

the B.C. teacher

MARCH 1974

VOLUME 53

NUMBER 6

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• THE PARTIALLY-SIGHTED CHILD

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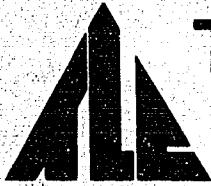
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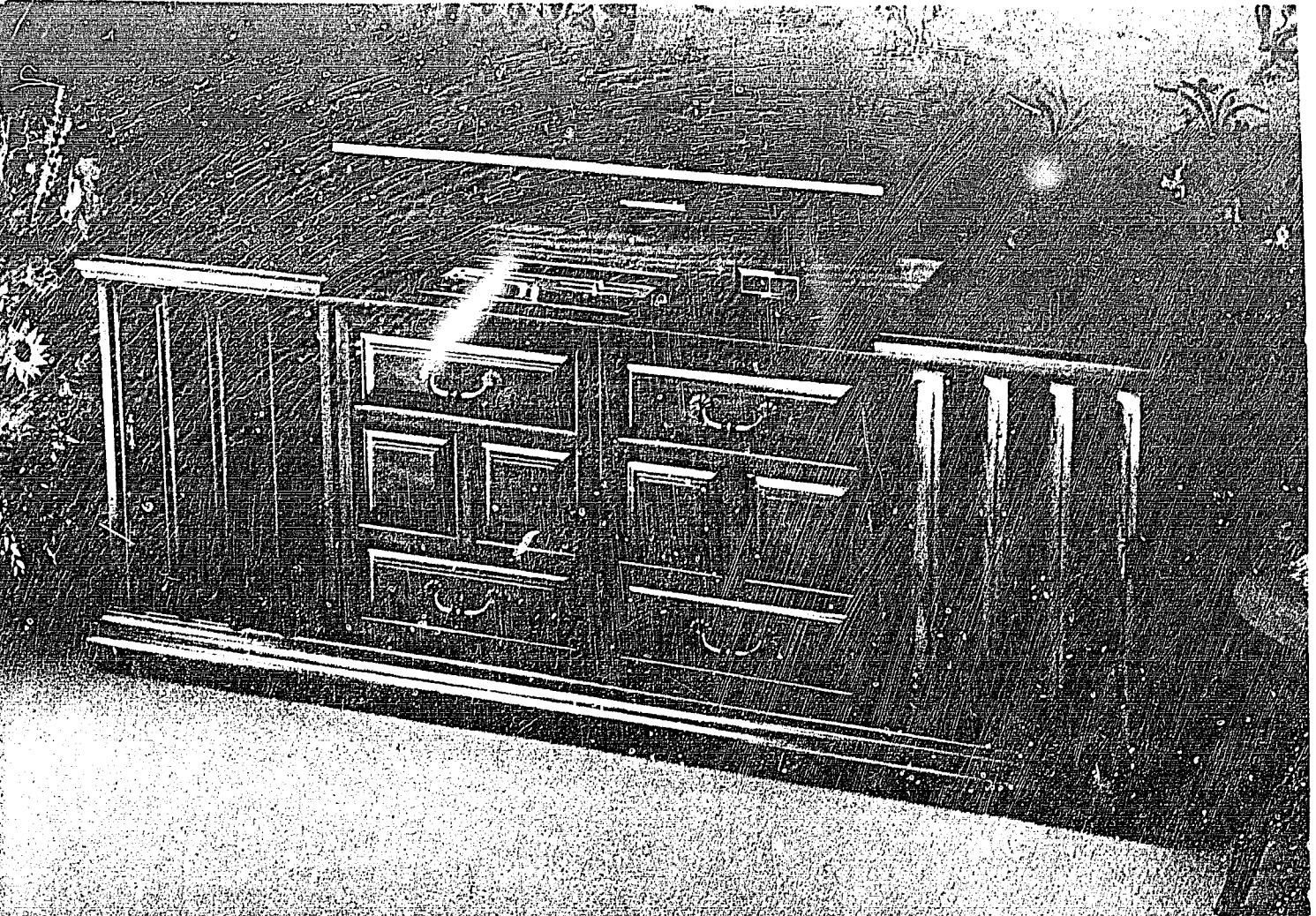
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Skunk cabbage or swamp lantern — it goes by either name — is known botanically as *Lysichiton americanum*. Colorful though malodorous, the plant grows to a height of between 6" and 24". The leaves grow to 3 feet long. Photograph courtesy of MacMillan Bloedel Limited.

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From our readers

His Exchange Is No Picnic

In the time of blackouts, gas rationing, train strikes, coal strikes and general economic breakdown in the United Kingdom, I would like to thank the BCTF for getting the mail (*The B.C. Teacher*) through to me here in Bonnie Scotland.

I would also like to commend Jan Drabek for expressing his accurate views of our present exchange program. I would also add that anyone who regards teaching now in the U.K. as a vacation may complete the balance of my exchange. The position offers one additional teaching hour daily, no free time, 30 children for all subjects with pupils' abilities ranging from borderline special school (75 reasoning quotient) to 120 IQ in an East End school.

Note — applicants need not apply due to charter flight cancellations — No go!

Fraserburgh

Gary Turner

Why Abuse Ourselves?

I have just read with interest the article entitled 'Edutopia' by Carl Bjarnason (January 1974). He makes some good points, but more and more I am beginning to ask myself questions after reading more and more articles on education and its problems.

When are we going to stop this continual self-abuse? All professions face frustrations and moments of doubt. Who said working in education should be different? Who said it should be easy? Who gave permission for some of our colleagues to wield the all-inclusive tar brush with often an unethical flair?

I for one never went into teaching looking for Utopia or Edutopia. I for one never felt that someday the struggle would be over. I for one don't think that our schools are Orwellian horrors presided over by modern day Fagins.

When we rush into print with our many rhetorical questions of what ought to be, we contribute to the 'malaise of criticism and discontent' as stated in the article. When we publicly

attack our profession we plant seeds of doubt in the uninformed. We tend to look to the bad and ignore the good in our schools. If we say 'all is lost,' I say 'relative to what?' 'Where?'

Unfounded criticism based upon 'feelings' is self-destructive. We are needed and get paid for what we do. Who ever promised us a rose garden?

Coquitlam W. L. Melville

On Children's Attitudes

Four normal middle-class Canadian Grade 5 boys are looking at a book of photography.

Seeing a photograph of a nude:
'Ugh! Sick!'

'Ooh, look at the hair! Ugh!'
'How sick!'

'Turn the page quick, I'm gonna puke!'

Seeing a photograph from the American Civil War:

'Man! Look. Cannons. Cool!'
'Hey, look at the dead guy. Far out!'
'Neat guns, eh?'

'Cool!'
Bravo, you teachers and parents out there! You're doing a fabulous job.

Burnaby Tom Durrie

Watch Those Free Materials

I have just returned to Bear Films Inc., Baldwin, N.Y., the contents of an envelope I received today — two filmstrips, two teacher guides and two posters — which purported to be 'free teaching aids' but which I believe would be more appropriately described as free propaganda from the Government of South Africa.

Should other teachers receive and consider using copies of the same material I recommend not only that they carefully examine the text of the man-

To be considered for publication, letters should be approximately 250 words long and must be accompanied by the name and address of the correspondent. Pseudonyms will be used if requested. Letters may be edited for clarity and length.

ual, but also read other descriptions of apartheid rule. The March 1967 and November 1971 *Unesco Courier* both carry articles that describe in detail some of the segregation laws and conditions in South Africa that have caused global concern and made them the subject of formal denunciation by the United Nations.

I should appreciate your publishing this letter as a cautionary measure to warn those who might unwarily accept 'free teaching aids' of the sort I received.

Vancouver (Mrs.) J.B. Thomson

Aid for Resource Centers?

Various statements in Mrs. Daily's article (November 1973 issue) have implications for individualized learning and the services of large well-stocked library resource centers, where students will develop skills in personal research that will equip them for life-long use of the public library. Yet there is no mention of the library.

For learning in schools young people have three chief resources — teacher, the library and the textbook. Consider the following points:

- The library is available daily for a longer period of time than is the teacher.
- It presents information from a variety of viewpoints, in various formats and at different levels.
- The student who knows how to use a library will benefit from its resources for many years after his/her formal contact with the teachers and textbooks.
- A teacher functions better when he or she has the facilities of an adequate library resource center.
- The teacher is of the utmost importance, but his or her aim should be to train the student to do without the teacher.

To implement the development of a more personalized approach to learning and to create more humane schools, surely it is vital that a large array of learning materials must be easily accessible to teachers and students. A good school media program will not, on its own, re-

vitalize the educational program, but it is an essential part of an interrelated set of components that must be present to support the personalizing process. The other components are the total school philosophy and the development of teachers who are skilled in working with students in individualized programs.

Teachers who were themselves educated in schools without adequate learning resource centers start with a disadvantage that Faculties of Education in the past have done little to counteract, not having a school library as an instructional laboratory. In spite of these handicaps, some teachers are extraordinarily flexible, matching diversified teaching strategies to diversified learning patterns through the use of diversified instructional materials

Retired	Last Taught In	Died
Anna L. Bigney	Vancouver	December 4
Newton L. Grimmett	Vancouver	November 10
Elsie R. (Esplen) Hunter	Richmond	November 11
Harry K. Martin	Nanaimo	November 20

in an interaction that fosters individual potential.

In British Columbia we have waited a long time for the provision of adequate personnel, space and materials for school libraries. We noted with great anticipation that one of Mrs. Dailly's

priorities is the improvement of school libraries. One year of her administration has passed, and her review of that year did not even mention the school library. How much longer must we wait?

Jack Hopper
BCSLA

Canada Studies Foundation Plans For The Future

I believe that John Church has posed some very useful questions concerning the possible future of Project Canada West and the Canada Studies Foundation in your January issue. One of these pertains to the Foundation's role as a fund-raising organization, which raises a related question concerning whether the Foundation has a role to play on the Canadian educational scene that is not (and has not heretofore ever been) played by any other organization.

We have had a number of national organizations in the past in Canadian education, but none that have provided opportunities for teachers to participate in nationwide curriculum endeavors. By assisting and supplementing local, regional and provincial efforts, the Foundation has made teachers in all provincial jurisdictions aware of their common interests and problems in the field of Canadian Studies. In the past, in the absence of organizations similar to the British Schools Council and the Social Studies Educational Consortium in the United States, Canadian teachers have had to depend on foreign agencies, mostly in the latter country, to assist them in meeting their unique problems.

Now, for the first time, there exists an organization with the potential for encouraging teachers to come together for purposes of conferring and working on Canadian problems in a Canadian milieu. This has happened at a time when several marked 'grassroots' developments have occurred in Canadian education, e.g., an unprecedented amount of interprovincial activity in the form of student and teacher travel and exchange programs, tours, confer-

ences, forums and seminars; the decentralization of curricula and greater teacher autonomy, which has induced in teachers a need (expressed to the Foundation almost daily) to find out what their colleagues in other provinces are doing; the appearance of a great deal of informally-produced teaching material creating a crying need for national dissemination and evaluation.

These developments suggest the need for a national agency that could provide valuable consultative, developmental, evaluative, dissemination and clearinghouse services. The Foundation's present national network of more than 700 teachers and associated specialists in nearly 50 teams in all provinces suggests the possibilities as well as the wealth of talent and expertise available for the future. But, as Mr. Church cogently suggests, future development must be task-oriented in temporary systems of the type that now characterize Project Canada West, an interprovincial, interinstitutional, teacher-based curriculum development enterprise unique in the history of Canadian education.

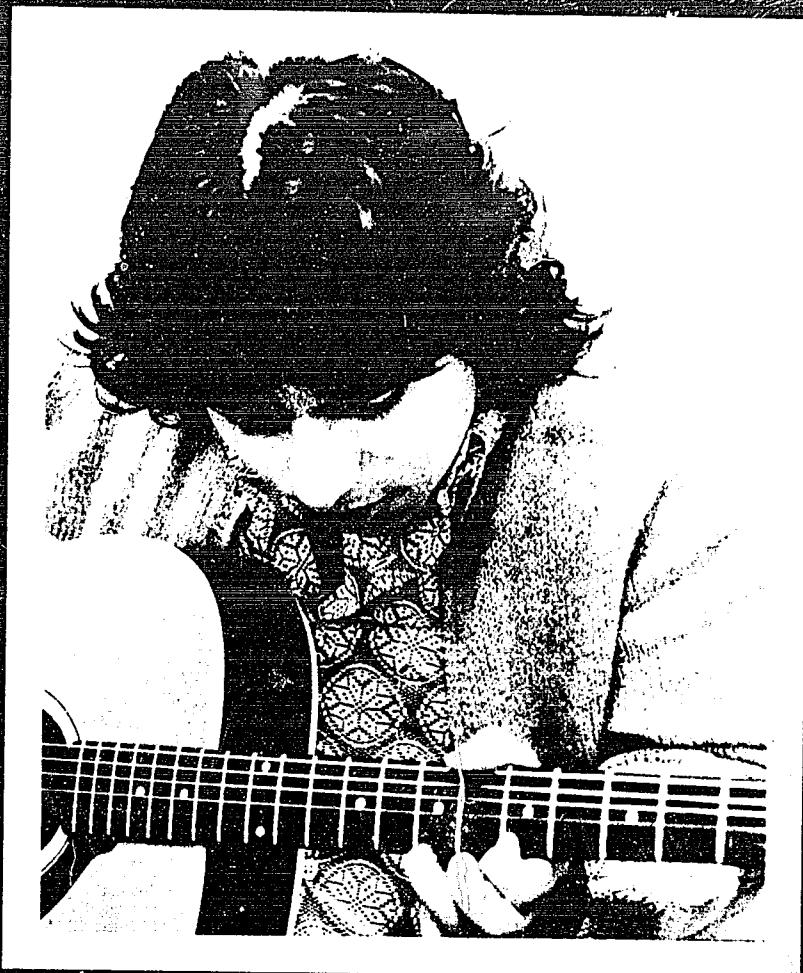
Mr. Church also cogently raises the question of whether the necessary autonomy will be possible in an organization that will rely mostly on public as opposed to the present reliance on private funding. This question is very much in the minds of all who are exploring the future possibilities of the Foundation. A measure of continued private and non-governmental institutional support would, as Mr. Church suggests, be highly desirable and is under active consideration.

