developed instrument (SEC) which was designed by the writer to measure pupils' self-esteem. It also examines the relationship between Singapore secondary school pupils' self-esteem and their academic achievement. "Strategies For Motivating Students To Learn" by Jere Brophy synthesizes the literature about motivation to find principles which teachers could make use of to motivate their students. The article by Nina Kay Buchanan "Factors Contributing To Mathematical Problem-Solving Performance" attempts to find out the different ways gifted and average children tackle mathematical problem solving and what factors motivate them in the performance of these tasks.

ENDNOTE

When reading the abstracts, you may find that in the effort to be concise, richness of detail has been lost. You are encouraged, therefore, to read the original reports, articles or dissertations, most of which are deposited in the IE Library.

STRATEGIES FOR MOTIVATING STUDENTS TO LEARN

by Jere Brophy

Abstract by Richard Brown

INTRODUCTIDN

This article synthesises the literature on research about motivation in order to identify principles that teachers may apply to motivate their students. A distinction is made between motivation to learn as an enduring trait in a person and motivation as a temporary state generated by a specific activity or situation. The writer makes a second distinction which refers to the motivation to learn which underlies the information-processing activities involved in learning and the motivation to perform later to demonstrate the acquisition of a particular knowledge or skill.

PROCEDURE FOLLOWED IN THE REVIEW

The writer reviews many well-known studies on motivation to suggest principles that apply to the classroom. He organises his strategies for motivating students around expectancy x value motivation theory which posits that people expend effort on a task only if (1) they can expect success if they try and (2) they value participation in the task. According to the theory both factors must be present to some degree for motivation to occur.

MOTIVATIONAL STRATEGIES

Using the above theoretical framework: first, the writer describes the preconditions necessary for teachers to motivate their students. In summary these are a supportive environment, appropriate level of challenge in learning, meaningful objectives and a variety amongst the motivational strategies used.

Secondly, a list is given of motivational strategies uhich are designed to maintain the success expectations of students. Briefly these strategies include: planning for students to succeed; teaching goal-setting and self-appraisal to students; emphasising the link between effort and outcome and providing remedial socialisation for discouraged students through techniques such as performance contracting.

Thirdly, a list is presented of strategies uhich are aimed at increasing the subjective value that students place on particular learning activities. Some of these strategies refer to the use of extrinsic incentives, others **capitalise** on the intrinsic motivation already present in the students whilst a third group of strategies are **designed** to stimulate student motivation to learn. These lists of strategies are too long to be given **here** in full but a sample is:

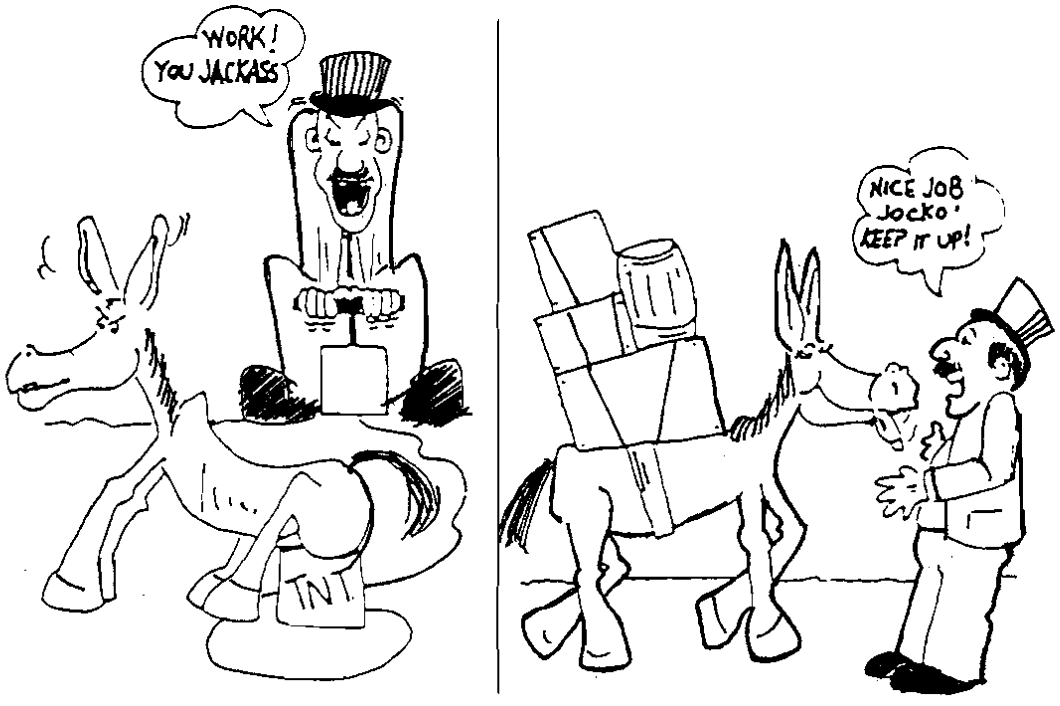
extrinsic incentives : rewards and appropriate competition. Brophy states that these incentives are more useful for stimulating intensity of effort than for inducing thoughtfulness.

capitalising on intrinsic motivation: interesting tasks, novelties, allowing choice of activities to students, giving immediate feedback, including gaming techniques amongst the learning activities. Such strategies capitalise on the students' interest and enjoyment in learning.

stimulating motivation: be a model of motivation to learn and interest in learning; set suitable expectations, project a level of intensity and enthusiasm about learning, set objectives and use advanced organisers. Brophy says that these strategies will directly increase the students' motivation to learn.

IMPLICATIONS FOR TEACHERS

Although student motivation cannot be taught as a concept or skill it can be developed by teachers who "systematically socialise their students using the strategies listed here as part of a larger package of appropriate curriculum and instruction.''



How do you motivate people?

Brophy, J. "Synthesis of Research on Strategies for Motivating Students to Learn", Educational Leadership, 1987, 45(2): 40-48.

EFFECTS OF HOMEWORK ON LEARNING

by Rosanne A. Paschal et. al.

Abstract by C H Diong

INTRODUCTION

Homework is generally regarded as school work formally assigned for completion outside school time. Since a large fraction of the students' time (potentially educative) is spent outside the school, homework can help provide a more enriching and stimulating "curriculum of the home", develop independent learning skills, encourage student initiative, and allow time for practice, reinforcement and application of what has been learned in school.

Its critics argue that homework is unwholesome, professionally unsupervised, allows children to practise mistakes and encroaches on students' leisure time. Whatever the arguments or reservations, it is encouraging to note that extensive classroom research on "time on task" and international comparisons of year-round time for study suggest that the effects of homework on learning are favourable and that additional homework might even promote student' achievement.

UHAT WAS THE PURPOSE OF STUDY?

The literature on homework effects is vast, but the factual information about such effects is small. Hence, the purpose of this study was to synthesize empirical studies of homework and its various strategies on student achievement and to estimate the overall size of this effect (effect size) and its dependency on homework variables, eg. types of homework, frequency of homework.

HOW WAS THE STUDY CARRIED OUT?

Two databases, ERIC and DAI were searched for studies on homework. 67 studies for the period 1966-1982 were located. Only studies on homework using "achievement", "motivation", and "attitude" as identifiers and containing sufficient statistics were selected for the meta-analysis (quantitative analysis). This selection included studies which compared students with various qualities and amounts of assigned homework and others which compared students who were assigned homework with those who were not assigned homework. The greatest number of comparisons of homework effects fell into the "homework/no homework" group. Information concerning the variables (eg. homework quality, type of homework) were coded for analysis. To quantify the effects of homework on achievement and motivation, effect sizes were calculated. An effect size can be defined as the difference between the means of the experimental and control groups, divided by the standard deviation of the control group.

WHAT WERE THE MAIN FINDINGS?

The main findings of the meta-analysis show that :

(1) Homework that bears teachers' comments and those that were graded by teachers had larger effect sizes compared to those that were not commented upon or graded.

(2) Assigned homework produced more learning than no homework; and traditional homework was superior to non-traditional types of homework.

(3) With respect to the effect of homework quantity per week (daily, once a week, 2-3 per week), it was found that the highest effect size indicates the superiority of daily homework assignments.

(4) 69 (85%) of the 81 comparisons favoured the treatment group (homework) and the null hypothesis that there was no difference between the treatment and control groups was rejected.

WHAT ARE THE IMPLICATIONS FOR TEACHING AND LEARNING?

The corpus of evidence arising from this meta-analysis shows that homework that is assigned regularly, and commented upon or graded by teachers benefited learning and produced larger effects on student achievement.

° Teachers can take advantage of students' potentially educative time after school by assigning regular homework to further reinforce classroom learning and enhance students' time on the learning tasks given in schools.

° Teachers can re-orientate their lesson planning and instruction to optimise the favourable effects of homework on learning. Thus the scheme of work could be planned to specify the types of homework assignments and the quantity of homework to be assigned to students for particular topic areas.

° Rather than give a large, complex assignment as a one-shot piece of homework, teachers can divide the assignment into a series of smaller homework assignments to be given more regularly over a period of time. In this way students will receive regular feedback on their work before they move on to the other parts of the assignment.

° Since homework that is commented on or graded has larger effects on student learning and achievement, teachers can observe how students benefited from their comments or assessment so as to gain better insights into how useful comments and feedback can be for students.

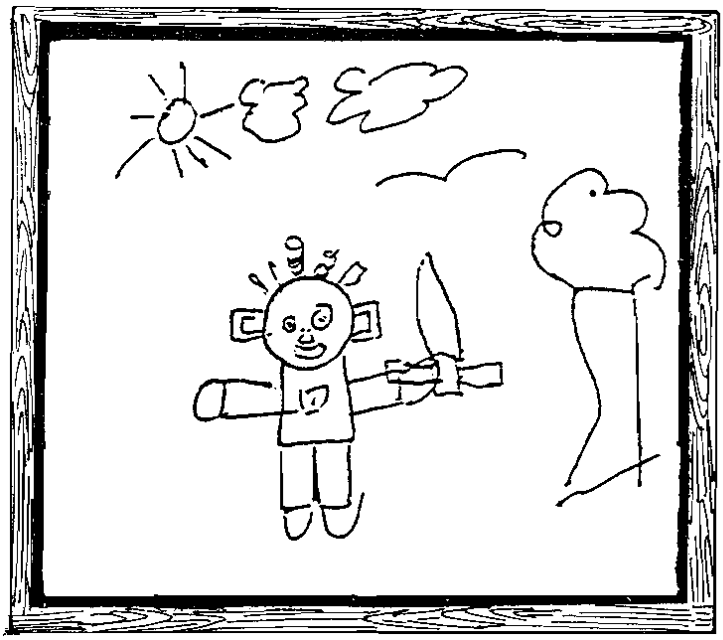
This is an abstract of the following article:

Rosanne A. Paschal, Thomas Weinstein and Herbert J. Walberg.
Journal of Experimental Education, 1984, 78(2): 97-104.

GIVE ME A CHILD UNTIL HE IS SEVEN

By John Brierley

Abstract by Loh Shoou A



'Give Me A Child Until He Is Seven' is not a book about Jesuit teaching although the title of the book is unmistakably taken from a famous Jesuit saying. Many people believe that the first seven years of a child's life is the 'critical period', but is it? The author goes on to examine the extent of truth in such a claim by looking at research on brain studies and then drawing twenty-one implications for early childhood education.

WHY IS THIS BOOK WELCOME?

In the literature on early childhood education, there seems to be a knowledge gap about what brain studies suggest for the teaching and learning of very young children. That is why this book is welcome and valuable because the author systematically examines the relevant research of neuroscientists and draw implications for learning and teaching. This book is very readable and after reading it, teachers can speak with more understanding and authority on the value of early childhood education and the corresponding notion of a 'critical period'.

WHAT ARE SOME OF THE BASIC PACTS ABOUT THE HUMAN BRAIN?

- The average weight of an adult brain is about three pounds (1350 gm).
- Weight of brain is not correlated with intelligence.
- Intelligence is related to the ability to use the brain differently and not to more grey matter.
- There are four closely interlinked parts: the cortex (grey matter); the brain stem; the lower brain stem; and the cerebellum.
- Cortex is divided into left and right hemispheres but connected by nerves which facilitate a balance. The left is concerned with speech and skilled movements and the right with some visuospatial skills.
- Glucose and oxygen are needed continuously to sustain brain activity.

WHAT ARE THE FINDINGS AND IMPLICATIONS?

Below are some of the findings and their implications for teaching and learning :-

FINDINGS	IMPLICATIONS
° At birth, a child's cortex is like a blank slate (the nature of the slate is hereditary).	The quality of experience in early childhood is vital in developing learning.
° Senses of sight, hearing and touch are especially alert in early years.	The early years are 'critical years' of learning as children are at 'flood readiness' to learn.
° Brain growth is related to M y growth.	Keep a healthy M y to promote good brain growth.
Brain searches for clues and patterns in sight, sound and touch.	Relate new knowledge to previous learning for better understanding and memory.
° Brain is predisposed to learn speech.	A stimulating language environment facilitates speech and language learning.
° Boys are better with patterns and shapes whilst girls are better at language in early years.	Boys are better at mathematics and science whilst girls are better in linguistic skills.
° Boys will catch up on language but girls my not catch up on mathematics and science.	More numerical, experimental and spatial activities should be provided for girls.
Brain is not responsive to monotonous and familiar environment.	Create a stimulating and varied learning environment.
° Brain needs repeated relevant experiences to learn concepts well.	Learning associations need to be repeated for better understanding and flexibility.
° Sleep gives the brain its deserved rest.	A tired child cannot play, explore and learn. properly.
Brain studies alone cannot explain intelligence.	Intelligence is an interaction of hereditary and environment.

This abstract is based on the book, Give Me A Child Until He Is Seven: Brain Studies & Early Childhood Education by John Brierley (The Falmer Press, 1987 This book is available in the IS Library.

INFLUENCING THE MUSICAL PREFERENCES OF YOUNG CHILDREN

by J. PEERY and W. PEERY

LIBRARY

Abstract by Robert Henderson

BACKGROUND

Music is thought to be a human need that bridges cultural diversity. It is also a billion dollar industry in the United States and is an important part of the lives of young children everywhere.

Several studies have been made of the musical tastes of children of various ages, from which the two most frequently occurring hypotheses regarding the formation of musical preferences are:

- That repeated exposure to particular music increases liking for that music. (What you hear is what you like.)
- Musical preference is influenced by parents and teachers. (You like what significant others like.)

WHY WAS THE STUDY WNE?

The development of musical preference seems to begin before children reach primary school age. This study sought to combine the two most potent factors that have been suggested as influencing musical preference: repetition and social reinforcement. The purpose was to determine if familiarity with a musical style (classical) combined with a positive social experience could influence the development of musical preference of pre-school children.

HOW WAS THE STUDY WNE?

- The subjects were 45 pre-school children aged 4-5 from middle class backgrounds.
- Parents had expressed a desire to have their children participate in a music enrichment programme.
- Eight pieces of music were used, six classical and two popular. These were recorded in random order, with each extract lasting 30 seconds.

All the children were first asked to evaluate the extracts by pointing at five cartoon faces expressing like or dislike. Then an experimental group of 21 children were selected and, over a 10-month period given weekly 45 minute classes in which a variety of activities involving classical music were experienced. These included singing themes and learning them from memory (including two from the selection), listening to classical themes, playing musical games etc. The children were

positively encouraged to participate in the activities and consistently praised for their participation.

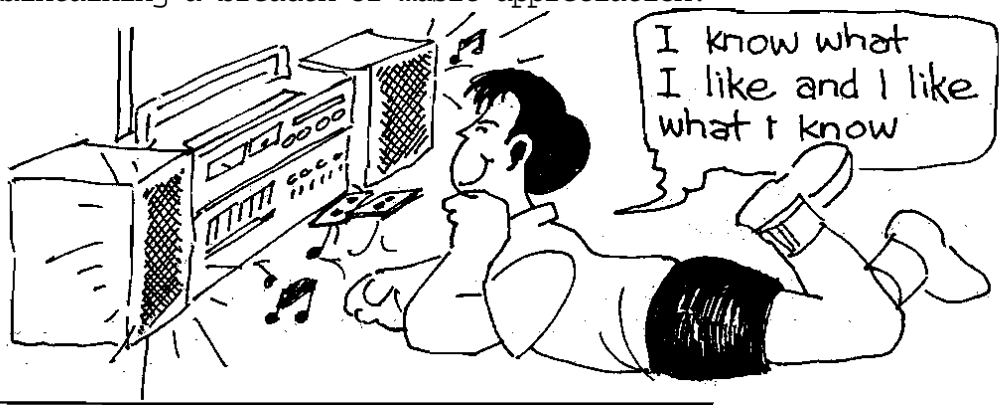
The remaining 24 children did not experience anything unusual in the way of musical training. At the end of the 10-month period, all the children were again asked to evaluate the selection of musical pieces.

WHAT WERE THE RESULTS?

- At the initial evaluation all the children liked all the pieces.
- At the end of the 10-month period, the experimental group preferred the classical selections significantly more than the other 24 children.
- The experimental group maintained their liking for classical pieces over the period - the others experienced a decline in preference for the classical pieces.
- Both groups liked popular music after the 10-month interval.
- Repeated exposure to actual pieces probably did maintain or increase liking.

IMPLICATIONS

These findings may have significance for parents and pre-school teachers who can play an influential role in directing the development of musical preferences by ensuring positive exposure to desired kinds of music and musical experiences. Primary teachers could then build on this and, as part of a society that values many different musical styles, take advantage of a child's eclectic musical taste by providing experiences with many different kinds of music at a young age, thereby fostering and maintaining a breadth of music appreciation.



From the article "Effects of Exposure to Classical Music on the Musical Preferences of Pre-School Children" which can be found in the Journal of Research in Music Education, 1986, 34(1):24-33.

COMPARING DAILY AND WEEKLY SPELLING PERFORMANCE

BY D. S. Guza and T. F. McLaughlin

Abstract by Soh Kay Cheng

What Was the Purpose of the Study?

The study compares the traditional manner of presenting all words at the beginning of the week with presenting the spelling list in instalments over a few days during the week. This was, in a way, applying the psychological principles of mass versus distributed practice in an important aspect of language teaching.

How Was the Study Done?

Fourteen fourth-graders were involved in this study which lasted for 20 weeks. For each week, there were 20 words to be learned. During the first five weeks, the pupils were presented with the spelling list for each week. Exercises during the week included writing each word five times, writing each word in a sentence, and completing selected activities from the exercises in the spelling programme. On the last day of each week, the pupils were tested and the percentage of correct spelling calculated.

During the next five weeks, the pupils were given five words of the spelling list for the week each day. They did the same kind of exercises as before. On the last day of the week, a spelling test was given. The above two phases were repeated for the subsequent ten weeks.