As for Mr. Church's legitimate con-

cern that any national organization must recognize the regionalism of Canada, it is worth pointing out that the Foundation's present very small national secretariat is widely dispersed, with its staff members located part- or full-time in Vancouver, Calgary, Toronto, Ottawa and Quebec. Directors and co-ordinators of projects are located in seven different provinces. Projected disbursements of funds directly to projects to 1975 (since 1970 and not including large amounts available for interproject activities) amount to half a million dollars in the case of Project Canada West. This is 35% of the total compared with 37% projected for projects in Quebec and Ontario and 20% in the Atlantic region. In other words, more than half of all project funds will have been disbursed outside 'central' Canada.

Finally, I would like to comment on Mr. Church's point that school systems should view curriculum development as part of the way of life of the teacher and not as something extraneous to or superimposed on his/her role. Clearly, it should be so viewed and to the extent that Project Canada West and the Canada Studies Foundation have demonstrated the need for such a view, both are making a signal contribution to Canadian education. Acceptance of this view in the future should enhance the Foundation's capacity to devote more of its resources to services on a national scale to meet teacher needs that local and provincial jurisdictions, acting individually, are not equipped to meet.

George S. Tomkins
Director of Projects
Toronto Canada Studies Foundation



the free and happy student

The man who is probably North America's best-known behaviorist says that the natural, logical outcome of the struggle for personal freedom in education is that the teacher should improve his control of the student rather than abandon it. The free school is no school at all.

B.F. SKINNER

His name is Emile. He was born in the middle of the 18th century in the first flush of the modern concern for personal freedom. His father was Jean-Jacques Rousseau, but he has had many foster parents, among them Pestalozzi, Froebel and Montessori, down to A.S. Neill and Ivan Illich. He is an ideal student. Full of goodwill toward his teachers and his peers, he needs no discipline. He studies because he is naturally curious. He learns things because they interest him.

Unfortunately, he is imaginary. He was quite explicitly so with Rousseau, who put his own children in an orphanage and preferred to say how he would teach his fictional hero; but the modern

version of the free and happy student to be found in books by Paul Goodman, John Holt, Jonathan Kozol, or Charles Silberman is also imaginary. Occasionally a real example seems to turn up. There are teachers who would be successful in dealing with people anywhere — as statesmen, therapists, businessmen, or friends — and there are students who scarcely need to be taught, and together they sometimes seem to bring Emile to life. And unfortunately they do so just often enough to sustain the old dream. But Emile is a will-o'-the-wisp, who has led many teachers into a conception of their role which could prove disastrous.

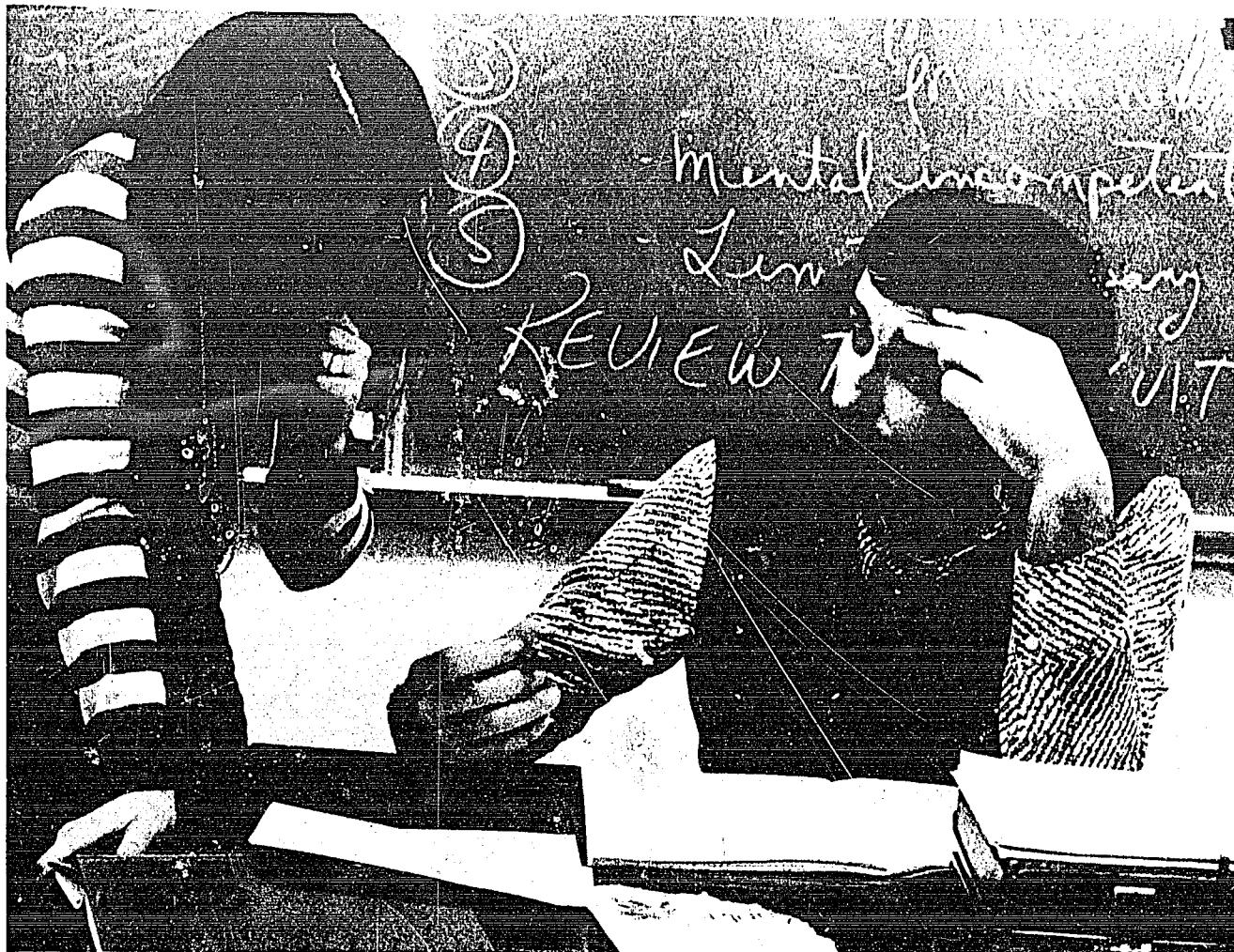
The student who has been taught as if he were Emile is, however, almost too painfully real. It has taken a long time for him to make his appearance. Children were first made free and happy in kindergarten, where there seemed to be no danger in freedom, and for a long time they were found nowhere else, because the rigid discipline of the grade

schools blocked progress. But eventually they broke through — moving from kindergarten into grade school, taking over grade after grade, moving into secondary school and on into college and, very recently, into graduate school. Step by step they have insisted upon their rights, justifying their demands with the slogans that philosophers of education have supplied. If sitting in rows restricts personal freedom, unscrew the seats. If order can be maintained only through coercion, let chaos reign. If one cannot be really free while worrying about examinations and grades, down with examinations and grades! The whole Establishment is now awash with free and happy students.

Dropping Out Of School, Dropping Out Of Life

If they are what Rousseau's Emile would really have been like, we must confess to some disappointment. The Emile we know doesn't work very hard.

Dr. Skinner is Edgar Pierce Professor of Psychology at Harvard University and author of such widely discussed works as *Walden II* and *Beyond Freedom and Dignity*. This article originally appeared in the New York University Education Quarterly, spring, 1973. It is reprinted with permission.



The student who scarcely needs to be taught and the teacher who would be successful in dealing with people anywhere occasionally turn up. Together they occur just often enough to keep alive the old dream of the ideal student.

'Curiosity' is evidently a moderate sort of thing. Hard work is frowned upon because it implies a 'work ethic,' which has something to do with discipline.

The Emile we know doesn't learn very much. His 'interests' are evidently of limited scope. Subjects that do not appeal to him he calls irrelevant. (We should not be surprised at this, since Rousseau's Emile, like the boys in Summerhill, never got past the stage of knowledgeable craftsman.) He may defend himself by questioning the value of knowledge. Knowledge is always in flux, so why bother to acquire any particular stage of it? It will be enough to remain curious and interested. In any case the life of feeling and emotion is to be preferred to the life of intellect; let us be governed by the heart rather than the head.

The Emile we know doesn't think very clearly. He has had little or no chance to learn to think logically or scientifically and is easily taken in by the mystical and the superstitious. Reason is irrelevant to feeling and emotion.

And, alas, the Emile we know doesn't seem particularly happy. He doesn't like his education any more than his predecessors liked theirs. Indeed, he seems to like it less. He is much more inclined to play truant (big cities have given up enforcing truancy laws), and he drops out as soon as he legally can, or a little sooner. If he goes to college, he probably takes a year off at some time in his four-year program. And after that his dissatisfaction takes the form of anti-intellectualism and a refusal to support education.

Are there offsetting advantages? Is the free and happy student less aggressive, kinder, more loving? Certainly not toward the schools and teachers that have set him free, as increasing vandalism and personal attacks on teachers seem to show. Nor is he particularly well disposed toward his peers. He seems perfectly at home in a world of unprecedented domestic violence.

Is he perhaps more creative? Traditional practices were said to suppress individuality; what kind of individuality

has now emerged? Free and happy students are certainly different from the students of a generation ago, but they are not very different from each other. Their own culture is a severely regimented one, and their creative works — in art, music and literature — are confined to primitive and elemental materials. They have very little to be creative with, for they have never taken the trouble to explore the fields in which they are now to be front-runners.

Is the free and happy student at least more effective as a citizen? Is he a better person? The evidence is not very reassuring. Having dropped out of school, he is likely to drop out of life too. It would be unfair to let the hippie culture represent young people today, but it does serve to clarify an extreme. The members of that culture do not accept responsibility for their own lives; they sponge on the contributions of those who have not yet been made free and happy — who have gone to medical school and become doctors, or who have become the farmers who raise the

food or the workers who produce the goods they consume.

These are no doubt overstatements. Things are not that bad, nor is education to be blamed for all the trouble. Nevertheless, there is a trend in a well-defined direction, and it is particularly clear in education. Our failure to create a truly free and happy student is symptomatic of a more general problem.

The Illusion of Freedom

What we may call the struggle for freedom in the Western world can be analyzed as a struggle to escape from or avoid punitive or coercive treatment. It is characteristic of the human species to act in such a way as to reduce or terminate irritating, painful, or dangerous stimuli, and the struggle for freedom has been directed toward those who would control others with stimuli of that sort. Education has had a long and

shameful part in the history of that struggle. The Egyptians, Greeks and Romans all whipped their students. Medieval sculpture showed the carpenter with his hammer and the schoolmaster with the tool of his trade too, and it was the cane or rod. We are not yet in the clear. Corporal punishment is still used in many schools, and there are calls for its return where it has been abandoned.

A system in which students study primarily to avoid the consequences of not studying is neither humane nor very productive. Its by-products include truancy, vandalism and apathy. Any effort to eliminate punishment in education is certainly commendable. We ourselves act to escape from aversive control, and our students should escape from it too. They should study because they want to, because they like to, because they are interested in what they are doing. The mistake — a classical

mistake in the literature of freedom — is to suppose that they will do so as soon as we stop punishing them. Students are not literally free when they have been freed from their teachers. They then simply come under the control of other conditions, and we must look at those conditions and their effects if we are to improve teaching.

Those who have attacked the 'servility' of students, as Montessori called it, have often put their faith in the possibility that young people will learn what they need to know from the 'world of things,' which includes the world of people who are not teachers. Montessori saw possibly useful behavior being suppressed by schoolroom discipline. Could it not be salvaged? And could the environment of the schoolroom not be changed so that other useful behavior would occur? Could the teacher not simply guide the student's natural development? Or could he not accelerate

Are today's students really free? Are they really happy? Or do they study primarily to avoid the consequences of not studying?



Students have very little to be creative with, for they have never taken the trouble to explore the fields in which they are now to be front-runners.

it by teasing out behavior which would occur naturally but not so quickly if he did not help? In other words, could we not bring the real world into the classroom, as John Dewey put it, or destroy the classroom and turn the student over to the real world, as Ivan Illich has recommended? All these possibilities can be presented in an attractive light, but they neglect two vital points:

1. No one learns very much from the real world without help. The only evidence we have of what can be learned from a nonsocial world has been supplied by those wild boys said to have been raised without contact with other members of their own species. Much more can be learned without formal instruction in a social world, but not without a good deal of teaching, even so. Formal education has made a tremendous difference in the extent of the skills and knowledge which can be acquired by a person in a single lifetime.
2. A much more important principle is that the real world teaches only what is relevant to the present; it makes no explicit preparation for the future. Those who would minimize teaching have contended that no preparation is needed, that the student will follow a natural line of development and move into the future in the normal course of events. We should be content, as Carl Rogers has put it, to trust

...the insatiable curiosity which drives the adolescent boy to absorb everything he can see or hear or read about gasoline engines in order to improve the efficiency and speed of his 'hot rod.' I am talking about the student who says, 'I am discovering, drawing in from the outside, and making that which is drawn in a real part of me.' I am talking about my learning in which the experience of the learner progresses along the line: 'No, no, that's not what I want'; 'Wait! This is closer to what I'm interested in, what I need.' 'Ah, here it is! Now I'm grasping and comprehending what I need and what I want to know!'

Rogers is recommending a total com-

mitment to the present moment, or at best to an immediate future.

Formal Education As Preparation For The Future

But it has always been the task of formal education to set up behavior which would prove useful or enjoyable later in the student's life. Punitive methods had at least the merit of providing current reasons for learning things that would be rewarding in the future. We object to the punitive reasons, but we should not forget their function in making the future important.

It is not enough to give the student advice — to explain that he will have a future, and that to enjoy himself and be more successful in it, he must acquire certain skills and knowledge now. Mere advice is ineffective because it is not supported by current rewards. The positive consequences that generate a useful behavioral repertoire need not be any more explicitly relevant to the future than were the punitive consequences of the past. The student needs current reasons, positive or negative, but only the educational policy maker who supplies them need take the future into account. It follows that many instructional arrangements seem 'contived,' but there is nothing wrong with that. It is the teacher's function to contrive conditions under which students learn. Their relevance to a future usefulness need not be obvious.

It is a difficult assignment. The conditions the teacher arranges must be powerful enough to compete with those under which the student tends to behave in distracting ways. In what has come to be called 'contingency management in the classroom,' tokens are sometimes used as rewards or reinforcers. They become reinforcing when they are exchanged for reinforcers that are already effective. There is no 'natural' relation between what is learned and what is received. The token is simply a reinforcer that can be made clearly contingent upon behavior. To straighten out a wholly disrupted classroom, something as obvious as a token

economy may be needed, but less conspicuous contingencies — as in a credit-point system, perhaps, or possibly in the long run merely expressions of approval on the part of teacher or peer — may take over.

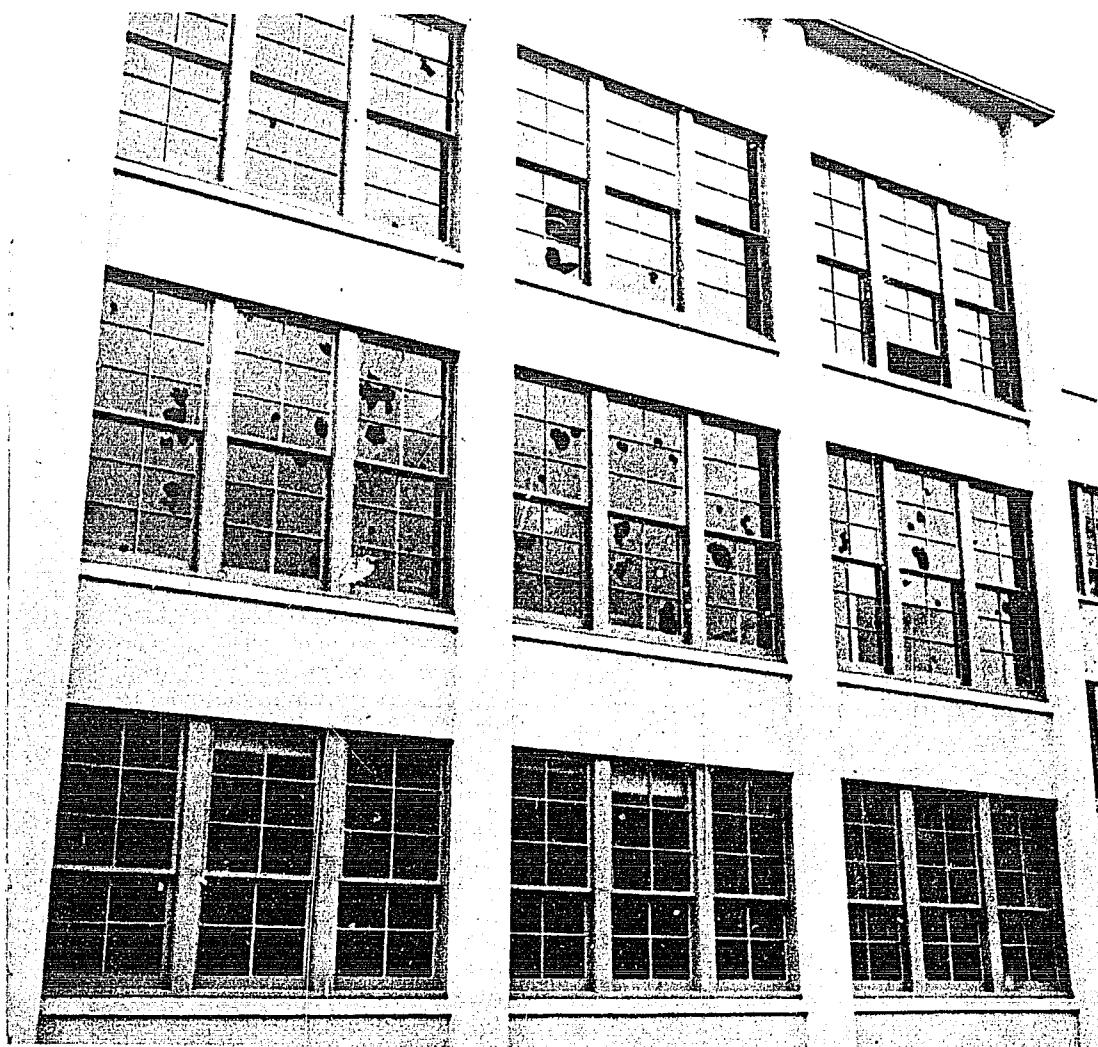
The teacher can often make the change from punishment to positive reinforcement in a surprisingly simple way — by responding to the student's success rather than his failures. Teachers have too often supposed that their role is to point out what students are doing wrong, but pointing to what they are doing *right* will often make an enormous difference in the atmosphere of a classroom and in the efficiency of instruction. Programmed materials are helpful in bringing about these changes, because they increase the frequency with which the student enjoys the satisfaction of being right, and they supply a valuable intrinsic reward in providing a clear indication of progress. A good program makes a step in the direction of competence almost as conspicuous as a token.

Programmed instruction is perhaps most successful in attacking punitive methods by allowing the student to move at his own pace. The slow student is released from the punishment which inevitably follows when he is forced to move on to material for which he is not ready, and the fast student escapes the boredom of being forced to go too slow. These principles have recently been extended to college education, with dramatic results, in the Keller system of personalized instruction.²

The Responsibility Of Setting Educational Policy

There is little doubt that a student can be given nonpunitive reasons for acquiring behavior that will become useful or otherwise reinforcing at some later date. He can be prepared for the future. But what is that future? Who is to say what the student should learn? Those who have sponsored the free and happy student have argued that it is the student himself who should say. His current interests should be the source of an effective educational policy. Certainly they will reflect his idiosyncrasies, and that is good, but how much can he know about the world in which he will eventually play a part? The things he is 'naturally' curious about are of current and often temporary interest. How many things must he possess besides his 'hot rod' to provide the insatiable curiosity relevant to, say, a course in physics?

It must be admitted that the teacher is not always in a better position. Again and again education has gone out of



The free and happy student is not less aggressive, kinder, more loving—certainly not to the schools and teachers who have set him free, as increasing vandalism and personal attacks on teachers seem to show.

date as teachers have continued to teach subjects which were no longer relevant at any time in the student's life. Teachers often teach simply what they know. (Much of what is taught in private schools is determined by what the available teachers can teach.) Teachers tend to teach what they can teach easily. Their current interests, like those of students, may not be a reliable guide.

Nevertheless, in recognizing the mistakes that have been made in the past in specifying what students are to learn, we do not absolve ourselves from the responsibility of setting educational policy. We should say, we should be willing to say, what we believe students will need to know, taking the individual student into account wherever possible, but otherwise making our best prediction with respect to students in general. Value judgments of this sort are not as hard to make as is often argued. Suppose we undertake to prepare the student to produce his share of the goods he will consume and the services he will use, to get on well with his fellows, and to enjoy his life. In doing so

are we imposing our values on someone else? No, we are merely choosing a set of specifications which, so far as we can tell, will at some time in the future prove valuable to the student and his culture. Who is any more likely to be right?

The natural, logical outcome of the struggle for personal freedom in education is that the teacher should improve his control of the student rather than abandon it. The free school is no school at all. Its philosophy signalizes the abdication of the teacher. The teacher who understands his assignment and is familiar with the behavioral processes needed to fulfill it can have students who not only feel free and happy while they are being taught but who will continue to feel free and happy when their formal education comes to an end. They will do so because they will be successful in their work (having acquired useful productive repertoires), because they will get on well with their fellows (having learned to understand themselves and others), because they will enjoy what they do (having acquired the

necessary knowledge and skills), and because they will from time to time make an occasional creative contribution toward an even more effective and enjoyable way of life. Possibly the most important consequence is that the teacher will then feel free and happy too.

We must choose today between Cassandra and Utopian prognostications. Are we to work to avoid disaster or to achieve a better world? Again, it is a question of punishment or reward. Must we act because we are frightened, or are there positive reasons for changing our cultural practices? The issue goes far beyond education, but it is one with respect to which education has much to offer. To escape from or avoid disaster, people are likely to turn to the punitive measures of a police state. To work for a better world, they may turn instead to the positive methods of education. When it finds its most effective methods, education will be almost uniquely relevant to the task of setting up and maintaining a better way of life. References available on request.

OR NOT TO READ

SIR ALEC CLEGG

Somehow we have to redress the imbalance between what we in our jargon call cognitive and affective learning, and counter the naive belief that business efficiency methods can be applied to the flowering of the human spirit. The person a child grows into is more important than what he knows.

Sir Alec Clegg, Chief Education Officer, West Riding of Yorkshire, England, delivered an address, entitled 'Education, Mind and Spirit,' to the Reading '73 Conference at York University, Toronto. It was published in a condensed form, with Sir Alec's permission, in The Bulletin, journal of the OSSTF, from which we reprint it with permission.

My grandfather, my father, I and two of my sons have all been or are teachers, and there is no doubt that our roles have changed vastly with the generations. These roles change not only according to the law of the land, but according to the prevailing philosophies, to current ideas about the nature of learning and of discipline and according to the needs of society. These ideas vary so much from one generation to the next that we are driven to ask, What do we mean by education? What is the product of it and what the by-product? What is the shadow and what the substance?

When we probe in this way we find that education process appears as a number of balances. There is for instance the balance between mind and spirit, which is the balance between what a man knows and what sort of person he is, between the skill that has to be mastered and the interest, excitement and joy which result from the mastery.

Then there is the balance between nature and nurture. How much derives from the quality of the brain that a child inherits? How can the efficiency of this brain be impeded or improved by the circumstances under which it develops, and in particular the circumstances of his home? There is the balance which society makes between the importance of one child and another, between the quick and the slow for instance. On which should public money be spent? On the gifted who it is believed will add to the national wealth or on the less fortunate and the frustrated who deserve our compassion and who may cause social trouble which will detract from our wealth if we disregard him?

There is the balance between the spurs and goads which we use in education to stimulate the learning process —

the use of fear and of love, of threats and encouragements. The school or generation or the society which believes that what matters is the mind, that the quality of the mind depends almost entirely on inheritance, that only those with quick minds matter and that the fear of retribution is the only way to ensure good behavior, will be very different from those which believe that the spirit of man comes first — that both the mind and the spirit can be greatly modified by nurture, that all children, the quick and the slow, should receive our concern, and that love is a better spur than fear.

Let me start with mind and spirit and attempt once more to make clear my distinction between them. I mean the botanical classification of the rose on one hand, and its color, shape and scent on the other. I mean the scientific knowledge required to make a nuclear bomb and the callousness in making the decision to kill people with it. The classification of the rose and the physics of the bomb can be learnt and the effectiveness of their learning can be measured and tested. The scent of the rose and the callousness behind the dropping of the bomb cannot.

Now this dichotomy between what a man knows and what knowledge does or does not do to his loves, his hates, his apathies and his enthusiasms is of course manifest in all subjects.

When technique and full facts are emphasized at the expense of feeling, learning is sterile. When it taps enthusiasm and arouses excitement and provides enjoyment, it stimulates growth. Let's examine a basic subject to show what happens when the cognitive

When learning taps enthusiasm and arouses excitement and provides enjoyment, it stimulates growth.



There is an all-important distinction between the scientific knowledge required to make a nuclear bomb and the callousness in making the decision to kill people with it.

and technical side of a subject gain the upper hand.

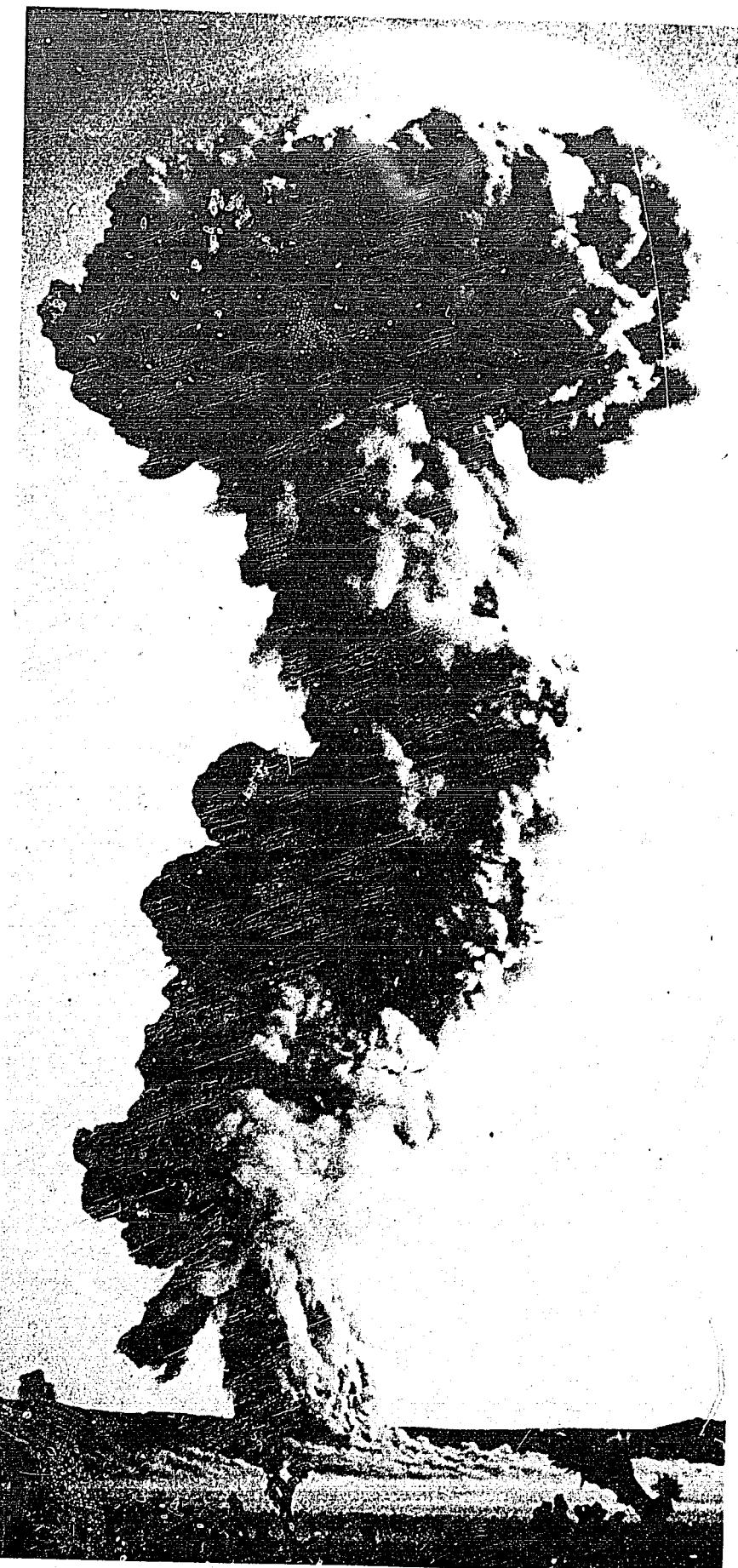
I became alarmed recently when I found some extraordinarily elaborate reading schemes which used terms which few teachers of reading had ever heard of and which turn a relatively simple process into an extravaganza of technical exercise.