What Were the Main Findings;

The percentages of correct spelling during the four phases are :

83.8% ----→ 94.8% ----→ 83.3% ----→ 95.6%

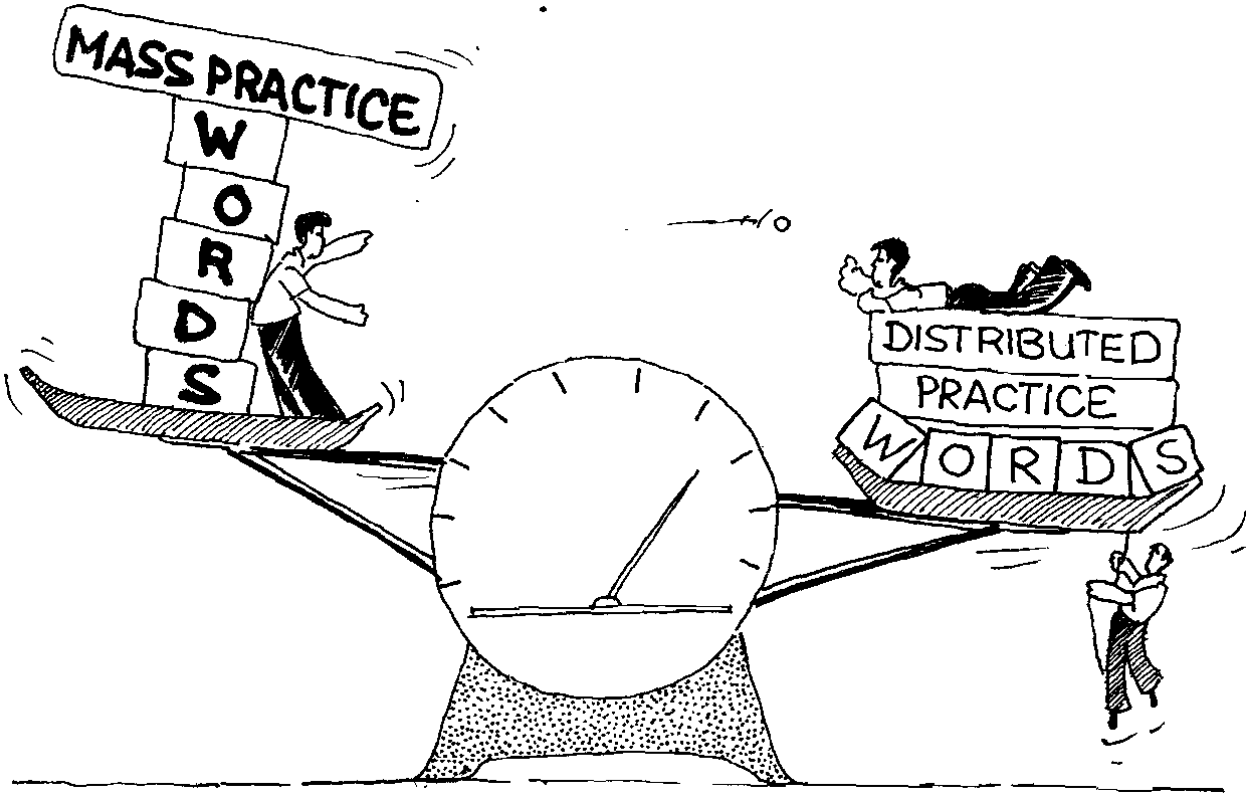
It is obvious that the pupils performed much better when the spelling list was presented in instalments over a few days during each week.

Pupils of different spelling abilities were also singled out for comparing the effect of distributed practice. While the more able ones maintained their high level of performance throughout, the weaker ones did better during the two distributed practice phases than they did during mass practice.

Feedback from parents showed that the pupils worked harder and performed better during distributed practice phases. Pupils indicated that they favoured distributed practice for learning to spell.

What Does the Study Imply?

The implication seems obvious. When there is a long list of words to learn, break it down into a few shorter lists and learn them in turn. This may allow for more thorough practice of each short list as well as give the pupils the feeling of making progress. At least, shorter lists to be learned over a period of time do not look so formidable as one long list.



This is an abstract of D.S. Guza, & T. F. McLaughlin's A Comparison of Daily and Weekly Testing on Student Spelling Performance. Journal of Educational Research, 1987, 80(6) : 373-376.

HOW 35 CHILDREN BORN BETWEEN 1724 AND 1900 LEARNED TO DRAW

by PAUL DUNCUM

LIBRARY

Abstract by John Tan Peng Chieu

WHAT WAS THE PURPOSE OF THE STUDY?

The study examines the claims that children learning to draw necessarily involves copying as well as the belief'that children who are influenced by popular media are actively discriminating in favour of their own development.

HOW WAS THE STUDY DONE?

The study is a systematic report of how 35 children and adolescents, born between 1724 and 1900, who drew prolifically, learned to draw. The survey is based on biographies, autobiographies, and collections of youthful drawings.

The study included, as a general classification of artists from different periods of history, illustrators, an art critic, and two writers.

For the purpose of the study, childhood experiences accepted as strategies for learning to draw were derived from the art education literature on how children learn. These strategies included copying, both from other pictures and from parents, peers, and older siblings; tracing; self-instruction through how-to-draw manuals, studying pictures to acquire technique; observing others draw and drawing directly from life. These are strategies that are also applicable to our children today.

WHAT WERE THE FINDINGS?

The study found that

1. There were more reports of children copying than reports of any other single strategy. Besides others, the artist Delacroix copied numerous masters from the Italian Renaissance and other periods of art history.

2. There were more reports of children copying from popular arts of their day than from any other kind of source. Paul Klee and other well-known artists and Ruskin, the art critic, copied from book illustrations.

3. Tracing seemed to have served as a preliminary to copying.

4. The second most frequently reported method of learning to draw was the observation of others making images.

5. Pictorial preferences were drawn from the fine and popular arts.

6. Few examples of self-instruction through how-to-draw books were recorded.

7. For some children their instructors acted as a source of inspiration and a model to emulate.

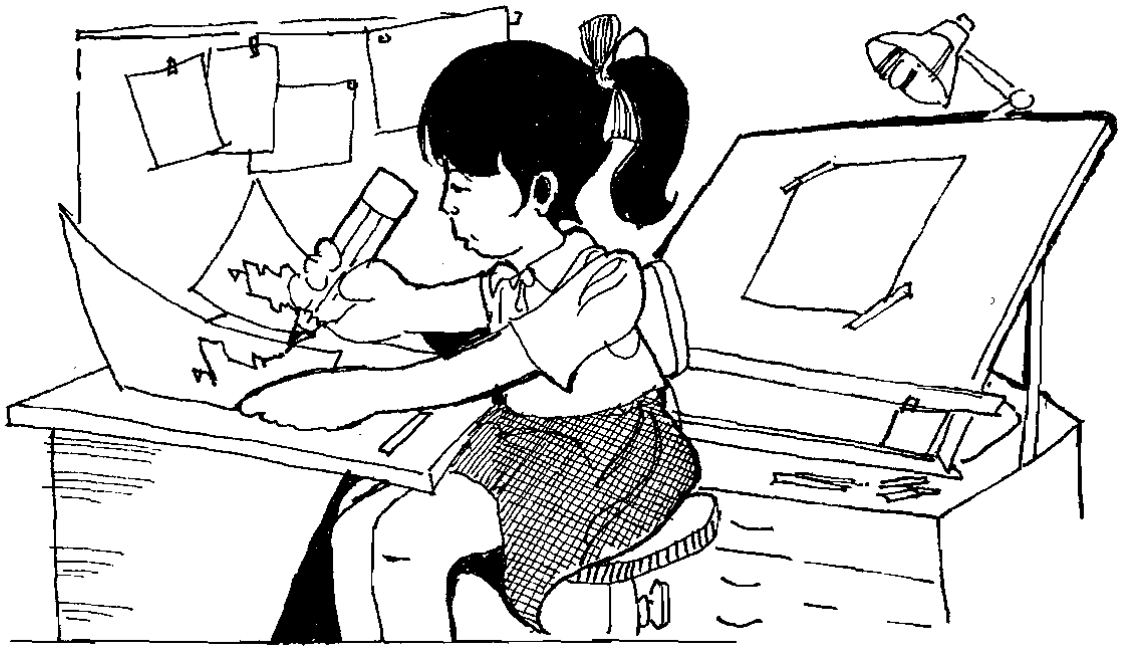
8. Some instructors advised their youthful prodigies to draw directly from life.

Most of the subjects were found to have copied directly from pictures, and all the subjects used strategies that involved influence from a graphic source.

WHAT ARE THE IMPLICATIONS FOR TEACHERS?

1. Teachers should allow students to copy when learning to draw, provided that they do not do so slavishly. It can lead to skilled achievement in drawing as well as being a useful stepping-stone for those who lack confidence.

2. Teachers should allow students to use ideas from the popular media like television and graphic sources and the popular arts. In allowing themselves to be influenced by popular media, students are acting purposefully for the good of their own development by exercising choice from various sources that provide an interest and motivation for them.



This abstract was based on the article "How 35 **Children** Learned to Draw" in Studies in Art Education: A Journal of Issues and Research in Art Education, 1985, 26(2):93-102. The journal is available in the IE Library.

THE BILINGUAL (ENGLISH/CHINESE) ABILITY OF A SAMPLE OF PRIMARY THREE PUPILS

by Leong Weng Kee and Neo Eng Guan

Abstract by Leong Weng Kee

Bilingualism as a concept has numerous definitions. In Singapore, it has to be defined within its unique context in which the mother-tongue (Chinese/Malay/Tamil) is learnt in school as L2 by the respective ethnic groups while English, the medium of instruction for most of the primary and secondary schools, is considered as L1.

Bilingualism has always been emphasised in our education system. Parents, educators and policy makers have always had this question in mind: To what extent has bilingual ability been achieved by our pupils st dif-ferent levels? This paper attempts to address this question by using a sample of primary three pupils.

HOW WAS THE RESEARCH STUDY CARRIED OUT?

We selected our sample by stratified random sampling to ensure that it includes the "high", "middle" and "low" groups from both government and aided schools. The sample is made up of 138 boys and 158 girls.

The test instrument consists of the following: Listening Ccmprehension, Dictation, Sound Discrimination, Reading comprehension, Composition and Oral.

WHAT ARE THE RESULTS?

1. There seems to be no strong relationship in the English (EL)/Chinese (CL) (bilingual) ability. However, the correlation is positive though it is rather low ($r = 0.21$, $p < 0.01$). This implies that there was no negative interference in the learning of the two languages.

2. Girls generally performed better than boys in almost all the components of the test.

3. When the two languages (EL/CL) were compared, pupils did better in EL than in CL in all components except in the oral test.

4. Pupils at this stage were found to be generally superior on the listening comprehension task than on the reading comprehension task in both EL and CL.