The schemes tell of grapheme bases, of how to blend phonemes into spoken words, of how to identify consonant diagraphs and grapheme-phonemic correspondences, etc.

Having read all this, I said to myself 'CAT spells cat' and I set out to look at one or two schools which serve some of the poorest social areas I know, where there are severe language problems. These are schools in which at least half the seven-year-olds are fluent readers, in which no child of that age has failed to reach the third reading book of a series. I asked the teachers what they did and was told that although they did use look-and-say and the sentence method, and the phonic method, their effectiveness had little to do with techniques. What they stressed above all else was enjoyment. Some children come to school speaking only in monosyllables and need all kinds of activities to stimulate their talking and to give them something to talk about. They expose the children to a whole range of books that they like looking at and are offered delight in listening to stories that are read to them.

The book corner offers a place of enchantment, the daily news sheet builds the children's individual statements into a unique book from which all can read.

When I read of the sophisticated elaborations of what is after all a relatively simple process, it makes me thank God we don't have to teach children to walk. I can well imagine that we would embark upon systematic assessment, long-and short-range goals, the use of alternative methods, organization structures within and without the classroom which are most likely to facilitate the walking process, adequate support systems and a system which effectively measures walking objectives. We would no doubt appoint a walking coordinator who would supervise the entire walking program directly under the principal or superintendent. We would appoint walking specialists, teacher aides to walking, walking consultants,



The B.C. TEACHER

walking clinicians, and home tutor co-ordinators.

Most of the mechanical aids which are growing more and more sophisticated each year help us with the already over-emphasized cognitive side of the learning process. Edward Thring, an English schoolmaster, had this vision nearly one hundred years ago.

'Marvellous automata can be imagined of force bodily and intellectually able to carry on, when set in motion, every process of mechanical skill. These automata would figure as external agents of a high order, busy with innumerable problems of calculation, statistics, science, measuring other people's thoughts and exercising any kind of coercive power as well as all the fact-collecting power in the universe.'

'But powerful and honoured as these automata would be, they would be separated entirely from the feeblest, tenderest birth of human thought and feeling requiring man to think and feel it. Mental factory wheels and the scintillations of like are different in kind and might belong to two different worlds, though both are packed together in man's being.'

Somehow we have to redress the imbalance between what we in our jargon call cognitive and affective learning, and counter the naive belief that business efficiency methods can be applied to the flowering of the human spirit.

Our teachers, particularly the teachers of the very young who receive their pupils straight from home, are seeing the connection between home and school much more clearly than they did only a few years ago. They see home as a resource center for civilizing influences, and if it is not such a home, they know that the school must make good the loss. They see home as a source of that aspiration which is one of the most powerful of all educational forces, and if it is not, the school has to provide what an inspector years ago described as 'that recognition which our natures crave and acknowledge with renewed endeavor.' Home is a place which provides the care and love and happiness without which education so rarely thrives, and if the home fails the child in this vital support, the school must somehow try to make it good.

The good teacher of today as compared with his predecessor has established a relationship with his pupils which is far less aloof and far more warm than it used to be.

He acknowledges in agreement with many of the great writers and practitioners of the past that love is a better spur to learning than fear.



If the home is not a resource center for civilizing influences, the school must make good the loss. Love is a better spur to learning than fear.

Behind the education he provides is the acceptance that the person the child grows into is more important than what he knows.

He prefers to arrange the curricular diet to suit each individual rather to supply the whole class with the same meal. He is hesitant about accepting a syllabus or course of learning prescribed by an examination or devised by a person who has no knowledge of the quality and background of the children in his class.

He tries to ensure that every child has an experience of success and he proclaims this success and tries to build on it.

He knows the lamentable effect on children of incessant failure.

He knows the limitations of measuring education and uses measurement with wise discrimination.

He knows and acts on the fact that to delight in the performance of a skill is essential to its mastery.

He knows how to cultivate initiative, sensitivity and confidence as well as how to impart facts and the skills.

He knows that as knowledge is doubling at least once a decade, the bits of it which he uses to stimulate his children

today and will use five years hence may be very different from the bits he used five years ago.

In particular he knows the ways in which children can be handicapped by misery caused by lack of love or a disrupted home, or a bad start in life, or poor speech or spiritual and material impoverishment or other causes, and he is especially careful to help in these special cases.

Having expressed my hope, I am bound to admit that we have still a long way to go before we achieve the ideals of some of our forebears.

Finally, a statement of the relationship between response and achievement, from which we could all learn. It was expressed in the testimonial which Michelangelo took to the Pope who was to employ him on building the Dome of St. Peter's and on painting the Sistine Chapel.

'The bearer of these presents is Michelangelo, the sculptor. His nature is such that he has to be drawn out by kindness and encouragement, but if he be treated well and if love be shown to him he will accomplish things that will make the whole world wonder.'

Are Lab Science Courses worth while?

GORDON R. GORE

Why do many students turn away from science courses as soon as they can? To try to answer the question, the author looks at teaching styles and student attitudes.

Since the new lab courses were introduced back in the 1960s, large sums of money have been spent on equipping British Columbia schools with laboratory facilities and scientific supplies. Most teachers have shifted their teaching style from a lecture-demonstration, note-giving, memory-oriented approach to the much-touted 'new' way of teaching science.

What is the 'new' way of teaching science, and in what ways is the new better than the old? Was it worth all the effort and expense? There appears to be no set of reliable research data upon which to base an objective reply, so I shall use the tried and true approach in education: I shall state my opinions on the matter.

The 'new' science can be described in many ways, depending upon the individual teacher's interpretation of what a laboratory course is supposed to be. We can obtain some idea of how a teacher interprets 'laboratory course' by observing him teach or at least by listening to him describe how he teaches his science classes. It seems to me that there are at least five fairly distinct styles of teaching, each of which

gives clues to the teacher's notions of what a laboratory science course is supposed to be.

The Prescriptive Style, or Covery Method

The prescriptive teacher's main objective for the year is to cover THE BOOK. He is fully aware of every detail in THE BOOK. To him, THE BOOK is to be interpreted literally. It outlines a definite body of knowledge that he is duty-bound to cover with his classes during the school year. If the material is in THE BOOK, it must have intrinsic merit and therefore all students will be better off for having covered it. At the end of the year students must have mastered at least fifty percent of THE BOOK. Digression from the outlined program is minimal, since the time allotment for covering the core material is not generous. The prescriptive teacher teaches essentially the same course from year to year. He is often very well organized and keeps an excellent daybook and previews. He is very conscientious and often well respected by his superiors.

Individual Progress

One innovative approach to teaching science might be called the *individual progress* mode. There are different interpretations of individual progress, but in its most popular form it is basically

the same as the prescriptive style, except that the individual gets bored at his own rate. The teacher who uses this style may consider coverage of the prescribed BOOK important, but allows the student to cover THE BOOK at his own rate, provided he finishes it by the end of the year. This teacher may consider the main objective of a science course to be the development of the ability to read instructions. This style quite often eliminates discipline problems, since students work in isolation and rarely have to sit listening to a teacher talking.

The Permissive Style (Sometimes Called Progressive)

There are degrees of permissiveness. In the extreme form, the teacher uses what he may call the *discovery* approach. When students enter the laboratory, the teacher tells them what page the next experiment is on, and how long the students have to do it. They then proceed to discover what the instructions are, if they are capable of reading them. If they are not, they discover something else, like how to throw spitballs. This teacher generally is inclined to complain about the lousy laboratory text because students can't discover anything from it. This style of teaching requires very little effort on

Before joining the Faculty of Education at UBC, the author taught science from Grade 7 to 13 for nine years. He is teaching in Kamloops this year.



This student taking part in a demonstration lesson at UBC seems to be hoping fervently that her experiment will turn out well.

the part of the teacher other than unlocking the door at the beginning of the period and shouting down the occasional over-enthusiastic discoverer. Any incidental chaos that erupts during the period can be explained away as 'the noise of active, discovering minds.'

The fourth style of teaching is quite rare, but it does exist.

The Oddball Style

The oddball teacher has peculiar characteristics that on occasion may even get him in trouble with his superiors and colleagues. He is not orderly in his daybook and previews, if he keeps them at all. He quite often cannot accurately predict what his class will be doing a month hence. He frequently strays from THE BOOK and may in fact not even use it. He is easily diverted by student questions that lead to unprescribed experiments or time-consuming projects that have been suggested and even designed by mere students! This teacher's students may never learn how to follow the instructions in THE BOOK because he foolishly insists on having young students design their own procedures. He may even allow his students to make mistakes! Obviously this teacher just doesn't appreciate what science is about! He is unpredictable. He may go as far as to

suddenly take his class out-of-doors (perhaps without telling the OFFICE) just to let his students look for answers to their silly questions, when they could just as easily read them in THE BOOK and save a lot of valuable teaching time.

This type of teacher is to be discouraged, because his students will never learn how to be happy in a PROPERLY RUN SCIENCE LABORATORY. They ask silly questions, like 'If this experiment has been done a thousand times before, why must I repeat it again?' And they ask a lot of other silly questions, too, which tend to slow down the progress of the class through THE BOOK. In senior courses this can be very serious, since THE EXAM has to be prepared for, and THE EXAM will show up the teacher who has not covered THE BOOK. Good science teachers who have HIGH STANDARDS and get their students through THE EXAM with high marks always cover THE BOOK.

In short, if you have an oddball science teacher on your staff, fire him immediately. (His students may become scientists, and we can't have that!)

The Perfect Style

This style of teaching requires no description. It is the one that you and I use exclusively.

Returning to the question 'Are lab

science courses worth-while?', it is difficult to generalize. Regardless of teaching styles, there has been a shift toward greater student activity, which presumably is a desirable trend. But we must not assume that because students get to work with 'scientific' apparatus and are engaged in 'doing experiments in the laboratory,' they are therefore developing a proper notion of what a scientist does, are developing more positive attitudes toward science, or are more scientifically 'literate' than students of a decade ago.

One suspects that there are just as many and possibly more students with strong anti-science feelings now (in, say, the tenth grade) as there were ten years ago. This is not necessarily because of the laboratory courses, since student attitudes are surely not entirely the result of their in-school experiences. There were students excited about science ten years ago, and there still are. There were excellent science teachers ten years ago, and there still are. But there are a great many students turning away from science courses as soon as they can. Why is this so, when we have better facilities, better hardware, and a greater number of highly qualified science teachers than ever?

No, 'doing experiments' does not

Continued on page 208

A FRESH APPROACH TO EVALUATING STUDENTS

During the last three or four years a considerable number of so-called *Gesamtschulen* have developed in at least six of the 10 states of West Germany. The term *Gesamtschule* could be translated as 'comprehensive school' or 'school for every child.'

Gesamtschulen do away with the type of streaming that for decades has determined a German child's school career at the age of 10. In this respect, they tend to follow the North American idea of 'togetherness' of children of various ability levels within one building, if not one classroom. Nothing is left of the traditionally harsh methods of education for which German schools have been known.

In *Gesamtschulen*, student representatives participate in staff meetings. Each pupil chooses a mentor from the teaching staff, to whom he can turn for advice and help. Also new is the five-day weekly schedule with some afternoon school hours — traditionally a German student went to school six days a week (Mondays to Saturdays) from eight until about one o'clock.

Perhaps the most noteworthy of the innovations under study in *Gesamtschulen* is the fresh approach to student measurement and evaluation. Typical is the *Gesamtschule Hannover-Linden*, a 54-teacher school in an industrial suburb of the capital of Lower Saxony, a city of over half a million people.

In Hannover-Linden no letter grades are given to students in any subject. Teachers establish *Lernziele* (learning goals) for various subject areas through team-work. For example, all teachers of English of a certain grade level hold a staff meeting to determine objectives

A long-time teacher and principal in Alberta, the author is at present teaching in Hanover, West Germany.



Above: One result of centralization is the increased use of school buses.



Facing: Students write tests to see if they have reached goals set for them.

Below: Although they do not compete for grades, students compare notes after exams.

A school in West Germany has done away with letter grades. Instead, learning goals are established for each course, and tests are given to determine only which students have reached the goals and which ones have not.



Students in a classroom in West Germany are shown here. The school has done away with letter grades.

for a certain section of their course. Included are listening skills, as well as English reading, vocabulary work and spelling. Tests are prepared along the lines of these objectives.

Testing takes place for the first time in November, about two months after the beginning of the school year. Separate tests are administered for the components of the course — listening skills, English reading, vocabulary work and spelling. Students who reach a certain number of correct responses on a test have reached the goal associated with this test. The pass-mark is seven or eight out of 10, 14 or 16 out of 20, or the like.

What counts, however, is not the number of correct responses, not percent or percentile figures, not a letter grade or evaluation in terms of 'good' 'fair' or 'failure.' Instead, results are discussed in terms of students who reached certain goals and others who did not. Any terminology related to competitive scales and grades is avoided.

The first battery of tests is followed by *Differenzierung*, a two-week period of homogeneous regrouping. Pupils who reached the goals of all tests are grouped for enrichment. A second group consists of pupils with deficiencies in listening skills, while still other groups concentrate on the improvement of reading, vocabulary work and spelling. Students with low standing in several areas take general review classes.

After these *Differenzierungsgruppen* (differentiated groups) have operated for a period of two or three weeks, a second series of tests is administered. Many who did not reach some of the goals in the first instance are now successful. What critics find lacking is an indication how far a pupil was above the

minimum requirement, or how far below. Who reached the goal is the only thing that matters.

This method is not geared to student rank or percentage, although test results provide the data for such undertaking. The intention is clearly a move against competition among students.

What matters after the first set of tests is a distinction between those who reached certain goals and others who have to try again. Few low-scoring students are interested in knowing exactly how low they place on the scale. On the other hand, above average students might want to know accurately how well they did.