IMPLICATIONS FOR CLASSROOM TEACHERS

1. The positive correlation ($r = 0.21$, $p < 0.01$) indicates that the learning of CL has no adverse effect on the learning of EL. It could clear up the doubts for sane parents and teachers who are very much concerned about interference in their children's learning of two languages.

2. Pupils at this stage were rather weak in reading comprehension. This is the area that requires our CL2 teachers' attention. One recommendation would be for teachers to look for more suitable supplementary CL reading materials for our children to read.

3. A new approach to the teaching of recognition and writing of Chinese characters needs to be introduced, that will enable our pupils to recall and write Chinese characters correctly.

4. Pupils appear to have performed well in sound discrimination. With a dialect speaking background they did not find much difficulty in differentiating the four tones in Mandarin. The areas that children encountered difficulty with were the initials such as (r l), (s sh), (z zh) and the finals with (in ing). In the teaching of Hanyu Pinyin, emphasis should be placed on those areas where pupils are likely to have difficulty.

This abstract is based on the joint paper entitled "The Bilingual (EL/CL) Ability of A Sample of Primary Three Pupils", published in IE Research Paper "The Bilingual Ability of A Sample of Primary Three Pupils - A Collection of Three Papers" (1987) edited by Dr Ho Wah Kam. The full report is available in IE Library.

LEARNING STYLES OF SINGAPORE SECONDARY TWO STUDENTS

by Yeap Lay Leng

Abstract by Yeap Lay Leng

BACKGROUND

Education has always been concerned with the individual differences of students. More recently interests have been focused on learning styles, including the hemisphericity of the brain, as another dimension of individual differences. Learning styles refer to the five domains, namely, environmental, physical, emotional, sociological, and psychological under which an individual is most likely to learn, remember, achieve, and process information. The psychological domain is concerned with hemisphericity which is a tendency of a person to use one side of the brain to perceive and function more than the other.

The high attrition rates in schools, the great concern to fully develop any special talents in an individual, the need to find out why some students are not making progress in their work, and the need to help students stretch to the limits of their academic abilities are some of the reasons that have prompted the undertaking of this research.

THE PURPOSE OF THE STUDY

The study sought :

1. To find out the learning styles of 284 Secondary Two students in the Normal, Express, and Special Courses;

2. To determine which domain of the learning style characteristics distinguished the learning styles of the different achievement groups.

THE FINDINGS :

The study identified :

* A core of learning preferences that can positively and negatively affect the students' academic achievement.

* The psychological domain in terms of cerebral dominance as the one domain of learning style characteristicsthatclearlydistinguished the low, average, and high achievers.

Briefly, six elements, namely, noise level, light, motivation, learning alone/peer-oriented, learning in several ways, and visual were found to be significantly different between any two achievement groups. All the three groups were persistent, self-motivated, teacher-motivated, and parent motivated.

The Normal and the Express groups were right brain dominant, and the Special group was left brair dominant. Right preferenced students in the Normal and the Express groups did better in the visuo-spatial tasks and would process information holistically. Left preferenced students in the Special group did better in the verbal tasks with sequential information processing. The difference in the performance of the left and the right brain dominant tasks narrowed to a very great extent for the Special group. The lower the achievement levels of the students, the more unbalanced was their performance between the right and left brain dominant tasks.

IMPLICATIONS FOR THE CLASSROOM TEACHER

1. The distinct group patterns of learning styles would warrant differentiated educational approaches in relation to the environmental, physical, emotional, sociological, and psychological factors.

2. Not all students learn or process information in the same way. Students in the Special group would do well academically regardless of the ways learning tasks were introduced to them as they were more balanced in the functioning of both sides of the brain.

3. With the low achievers in the Normal group, there might be a need to deliberately create a learning environment where teaching styles match the students' styles.

The overall implication of the research is to direct teachers to a 'new look' at another dimension of individual differences and at classroom activities in the light of individual students' learning characteristics, learning style preferences, and cerebral dominance.

This is an abstract of Yeap Lay Leng's Ed. D. disseratation entitled "Learning Styles of Singapore Secondary Two Students", University of Pittsburgh, USA, December 1987.

THE EFFECTIVENESS OF USING INSTRUCTIONAL OBJECTIVES WITH LESS ABLE SECONDARY SCHOOL PUPILS

by Teo Boon Guat and George P.L. Teh

Abstract by Richard Lancaster

Singapore teachers have been writing instructional objectives to guide themselves in their teaching since 1983. Is there any benefit in providing the pupils with these objectives? The research evidence from overseas is contradictory. Although providing objectives does not seem to hurt student learning, some researchers found that objectives do not help either, or if they do, it is the more able students who profit.

What is this study about?

The authors set out to test two hypotheses with less academically able pupils in Normal-course classes.

- Students who are provided in advance of the topics with a list of instructional objectives will not score differently on an objective-referenced post-test from those not provided with such a list.

- Boys and girls who are provided with such a list before they are taught will score the same on the post-test.

How was the study done?

Six Secondary One classes from three schools, 240 pupils altogether, formed the sample. Of the two classes in each school, one became the treatment, the other the control class. The two classes in each school were taught by the same teacher.

The experiment was based on three topics on the geography of Singapore in the Normal-course syllabus. A fifty item multiple-choice measure which served as pre- and post-test was first drawn up. After the pre-test, pupils in the treatment classes were each given a list of instructional objectives. In the control classes, the teachers taught as similar lessons as possible except that no instructional objectives were given.

After nine lessons the same measure which served as the pre-test was administered as a post-test.

What are the findings?

- Less-able pupils who were given instructional objectives to guide them in their learning and to inform them of what was expected of them in the lesson scored significantly higher in a post-test than students who were not provided with objectives.

- Boys provided with instructional objectives achieved significantly higher scores than girls.

What do the results mean to teachers?

The results of this study at times contradict other research findings and so, even though this is the only study local to Singapore, the finding must be treated with some caution.

This study suggests that:

- Providing less academically able secondary students with instructional objectives before they are taught the topic will increase scores in a post-test.
- The less able the students, the bigger the gain may be. Exactly why is not clear, but the authors discuss orienting and motivating effects and the consequences of giving guidance as to what to expect in the post-test.
- Boys may profit more than girls and thus gender bias needs to be watched by teachers.

This is an abstract of "The Effectiveness of Using Instructional Objectives with Less Able Secondary School Pupils" by Teo Boon Cuat and George P.L. Teh in The Australian Journal of Educational Technology, 1987, 3(2):135-144.

ENHANCING THE DEVELOPMENT OF LANGUAGE AND THOUGHT THROUGH CONVERSATIONS WITH YOUNG CHILDREN

by D.L. Rogers, M.S. Perrin and C.B. Waller'

LIBRARY

Abstract by Seng Seok Hoon

WHAT WAS THE STUDY ABOUT?

Many linguists, psychologists and educators believe that frequent and extended conversations between an adult and child are essential for facilitating language acquisition and the cognitive development of young children. Recent studies however in preschools indicate that there is little of such extended adult/child dialogue in early childhood classrooms. In these kindergarten classrooms, the teachers usually feel a strong need to control what the children will learn and how they will learn it. Neither language nor thinking is encouraged when teachers ask children a series of factual, assessment type questions.

It has been found that children are more likely to talk about things in which they are interested, and learning through language is encouraged if the teacher particularly stresses questions which seek information and emphasize thinking. The following study focuses on the adult/child relationship and the question-asking behaviour of one outstanding early childhood teacher. It tries to seek some insight into how language development and learning through language exchange can be facilitated.

HOW WAS THE STUDY DONE?

The study was based on ethnographic fieldwork in a preschool classroom and playground. One teacher, who has taught 6-week to 6-year old children for over seven years was observed closely for about 1½ years. This teacher had been evaluated by children, parents, administrators and other teachers as excellent. Her interactions with eighteen 3 to 5 year olds (12 boys and 6 girls) were recorded and analysed. Careful field notes were kept and four sessions (three hours) were videotaped. Twelve formal observations of approximately two hours in length were made. Written records, tape recordings were taken of discussions which usually took place within a few hours of the observation. After the fieldwork, the teacher's questioning of her children was analyzed in terms of structure and intent.

WHAT WERE THE FINDINGS?

- The teacher asked very few factual, assessment type questions (less than 5%).
- The child initiated the dialogue with the teacher on a topic of his choosing and therefore has greater control of the conversation and thus had more opportunity to talk. (63%)

The teacher clearly established a more equilitarian relationship with the child in their dialogue.

- Tne teacner asked questions which sought more information from tne child.

- Tne teacher talked to the child because she was sincerely interested in finding out more. She encouraged him to think about his ideas.

- Tne teacher attempted to extend the conversation through a simple comment related to the child's previous remarks.

- Tne teacher asked children questions to connect, to get an understanding of tneir reasoning patterns and to provide them with opportunities to express their thoughts verbally.

- Dialogues often consisted of both teacher and child sharing, explaining and extending ideas.

WHAT IRE THE IMPLICATIONS FOR TEACHERS?

The results of the study suggest important implications for teachers of young children. Through an analysis of this one teacher's interactions and dialogue with preschoolers, a number of effective strategies and approaches are identified to enhance the development of language and thought in young children.

- The teacher's relationship with children is the essential base from which conversation emanates. The teacher respects and enjoys children and sees them as active, eager learners who have interesting ideas and contributions to share.

- Certain skills are utilized by the teacher to enhance the development of language and thought, like
  - promoting a natural environment for conversation
  - responding sensitively and differently to children in all situations
  - engaging in individual or small group activities which are play oriented

- Teachers learn more about children through the mutual sharing of tneir personal lives and experiences outside of school.

Tnis abstract is based on a paper by Dwight L. Rogers, Marilyn Sneerer Perrin and Cathleen Boggs Waller entitled "Enhancing the Development of Language and Thought Tnrough Conversations with Young Children", delivered at AERA in April 1986, San Francisco. A copy of the paper is in the Reference Section of tne IE Library.