To some degree, this information is available to them unofficially, for they could compare the number of their correct responses with that of other bright members of the class. Some students will sense their own position from their placement during the homogeneous review grouping. If some get enrichment and others have to improve their English spelling, members of the enrichment group will conclude correctly that they have done well, while those practising spelling know that they are weak in this area. The latter might try to work toward enrichment during the next section of the course.

The spirit of competition cannot be eradicated completely, and this is not the purpose of *Gesamtschulen*. They place more emphasis on co-operation and socialization than on competitive values. But competition cannot be excluded completely from the schools of a country whose very existence depends largely on successful economic competition; it cannot be ignored, but it can be subdued in the face of other values.

There is a need for the safe-keeping of test results over many years, since these results, rather than letter or percentage grades, are guidelines for student counselling and placement. Not every student will reach matriculation through the new type of school; school officials hope, however, to raise quotas from the present 15% to a much higher level.

Report cards are issued semi-annually. They consist of separate information sheets for the various subject areas. For each subject the objects pursued are listed. In English, for example:

1. Student can read English at class level sufficiently well.....
2. Student has an adequate mastery of relevant vocabulary.....
3. His expression in English is satisfactory.....
4. He has been successful in English spelling.....



Teachers at Hannover-Linden and other *Gesamtschulen* bear a heavy burden, for much of the new approach is being planned at the local level. These teachers enjoy a few moments of respite in the staffroom.

To the right of these comments check marks will indicate to parents which of these objectives were reached at the time of the first series of tests, which were reached by the second tests, and which were not reached at all.

Teachers at Hannover-Linden and other *Gesamtschulen* bear a heavy burden, for much of the new approach is being planned at the local level. There is an extensive public relations program. The Teachers' Federation of Lower Saxony (Niedersachsen), not as strong a body as many teachers' organizations in North America, encourages the new type of school through seminars, pamphlets and newspaper work.

School Organization Should Stay

Politically speaking, *Gesamtschulen* have the support of the Social Democrats, who are now in power in most of the states of West Germany. Opposed to the amalgamation of traditionally separated schools are the Christian Democrats, who hold office in Bavaria and Wurttemberg-Baden, besides forming the official opposition in all other regions. If the Socialists remain strong, and indications are they will, the *Gesamtschulen* can be expected to move from the model stage toward regular status, thus changing school organization somewhat in the direction of well established forms in North America and other parts of the world, even though the Hanover experiment in student evaluation may remain unique for some time to come.

I do not believe that student grading and competition for marks should be eliminated from Canadian schools. The question may be posed, however, of whether student grading has been overdone in the past. If this be the case,

where would one begin to move away from an evaluation in terms of As, Bs, Cs, Ds and Es?

One area for a beginning would be in the field of optional subjects and courses. For example, if a junior secondary school student in Canada chooses astronomy as an elective, he should very rarely, if ever, be given an E in astronomy, as long as he demonstrates a minimum degree of interest in this field of his own choice.

It may be argued that in smaller schools subjects offered as options are limited and students cannot make genuine choices. The new approach could possibly be introduced best in large schools, where choices are possible from a wide variety of subjects.

Perhaps this is all that can and should be done to have at least one part of the school program that provides for maximum co-operation and minimum competition among students. The pupil who has been frustrated through the perennial experience of getting Ds and Es anyway could then expect a pass mark, a success mark in a field of his own choice. If all participants in an optional course were confident of their outcome, interest in the subject would not be disturbed by fear of the final grade.

Gifted students would understand that they could not get As or Bs in this particular course. This would induce them to help the mediocre and slow learners rather than to work as individualists.

The optional courses would thus become an area and instrument for co-operation among youth, while the other courses would allow ample room for competition.

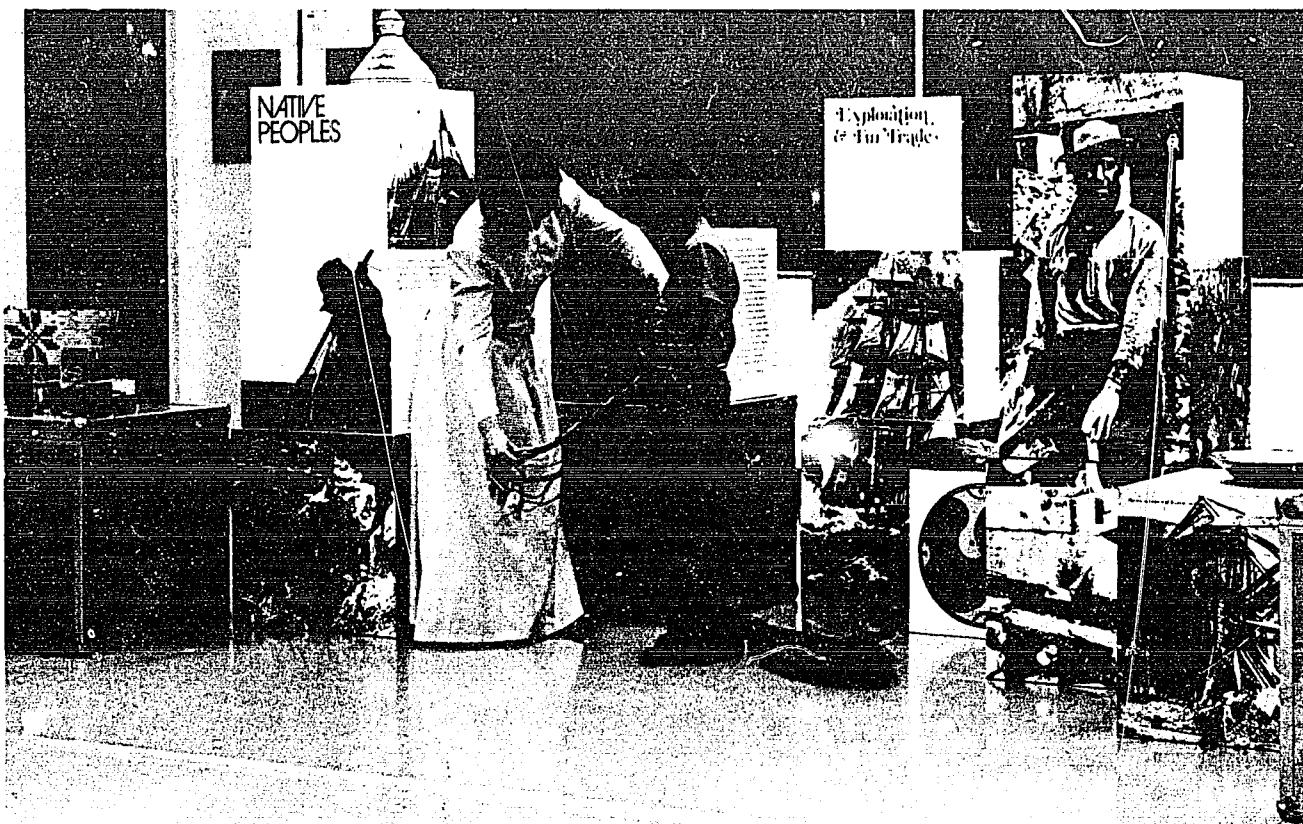
References available on request.

TRAVELING MUSEUMS

TRAVELING MUSEUMS B.C.

The Provincial Museum is conducting a unique experiment with three traveling displays, taking the museum to students who cannot get to Victoria.

WILMA A. WOOD



The kids stay after school. They hang around during the noon hour. 'It's interesting,' they say. 'It's fun.'

Today, it's common place for something educational to be interesting, to be fun.

But we at the Provincial Museum think that we have something unique for students to learn with.

With a marine biology traveling kit.

With a history traveling kit.

With an Indian traveling kit.

These three kits, each unique in de-

The author is chief of the Education and Extension Services of the B.C. Provincial Museum.

sign, distinct in its learning application and different in length of time it is used, are 'on the road' to schools in B.C. this year. Part of a three-year testing and evaluating program for traveling exhibitions under the auspices of the National Museums, Native Indian Fund and the B.C. Provincial Museum, the kits will reach schools in the regions of the province that do not have an opportunity to travel to the Victoria museum.

Very little is known about the function and value of real objects in combination with other sensory media as agencies in the learning process. How to combine and use media in ways that

will permit teachers and students to communicate with each other on topics having a high proportion of non-verbal content is one problem we're investigating. Will the kit process make science or history fun and interesting — and informative?

During the first semester, the kits seemed to be fun and interesting. The logistical problems have been ironed out and, as 1974 progresses, the evaluation of the project will get into full swing with the assistance of the Educational Research Institute of B.C. By June 1975 the comprehensive study will be completed and published.



Emma Hunt tells a story of the whale hunt during a lesson at a Vancouver Island School. Mrs. Hunt was born on the West Coast and is traveling in the area with the program 'Son of Raven, Son of Deer.'

What makes up each kit?

Each contains artifacts and specimens that can be handled by the students. From the moment they set up the exhibit, which contains the objects, the two-dimensional panels or boxes become three-dimensional as the students work within the environment of the exhibit.

For example, the marine biology kit unfolds like a super tinker-toy as the Grade 5 and 6 students assemble their own exhibit. Six lessons headed by group leaders relate to the colorful panels, wet and dry specimens of marine life, books, models and games included in the exhibit. One lesson includes the reading of herring scales (taken by the student from a specimen) to determine that herring's age. Another lesson includes a dictionary of common marine life.

Another lesson includes a game a lot like Snakes and Ladders, called Dams and Ladders. It describes the hazards a salmon is likely to encounter on its way to the spawning grounds. And a card game (52 to the pack) helps students picture and recall common marine life.

During the first semester the kit was in the Quesnel District, one of the first districts to appeal to the Provincial

Museum for traveling school kits. This spring it will be in the Peace River area.

Emphasis on local history as well as settlement in the province is included in the history kit, 'Journey Through Time.' Modular in design, like the marine biology kit, it has with it a museum educator — a teacher who uses the real things from the museum in four lessons for two days. Touching, eating, smelling and feeling are all part of this kit.

Maureen Gee, the teacher, has been traveling with the Museumobile throughout the Smithers-Kitimat area since the program started in September.

She says she hopes many of the students will react the way a Hazelton student did:

'I sure liked it when you were here because we didn't do work...but we will remember everything went you left. I sure liked the drop spinning...'

A teacher at Hazelton wrote to Maureen:

'They have been working through many of the follow-up activities and I am amazed by how much they remember. They are very interested and seem to want to learn more.'

The 'Son of Raven, Son of Deer' traveling kit permits cultural contact between West Coast Indian Emma Hunt

and Grade 4 and 5 students. Grandmother to every child she works with, Emma is touring Vancouver Island and the Queen Charlotte Islands with stories from George Clutesi's book and artifacts that represent the life of another people. Emma dramatically presents the view of her people as she would to her own grandchildren, telling stories as she would in the long house in which she lived for many years. The importance of story-telling to convey a history of a people, and the contact the children have with Emma, is related in the many letters she receives from the students.

'I really learned quite a lot about Indians. I really am glad. Indians are as good as every other race too, if not better.'

And from a student who was obviously impressed by the story:

'You taught me something by what you said. I learned not to be selfish and greedy.'

These traveling kits produced for the study are the only ones of their kind in Canada. The lack of appropriate media and the appropriate personnel for non-verbal learning spurred us to apply for grants to investigate what museum educational programs should be doing. We hope we've found one answer. 

The Beaver Box

Here is a report of an experiment with a semi-structured learning package or mobile learning center. The Grade 4 pupils who used the materials all enjoyed working with them.

TERRY D. JOHNSTON,
KERRY QUORN
and BETTY EMERY

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The Beaver Box, a semi-structured learning package or mobile learning center, grew out of at least four felt needs:

- An increasing knowledge of the human learning process continues to point out ever more emphatically the need for teaching methods that recognize the individuality of the learner. Related to this idea is the conviction that the learner must be centrally and actively involved if teaching is to result in learning.
- Many teachers, trained in and familiar with more structured methods, appreciate the need for individual inquiry learning, but feel inadequate to adapt present resources to such methods.
- Many children, particularly those in the intermediate grades, lack the organizing ability to complete a useful research project. The school library presents such a plethora of material that the uninitiated child frequently resorts to copying out passages from an encyclopedia. In the long term the answer is to train children in research methods and permit them to develop the necessary independence and self-direction. In the meantime, the teacher still is faced with the problem of how to proceed with a class of children who lack such skills.
- Teachers spend many hours gathering together books, pictures, artifacts, worksheets, games, questions and assignments. These resources are assembled to produce a relatively brief learning experience and are then dispersed. The pictures are taken down, the books returned and the Mimeo-masters filed away. The whole process, with little reduction of effort, must be repeated the next year. There must be some way that such learning units can be kept together permanently so as to avoid this repetitive labor.

With these needs in mind, we decided that such a package must have the following characteristics:

- It must be attractive.
- It must be reasonably self-contained and relatively mobile.
- It must permit children to work at their own level and rate.
- The children must be active participants in the learning process.

ants in the learning process.

- It must permit the teacher some control over the content and skills to be learned.
- It must be practical.
- It must allow several children to interact with the material at the same time.
- It should include both structured and open-ended experiences. Ideally, successful completion of a structured sequence should lead to a more open-ended activity.

The product that resulted was a three-sectioned display board that folded down into a movable self-contained package. The topic, beavers, was chosen for no particular reason except that we were interested in beavers, we had some resource material on beavers readily available, and it seemed a mildly patriotic thing to do. As will be evident, any topic or skill could have been employed.

The Contents of The Beaver Box

The books. The books provided by ourselves and those provided by the school are listed in the bibliography that is available on request. They cover fiction and non-fiction over readability levels from Grades 2 to 7. In providing such a variety we hoped to meet the reading needs of a wide range of children.

The pictures. Four colored pictures of beaver activities were also included. These pictures were taken from magazines. They were accompanied by informative labels and captions, although no activities were specifically related to them.

Enemies of the beaver game. This game comprised a set of pictures of the beaver's natural enemies, a pack of cards, each carrying a short description of one animal, and a label for each animal. The child had to match picture, label and description. In the instructions the child was informed that the book, *Album of North American Animals* by Clark Bronson, might be helpful. Answers were provided on the back of each card so that the child could check his/her work.

Beaver race game. This game comprised a board depicting a map of a beaver

pond with canals and lodge, a pack of problem cards and a pack of Helper/Hazard cards. Progress around the board depended partly upon accurately answering questions about beavers. The players were advised to read the *Junior Science Book of Beavers* by Alexander L. Crosby and *Beavers* by Dorothy Wood before they played the game.