PRACTICAL EXPERIENCE AND SEQUENTIAL SKILLS IN MAP READING

by Liaw Beng Teck

Abstract by Liaw Beng Teck

Why was the study conducted?

This study was carried out to examine the effects of practical experience and sequential skills on achievement in map reading among secondary one pupils in Singapore.

How was the study conducted?

A total of 144 pupils in four secondary one (Express) classes participated in the study.

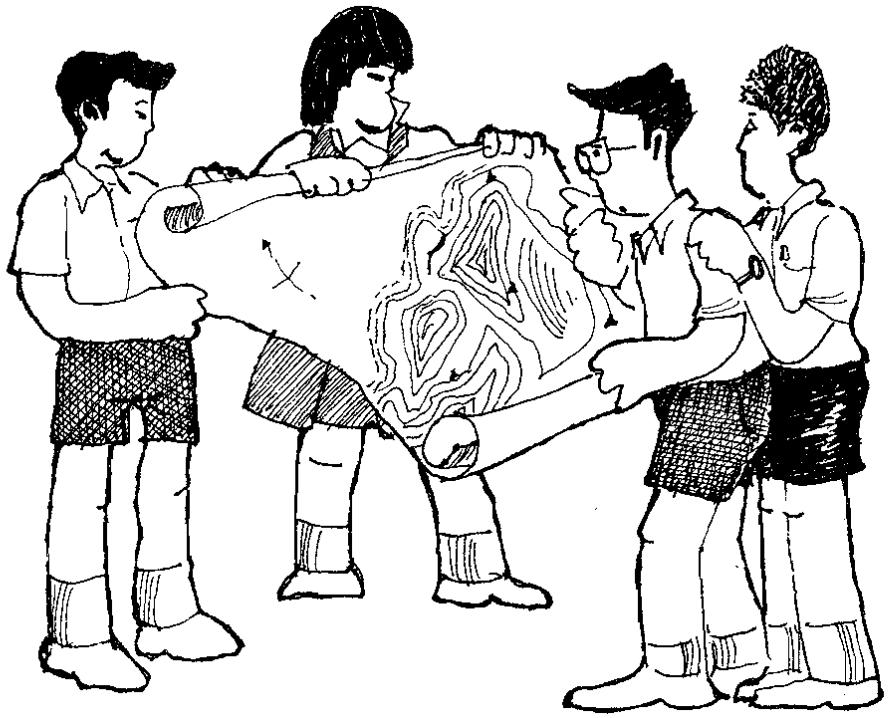
- Each class was randomly assigned to one of the four treatment groups, where two teaching methods, i.e. practical-learning and direct-teaching, and two types of curriculum structure, i.e. hierarchical sequence and non-hierarchical sequence, were compared.
- The instruction consisted of eight weeks of teaching. Each week was made up of two 35-minute periods. The lessons covered mapping and map reading of the new secondary one syllabus. All the treatment groups were taught by only one teacher to reduce teacher variability.
- A pre-test, a post-test and a delayed post-test were administered.

What were the main findings?

- Pupils who followed a hierarchical sequence and a practical approach to map reading generally performed better in the achievement tests, and, they also had a better retention of the acquired map skills.
- Practical learning approach could provide pupils with a richer experience and a more versatile knowledge in mapping and skills in map reading.
- Though there was no significant sex difference in the results of the achievement test between boys and girls, there were, however, wide variations in map skills among different pupils.

What are the implications for teaching?

- The curriculum structure should begin with simple orientation of a large scale map and identification of direction, then proceed to the location and reference system, distance and scale, symbols and keys, and, finally contour and map reading.
- Map reading should be taught through systematic progression combined with practical work by the pupils rather than through a series of sterile instruction by the teacher.
- Grouping for map skills instruction should be based on individual differences in ability rather than on a boy-or-girl basis.



This is an abstract of Liau Beng Teck's M.Ed. dissertation, entitled "Effects of Practical Experience and Sequential skills on Achievement in Map Reading For Secondary One Pupils in Singapore" (National University of Singapore, 1985). A copy of the dissertation is in the IE Library.

INSTITUTE OF EDUCATION LIBRARY

EFFECTS OF TRAINING IN CONCEPT MAPPING ON STUDENT ACHIEVEMENT IN CLASSROOM TESTS

by Kym Fraser and John Edwards

Abstract by C H Diong

WHAT WAS THE STUDY ABOUT?

Over the last few years concept mapping has emerged internationally as a method for studying students' knowledge, learning and understanding of science. While not denying that widespread usage of concept mapping may in time lead to significant changes in pedagogy and assessment, it is the transferability of concept mapping techniques to learning that is of immediate concern to teachers. This piece of action research was aimed at examining this question: "Will training in the use of concept mapping techniques significantly change student achievement in traditional classroom tests?"

HOW WAS THE STUDY CARRIED OUT?

The study involved instruction in concept mapping for 27 Grade 9 science students. The students were drawn from two classes totalling 63 students. The sample chosen consisted of low and medium achievers. During a three-month period, groups of 4 students from each class were instructed in, and carried out the techniques of concept mapping through both class and homework. Sample students' test placings before and after treatment were then compared.

The basic instruction was carried out as follows :

Step 1 - Illustration of key characteristics of a concept map using diagrams which were familiar to students.

Step 2 - Comparison of a concept map and the written paragraph from which it is developed.

Step 3 - Reiteration of the characteristics from (1), this time using the concept map from (2).

Step 4 - Written format of steps to produce a concept map.

Step 5 - Each student produces a concept map.

Step 6 - Discussion and correction of the concept maps completed in (5).

After instruction in concept map construction, students were required to incorporate the construction of concept maps into classroom and homework routine. The following situations allowed sample and non-sample students to work from the same information :

(a) Given a set of terms, write a paragraph (draw a map) incorporating those terms.

(b) Define (draw a map of) a set of terms.

(c) Read and summarise a section of the text. (Read a section of the text, select key words and develop a map).

(d) Given a heading, select relevant terms and write a summary (draw a map) using those terms.

WHAT WERE THE MAIN FINDINGS?

(1) Students who did not achieve a high level of concept mapping mastery showed no significant improvement in performance on normal classroom achievement tests,

(2) Over half of the students who achieved a high level of concept mapping mastery also showed a significant improvement in performance on normal classroom tests.

(3) Both low and medium achievers showed an ability to master and apply concept mapping techniques.

WHAT ARE SOME OF THE IMPLICATIONS FOR TEACHERS?

- Teachers can incorporate concept mapping techniques into their instruction as a strategy in helping students improve their understanding, learning and test performance.

- Students can be trained in concept mapping skills as a means sf helping them take notes, summarise lesson points, revise and develop study skills. Students can improve their test performance in the traditional tests (content/process tests), if they are trained in concept mapping techniques.

This is an abstract of the following article:

Kym Fraser and John Edwards. "The Effects of Training in Concept Mapping on Student Achievement in Traditional Classroom Tests." Research in Science Education", 1985, 15: 158-165.

TEXT MODIFICATIONS IN ESL READING COMPREHENSION

by TSANG WAI KING

Abstract by Chua Seok Hong

WHY WAS THE STUDY DONE?

The study is in the tradition of studying the effect of text simplification on reader's understanding. It looks at how three versions of the same text affect reading comprehension at five form levels. The three versions are i) native-speaker, ii) input modified and iii) interactional structure modified.

Native-speaker texts:	texts as written;
Input modified texts:	long and complex sentences rendered shorter and simpler;
Interactional structure modified:	more redundancy, classification and explanation but the sentence structure and difficult words are still retained.

The finer point is that interactional structure modified texts may be more useful than input modified texts since they keep the same level of syntactic and lexical complexity of native-speaker texts and so help the learner to acquire the language faster. However the study mainly examines recognition and less of the higher order comprehension tasks such as recall, inference and synthesis.

HOW WAS THE STUDY DONE?

Sample : The 401 subjects were all Chinese speakers and learners of English as a Second Language in Hong Kong. They are students in a government-aided English-medium secondary school. Classes are divided into Form One (ages 14 - 18) to Form Seven (ages 18 - 21); these are roughly similar to the British education system. Students of each level from Form Three to Form Seven were randomly placed into three groups making up a total of fifteen groups.

The experiment : Each randomly selected group within a form level was given one of three versions of the same text of native-speaker Grade 10 readability accanpanied by a

twenty-item multiple-choice comprehension test. Subjects were given fifty minutes and encouraged to answer all questions.

WHAT WERE THE MAIN FINDINGS?

1. Overall, both input modified and interactional structure modified text versions were found to be more effective for reading comprehension than the native-speaker version especially at the lower form levels.

2. More significantly, data from Forms Three and Four showed different patterns of effectiveness for the two types of modified texts:

   i) at Form Three, the input modified text was the most effective text for reading comprehension;

   ii) at Form Four, both modified texts were more effective than the native-speaker text, though they do not differ much from each other.

WHAT ARE SOME IMPLICATIONS FOR TEACHERS?

* Teachers can use modified texts in the lower forms (eg. Form Three) with the assurance that students can better understand what they are reading.