Activity Cards. The activity cards suggested that the children find the answer to questions about beavers, draw pictures, make models or write stories. Helpful page references were included on some cards.

Yes and No beaver game. The Yes and No beaver game comprised a set of cards, each carrying a picture. Below each picture was a question that could be answered 'Yes' or 'No.' For example, a picture of a pond, surrounded by a thick forest, was accompanied by the question, 'Would a beaver like to live here?' A picture of an icecream fruit sundae carried the question, 'Would a beaver like to eat this icecream?' The correct answer was written on the back of each card.

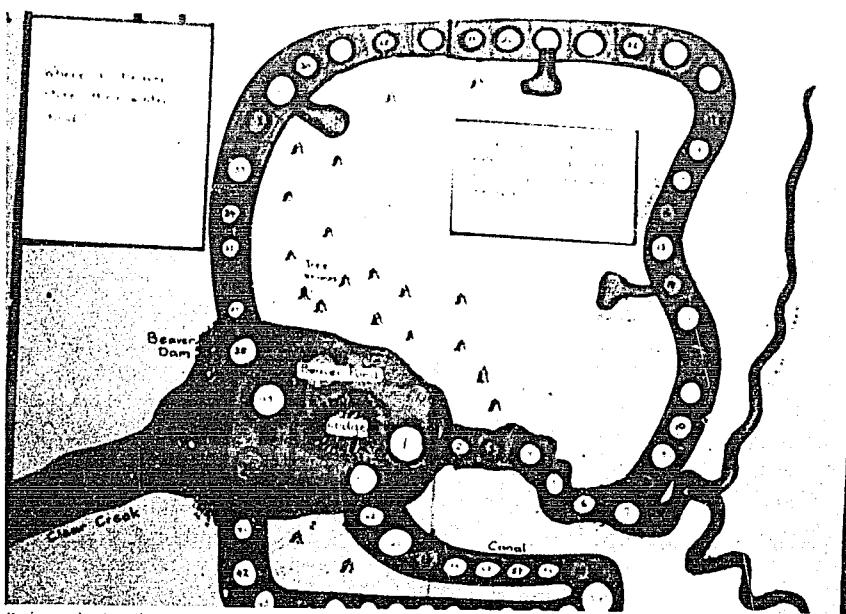
Be a beaver problem book. In this activity the child was asked to imagine he was a beaver and to say how he would behave under a variety of conditions. For example, the child is asked how, as a beaver, he would react if his cousin, the otter, appeared in the front door of his house. Helpful references are provided with each problem. A specimen answer is provided as an example of the type of response required. Starter sentences are provided in subsequent problems.

Programmed instruction sequence. This material comprised a pre-test, an instructional sequence of about 20 frames, a post-test and an answer book.

Plasticine and board. Two plastic-coated boards and two small dishes of green and brown plasticine were provided. One of the activity cards described above suggested that the child might like to make a model of a beaver lodge and dam.

Parts of the beaver matching game. This material comprised a set of pictures of various parts of the beaver and a pack of label cards. The child was required to match the picture and with the correct label. Answers were provided. Some answers were in the form of directions to certain pages in a specified book where the answer could be found.

Labeled boxes of writing and drawing paper were also provided, along with a labeled box in which the children were directed to place finished work. The theme of leaving material ready for use by others is an important consideration and was used consistently in the direc-



Before playing the Beaver Race game, the children had to prepare themselves by reading two books about beavers.



Interest ran high and their enthusiasm was obvious when these pupils actually played the Beaver Race game.

tions for each activity. Technically the technique is called regeneration. Without provision for regeneration the learning material will rapidly become disorganized. In practical terms it means providing clearly labeled containers for each item, labeling each item of the learning material, and including directions to return the learning material to its container in the instructions for any given activity. Certain children might also be made familiar with the operation of the learning center and given the responsibility of maintaining it.

The center will occupy about 17 children for varying periods of time, although access to the center must be

staggered so as to avoid congestion.

Teacher control of content is exercised through the decisions on what shall be included in the learning material. Control of sequence can be exercised by designating a sequence and having children work through it or by assigning specific activities to certain children. It was our thought that children should exercise some choice as to what they learn and when they learn it, but such a philosophy is not necessary for the use of our learning center.

Control of methodology is maintained through the form of the learning activities. We leaned heavily toward a game model together with open-ended creative activities, although we did in-

clude the highly structured methodology of programmed instruction. The center does not preclude the use of any form of teaching/learning. Lectures can be delivered by tape; movies, films and filmstrips can be included; discussions, readings, quizzes and other assignments can be incorporated.

The learning center was placed in a Grade 4 classroom for a period of three weeks.

How The Children Reacted

When the box had been in the room for about three weeks the children were interviewed in groups of four or five. They were asked informally:

Which item did you like the best?

Which item did you like least?

What did you think of the idea of choosing your own work?

What advice would you give a teacher who was planning to make a new box?

The two items that were most popular were the Beaver Race Game and the plasticine. The popularity of the plasticine is interesting. Its inclusion for children in the fourth grade was with some trepidation in case it was seen as too babyish. In fact it turned out to be exceeded in popularity only by the Beaver Race Game.

The reasons given for liking the Beaver Race Game were also interesting. One boy said, 'Well, you had to answer questions and the answers were right there. You found out right away.' We took him to be responding to the reinforcing effects of immediate feedback. One of the girls said she liked the game 'because there were things to move around.' We interpreted her answer to

indicate she appreciated the active manipulative involvement required by the game format.

The children were less specific about the items they did not like. One boy said he did not like the job cards because it was hard to find the information in the books. The job cards outlined rather open-ended, unstructured projects. This boy seems to be lacking in independent study skills. The dual remedy seems to require the provision of an interim phase of more structured assignments accompanied by the teacher-guided lessons on the development of study skills.

The strongest dislike expressed was the 'work' involved in the Beaver Corner. 'Work' turned out to be writing. As one girl pointed out, 'We work in school and we don't want to do more work when we get to the beaver corner.' This remark is most interesting. Writing is equated with work. The use of the Beaver Corner was not regarded as being 'in school,' regardless of the fact that the use of the corner was scheduled in class time and carried out in the regular classroom. Moreover many items were liked 'because you learned something.'

The tripartite attitude of children to writing, work and learning is worthy of more consideration and investigation. Presumably we, as teachers, are more interested in learning than in 'work.' We are also presumably interested in maintaining the school as an attractive place. It would seem quite possible to reduce the work (writing), maintain or increase learning and, thereby, increase the attractiveness of school if we

can reduce our reliance on written expression as evidence of learning.

The children's responses regarding the voluntary aspect of the center were most illuminating. Perhaps their attitude is best summarized by one boy who said, 'It was good because if you couldn't understand things you could do an easier one.' Remarks similar to this underlined for us the importance of providing developmental sequence and allowing children some freedom of choice so as to enable them to find their own level of work.

The idea of offering advice to teachers seemed novel and disconcerting to many of the children (a point worth considering). Consequently their suggestions were somewhat vague. Their suggestions with regard to other topics were limited entirely to other animals — deer, horses, chimpanzees, snakes, etc. When asked to consider non-animal topics they became extremely vague — geographical, people and rabbits (sic). When asked what kinds of activities to include one girl suggested the inclusion of more games 'because some kids were fighting over the game (the Beaver Race Game).' This remark (and revelation!) underlined for us the importance of providing alternatives that are equally high in interest. A single game in a class of 30 is little more than a potential discipline problem. However, it seems to us that the answer is to make all activities not equally dull, but equally attractive.

How The Teacher Reacted

The teacher reported that the children were very enthusiastic about the Beaver Corner, as they called it. Many children would use the corner voluntarily in their spare time. The teacher was observant enough, however, to notice that some children were not getting to the corner because they never finished assignments soon enough to have any spare time. She very wisely started to assign groups blocks of time during which they were free to work on any activity from the Beaver Corner. She also put together a 'Fish Corner' to provide non-Beaver workers with an equally attractive alternative. Other children were permitted free time in the library.

In this manner an attempt was made to distribute the children among activities that were more or less equal in their attractiveness. We believe this organizational approach to be very sound. A teacher who was foolish enough to give a spelling test, for example, to two-thirds of the class while the remaining third worked out of the Beaver Corner, would probably encounter se-



Playing Yes/No — a picture and question game illustrated here — inspired some children to develop their own quiz game.

vere attentional difficulties.

The teacher also reported that several children spontaneously started beaver projects on their own. One boy, with the help of his father, built a cardboard roller 'television' with a beaver scroll. One girl made her own 'Beaver Corner' complete with games, activity cards and research materials. Two boys created an elaborate beaver dam and lodge from materials they had collected themselves. The teacher observed that the children involved in these voluntary projects were those of either low or average ability. None of the high ability children were involved.

The limelight and improvement in self-concept generated by these voluntary projects is extremely valuable for these low and average children who are frequently outshone by their more able classmates. The high achieving children used the Beaver Corner as enthusiastically as the rest of the class, but were not stimulated sufficiently to make creative contributions. This relative inactivity of the high achievers is curious and thus far unexplained.

The major drawback of the center is the considerable time required for preparation. The senior author spent many evenings drawing, writing, cutting, pasting and starting over. This disadvantage can be ameliorated in various ways: division of labor by a group of teachers who all plan to use the center, location of the learning packages in a central place so that many teachers can use them, and re-use of the same material in subsequent years with little reorganization.

In conclusion we should like to thank the staff of Braefoot Elementary School, Victoria. We should particularly like to single out the principal, Mr. R. Mainwaring, as an object of our gratitude. At no time did we have any talk of curriculum control, timetabling, disturbance of the children's 'work' (writing) or fears of janitorial disruption. It is this kind of co-operation in innovative projects that permits 'ivory towerers' to become unworthy of the label.

We forgot to specify and analyze our objectives. This may have been because we were more interested in children and beavers than we were in specificity and objectivity. We had an *n* of only 35, but since each member of that *n* 'allowed as how they had had a thumping good time,' we concluded that our experiment was a success in that we felt we had provided an improved learning experience and that we ourselves had learned enough for us to do better next time.

Bibliography available on request.

This year you may be one of hundreds of Canadian teachers who will meet a partially sighted student for the first time. How you feel about the child makes all the difference.

Teachers who think such students should not be in their classes may feel overburdened and unsympathetic. If they feel pity for the children, they could be overprotective and expect too little from them. But if they feel that partial sight does not really make such children very different, if they can accept the children whole-heartedly, their classmates will accept them and they will try to do their best to the full members of the class.

Since there are many kinds of partial sight, you will want to know just how a student like Robert sees and what special help he needs. He may be able to see the blackboard from a front seat, or he may need a seat placed closer to the board. You and the student should decide together where he functions best. If the child can't see the board, you could give him lesson material you have

Miss Scott is supervisor of social welfare at CNIB, Vancouver.

prepared — either from the textbook or written in black ink.

For close work Robert may need to have his book close to his eyes — an easel or book rest will save him a lot of unnecessary fatigue. To understand the problem, try reading with your face only a few inches from your book; you will learn what happens to your own neck and back muscles.

It will help, too, if you write your blackboard notes larger than usual and read them aloud. This will keep Robert in step with the class — and you will be surprised to note how much the combined audio-visual helps everyone.

Try not to make Robert feel conspicuous when working out his routine. If you use a matter-of-fact approach, he will respond readily. 'Robert, you will do better work if you use this nice black pencil.'

An important point to remember is that the student will not see you point to him when it is his turn to answer a question. 'Yes, Robert' is all you need to say to get a quick response.

Robert's classmates will be glad to help, too. When the blue lines in his notebook are hard to see, someone can

EILEEN SCOTT

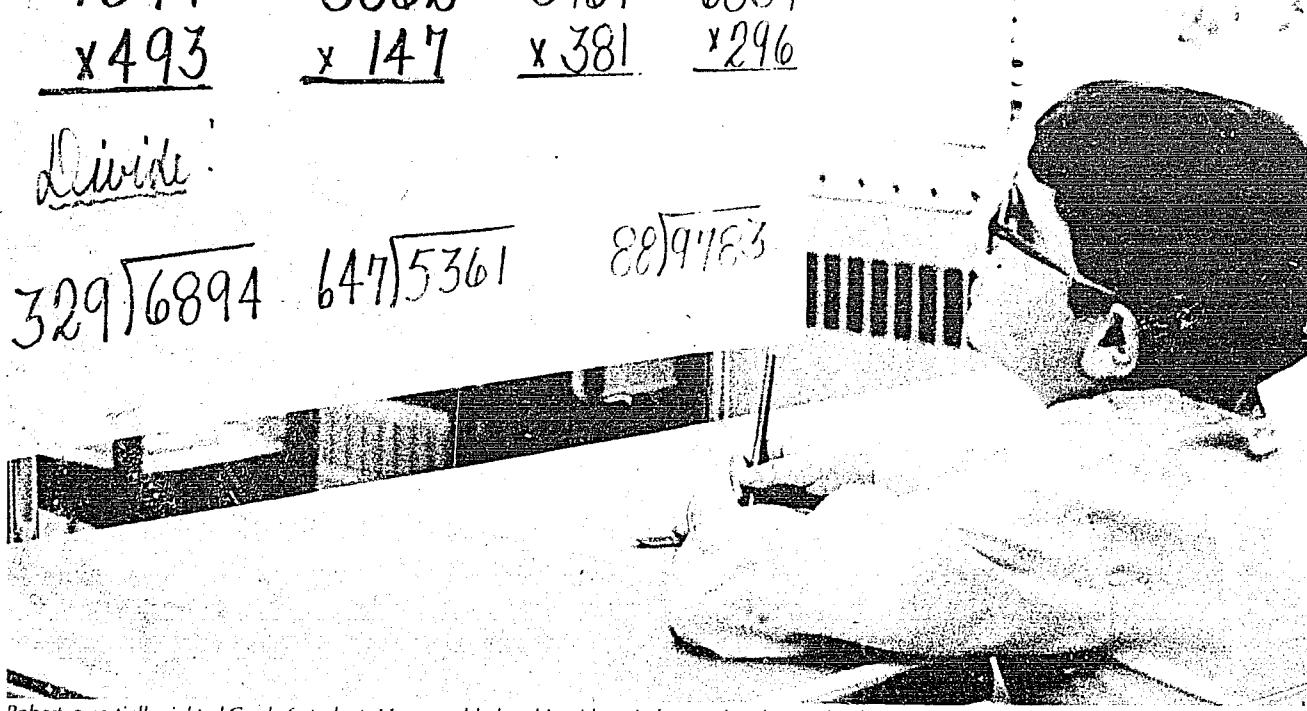
HOW YOU CAN HELP THE PARTIALLY SIGHTED CHILD

"Multiply:

$$\begin{array}{r} 9374 \\ \times 493 \\ \hline 8062 \\ \times 147 \\ \hline 3964 \\ \times 381 \\ \hline 6831 \\ \times 296 \\ \hline \end{array}$$

divide:

$$\begin{array}{r} 329 \overline{) 6894} & 647 \overline{) 5361} & 88 \overline{) 9783} \end{array}$$



Robert, a partially sighted Grade 6 student, 11 years old, does his arithmetic from a chart his teacher had prepared previously.

refine every other line in black. This double spacing will allow for larger writing.