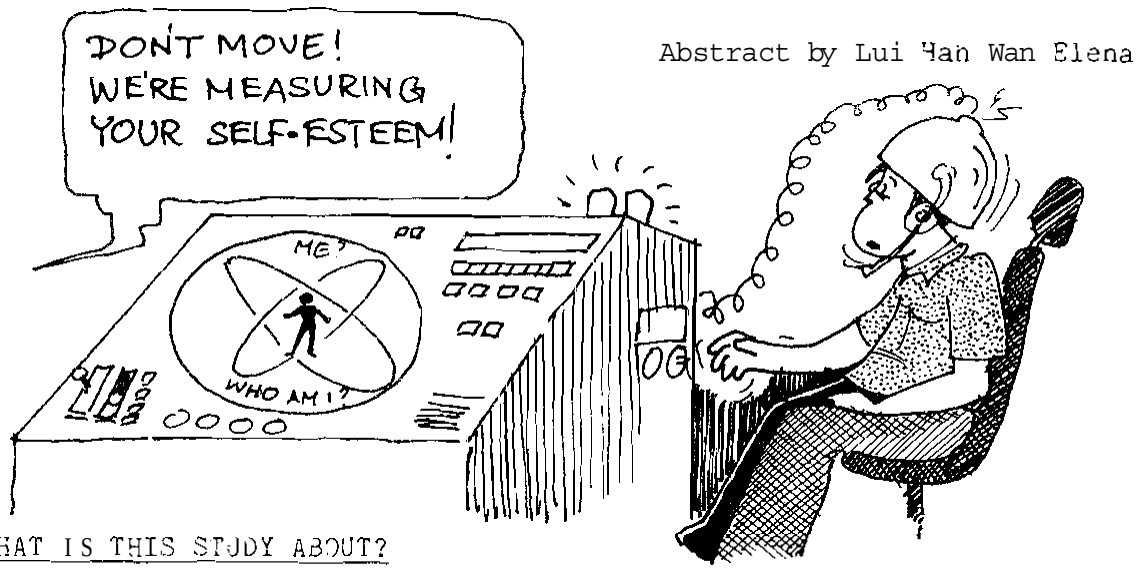
* At subsequent higher levels, interactional structure modified texts are more suitable than input modified texts since both are equally effective but the former is closer to the target text and maintains the same language complexity while ensuring comprehensibility.

* Another implication is that modifications are only effective when the chosen text is of the same or higher level than the student's proficiency. With native-speaker texts of a lower readability level than the student's proficiency level, modifications do not help.

This is an abstract of "Text Modifications in ESL Reading Comprehension" by Tsang Wai King in the RELC Journal 1987 18. (2): pp 31 - 44. The journal is available in the IE Library.

THE DEVELOPMENT OF THE SELF-ESTEEM CHECKLIST(SEC) AS A NEW MEASURE OF PUPIL SELF-ESTEEM

by LUI HAN WAN ELENA



Abstract by Lui Han Wan Elena

WHAT IS THIS STUDY ABOUT?

The main purpose of this study was two-fold: **(a)** to test the validity and reliability of a new instrument specially designed to measure pupils' self-esteem, **(b)** to measure the relationship between pupils' seif-esteem and their academic achievement.

WHAT IS "SEC"?

The new instrument is named the Self-Esteem Checklist, "SEC" in short. It is a 25-item forced-choice self-reporting checklist. It consists of four subscales, **i.e.,** General Self, Academic-School, Peer-Social and Home-Parents, which measure Sour aspects of self-concept.

HOW WAS THE "SEC" DEVELOPED?

The **"SEC"** had undergone two pilot studies before the main study was conducted in May, 1987. All these studies were carried out in Singapore secondary schools. The main study had a sample of 320 pupils representing both genders, Express and Normal courses, as well as the secondary one and two levels. The second pilot study was used to replace two items shown to be very weak in the first pilot study. The sample of each of these studies was drawn from different classes and schools.

HOW RELIABLE ANC VALID IS THE "SEC"?

The findings showed that the **"SEC"** Total Scale had high reliability, **KR20=0.73.** Its four subscales had **KR20s** ranging from 0.42 to 0.75. All the 25 items had discriminating power above 0.16 (ranging from 0.16 to **0.55),** except for two items in which the discrimination index was 0.13 and 0.11 respectively.

Most of these items were congruent With the four subscales. The "SEC" Total Scale and Academic-School Subscale had significantly positive correlations with academic score. The above findngs show that the "SEC" is a valid and reliable instrument to measure the self-esteem of lower secondary pupils in Singapore.

HOW TO USE THE "SEC" IN CLASSROOM RESEARCH?

Teachers are encouraged to test and refine the "SEC" in their schools before they use it to measure pupils' self-esteem. They must not misuse the instrument and overgeneralise the test results. The "SEC" is not meant to be a sorting device to 'judge' or 'label' pupils. Its scores merely serve as an indicator of the pupil's ideas about him/herself at the particular time when the test is taken. There may be many other features or ideas of his/her 'self' not reflected in this measure.

> Any measure of self-esteem, no matter how valid and reliable, is no more than a reflection of a fraction of the inner self, which is somewhat like a misty pond to us sometimes.
>
> ..... Lui Hah Wah Elena

WHAT ELSE DID TTR "SEC" FIHDINGS SUGGEST?

The data analysis showed that the "SEC" Total Scale, General Self and Home-Parents Subscales had significant differences between the genders. The boys had higher scores than the girls, especially among the secondary two pupils. It is recommended that further research, involving a larger sample of pupils, should be conducted in Singapore secondary schools to investigate these differences.

This abstract is based on Lui Hah Wah Elena's Ph.D. dissertation (Michigan State University) entitled "The Development of the Self-Esteem Checklist as a New Measurement of the Self-Esteem of Pupils in Singapore Lower Secondary Schools" (.1987). A copy of the dissertation is in the IE Library. The Self-Esteem Checklist will mads availabls upon request from teachers/researchers, at the writer's office: Dept. of Educational Testing, Guidance and Counselling, School of Foundation Studies, Institute of Education.

USE OF MODIFIED LABORATORY INSTRUCTION IN CHEMISTRY PRACTICALS

by Goh Ngoh Khang et al.

Abstract by Chia Lian Sai

What is the Problem?

At the GCE 'O' Level, the assessment of laboratory work in Chemistry is based on the written report of a practical examination. As a result, teachers emphasize getting the "correct answer" during laboratory work and often resort to verification of something that is already known. In this situation, students' acquisition of science process skills is usually left to chance.

What is the Study About?

In order to remedy this problem, the Modified Laboratory Instruction (MLI) of Qualitative Analysis in Chemistry has been conceptually constructed.

The following are some of the features of the MLI:

- Science process skills are systematically organised and introduced;
- Continuous monitoring of students' performance in the process skills is carried out with coaching;
- The students are provided with feedback about "what", "how" and "why" with respect to the skills used, design of experimental procedure and their mistakes made.

The study involved a sample of 164 Secondary Three students drawn from four classes in two schools. Two (intact) classes in each school with comparable academic performance were randomly selected and assigned, one as an experimental group and the other as a control group.

Before the implementation, it was commonly agreed among all the teachers concerned that the same content and process skills would be covered. Also the time frame would be identical and the same types of assessment administered at the final stage. Teachers involved in the experimental groups were briefed in detail' on the MLI and the materials to be used. Teachers involved in the control groups were told to carry on their laboratory work in their usual (conventional) way. The content of the Chemistry practicals includes studying properties of some common salts and detecting some common cations and anoins in known and unknown samples which are covered by the 'O' level Chemistry syllabus.

After the treatment, both experimental and control groups were each given a traditional practical test and an alternative-to-practical test. While the former deals with following instructions, recording observations, and making deductions, the latter is a paper-and-pencil test which taps skills not covered by the former. The two tests complement one another. Furthermore, both groups had also completed an attitude test.

Results of the Study

This study shows that the performance of the experimental groups in most tests is higher than that of the control groups. This would seem to suggest that the MLI, which stresses the mastery learning of process skills, gives rise to improved quality of performance in practical work. The study also reveals that attitude towards practical work of the experimental groups is better than that in the control groups as reflected by the performance in the attitude test.

Implications for Teaching

The positive effect of the MLI on the achievement of Chemistry practicals implies that the necessary ingredients for promoting the acquisition of process skills are:

- the continuous monitoring of process skills by the teacher;
- the design of clear experimental procedures that provide students with the "why" and "how", and the cause-effect of a particular procedure;
- the identification of the reason when the students make a mistake, to help them avoid repeating the same mistake.

This study also reveals that the incorporation of an alternative-to-practical test into the present practical examination will contribute to a better assessment of process skills involved in science practicals.

Research paper SSV 2-87. "The Effect Of Modified Laboratory Instruction On Students' Achievement In Chemistry Practicals". Goh Ngoh Khang, Toh Kok Aun and Chia Lian Sai, Institute of Education, Singapore, 1987.

FACTORS CONTRIBUTING TO MATHEMATICAL PROBLEM-SOLVING PERFORMANCE

by Nina Kay Buchanan

Abstract by Gan Kee Soon

This study describes differences in the mathematical problem solving performance of Grade Three gifted and Grade Five average students observed during an eight week period.

How was the study carried out?

Four problem solving groups were formed, one of three gifted third grade boys, another of three gifted third grade girls, a third of three average fifth grade boys and a fourth of three average fifth grade girls. Each group met with the researcher twice a week for eight weeks, each session lasting for 30 to 45 minutes. During these sessions, students were engaged in solving a variety of mathematical problems, which were non-routine problems that required more than learned procedures and algorithms for their solutions.

What were the main findings?

The researcher reported that four Student Types best characterised the observed problem solving performance.

- Type I students enjoyed the tasks and were challenged by them. They believed that mathematics involved relationships that make sense and, in solving problems, they used a variety of processes; they were persistent but flexible and they did not consider the problem complete until they knew the 'why' as well as the 'how'.

- Type II students depended on the researcher for support and direction. Mathematics to them was to get the right answer. They relied mainly on a guess-and-test strategy and when the researcher seemed satisfied or indicated that the solution was correct, they stopped working and did not explore further.