A partially sighted student frequently reads slowly and hence does not finish tests on time. You can either cut down on the number of questions he must answer and pro-rate the marks or allow him some extra time. Mimeographed material is hard to see because the letters are often only partially printed and the overall contrast is poor. Ask a volunteer to go over the paper in black ink or tape the test in advance and let him listen question by question as he goes along. Quite often the pupil will have good skill with the typewriter and will be able to give you a clean set of answers.

When working with mathematics, reading the blackboard out loud is essential. Don't say, 'Draw a line here.' Give specific directions. 'Draw a diagonal from point A to point C.'

Visually handicapped youth need dramatic arts and physical education almost more than the sighted do. They may not do the work as well as those who see, but teachers should not put limits on them. As the CNIB booklet,

*The Partially Sighted Child in School,** points out, 'Partially sighted children need exercise and the opportunity to develop co-ordination because they tend to be less active. In games like baseball where the child cannot see the ball, he can be team manager or scorekeeper. He can participate in swimming, yoga, judo, skating, gymnastics, wrestling, and dancing.'

So, if a visually handicapped student comes your way, don't get 'up tight.' Discover his visual limitations and work out the kind of help he needs. Remember, too, that the Canadian National Institute for the Blind is a nation-wide organization with trained consultants eager to talk things over as you go along.

In Canada as a whole there are several thousand children with visual handicaps. In B.C. there are 16 children in the public schools who use Braille only. At Jericho Hill School there are at present some 40 children from B.C. and others from Alberta and Saskatchewan.

* *The Partially Sighted Child In School*, by Eileen Scott. This guidebook for teachers is available free of charge by writing the CNIB, 350 East 36th Avenue, Vancouver, B.C. V5W 1C6

People with 20/80 or less vision will have problems in seeing, and there are at least 400 children now attending public school with 20/80 or less — vision sufficiently poor that they have problems in reading, either close up or at a distance, or both.

There is help available. Braille material for students using Braille only can be requested from Jericho Hill School, 4100 West 4th Avenue, Vancouver. Tape recordings (7" reels) of all prescribed texts for Grades 7 to 12 are available on loan from the CNIB in Vancouver.

The fact that 300 blind and partially sighted students are now enrolled in Canadian community colleges and universities is proof of their success in the regular education system. Their achievements result from many factors — their own abilities, CNIB professional assistance, which began in their early childhood, and the interest of their teachers.

If you meet visually handicapped children in your classes this year, focus on their training and learn more about the approach to the partially sighted. Your work with these children is vital to their future.

Lab Science Courses

Continued from page 197

guarantee increased interest or better performance in science. There is no pat formula for improving science teaching, but it would appear there is one thing that must be true if a science experience is to be effective:

There must be, on the part of the student, a feeling of personal involvement. The student must care about the work he is doing, whether it is a standard textbook exercise, a reading assignment or an experiment that he and his



The student should have a clear notion of what he is trying to do, and of why he is doing it. He should feel that the experiment is his experiment.

classmates have worked out for themselves or with intelligent guidance where needed from their teacher. The student must also feel that his teacher cares about his experiment and about him. The student should have a clear notion of what he is trying to do, and of why he is doing it. He should feel that the experiment is his experiment and be committed to working out a sensible procedure and carrying it through to a satisfying end.

Let's face it! Too often a class experiment is nothing more than a dull ritual. You ask a student, 'What are you doing

today?' and he will likely respond in this manner:

'Lab 17.'

'What is the purpose of the lab?'

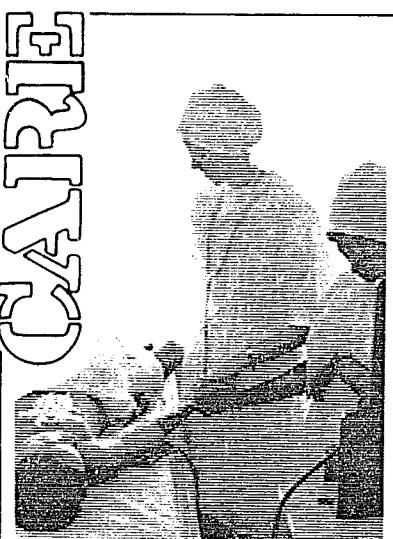
'I don't know. I haven't read it yet.'

'Why are you doing the experiment?'

'I don't know. The teacher said to do it.' (Or, 'Because we finished Lab 16 yesterday.')

How often have you heard a student say, as he entered your room, 'Aw! Do we have to do another lab today?'

Comments like these make one wonder about the value of a so-called laboratory-oriented science course (and what is often loosely referred to as 'discovery learning').



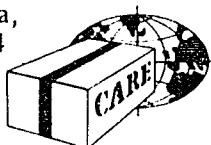
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EDUCATION — A NATURAL MONOPOLY

This new column will be a regular feature from now on. We welcome your comments.—Ed.

There is B.C. Hydro ... There is B.C. Tel ... There is Westcoast Transmission ... AND THERE IS EDUCATION ... Natural monopolies all, wouldn't you say? And what person in his right mind would wish it otherwise?

Just think of the situation if suppliers of electricity, telephone communication facilities and gas lines were to operate in the hands of competing companies! Rivers would be choked with rival dams. The sky visible only among the interstices of a hopeless tangle of power and telephone lines. The earth criss-crossed and gashed by the routes of dozens of juxtaposed pipelines.

Similarly, just imagine the confusion if education were organized to permit competition and diversity among schools and other instructional institutions. Surely social and cultural unity would be lost. Society would degenerate into a proliferating excess of antagonistic social groups forever at one another's throats. Education must be a monopoly to help preserve social cohesion, if for no other reason.

Besides, the ideal of ideological and social unity has had a long and honorable history in Western culture, stretching back to its Graeco-Roman beginnings, and is deeply embedded in the cultural matrix. In its name, the Romans attempted to eradicate those disturbing and subversive Christians and the Christians, from the Middle Ages to the present, have striven mightily to eradicate their dissident brethren by such legitimized techniques as burning at the stake, the Inquisition and other more traditional forms of suppression and execution.

In our own time, we have a similar process in operation in Northern Ireland. And one of the forces fueling the

Communist vs Free World conflict is the same.

Even in North America the ideal of cultural unity has had a distinguished history. In its name the Indian civilizations of Central and South America were disposed of, whole peoples moved from their customary habitat or like the Beothuk of Newfoundland, liquidated, and languages and cultures repressed, as the march of the superior, civilized West made its permanent mark on the New World.

For education to abandon such an honorable tradition and accept the principle of natural diversity as a healthy given of any social order would most assuredly be disastrous.

The current operational word, is, of course, 'integration.' Thus a recent conference of educators and social workers at UBC recommended that all children attending alternate schools be integrated into the regular school system...

'Ideally, if the school system were doing its job, there would be no need for any alternate or special schools,' said chairperson Csapo, revealing his person's progressive enlightenment. The conference went on to recommend that local community centers integrated into the school be established and operated by local educational and welfare authorities.

In similar fashion policy has determined that Canada's native people shall be integrated and they too pressed into the common mold through the mechanism of integrated schools. The loss of language, conceptual schemes and cultural heritage are a small price to pay for the abundant benefits of the unity which only sameness can achieve.

'Personally I think that the only remedy is the slow, patient blending of

the Indian with our civilization,' said one such spokesman recently, thereby exemplifying the virtue of ethnocentrism.

The philosophy of integration is quite simple: Why can't you be like me? Indeed, if you aren't like me, there must ipso facto be something wrong with you and one way or another I'll see to it that you're made over in my image. I may have to mould you forcibly into the pattern. I may even have to destroy you to achieve your salvation, but I'm sure you'll appreciate how the force of destiny leads inevitably to the bed of Procrustes.

Despite this, some simple souls have even had the audacity to suggest that there ought to be a variety of routes whereby secondary students might obtain an education: that they should not necessarily have to obtain it at the neighborhood secondary school; that they should perhaps be permitted to obtain it by correspondence courses if they wish, or at day or evening continuing education centers, or at Canada Manpower upgrading centers, or through 'open secondary schools' à la open universities, or at alternate schools.

There would undoubtedly be some benefits in such schemes. They would probably assist in lowering pupil-teacher ratios in established secondary schools. They might provide more diversified job opportunities for teachers.

But outweighing such advantages would be the catastrophic danger of loss of cultural unity. They must therefore be firmly resisted. *E Pluribus Unum* must be the eternal watchword. Into the melting pot one and all — my melting pot, that is!

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NEW LESSON AIDS

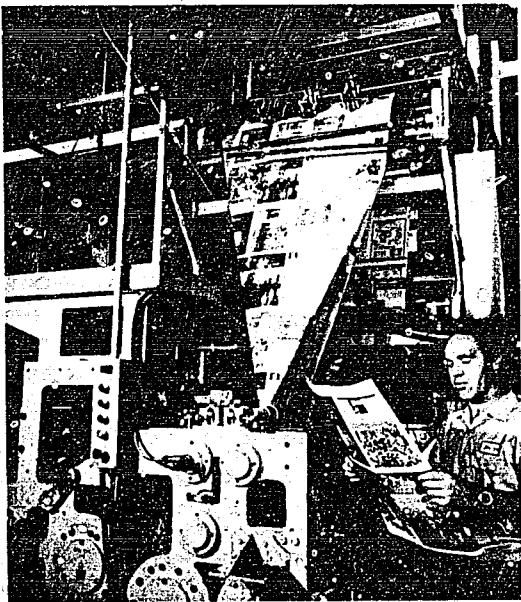
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Several teacher groups — those who teach the fine arts, those who teach French, the school counsellors and the school librarians, for example — are seeking a new panacea that will presumably resolve quickly and effortlessly their respective problems.

Each of these groups wants a provincial subject co-ordinator, or consultant, or supervisor — the name is immaterial — to provide an immediate solution for complex problems.

One of the fundamental reasons for recommending the appointment of a provincial subject co-ordinator results from disenchantment and frustration with the group decision-making process at the school level. How are group decisions reached at the school?

Many schools profess to be democratically organized, so individual decision-making becomes an arrangement whereby each staff member has the right and the responsibility to state his/her opinion or choice. The decision reached is then a majority one based on a democratic vote.

That, however, means there is a minority that often may wish to be dissociated from the majority decision. What commitment will the minority or minorities have to the majority decision?

Other schools, more authoritarian by nature, follow a lineal decision-making process. The leader — principal, supervisor or even department head — makes the decision and then transmits it 'down' through the locally established chain of authority. To what extent do those affected — teachers and students — then identify with these decisions?

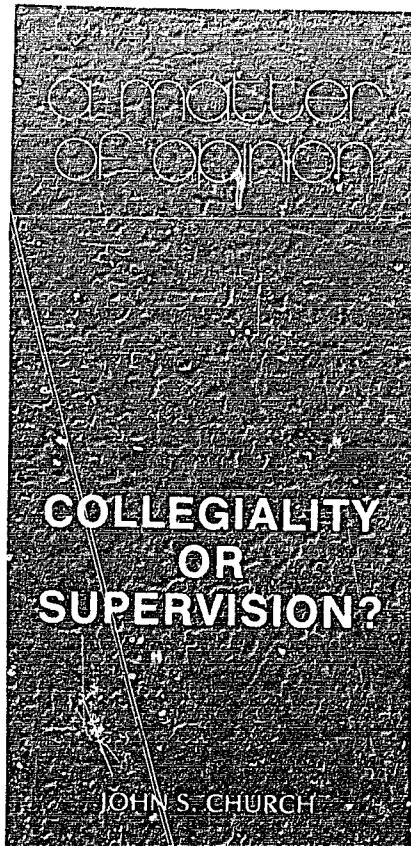
Are not the individual and the lineal approaches to group decision-making far too prevalent in far too many schools? Why is it that a collateral or a collegial approach to group decision-making is far too rare?

Under a collegial approach, the group — i.e., the school staff — discusses, weighs and considers the advantages and the disadvantages of each alternative, and the process continues until a consensus is reached. It must be a consensus with which all group members can feel comfortable.

The success of this approach depends on each member's recognizing and accepting that the goals of the group — i.e., of the school — are more important than are any individual needs or preferences.

Its success depends, too, on an acceptance of the fact that nothing is more important in a healthy school than complete support by all teachers of the school's goals.

A collateral decision-making ap-



revert to his original position as the principal teacher, or as one among several leader-teachers. Decisions must be collegial in nature because each school has identified a hierarchy of goals and each team has a plan to reach these goals. The school has become goal-oriented and has ceased to be role-oriented.

It is important to recognize, too, that more and more 'power' decisions can now be made at the school level where teachers and students interact constantly and intimately. It is therefore critical that each teacher subscribe fully to the group decision. This requires a collateral approach to decision-making. And, as Dr. Glasser has emphasized, it must require a willingness to accept and to live with the consequences of those decisions. They are those of the group, not those of some external agent.

It is now more essential than at any earlier period to implement practices that will emphasize the seamless cloak of learning. If teachers are serious about the unity of learning, of stressing how, not what, students learn, the conditions and attitudes prerequisite for those practices must originate in each school.

Almost 200 years ago, Benjamin Franklin warned about the need to hang together or else to hang separately. That piece of American folklore or experience is now universal. It is essential that our students learn to work together, to share, to respect each other and to work for a common good.

This goal can be achieved only within the environment of the school in which the teachers have already established the model of working together, of sharing, of respecting each other and of striving to realize a common good.