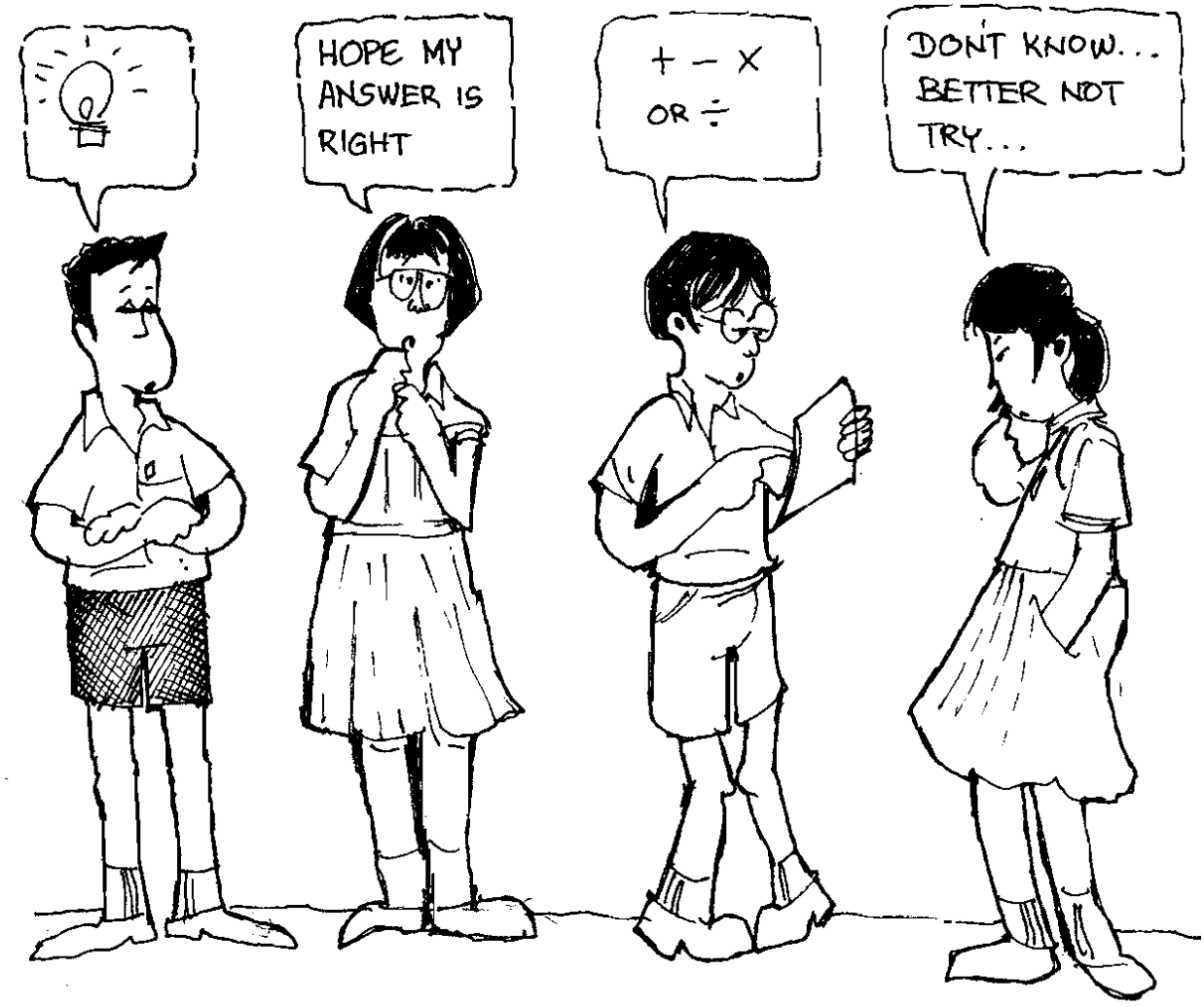
- Type III students wanted to be first to come up with an answer. They were the number manipulators who applied known procedures and algorithms even when these did not relate to the problem. They were finished whenever the answer was proclaimed by someone.

- Type IV students were sensitive to how others saw them. They tried to avoid failure at all costs. If they knew how to obtain the answer, their work showed a range of strategies used with understanding but if they did not see an immediate solution, they were not prepared to work on the problem.

Of the six boys and six girls in the study, three tall boys) were Type I and three (all girls) were Type II problem solvers. Sex difference was not so clearly related for Type III and Type IV students. The qualitative differences in problem solving performance were also unrelated to the original labels of gifted or average. It was observed that such factors as attitude, motivation and belief systems (how the students perceived mathematics) were important to problem solving performance.

What are the implications for teachers?

The study indicates that affective factors as well as cognitive ones have an influence on the wthemtical problem solving performance of students. It would be important in mthemtics classes to build up in students a positive attitude towards the subject, provide appropriate sources of motivation, especially in terms of task enjoyment and intellectual challenge, and develop a proper perception of mthemtics as beina sensible and relational.



This study is reported in Nina Kay Buchanan, "Factors Contributing to Mathematical Problem-Solving Performance : An Exploratory Study", Educational Studies in Mathematics, 1987, 18(4) : 399 - 415.

小学三年级学生
的
双语（英语和华语）能力

作者：梁荣基　梁荣源

摘要：梁荣源

双语这个概念，在不同的时空有它不同的具体内容。在现阶段的新加坡，所谓的双语者，指的是掌握英语（学校第一语文）和母语（学校第二语文）听说读写四种技能的人。

新加坡的教育政策一向强调双语教育，并积极地加以落实。相应的，有两个问题经常提出来讨论。那就是：

1. 不同年级的学生，他们的双语能力各达到什么水平？
2. 在学习一种语文的同时，学习另一种语文，有正迁移之效益呢，还是会产生互相干扰之负作用？

这项研究的目的，就是试图以小学三年级学生为例，寻找第一个问题的答案。确切地说，是要找出小学三年级学生双语（英语和华语）能力的实质是什么样的。

● 这项研究的经过是怎么样的？

这项研究的对象，是七所学校296名小学三年级的学生，其中有极少数是非华族，他们选修华文为第二语文。学生来自不同背景的家庭，其中男生138名，女生158名。学校包括政府学校和辅助学校，也包括学术成绩上中下三种类型的学校。

这项研究是在1986年通过测试进行的。英文测试和华文测试的命题形式相同，而有些项目，内容也一样。测试项目如下：

＊聆听理解
＊听写句子
＊辨音
＊篇章阅读理解
＊看图作文
＊看图说话

上列项目，就测试性质而言，有分立式和综合式两种。所有试题，都是经过初试再加以修订过的。

研究人员亲自到学校去执行测试工作。笔试在随堂老师的协助下进行，时间一小时。口试由研究人员在语言室或音乐室里进行。学生所说的话都加以录音。

测试过后，研究员先处理评分工作，然后通过电脑进行分析。

● 这项研究发现了些什么?

1. 学生的双语（英语与华语）能力，从统计数据看，它们的相关系数不高。（$r=0.21$，$p<0.01$）这意味着学习一种语文，对学习另一种语文，有一些效益，而没有互相干扰的负作用。
2. 关于双语成绩，一般而言，女生比男生的表现好，不管是在听说方面，还是在读写方面。
3. 在听、读、写三方面，学生的英语能力都比华语能力强。只有在说方面，他们的华语能力比英语强。
4. 他们的聆听理解能力都比阅读理解能力强。这种现象，英语这样，华语也是这样。
5. 在许许多多的因素中，影响他们双语成绩的，主要是性别和家庭用语。

● 向教师提出些什么建议?

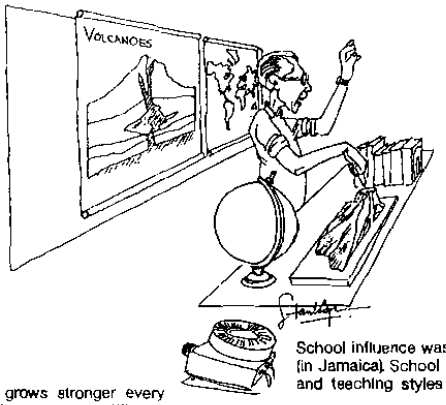
1. 基于学生的双语成绩之间的相关系数不大（$r=0.21$，$p<0.01$），教师可以据此向家长澄清，同时学习两种语文是不会有互相干扰的负作用的。
2. 小三学生，在阅读理解方面的表现，是稍微弱了些。有关教师应该加强这一方面的工作，譬如提供适当的读物给学生阅读，而阅读技巧的训练，也应加强。
3. 汉字的辨认与书写，教学方法应该科学化。设法帮助学生记忆汉字，以便正确地写出汉字。这是一项非常重要的事。
4. 学生对华语的辨音，一般上表现很好。在声调方面，具有方言基础的学生，毫无困难。在声母韵母方面，多数学生感到困难的，是下列几组：
   - r，l和n
   - s和sh
   - in和ing

   因此，字音和汉语拼音的教学，l，n，r，ch，sh，zh，en，eng，an，ang，in和ing是重点项目。

这是《小学三年级学生的双语（英语和华语）能力》的内容提要。研究报告全文以英文写成，收在何和鉴博士编辑的《小学三年级学生的双语能力》研究报告里（1987）。报告全文可向教育学院图书馆借阅。

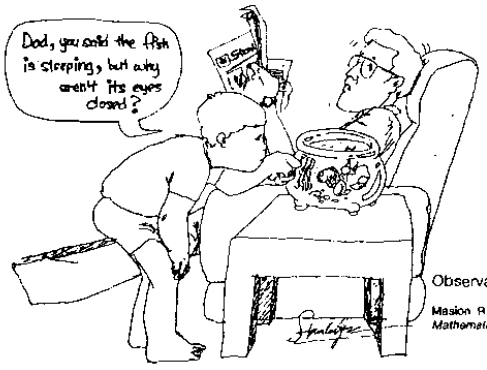
The case for matching learning and teaching styles grows stronger every year . . . many researchers have evidence that both achievement and attitudes towards school improve significantly when instructional methods or resources complement the way individuals learn.

R. Dunn et al. (1982) "Hemispheric Preference: The Element of Learning Style". *American Biology Teacher* (44 : 291-294).



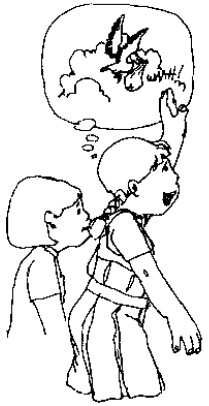
School influence was found to be strongly related to 'A' level Geography results (in Jamaica). School influence was taken to mean the qualifications, experience and teaching styles of the subject teachers.