To me, the question is stark and simple. Do we want schools whose goals have not been clearly defined, and whose teachers are partially alienated, or who at best are not intimately and directly committed to promoting the total growth and development of their pupils?

Or do we want schools whose teachers and students have collegially identified clearly defined goals, such as those of human growth and development?

There can be only one response.

That means that each teacher, with the assistance and support of his/her colleagues, must strive to resolve collegially the problems he/she faces.

It also means recognizing that a provincial subject supervisor from Victoria can never overcome the myriad varying teaching-learning problems that confront each teacher.

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HAVING CAST OUR BREAD...

Two months ago in this space, we have netted two more fish to add to our panel of reviewers. Let us welcome John Chalk of Burnaby and Tom Dunwoody of Happy Valley, Victoria. No slight intended, gentlemen, but after all, fish are found in schools, aren't they?

BANANAS...

Today we consider a number of people who are usually overlooked in our too-frantic daily rounds. Show biz is rife with teams of performers one of which is designated top banana and the other second banana. Curiously, top banana is usually given second billing, while second b. is the straight man who feeds all the lines for the other to get all the laughs. Consider Burns and Allen, Ford and Hines, Martin and Lewis, Rowan and Martin, etc., ad lib.

But that's show biz, as they say. What stirs my curiosity is a name like Frean. This, as everyone knows, is the better (or worse) half of Peek Frean biscuits. Did Mr. Frean love dogs, have headaches, beat his wife, have dandruff? Alas, we will never know. What do we learn about Sanborn, of Chase & Sanborn; Perrins, of Lee & Perrins; Roebuck, of Sears Roebuck; Mifflin, of Houghton Mifflin? Or Palmer, of Huntley & Palmer; Gamble, of Proctor & Gamble? We all know about Jack McClelland (definitely a top banana in Canadian publishing), but what of Stewart? Why doesn't someone apply for a Canada Council grant to investigate this not very pressing problem? Arise, Miffins of the world!

LESSON FOR TODAY...

A gas-meter-reader knocked on the

door of a house and a musical voice inside said, 'Come in.' The man entered and saw only a parrot sitting on a perch and a large dog lying in the corner. Just as he was about to lecture the parrot on the dangers of inviting strangers into the house, the parrot turned to the dog and squawked, 'Sic 'em Wolf!'

— C.D. Nelson

CHEMISTRY

Handbook of Chemistry for Highschool Students, by Philip S. Chen. Chemical Elements Pub. Co., 529 Mission Dr., Camarillo, Calif 93010, c1973. \$5.95

Dr. Chen maintains that the majority of handbooks of chemistry now available to the high school student are too comprehensive in scope and rather off - putting in dimensions. He has set out to overcome these disadvantages in publishing this handbook specifically for use in schools.

Information is grouped into predictable categories of the mathematical, chemical elements, followed by inorganic and organic compounds. However, the last, extensive section entitled 'Chemical Pastime and Miscellaneous' comes as a pleasant, refreshing surprise, which, in parts, I found quite entertaining.

Students will find the more formal presentation packed with useful information ranging from mensuration formulas, Latin and Greek roots in scientific terminology, a comprehensive glossary, to many varied tables particularly useful in the school situation. The tables are well presented in simple, uncluttered fashion and printed in clear type. Much material reflecting elementary periodicity is not only listed, but also set out visually using the familiar form of the periodic table.

I feel the author has been successful in achieving his aim and suggest that this book, at an attractive price, not only deserves a place on the library or laboratory shelf, but also will likely spend a considerable time off the shelf and in use by students. —John Bray

ENGLISH

Slaughterhouse Five, or The Children's Crusade, by Kurt Vonnegut, Jr. Dell, c1959. Paperback. 95c

Slaughterhouse Five is, among other things, about the fire bombing of Dresden, which Vonnegut experienced personally from the underground locker of a slaughterhouse numbered five. He tells us at the beginning of the novel that 135,000 civilians were killed in the basically non-military target of Dresden — twice as many as in Hiroshima — in fact, it was the greatest single massacre in European history. But having impressed us with the devastating magnitude of what the West is belatedly and reluctantly recognizing as an atrocity, he tells us at the end of the novel that twice as many people are now being born each day as were killed in Dresden, and then adds sarcastically, 'I suppose they will all want dignity.' So it goes.

When the English department at Cowichan Secondary in Duncan decided to teach *Slaughterhouse Five* to academic Grade 12s last semester, they did so with considerable caution and with many reservations expressed by various administrative groups. All students were told that if they or their parents objected to the book they would be given an alternative text. Why all the fuss over an author who is, after all, one of the most popular and widely acclaimed writers of the '70s? The obscenities and ethnic bigotries are on first reading shocking, but on reflection or second reading, totally related to the message of the author; when examined in the light of subsequent paragraphs viciously satiric of those who indulge in pornography and bigotry for their own sake. The author is an avowed existentialist, and although there are other existentialist selections on the prescribed course ranging from *Theatre of the Absurd* to Sartre and Kafka, none have the impact of Vonnegut, who in all his books maintains that free will is a ridiculous illusion held by conceited earthlings who do not realize that there is no why, that the moment is merely structured that way.

Paradoxically, and despite his existentialism, Vonnegut, in my opinion, has a strong moral conscience and the book is an effective anti-war book; but as the author tells us, it does as much good to write an

anti-glacier book as to write an anti-war one. Why select *Slaughterhouse Five* for academic 12 English? Because it is relevant, disturbing, humorous, as well as revolting — because Vonnegut is to literature in the '70s what Dylan was to music in the '60s — a voice that young people respond to, who tell it as they see it and as old cynics see it and as the Tralfamadorians see it and as a time-tripper on a 'telegraphic schizophrenic ... duty dance with death' and sees it, and so it goes.

The book is subtitled 'The Children's Crusade' and one of the basic messages of the text is that only an infantile mentality can cope with the horrors of war and still see it in terms of black and white, 'good guys' and 'bad guys.' Reality is more complex; in fact, so complex as to be ultimately meaningless. Vonnegut, in his opening autobiographical chapter, quotes many sources of traditional wisdom: the Bible, Goethe, Dostoevsky, etc., but then tells us that the old lies are not enough any more after the wholesale atrocities of World War II. We need new lies to give us the courage and faith to go on living with some kind of a purpose.

Was the teaching of the novel a success? It was a popular novel, idolized by a majority, detested by a small minority, leaving very few neutral. However, if popularity were the only criterion by which we chose selections for our students, we might all be teaching nothing but Linda Lovelace and Alice Cooper. I feel that Vonnegut presents a timely and forceful world view that stimulates young readers and makes for lively teaching, and I would recommend *Slaughterhouse Five* for academic 12s, *Cat's Cradle* for academic 11s and *Welcome to the Monkey House*, a collection of short stories, for vocational students.

To round off this review, may I quote a little parable from *Slaughterhouse Five*: 'Jesus, only twelve years old, was learning the carpentry trade from his father.'

'Two Roman soldiers came into the shop

with a mechanical drawing on papyrus of a device they wanted built by sunrise the next morning. It was a cross to be used in the execution of a rabble-rouser.

'Jesus and his father built it. They were glad to have the work. And the rabble-rouser was executed on it. So it goes.'

— Herb Hlady

PHYSICS

Applied Physics, by Paul E. Tippens. McGraw-Hill, c1973. \$11.50

This book of 725 pages has been well organized into three parts, introducing the reader to 40 different aspects of physics. Part One deals with mechanics, including two brief chapters on fluids; Part Two takes up heat, light and sound; and in Part Three the concepts of magnetism and electricity are discussed.

The language is clear; each new concept has been clearly defined and great care has obviously been taken to develop all formulae and principles in an easy-to-understand series of steps. There is a profusion of diagrams, which illustrate and clarify the text, and appropriate examples are consistently used to show the application of the principle or the formula developed.

The application of the knowledge gained by the student can be tested through a wide variety of questions and problems at the end of each chapter. (The traditional 'Answers to odd-numbered questions' are found in the back.)

The mathematics has deliberately been kept as simple as possible, the only prerequisite being the knowledge of some basic algebra. The trigonometric functions needed as exponents, radicals and the scientific (power-ten) notation of large and small numbers have been included in the form of an appendix.

This simplicity of the mathematics does occasionally leave the reader with an impres-

sion of superficiality in the treatment of topics requiring calculus and other forms of more advanced mathematics for a complete understanding, but this does not seriously detract from the overall favorable impression of this book.

Applied Physics could be placed high on the list of books being considered for selection as 'the text' for an introductory course in physics and should prove very helpful for secondary school students and teachers of physics. — Nils M.A. Hoeg

LATIN

Latin Is Alive and Well, by B.C. Taylor. Faculty of Education, University of Toronto, 1973. Paperback. \$1.15

Latin Is Alive and Well is a deceiving title. One expects to be informed about the 'where' and 'how' of the present renaissance of Latin in England and even North America. Fortunately it doesn't even mention this fact, but goes right on with the business to give us in 54 pages 'The Whys and Wherefores of our Language' and to give in the most economical and concise form examples and practices of 'How Latin Lives in English.'

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The size, format, organization and print of this booklet will tempt foreign language as well as English teachers to use it in their classes. And the results will be of a very practical nature. — Konrad Schamberger

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comment

ON LEARNING THE TUNE!

J. HARLEY ROBERTSON

Mark Twain's wife, attempting to shame him out of habitual profanity, cursed roundly over some minor irritation. Far from being embarrassed, her husband surveyed her with a critical eye and said, 'Well, my dear, you certainly have the words, but I'm afraid you will never have the tune.'

So it is with individualized learning. Most teachers, by now, have all of the words. Any educational paper one picks up extols the virtues of the new learning techniques (the operative word is learning, not teaching).

But will we ever get the tune? My small boy goes to an open-area elementary school. The floors are carpeted and there are no walls. But — the desks are very neatly and immovably set in rows. As the French say, 'It is necessary to laugh to prevent oneself from crying.'

We have intellectualized individualized learning. We have even convinced ourselves that we are involved in individualized learning. I maintain that many of us are in the position of Mrs. Twain. We still do not know the tune. We cling to our past, those of us who have taught for years, and are fearful of changing our ways.

We insist upon our right to teach even when it interferes with learning. We insist on our right to display erudition re-

gardless of its effect on learners. We insist on playing Mother Hen even when students demand freedom to learn. We even insist on exercising authority when none is required.

We know best. How many of us, I wonder, grew up within the strait jacket of *Mother-knows-best?* We know best what students need to know. We know best when they should learn it. We patronize.

It could be argued quite successfully that teachers are the greatest inhibitors of learning ever devised. We prattle and pretend concern about individual differences and proceed to demand the same thing from each student.

This is no plea for freedom. Total freedom is as antithetical to learning as is total regimentation. Why, I wonder in passing, does the former evoke more horror than the latter? Surely they are equally obnoxious.

We shall never get the tune right until we can accept learning as an individual exercise; as a total philosophy of our educational way of life.

The function of teachers is to render themselves obsolete. Their every action should be dedicated to that end. Every pupil must be made to stand on his/her own two feet in the learning enterprise. Too often teacher remains a handy crutch.

We must change the school system so that we do not have a captive, unwilling audience. We must change the school system so that students are there be-

cause they want to be there. We must change so that students clearly recognize that school fulfills their needs.

Surely this is a better climate in which to meet the demands of individual differences. Surely under these changed circumstances we teachers can take the chance of discarding the protective robes of authoritarianism and of curriculum for its own sake? We must put the responsibility where it belongs — with the learner — and help him meet his needs.

It is happening. Some of us — and I include me, naturally — have finally got the tune. I don't think we all have the tune yet, but we all have the words; we have all made the first giant step. Having no longer to worry about care and control and having a clientele interested in learning, we can now proceed with learning the tune. We can now re-examine our philosophy of teaching, orienting it to the needs of individuals rather than to teaching things to people.

Through such a program we can demonstrate the efficiency and effectiveness of individual learning. We can show that through catering to interests and needs of individuals the care and control component of education is not only unnecessary but wasteful!

It is happening. There are many classrooms and even whole schools predicated on meeting individual needs. In these cases we have finally learned the tune.

The writer is co-ordinator of Basic Training for Skill Development, Division of Technical-Vocational Services, Department of Education.

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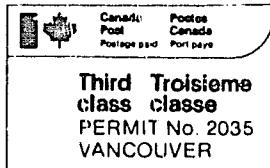
Note: Salary negotiations for a new contract effective September 1, 1974 will commence shortly.

Interviews will be held in major Western Canadian centres during the latter part of March and the first week of April. Candidates will be required to attend interviews at their own expense.

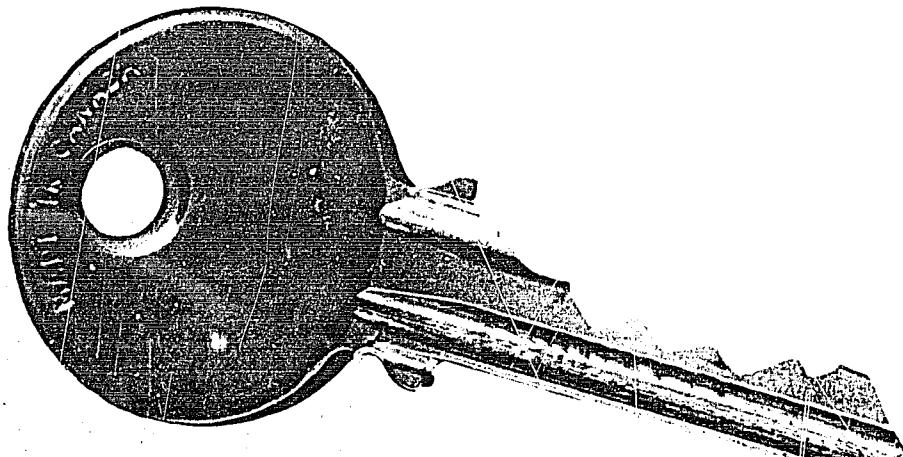
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KEY FACTORS

... To consider when investing your money in a Savings Account are ...

How often and on what balance is interest calculated?

Your Teachers Co-Operative pays $8\frac{1}{4}\%$ per annum, interest is calculated on your daily balance and may be left in your Account to compound annually.

$8\frac{1}{4}\%$

No term is necessary to earn this rate.

Why not start saving for summer vacation now?

TEACHERS' INVESTMENT AND HOUSING CO-OPERATIVE

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