Graham Webb. (1987). "Factors Affecting Achievement in the University of Cambridge GCE 'A' level Geography Examination in Jamaica". *Research in Education* (38 : 17-26).



Observation occurs all the time and little escapes the eyes of the young child.

Mason R. McNairy. (1965). "Sciencing: Science Education for Early Childhood". *School Science and Mathematics* (65 : 383-393)

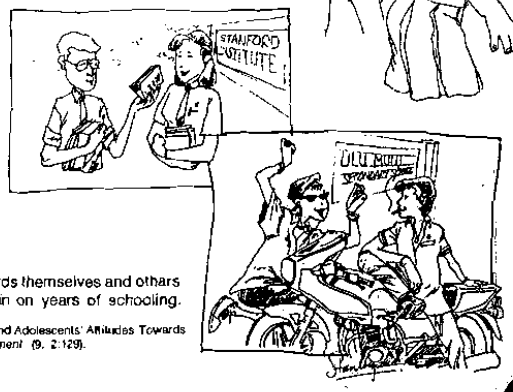


Pupils come to Scienee lessons already holding their own ideas about natural phenomena which they have developed through everyday experiences. Pupils are not empty-headed.

R. Driver and V. Oldham (1986). "A Constructivist Approach to Curriculum Development in Science." *Studies in Science Education* (13 :105-122)

A child begins to develop defensive interpersonal strategies at a very early age. Entering a preschool environment therefore can be a critical period in a child's social development.

Norman S. Kafer. (1984). "Interpersonal Awareness, Peer Acceptance and Interpersonal Strategies: A Study of Preschool Children." Paper presented at the Third Asian Workshop on Child and Adolescent Development, K.L., Malaysia, April 1984.

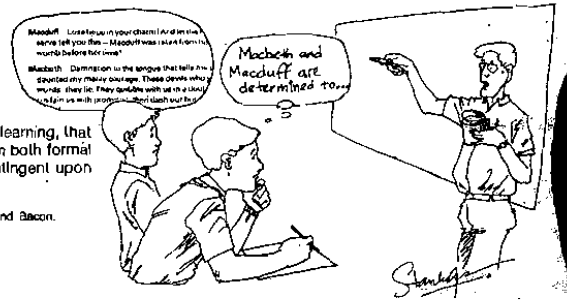


Adolescents differed significantly in their attitudes towards themselves and others depending on the type of school attended rather than on years of schooling.

S. Schludermann and E. Schludermann.(1986). "Sociocultural Changes and Adolescents' Attitudes Towards Themselves and Others". *International Journal of Behavioral Development* (9, 2:129).

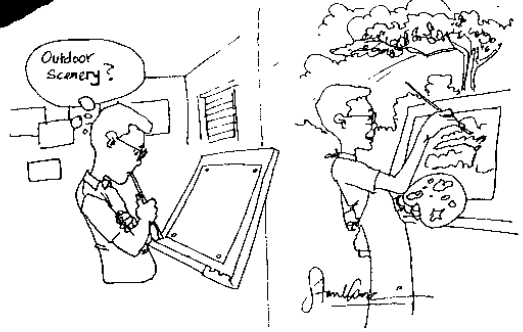
Research findings indicate that listening is central to all classroom learning, that listening skills can be taught and that progress may be measured in both formal and informal ways. Listening is not the same as attention, nor contingent upon intelligence. Listening skills are related to thinking skills.

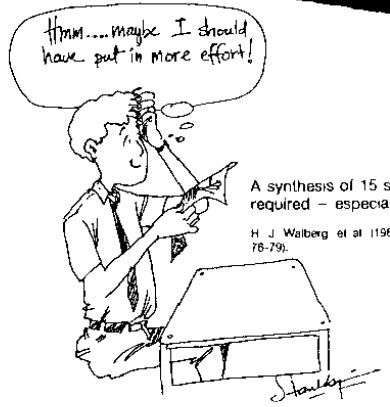
T. G. Devine.(1987). "Teaching Study Skills". *A Guide for Teachers*. Boston: Allyn and Bacon.



One important category of learning in schools is Dispositional Learning. Dispositions are a very different type of learning from skills and knowledge. They can be thought of as habits of mind and tendencies to respond to situations in certain ways.

Lilian, Katz. (1987). "What Should Children Be Doing?" *The Wingspread Journal* (9, 2).



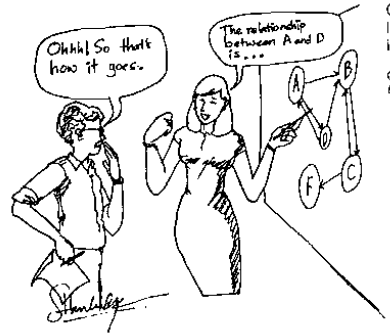


A synthesis of 15 studies shows much higher achievement when homework is required – especially if it is graded or commented on.

H. J. Walberg et al. (1985). "Homework's Powerful Effects on Learning". *Educational Leadership* (42: 76-79).

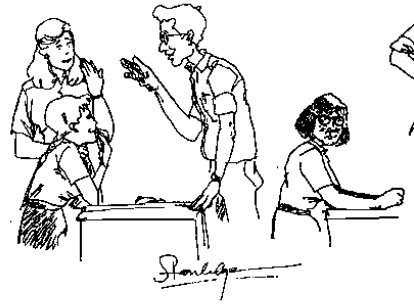
Contrary to the notion of instant creativity . . . great accomplishments are matters of opportunity and of continuous concentrated effort . . .

H. J. Walberg. (1988). "Synthesis of Research on Time and Learning". *Educational Leadership* (45: 75-85)



Concept mapping appears to increase students' awareness of meaningful learning components. The key may be that children are able to see how new information can be related to prior knowledge.

C. F. Stice and M. C. Alvarez. (1987). "Hierarchical Concept Mapping in the Early Grades". *Childhood Education* (64: 80-86).



Physically unattractive children are negatively discriminated by teachers and children. Such discriminatory behaviour and stereotypes based on appearances should be challenged and confronted.

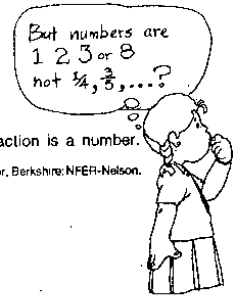
D.A. Byrnes, (1987). "The Physically Unattracted Child". *Childhood Education* (64, 42: 80-85).

Problem solving ability is facilitated significantly by solving problems.

Frank K. Lester Jr. (1983). "Trends and Issues in Mathematical Problem Solving Research". In R. Lesh & M. Landaw (Eds.). *Acquisition of Mathematics Concepts and Processes*. New York: Academic Press.

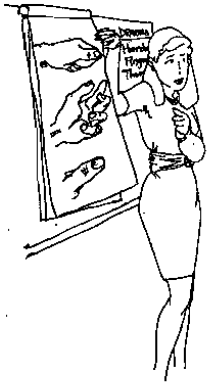
A team approach to leadership enables principals to do what they can do best and carry out the functions that have the highest priority.

A.A. Glatthorn et al. (1984). "A Team Approach to Instructional Leadership". *Educational Leadership* (41, 5: 60-63).



Many children find it difficult to accept the fact that a fraction is a number.

Daphne Kerslake. (1986). "Fractions". In *Children's Strategies and Errors*. Windsor, Berkshire: NFER-Nelson.



When students are taught with approaches and resources that complement their unique learning styles, their achievement is significantly increased.

R. Dunn, K. Dunn and G. Price. (1985). *Learning Style Inventory*, Kansas: Price Systems.

Dear Fellow Professional

React to REACT

Now that you have read REACT, we hope you will share with us some of your views so as to help us improve REACT. Please therefore complete the reactionnaire and return it to us through your principal at your earliest convenience.

Also, please answer the following questions:-

1. Are you a JC/Secondary/Primary teacher? _____

2. How long have you been in the service? _____ years

3. What main subject(s) do you teach? _____

_____

_____

Thank you.

THE EDITORIAL BOARD

REACTIONNAIRE

1. How do you find the language on the whole?

Reasonably readable ( )	Some difficulty ( )	Too technical ( )

2. What themes/topics would you like to see in future issues of REACT?

_____

_____

3. In what ways can REACT be improved so as to meet the needs of classroom teachers more satisfactorily?

_____

_____

_____

Please indicate the extent to which you have found each of the abstracts INTERESTING and USEFUL.

	Not read	Not Interesting	Interesting	Very Interesting	Not Useful	Useful	Very Useful
(1) Give Me A Child	( )	( )	( )	( )	( )	( )	( )
(2) Influencing the Musical Preferences	( )	( )	( )	( )	( )	( )	( )
(3) Enhancing the Development of	( )	( )	( )	( )	( )	( )	( )
(4) Comparing Daily and Weekly	( )	( )	( )	( )	( )	( )	( )
(5) How 35 Children	( )	( )	( )	( )	( )	( )	( )
(6) Effects of Homework	( )	( )	( )	( )	( )	( )	( )
(7) The Bilingual (English/Chinese) Ability	( )	( )	( )	( )	( )	( )	( )
(8) Learning Styles of	( )	( )	( )	( )	( )	( )	( )
(9) The Effectiveness of Using Instructional	( )	( )	( )	( )	( )	( )	( )
(10) Practical Experience and Sequential	( )	( )	( )	( )	( )	( )	( )
(11) Use of Modified Laboratory	( )	( )	( )	( )	( )	( )	( )
(12) Effects of Training in Concept	( )	( )	( )	( )	( )	( )	( )
(13) Text Modifications in	( )	( )	( )	( )	( )	( )	( )
(14) The Development of the Self-Esteem	( )	( )	( )	( )	( )	( )	( )
(15) Strategies for Motivating	( )	( )	( )	( )	( )	( )	( )
(16) Factors contributing to Mathematical	( )	( )	( )	( )	( )	( )	( )
(17) Says Research	( )	( )	( )	( )	( )	( )	( )

THANK Yffl FOR YOUR COOPERATION